PATERSON GROUP

Hydrogeological Study

Proposed Residential Development

4850 Bank Street
Ottawa, Ontario

Prepared for Regional Group

Report PH5087-REP.01.R1
dated October 17, 2025

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1.0 INTRODUCTION

1.1 Background

Paterson Group (Paterson) was retained by Regional Group to conduct a hydrogeological study for the proposed residential development located at 4850 Bank Street in the City of Ottawa (hereinafter referred to as the "subject site"). The location of the subject site is shown on Drawing PH5087-1 - Site Plan appended to this report. This report incorporates the findings of Paterson Report PG6912-1 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:

- ❒ Characterize the hydrogeological setting of the subject site. Consideration was given to bedrock and surficial geology, aquifer systems, groundwater levels, hydraulic properties and catchment characteristics.
- ❒ 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:

- ❒ PG6912-1 Rev.1 Geotechnical Investigation - Proposed Residential Development & Off-Site Sewer Installation - 4850 Bank Street - prepared by Paterson Group - prepared concurrently with this study.
- ❒ S4 Leitrim Urban Expansion Area - Serviceability Report - prepared by Arcadis – prepared concurrently with this study.
- ❒ Leitrim West Urban Expansion Area - S4 Environmental Impact Study prepared by Arcadis – prepared concurrently with this study.
- ❒ Pathways at Findlay Creek - Constructed Channel Monitoring (Year 5) - prepared by Cambium Inc. - October 30, 2024.
- ❒ PE6336-1 Phase I-II Environmental Site Assessment - 4850 Bank Street - prepared by Paterson Group - December 20, 2023.
- ❒ Environmental Management Plan for the Remer and Idone Lands - Ottawa, Ontario - Prepared by Golder Associates - February 2015

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 December 2023 and July 2025. During this time, 18 boreholes were advanced to a maximum depth of 8.5 m below ground surface (bgs). The location of the test holes are shown on Drawing PG6912-1 - 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 (BH1-25 and BH2-25) drilled during the July 2025 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 December 2023 and July 2025 geotechnical investigations. Falling head and rising head tests (slug tests) were completed in accordance with ASTM Standard Test Method D 4404 - Field Procedure for Instantaneous Change in Head (Slug) Tests for Determining Hydraulic Properties of Aquifers.

Slug testing was completed during the month of July 2025 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 a metal 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.

Infiltration Testing

In-situ infiltration testing was conducted at the subject site during the month of July 2025 using a Pask (Constant Head) Permeameter. At each testing location, up to two in-situ infiltration tests were conducted at depths of approximately 0.5 to 1.0 m below ground surface (bgs). The tests were conducted to provide general coverage of the subject site and are shown on Drawing PG6912-1 - Test Hole Location Plan included in Appendix 1.

At each testing location, an 83 mm diameter hole was excavated using a Riverside/Bucket auger to remove topsoil and other subsoil material until the desired testing elevation. Up to two holes were advanced at each testing location to approximately 0.5 and 1.0 m bgs. All soil from the auger flights was visually inspected and initially classified on site. An aggregated soil sample was gathered at each test location. Each test was conducted by filling the permeameter reservoir with water and inverting it into the hole, ensuring it was relatively vertical and resting at the bottom of the hole. The water level of the reservoir was monitored at 0.5 to 5 minute intervals until the rate of fall out of the permeameter reached equilibrium, known as a quasi “steady state” flow rate. Quasi steady state flow was considered to be obtained once 3 to 5 consecutive rate of fall readings with identical values were measured. The values for the steady state rate of fall were recorded for each test. The steady state rate of fall was converted to a field saturated hydraulic conductivity value (K_{fs}) using the Engineering Technology Canada Ltd. conversion tables. Unfactored infiltration rates were estimated based on the methodology outlined in Appendix C of the Credit Valley Conservation’s Low Impact Development Stormwater Management Planning and Design Guide.

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 December 2023 and July 2025 geotechnical field programs, 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 December 2023 and July 2025 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 summer 2025 and will last until spring high water levels are captured in 2026.

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 PG6912-1 - 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 subject site was undeveloped and heavily forested with mature trees and grass/shrubs. The subject site is located in the City of Ottawa, Ontario and is bordered by Bank Street to the east, forested land and a driving range to the south, forested land and a wetland to the west and a residential development and commercial properties to the north. The location of the subject site is shown on Drawing PH5087-1 - 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. Also, the Leitrim Wetlands lies west of the subject site. The ground surface at the subject site generally slopes downwards to the east and west from the central portion of the subject site. The site is generally at grade with adjacent roadways and properties. The site slopes from east to west with an elevation difference of approximately 6-8 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 eastern tip of the subject site is located in the limestone plains physiographic region. The sand plains region is characterized by silty sand deposits. The limestone plains region is characterized by limestone bedrock. These are 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 consist of till (stone-poor, sandy silt to silty sand-textured till on paleozoic terrain). Overburden soil mapping is shown on Drawing PH5087-3 - Surficial Geology Plan, appended to this report.

Overburden soils identified during the geotechnical investigations by Paterson between December 2023 and July 2025 were generally consistent with the available mapping. Soils generally consisted of topsoil overlying a glacial till deposit followed by bedrock. Fill material was encountered at one (1) borehole location. The fill material generally consisted of brown silty sand with gravel, crushed stone and trace clay, extending to a maximum observed depth of 0.9 m bgs. The glacial till deposit generally consisted of a silty sand matrix with varying amounts of gravel, cobbles and boulders, extending to a maximum observed depth of 6.7 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 PG6912-1 prepared concurrently with this report.

Bedrock Geology

Bedrock was encountered between 5.0 to 5.2 m bgs during Paterson's 2025 geotechnical field investigation and cored to a maximum depth of 8.5 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 3 and 15 m. Bedrock geology mapping is shown on Drawing PH5087-4 - 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 consist of 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 two (2) aquifer systems in the vicinity of the study area which consist of the overburden aquifer and underlying bedrock aquifer. The bedrock aquifer system consists of dolostone or dolostone and sandstone of the Oxford or March Formations, respectively. Given the temporal variability between the water well records and lack of geodetic elevation references, we were only able to approximate a potentiometric surface of the deeper bedrock aquifer which was inferred to range between approximately 2 to 15 m bgs. Surrounding water well records are included in Appendix 5.

Groundwater Levels

Piezometers and monitoring wells were placed across the study area for the purpose of monitoring groundwater levels. The piezometers and monitoring wells were installed in the overburden and bedrock. Groundwater levels were observed to be between 0.13 and 1.23 m bgs in the piezometers and between 0.39 and 1.99 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 July 3, 2025, were used to determine hydraulic gradients and the general groundwater flow direction at the subject site which is shown on Drawing PH5087-5 - Groundwater Contour Plan appended to this report. The manual measured groundwater levels 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)	
BH 1-25*	101.45	1.74	99.71	July 3, 2025
BH 2-25	103.07	2.18	100.89	July 3, 2025
BH 3-25*	109.30	1.99	107.31	July 3, 2025
BH 1-23*	102.56	2.47	100.09	July 3, 2025
BH 2A-23*	102.25	2.09	100.16	July 3, 2025
BH 6C-23*	101.59	1.21	100.38	July 3, 2025
BH 10-23*	103.35	1.25	102.10	July 3, 2025
BH 1-23*	102.56	1.40	101.16	January 29, 2024
BH 2A-23*	102.25	0.94	101.31	January 29, 2024
BH 10-23*	103.35	0.26	103.09	January 29, 2024
BH 1-23*	102.56	1.30	101.26	December 15, 2023
BH 2A-23*	102.25	0.80	101.45	December 15, 2023
BH 3-23	105.46	1.23	104.23	December 15, 2023
BH 4-23	106.70	Dry	-	December 15, 2023
BH 5-23	107.88	0.40	107.48	December 15, 2023
BH 6C-23*	101.59	0.76	100.83	December 15, 2023
BH 7-23	109.28	0.66	108.62	December 15, 2023
BH 8A-23	107.22	0.27	106.95	December 15, 2023
BH 9-23	106.87	0.13	106.74	December 15, 2023
BH 10-23*	103.35	0.39	102.96	December 15, 2023

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.

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 eastern portion of the site were observed to be in an approximate easterly orientation with a magnitude of approximately 0.022 m/m in the glacial till deposit. The horizontal hydraulic gradients within the western portion of the site were observed to be in an approximate westerly orientation with a magnitude of approximately 0.016 m/m in the glacial till deposit towards the Leitrim Wetlands. The approximate groundwater flow directions are presented on Drawing PH5087-5 - 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 3.71×10^{-7} to 1.21×10^{-5} m/sec for glacial till and 1.05×10^{-4} to 1.20×10^{-4} 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
BH1-25	101.45	93.17-94.67	1.05×10^{-4}	Falling Head	Bedrock
			1.20×10^{-4}	Rising Head	
BH3-25	109.30	103.15-104.65	1.33×10^{-6}	Falling Head	Glacial Till
			2.03×10^{-6}	Rising Head	
BH1-23	102.56	98.80-100.30	3.71×10^{-7}	Falling Head	Glacial Till
BH6C-23	101.59	96.97-98.47	9.00×10^{-6}	Falling Head	Glacial Till
			1.21×10^{-5}	Rising Head	
BH10-23	103.35	98.27-99.77	4.28×10^{-6}	Falling Head	Glacial Till
			5.01×10^{-6}	Rising Head	

In-Situ Infiltration Testing

In-situ infiltration testing was conducted by Paterson using a Pask (Constant Head Well) Permeameter across the subject site to determine the field saturated hydraulic conductivities (K_{fs}) and their respective unfactored infiltration rates of the unsaturated overburden soils. The tests were conducted in a manor to provide general coverage across the subject site. Estimated unfactored infiltration rates varied between 24 and 82 mm/hr for the glacial till unsaturated overburden soils. The variations in the infiltration rates are dependent on the

composition/compaction of the glacial till at a given location. In-situ infiltration testing results can be found below in Table 3.

Table 3 – Summary of Field Saturated Hydraulic Conductivity Testing Results and Estimated Infiltration Rates

Test Completed Adjacent to Borehole ID	Ground Surface Elevation (m asl)	Infiltration Testing Elevation (m asl)	K_{fs} (m/sec)	Unfactored Infiltration Rate (mm/hr)	Material
PT1-25	101.67	101.17	2.7×10^{-7}	33	Glacial Till
		100.67	9.3×10^{-8}	24	Glacial Till
PT2-25	105.82	105.32	5.3×10^{-6}	72	Glacial Till
		104.82	8.5×10^{-6}	82	Glacial Till
PT3-25	107.29	106.79	2.7×10^{-7}	33	Glacial Till
		106.49	1.4×10^{-7}	27	Glacial Till
PT4-25	109.49	108.99	2.1×10^{-6}	56	Glacial Till
		108.54	1.1×10^{-6}	47	Glacial Till
PT5-25	106.11	105.56	1.4×10^{-7}	27	Glacial Till

*Field saturated hydraulic conductivity (K_{fs})
**The infiltration rates do not include a safety correction factor. Based on our testing results, a minimum safety correction factor of 2.5 should be applied to the values.

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 some recharge occurring at the subject site due to the soils identified at the time of the field investigations, and the infiltration testing results at the subject site. 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. However, it should be noted that the site is not mapped as a significant groundwater recharge area (SGRA) by the MECP.

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

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 within the eastern portion of the subject site, and in a western direction within the western portion of the subject site, given the topographic relief.

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

Catchment Areas

The subject site is located within the Castor River subwatershed. As shown on Drawing PH5087-5 - Groundwater Contour Plan, the groundwater flows in an eastward direction within the eastern portion of the subject site, and in a western direction towards the Leitrim Wetlands within the western portion of the subject site. Therefore, it is Paterson's opinion that the subject site is predominantly characterized by two catchment areas.

Detailed servicing plans were unavailable at the time of report preparation. Based on discussions with the civil design team, the site will continue to be characterized by two catchment areas under post-development which will function similarly to pre-development conditions. However, it is anticipated that the size of the western catchment area will increase to allow for increased hydration to the adjacent Leitrim Wetlands as per recommendations by the Rideau Valley Conservation Authority (RVCA).

Groundwater Inflow/Dewatering Requirements

Three (3) potential sources of dewatering have been identified at the subject site. The sources consist of the excavation footprints related to the building foundations, servicing trenches and stormwater management pond (SWMP). Details regarding the excavation footprints and depths for each potential dewatering source were unavailable at the time of report preparation. Therefore, the building, servicing and SWMP excavations are assumed to encompass an area of approximately 750 m^2, 125 m^2 and 5,000 m^2, respectively, for a preliminary dewatering assessment.

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 3.03 x 10^{-6} m/sec (geometric mean of the calculated hydraulic conductivities), the steady state volume of groundwater anticipated is approximately 22,000 L/day, per excavation.

The stratigraphy within the anticipated saturated depth of the servicing excavations generally consists of a glacial till deposit. Specific design details were not available at the time of report preparation. For the purpose of this study, it has been assumed the servicing trenches will have a maximum excavation depth of 5 m bgs. Calculations are based on an excavation size of approximately 125 m^2 and a saturated depth of 4 m. Using a representative hydraulic conductivity of 3.03 x 10^{-6} m/sec (geometric mean of the calculated hydraulic conductivities), the steady state volume of groundwater anticipated is approximately 12,000 L/day, per excavation.

The stratigraphy within the anticipated saturated depth of the SWMP excavation generally consists of a glacial till deposit. Specific design details were not available at the time of report preparation. For the purpose of this study, it has been assumed the SWMP excavation will have a maximum excavation depth of 5 m bgs. Calculations are based on an excavation size of approximately 5,000 m^2 and a saturated depth of 4 m. Using a representative hydraulic conductivity of 3.03 x 10^{-6} m/sec (geometric mean of the calculated hydraulic conductivities), the steady state volume of groundwater anticipated is approximately 44,000 L/day.

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

5.0 SITE SPECIFIC WATER BUDGET ASSESSMENT

The site-specific water budget assessment (SSWB) was conducted to determine the hydrogeological function of the subject site, to identify infiltration potential and to identify opportunities for supplemental stormwater management measures. At the time of the field investigations the study area mainly consisted of mature trees, grass and shrubs. The pre and post-development terrain compositions are illustrated on Drawings PH5087-6 - Pre-Development Terrain Composition Plan and PH5087-7 - Post-Development Terrain Composition Plan, appended to this report. It should be noted that the future Earl Armstrong extension was excluded from the water budget study area as it is not a component to the current serviceability study for the development.

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 glacial till deposit. Given the similar soil profiles across the entire study area, the above noted calculations were carried out for the soil moisture holding capacity of a fine sandy loam.

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 4, 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 6 and 7 in Appendix 2 of this report. For the purpose of this study, 70% of the detached homes property footprints are considered to be impervious surfaces (100% of surplus will result in runoff) and 30% are considered to be urban lawns.

Table 4 - 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
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 5.

Table 5 - 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. Therefore, a pre-development soil infiltration factor of 0.3 was given for the 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 mature forest. A pre-development vegetation infiltration factor of 0.2 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 8 and Table 9 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 21,992,400 L/year of surplus water currently infiltrates the surface soils. The remaining estimated 14,661,600 L/year of surplus leaves the site as runoff.

The post-development water budget analysis determined that an estimated 6,168,925 L/year of surplus water will infiltrate the surface soils and approximately 72,011,680 L/year will leave the site as runoff. These values equate to an approximate decrease in infiltration of 72% and an increase in runoff of 391%.

The main variable that changed from pre-development conditions to post-development conditions was the addition of approximately 8.8 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 8 and 9, included in Appendix 2 of this report. Additional water budget calculations were completed for each catchment area and are also included in Appendix 2.

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
- K = 3.71 x 10^{-7} to 1.21 x 10^{-5} m/sec, based on site specific hydraulic conductivity values of the glacial till.

Using the above equation and assumptions, a radius of influence of 5 to 42 m will develop as a steady state condition within the glacial till, extending from the edge of the excavation, in the area of the subject site, depending on the groundwater levels and hydraulic properties of the specific soils encountered.

The surrounding area consists of mostly 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 PH5087-2 - 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. Furthermore, the properties that reside on the eastern boundary of the subject site will have the opportunity to connect to municipal services once the development proceeds. 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.

As the potential to interfere with the water quality/quantity of existing well users in the area is negligible, a water well monitoring program is not recommended for the aforementioned water takings. If wells are found to remain in existence on the subject site, they should be decommissioned in accordance with Ontario Regulation 903.

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

6.3 Impact of Proposed Development on the Environment

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

A Phase II Environmental Site Assessment (ESA) was completed by Paterson for the subject site. All soil samples were found to be in compliance with MECP Table 2 Residential standards. All groundwater samples were found to be in compliance with MECP Table 2 Potable standards.

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. Also, the Leitrim Wetlands lies west of the subject site.

As per the Environmental Impact Study (EIS) prepared by Arcadis, select drainage features located within the subject site are expected to be infilled/removed as part of the proposed development. However, removal of these features is not anticipated to impact the overall hydrogeologic or hydrologic function of the site, as the stormwater management infrastructure will replicate pre-development discharge conditions by directing flows from the western catchment area toward the wetland. Furthermore, the stormwater management infrastructure will direct flows to the adjacent wetland by the means of conventional stormwater management measures, thus increasing hydration to this natural feature. Additionally, it is anticipated that water directed towards the wetland will infiltrate the subsoils offsite, helping to maintain the overall hydrogeologic function of the area, despite the localized infiltration deficit within the subject site itself. Therefore, given that the EIS did not identify impacts to features outside the development area and the stormwater management measures discussed above, impacts to the surrounding natural environment as a result of the proposed development are anticipated to be negligible.

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 2014-BAQMK2 is registered to 4840 Bank St. Ltd. and is located within the residential development currently under construction to the north of the subject site. The above noted permit contains 2 sources (Services Trenches and Miscellaneous Ponded Areas) with a maximum taking of 5,200,000 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-009-7232525387 is registered to RON EASTERN CONSTRUCTION LTD. and is located within the residential development currently under construction

to the north of the subject site. The above noted permit contains 2 sources (Building Excavation and Servicing Excavation) with a maximum taking of 400,000 L/day, per source.

Based on available mapping (GeoOttawa), it is expected that the servicing has been completed for the adjacent residential development at 4840 Bank Street. 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. Eight (8) ECAs were found to be in relation to existing stormwater management systems in the area. 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 strategies 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

Based on the soil and groundwater samples collected at the subject site as part of the Phase II ESA investigation, all soil and groundwater samples were found to be in compliance with MECP Table 2 Residential standards and MECP Table 2 Potable standards, respectively.

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. It is also recommended that adherence to the City of Ottawa Salt Management Plan - Appendix A (October, 2011) included in Appendix 4 is enforced to ensure that chloride levels in stormwater runoff are minimized.

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 and conveyance channels. Also, the Leitrim Wetlands lies west of the subject site. However, as previously discussed, the stormwater management strategy will employ measures to increase hydration to adjacent surface water features. Therefore, by implementing the proposed stormwater management strategy and as per the Environmental Impact Study prepared by Arcadis, no significant impacts are expected from the proposed development on the overall hydrologic function of the area or sensitive features.

With respect to water discharge, water that is pumped from on site excavations must be managed in an appropriate manner. The contractor will be required to implement a water management program to dispose of the pumped water. If the discharge point for the pumped water is directed to overland drainage, it is

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

7.3 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 contractor shall take action to make available a supply of water equivalent in quality and quantity of their typical takings, or shall compensate those affected for reasonable costs for doing so, or shall reduce water taking amounts to alleviate the negative impacts. The contractor shall provide temporary water supplies, to those affected, to meet their typical takings or compensate such persons for reasonable costs associated to do so until permanent restoration of the affected water supply or an equivalent source. 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

As previously discussed, surficial soils within the study area generally consisted of topsoil overlying a glacial till deposit. With regards to infiltration rates for the soils found on-site, site-specific testing varied from 24 to 82 mm/hr for the glacial till. The variations in the infiltration rates are dependent on the composition/compaction of the glacial till at a given location. A minimum safety correction factor of 2.5 will need to be applied to the estimated infiltration rates

noted above prior to consideration in the stormwater management design. Additional infiltration testing may be required once additional development details become available.

As noted above, the results of the water budget analyses completed at the subject site indicated that 21,992,400 L/year of infiltration and 14,661,600 L/year of surface runoff are occurring under pre-development conditions. Under post development conditions, it is expected that there will be a 72% infiltration deficit and a 391% 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 City of Ottawa's Technical Bulletin IWSTB-2024-04 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), infiltration based Low Impact Development (LID) measures are not recommended at the time of report preparation. Therefore, it is understood that the stormwater management strategy will include conventional stormwater management measures (i.e., end of pipe quality and quantity control) as well as the implementation of Best Management Practices to mitigate impacts related to the post-development water balance. This will be accomplished by directing flows to the adjacent wetland, thereby increasing hydration and maintaining natural function of surrounding features. Despite the post-development infiltration deficit, the majority of runoff will continue to be directed to areas within the same subwatershed, where infiltration will occur offsite, thereby maintaining the natural function of the hydrologic and hydrogeologic systems.

8.0 CLOSURE

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

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 Regional Group 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.

Zavian Buchanan, E.I.T.

Oliver Blume, P.Geo.

9.0 REFERENCES

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

Engineering Technologies Canada Ltd, “ETC Pask (Constant Head Well) Permeameter – User Guide”, dated March 2016.

Transportation Association of Canada, “Syntheses of Best Practices – Road Salt Management”, dated 2013.

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

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

FIGURES

DRAWING PH5087-1 - SITE PLAN

DRAWING PH5087-2 - MECP WATER WELL LOCATION PLAN

DRAWING PH5087-3 - SURFICIAL GEOLOGY PLAN

DRAWING PH5087-4 - BEDROCK GEOLOGY PLAN

DRAWING PH5087-5 - GROUNDWATER CONTOUR PLAN

DRAWING PH5087-6 - PRE-DEVELOPMENT TERRAIN COMPOSITION PLAN

DRAWING PH5087-7 - POST-DEVELOPMENT TERRAIN COMPOSITION PLAN

LEGEND:

SITE BOUNDARY

SCALE: 1:3000

0 25 50 75 100 125 150 200m

PATERSON GROUP

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OTTAWA, ON
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TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

REGIONAL GROUP

HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4850 BANK STREET

OTTAWA, ONTARIO

Title:

SITE PLAN

Scale: 1:3000	Date: 08/2025
Drawn by: GK	Report No.: PH5087-REP.01
Checked by: ZB	Dwg. No.: PH5087-1
Approved by: OB	Revision No.:

11x17

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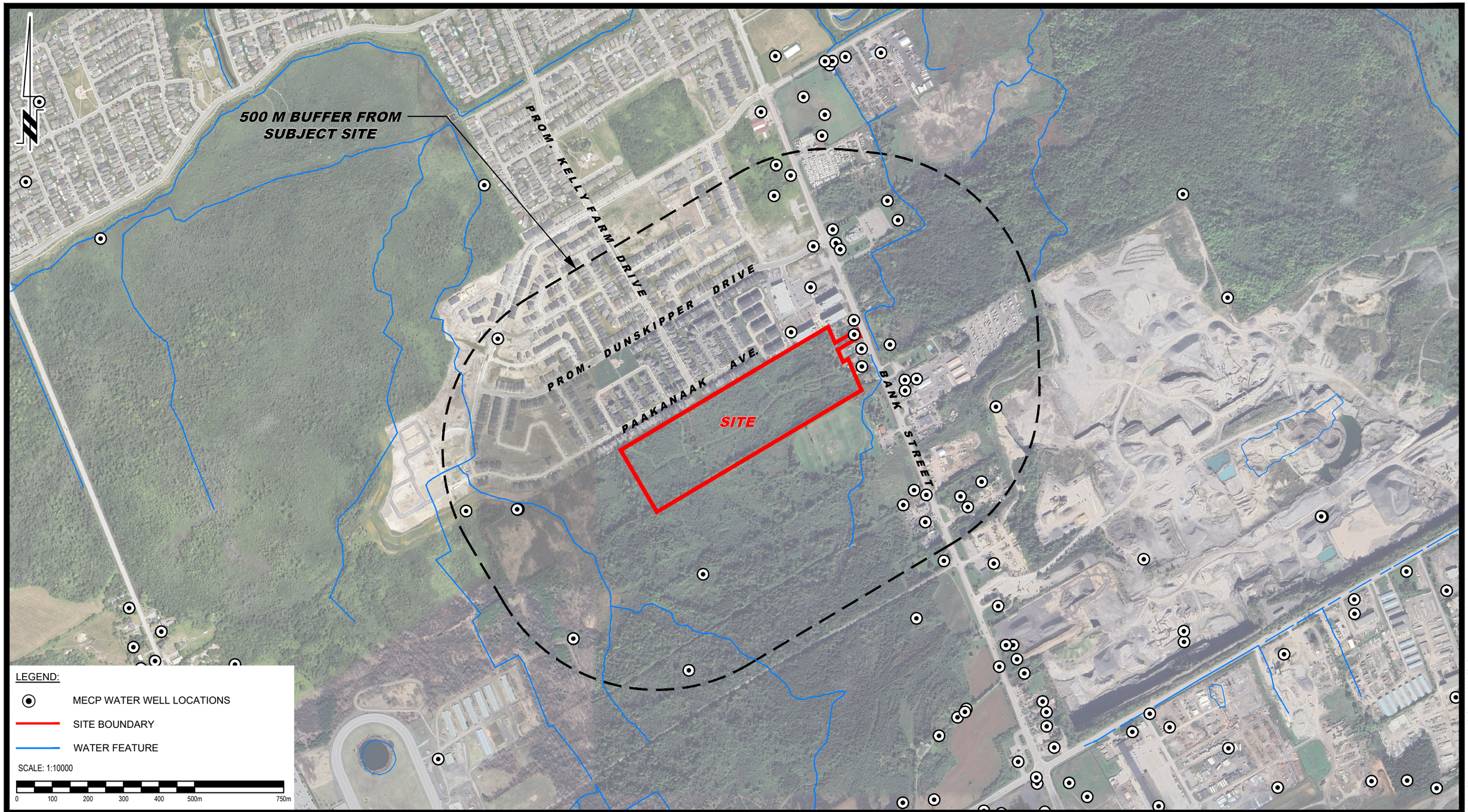

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4850 BANK STREET
OTTAWA, ONTARIO

Title:

MECP WATER WELL LOCATION PLAN

Scale: 1:10000	Date: 08/2025
Drawn by: GK	Report No.: PH5087-REP.01
Checked by: ZB	Dwg. No.: PH5087-2
Approved by: OB	Revision No.:

11x17

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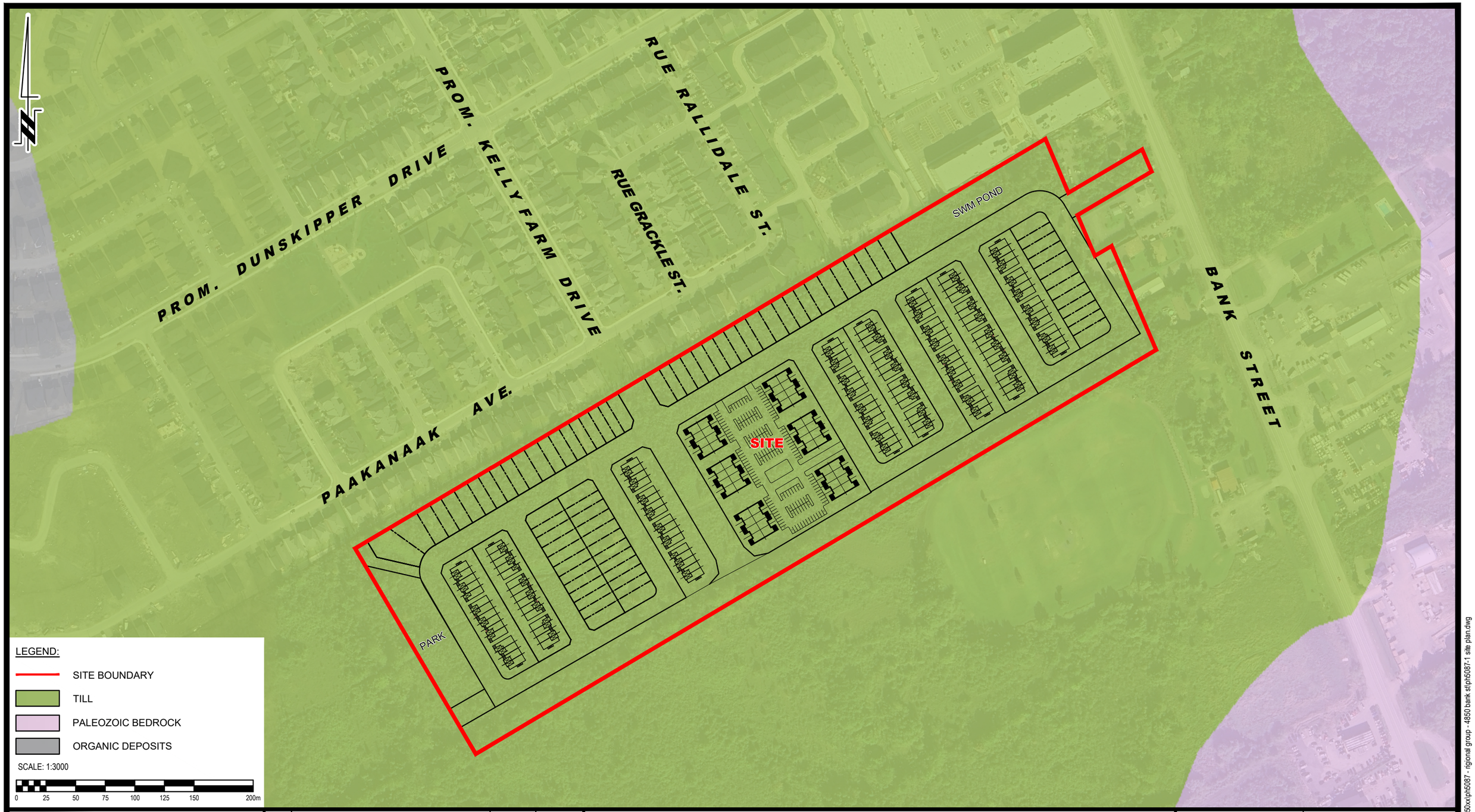

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OTTAWA, ONTARIO

Title:

SURFICIAL GEOLOGY PLAN

Scale: 1:3000	Date: 08/2025
Drawn by: GK	Report No.: PH5087-REP.01
Checked by: ZB	Dwg. No.: PH5087-3
Approved by: OB	Revision No.:

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PROPOSED RESIDENTIAL DEVELOPMENT
4850 BANK STREET
OTTAWA, ONTARIO

Title:
BEDROCK GEOLOGY PLAN

Scale: 1:3000	Date: 08/2025
Drawn by: GK	Report No.: PH5087-REP.01
Checked by: ZB	Dwg. No.: PH5087-4
Approved by: OB	Revision No.:

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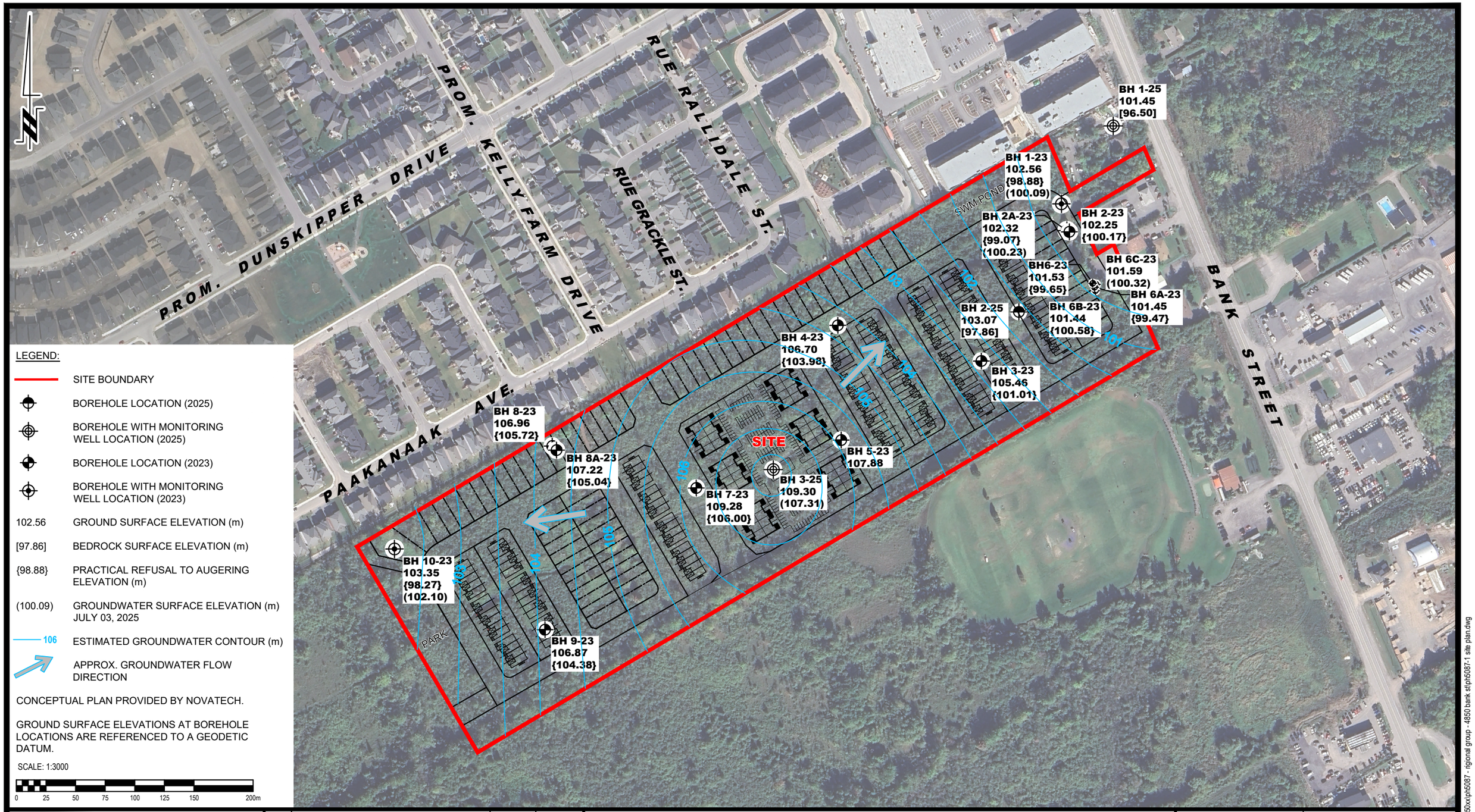

LEGEND:

- SITE BOUNDARY
- BOREHOLE LOCATION (2025)
- BOREHOLE WITH MONITORING WELL LOCATION (2025)
- BOREHOLE LOCATION (2023)
- BOREHOLE WITH MONITORING WELL LOCATION (2023)
- 102.56 GROUND SURFACE ELEVATION (m)
- [97.86] BEDROCK SURFACE ELEVATION (m)
- {98.88} PRACTICAL REFUSAL TO AUGERING ELEVATION (m)
- (100.09) GROUNDWATER SURFACE ELEVATION (m) JULY 03, 2025
- 106 ESTIMATED GROUNDWATER CONTOUR (m)
- APPROX. GROUNDWATER FLOW DIRECTION

CONCEPTUAL PLAN PROVIDED BY NOVATECH.

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

SCALE: 1:3000

0 25 50 75 100 125 150 200m

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NO.	REVISIONS	DATE	INITIAL
1	UPDATED GROUNDWATER ELEVATION	16/10/2025	OB

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PROPOSED RESIDENTIAL DEVELOPMENT
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OTTAWA, ONTARIO

Title:
OVERBURDEN GROUNDWATER CONTOUR PLAN

Scale: 1:3000	Date: 08/2025
Drawn by: GK	Report No.: PH5087-REP.01
Checked by: ZB	Dwg. No.: PH5087-5
Approved by: OB	Revision No.: 1

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LEGEND:

- WATER BUDGET STUDY AREA
- CATCHMENT BOUNDARY
- MATURE FORESTS (FINE SANDY LOAM)

SCALE: 1:3000

0 25 50 75 100 125 150 200m

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NO.	REVISIONS	DATE	INITIAL
1	UPDATED WATER BUDGET STUDY AREA	16/10/2025	OB

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HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4850 BANK STREET
OTTAWA, ONTARIO

Title:
PRE-DEVELOPMENT TERRAIN COMPOSITION PLAN

Scale: 1:3000	Date: 08/2025
Drawn by: GK	Report No.: PH5087-REP.01
Checked by: ZB	Dwg. No.: PH5087-6
Approved by: OB	Revision No.: 1

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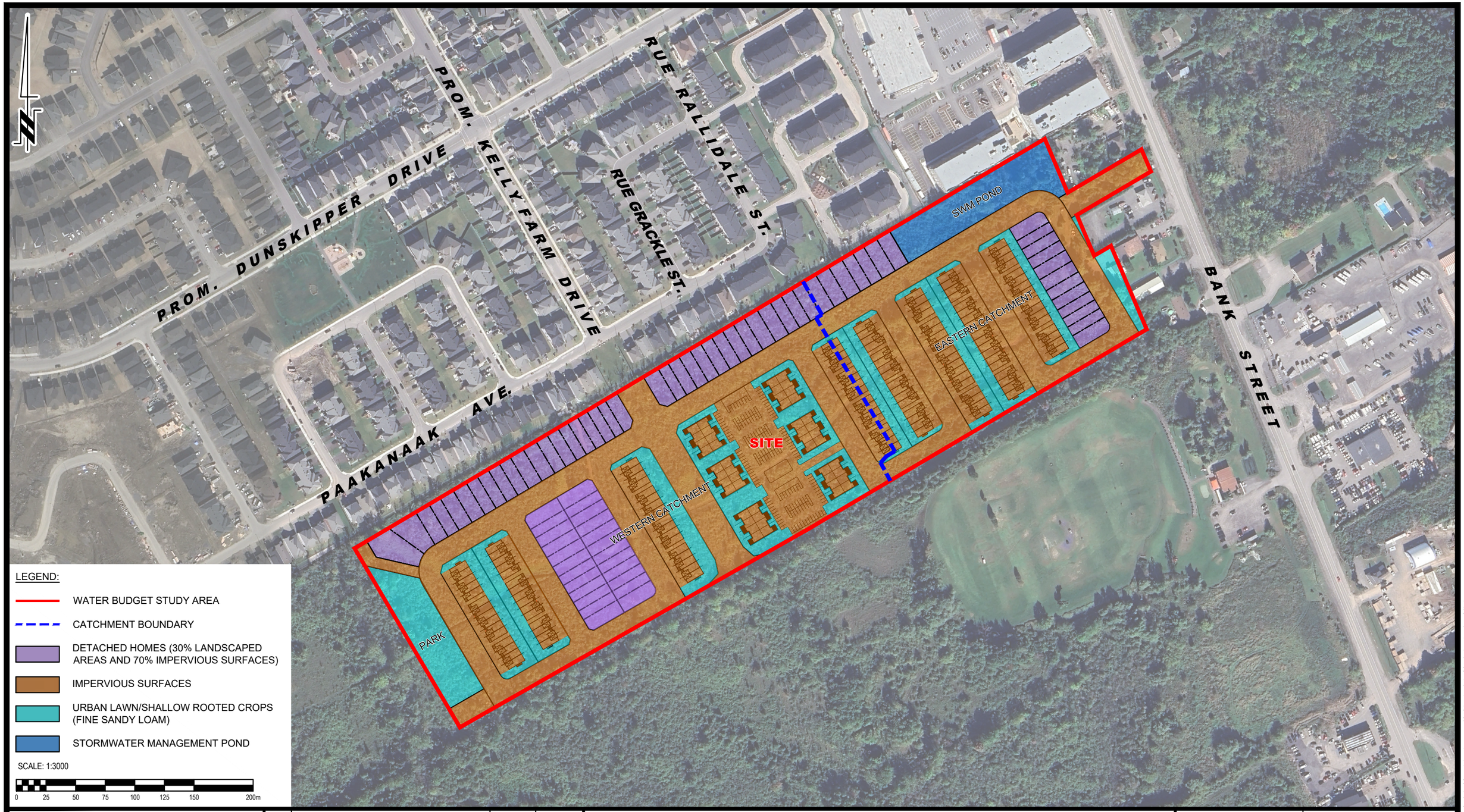

LEGEND:

- WATER BUDGET STUDY AREA
- CATCHMENT BOUNDARY
- DETACHED HOMES (30% LANDSCAPED AREAS AND 70% IMPERVIOUS SURFACES)
- IMPERVIOUS SURFACES
- URBAN LAWN/SHALLOW ROOTED CROPS (FINE SANDY LOAM)
- STORMWATER MANAGEMENT POND

SCALE: 1:3000

0 25 50 75 100 125 150 200m

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NO.	REVISIONS	DATE	INITIAL
1	UPDATED WATER BUDGET STUDY AREA	16/10/2025	OB

REGIONAL GROUP
HYDROGEOLOGICAL STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
4850 BANK STREET
OTTAWA, ONTARIO

Title:
POST-DEVELOPMENT TERRAIN COMPOSITION PLAN

Scale: 1:3000	Date: 08/2025
Drawn by: GK	Report No.: PH5087-REP.01
Checked by: ZB	Dwg. No.: PH5087-7
Approved by: OB	Revision No.: 1

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APPENDIX 1

SOIL PROFILE AND TEST DATA SHEETS

DRAWING PG6912-1 - TEST HOLE LOCATION PLAN

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376393.34 **NORTHING:** 5019077.45 **ELEVATION:** 101.45

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: June 18, 2025

FILE NO. : PG6912

HOLE NO. : BH 1-25

SAMPLE DESCRIPTION	STRATA PLOT	DEPTH (m)	SAMPLE TYPE AND NO.	SAMPLE RECOVERY (%)	SAMPLE 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									
FILL: Compact, brown silty sand with gravel and crushed stone			AU 1						
0.61m [100.84m]									
FILL: Compact, brown silty sand, trace gravel									
0.91m [100.55m]									
GLACIAL TILL: Very dense, brown silty fine sand with gravel, trace clay, occasional cobbles and boulders		1	SS 2	58	2-5-12-10 17				
		2	SS 3	85	9-24-50-/ 74/0.05				
			SS 4	63	50-/-/-/ 50/0.13				
3.20m [98.25m]		3	SS 5	46	14-45-50-/ 95/0.03				
GLACIAL TILL: Very dense, grey silty fine sand with gravel, cobbles and boulders		4	RC 1	71					
4.95m [96.50m]		5	RC 2	100	RQD 65				
BEDROCK: Poor quality bedrock									
- Vertical fractures from 5.94 m to 6.96 m depth		6	RC 3	100	RQD 31				
- Excellent quality bedrock below 6.96 m depth		7							
		8	RC 4	100	RQD 90				
8.46m [93.00m]									
End of Borehole		9							
		10							

6.76m

8.28m

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376313.61 **NORTHING:** 5018920.17 **ELEVATION:** 103.07

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: June 18, 2025

FILE NO. : PG6912

HOLE NO. : BH 2-25

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	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									103
TOPSOIL: with organics 0.18m [102.89m]			AU 1						
GLACIAL TILL: Very dense, brown silty fine sand with gravel, trace clay, occasional cobbles and boulders		1	SS 2	74	12-25-50-/ 75/0.1				102
1.98m [101.09m]			SS 3	73	29-50-/-/ 50/0.05				
GLACIAL TILL: Very dense, grey silty fine sand with gravel, cobbles and boulders		2	SS 4	76	32-50-/-/ 50/0.05				101
		3	SS 5	0	50-/-/-/ 50/0.03				100
			RC 1	89					
5.21m [97.86m]		4							99
BEDROCK: Excellent quality bedrock			RC 2	100	RQD 57				98
		5							
		6	RC 3	100	RQD 100				97
7.06m [96.01m]		7							96
End of Borehole									
		8							95
		9							94
		10							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376106.17 **NORTHING:** 5018786.90 **ELEVATION:** 109.30

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: June 20, 2025

FILE NO. : PG6912

HOLE NO. : BH 3-25

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 0.20m [109.10m]											109
GLACIAL TILL: Very dense, brown silty fine sand, some gravel, cobbles and boulders		1	AU 1								108
			SS 2	90	12-15-51-50 66/0.05						
			SS 3	66	19-50-/-/ 50/0.08						
		2	SS 4	90	49-50-/-/ 50/0.03						107
		3	SS 5	109	50-/-/-/ 50/0.08						106
		4	SS 6	66	14-50-/-/ 50/0.08						105
- Grey by 4.57 m depth			SS 7	60	42-50-/-/ 50/0.05					4.63m	
- Cobbles and boulders decreasing with depth		5	SS 8	8	15-24-18-17 42						104
- Silty fine to medium sand by 6.10 m depth		6	SS 9	92	10-16-21-20 37					6.15m	103
6.71m [102.59m]											
End of Borehole		7									102
		8									101
		9									100
		10									

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376203.99 **NORTHING:** 5019601.65 **ELEVATION:** 96.09

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: July 7, 2025

FILE NO. : **PG6912**

HOLE NO. : **BH 4-25**

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	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									96
FILL: Brown silty sand with gravel and crushed stone			AU 1						
0.69m [95.40m]									
FILL: Compact, brown silty sand with gravel, trace clay		1	SS 2	50	2-8-7-5 15				95
1.52m [94.57m]									
TOPSOIL: with organics, trace sand			SS 3	58	5-5-5-11 10				
1.83m [94.26m]		2							94
GLACIAL TILL: Very dense, brown silty fine sand, occasional cobbles			SS 4	83	14-25-24-30 49				
2.97m [93.12m]		3							93
GLACIAL TILL: Very dense, grey silty sand with gravel, cobbles and boulders			SS 5	73	15-50-/-/ 50/0.13				
3.23m [92.86m]									
End of Borehole		4							92
Practical refusal to augering at 3.23 m depth on inferred boulders		5							91
		6							90
		7							89
		8							88
		9							87
		10							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376242.76 **NORTHING:** 5019509.68 **ELEVATION:** 96.49

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: July 7, 2025

FILE NO. : PG6912

HOLE NO. : BH 5-25

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	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											96
FILL: Compact, brown silty sand with gravel and crushed stone			AU 1								
1.07m [95.42m]		1	SS 2	33	3-8-4-3 12						
TOPSOIL: with organics with sand, trace grass											95
1.37m [95.12m]											
GLACIAL TILL: Compact to dense, brown silty fine sand with gravel, occasional cobbles, trace clay		2	SS 3	83	2-10-14-9 24						
			SS 4	92	19-22-19-22 41						94
3.15m [93.34m]		3	SS 5	0	50-/-/-/ 50/0.05						
End of Borehole											93
Practical refusal to augering at 3.15 m depth on inferred boulders		4									
		5									92
		6									91
		7									90
		8									89
		9									88
		10									87

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376283.28 **NORTHING:** 5019413.06 **ELEVATION:** 97.68

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: July 7, 2025

FILE NO. : PG6912

HOLE NO. : BH 6-25

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	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											
ASPHALT 0.05m [97.63m]											97
FILL: Granular, crushed stone, some sand 0.61m [97.07m]											
FILL: Compact, brown silty sand with gravel 1.22m [96.46m]		1	AU 1								
TOPSOIL: with organics, sand, trace clay and gravel 1.52m [96.16m]			SS 2	42	5-7-3-6 10						
GLACIAL TILL: Dense to very dense, brown silty fine sand with gravel, cobbles and boulders		2	SS 3	67	7-16-14-13 30						96
			SS 4	85	50-/-/-/ 50/0.13						
3.51m [94.17m]		3	SS 5	92	30-48-51-42 99						95
GLACIAL TILL: Very dense, grey silty fine sand with gravel, cobbles and boulders 4.50m [93.18m]		4	SS 6	79	20-26-21-50 47/0.13						94
End of Borehole		5									93
Practical refusal to augering at 4.50 m depth		6									92
		7									91
		8									90
		9									89
		10									88

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376306.21 **NORTHING:** 5019357.57 **ELEVATION:** 98.42

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: July 7, 2025

FILE NO. : PG6912

HOLE NO. : BH 7-25

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	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											
ASPHALT 0.05m [98.37m]											98
FILL: Granular, crushed stone and gravel, some sand 0.61m [97.81m]											
FILL: Dense, brown silty sand with gravel, trace topsoil and clay 1.83m [96.59m]		1	AU 1								97
			SS 2	42	16-29-18-10 47						
GLACIAL TILL: Compact to very dense, brown silty fine sand with gravel, cobbles and boulders		2	SS 3	100	4-8-6-15 14						96
			SS 4	67	13-30-28-42 58						
		3	SS 5	54	14-50-/-/ 50/0.13						95
4.14m [94.28m]		4	SS 6	77	26-52-50-/ 102/0.03						
End of Borehole											94
Practical refusal to augering at 4.14 m depth		5									
		6									93
		7									92
		8									91
		9									90
		10									89

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376361.10 **NORTHING:** 5019231.96 **ELEVATION:** 100.48

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: July 7, 2025

FILE NO. : **PG6912**

HOLE NO. : **BH 8-25**

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	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									
ASPHALT 0.05m [100.43m]			AU 1						100
FILL: Granular, crushed stone, some sand 0.61m [99.87m]									
FILL: Dense, brown silty sand, trace gravel 1.45m [99.03m]		1	SS 2	33	8-26-21-17 47				99
GLACIAL TILL: Dense, brown silty fine sand with gravel, cobbles and boulders 2.34m [98.14m]		2	SS 3	75	8-12-24-29 36				98
			SS 4	0	50-/-/-/ 50/0.03				
End of Borehole		3							97
Practical refusal to augering at 2.34 m depth		4							96
		5							95
		6							94
		7							93
		8							92
		9							91
		10							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376401.58 **NORTHING:** 5019136.66 **ELEVATION:** 101.22

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: July 7, 2025

FILE NO. : PG6912

HOLE NO. : BH 9-25

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	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE									101
ASPHALT 0.05m [101.17m]		0	AU 1						
FILL: Granular, crushed stone, some sand 0.61m [100.61m]									
FILL: Compact, brown silty sand with gravel, trace clay and topsoil 1.45m [99.77m]		1	SS 2	33	8-5-4-9 9				100
GLACIAL TILL: Dense, brown silty fine sand with gravel, cobbles and boulders 2.11m [99.11m]		2	SS 3	66	12-16-24-50 40/0.05				99
End of Borehole Practical refusal to augering at 2.11 m depth		3							98
		4							97
		5							96
		6							95
		7							94
		8							93
		9							92
		10							

SOIL PROFILE AND TEST DATA

Geotechnical Investigation

4850 Bank Street, Ottawa, ON

COORD. SYS.: MTM ZONE 9 **EASTING:** 376435.21 **NORTHING:** 5019057.96 **ELEVATION:** 101.23

PROJECT: Proposed Residential Development

ADVANCED BY: CME-55 Low Clearance Drill

REMARKS:

DATE: July 7, 2025

FILE NO. : **PG6912**

HOLE NO. : **BH10-25**

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	PIEZOMETER CONSTRUCTION	ELEVATION (m)
GROUND SURFACE											101
FILL: Compact, brown silty sand with gravel 0.61m [100.62m]			AU 1								
FILL: Compact, brown silty sand with asphalt, some gravel 1.45m [99.78m]		1	SS 2	33	8-7-25-14 32						100
FILL: Loose to compact, brown silty sand with gravel, trace clay and topsoil 2.21m [99.02m]		2	SS 3	42	4-4-4-6 8						99
Compact, grey, medium **SAND**, some gravel 2.44m [98.79m]			SS 4	58	6-9-26-32 35						98
GLACIAL TILL: Dense, grey silty fine sand with gravel 2.95m [98.28m]		3									97
End of Borehole Practical refusal to augering at 2.95 m depth		4									96
		5									95
		6									94
		7									93
		8									92
		9									
		10									

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376352.245 **NORTHING:** 5019009.799 **ELEVATION:** 102.56

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 11, 2023

FILE NO. **PG6912**

HOLE NO. BH 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	Monitoring Well Construction
Ground Surface EL 102.56 m										
TOPSOIL with organics, trace clay 0.15 m EL 102.41 m		AU 1				0				
GLACIAL TILL: Very dense, brown silty sand to sandy silt, some gravel and boulders, occasional cobble		SS 2	83	50		1				
- silt content increasing with depth		SS 3	100	+50		2				
- grey by 2.2m depth - compact between 2.3m to 2.9m depth		SS 4	83	18		3				
		SS 5	100	+50						
3.76 m EL 98.8 m		SS 6		+50		4				
End of Test Hole Practical refusal to augering at 3.76m depth (GWL @ 1.30 m - Dec. 15, 2023)						5				
						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376358.876 **NORTHING:** 5018986.132 **ELEVATION:** 102.25

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 11, 2023

FILE NO. **PG6912**

HOLE NO. BH 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	Monitoring Well Construction
Ground Surface EL 102.25 m										
GLACIAL TILL: Brown clayey silt with gravel and occasional cobble, trace organics		AU 1				0				
0.46 m EL 101.79 m										
GLACIAL TILL: Dense, brown silty sand to sandy silt with gravel and boulders, occasional cobble		SS 2	63	48		1				
- very dense by 1.2m depth		SS 3	76	+50		2				
2.08 m EL 100.17 m										
End of Test Hole						3				
Practical refusal to augering at 2.08m depth						4				
						5				
						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376356.813 **NORTHING:** 5018986.889 **ELEVATION:** 102.32

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 11, 2023

FILE NO. **PG6912**

HOLE NO. BH 2A-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	Monitoring Well Construction
Ground Surface EL 102.32 m										
Overburden						0				
Augered to 2.18 m depth						1				
2.18 m EL 100.14 m						2				
GLACIAL TILL: Very dense, grey silty sand to sandy silt with gravel and boulders, occasional cobble		SS 1	86	+50		3				
		SS 2	100	+50						
- trace clay by 3.0m depth 3.25 m EL 99.07 m						4				
End of Test Hole						5				
Practical refusal to augering at 3.25m depth						6				
(GWL @ 0.80 m - Dec. 15, 2023)						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376284.113 **NORTHING:** 5018877.194 **ELEVATION:** 105.46 m

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 11, 2023

FILE NO. **PG6912**

HOLE NO. BH 3-23

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 105.46 m										
TOPSOIL with organics 0.25 m EL 105.21 m						0				
GLACIAL TILL: Compact, brown silty sand to sandy silt, trace gravel		AU 1								
		SS 2	42	12		1				
- no gravel by 1.5m depth		SS 3	83	19		2				
2.21 m EL 103.25 m										
GLACIAL TILL: Very dense, grey silty sand to sandy silt with gravel and boulders, occasional cobble		SS 4	75	+50		3				
		SS 5	100	+50						
- trace clay by 3.8m depth		SS 6	78	+50		4				
4.45 m EL 101.01 m										
End of Test Hole						5				
Practical refusal to augering at 4.45m depth										
(GWL @ 1.23 m - Dec. 15, 2023)						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376162.967 **NORTHING:** 5018907.818 **ELEVATION:** 106.7 m

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 11, 2023

FILE NO. **PG6912**

HOLE NO. BH 4-23

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 106.7 m						0				
TOPSOIL with organics 0.1 m EL 106.6 m		AU 1								
GLACIAL TILL: Brown clayey silt, some gravel and boulders, occasional cobble 0.46 m EL 106.24 m		SS 2	100	46		1				
GLACIAL TILL: Dense to very dense, brown silty sand to sandy silt with gravel and boulders, occasional cobble		SS 3	88	+50		2				
		SS 4	67	+50		3				
2.72 m EL 103.98 m						4				
End of Test Hole						5				
Practical refusal to augering at 2.72m depth						6				
(Dried Borehole - Dec. 15, 2023)						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376165.452 **NORTHING:** 5018810.785 **ELEVATION:** 107.88 m

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 11, 2023

FILE NO. **PG6912**

HOLE NO. BH 5-23

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 107.88 m										
TOPSOIL with organics 0.3 m EL 107.58 m						0				
GLACIAL TILL: Brown clayey silt with gravel, occasional cobble 0.61 m EL 107.27 m		AU 1								
GLACIAL TILL: Dense to very dense, brown silty sand to sandy silt with gravel and boulders, occasional cobble		SS 2	83	43		1				
		SS 3	100	+50		2				
		SS 4	100	+50						
- grey by 3.0m depth		SS 5	100	+50		3				
		SS 6	100	+50		4				
- dense by 4.6m depth		SS 7	100	46		5				
		SS 8	75	34		6				
5.94 m EL 101.94 m End of Test Hole (GWL @ 0.40 m - Dec. 15, 2023)						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376381.101 **NORTHING:** 5018941.64 **ELEVATION:** 101.53

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 13, 2023

FILE NO. **PG6912**

HOLE NO. BH 6-23

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	Monitoring Well Construction
Ground Surface EL 101.53 m										
TOPSOIL with organics 0.25 m EL 101.28 m						0				
GLACIAL TILL: Brown clayey silt, trace gravel 0.61 m EL 100.92 m		AU 1								
GLACIAL TILL: Compact, brown silty sand to sandy silt with gravel and boulders, occasional cobble		SS 2	75	19		1				
- very dense by 1.5m depth 1.88 m EL 99.65 m		SS 3	89	+50		2				
End of Test Hole						3				
Practical refusal to augering at 1.88m depth						4				
						5				
						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376380 **NORTHING:** 5018939.186 **ELEVATION:** 101.45

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 13, 2023

FILE NO. **PG6912**

HOLE NO. BH 6A-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	Monitoring Well Construction
Ground Surface EL 101.45 m										
Overburden						0				
Augered to 1.98 m depth						1				
1.98 m EL 99.47 m						2				
End of Test Hole										
Practical refusal to augering at 1.98m depth						3				
						4				
						5				
						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376380.758 **NORTHING:** 5018936.262 **ELEVATION:** 101.44

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 13, 2023

FILE NO. **PG6912**

HOLE NO. BH 6B-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	Monitoring Well Construction
Ground Surface EL 101.44 m										
Overburden						0				
Augered to 0.86 m depth						1				
0.86 m EL 100.58 m										
End of Test Hole						2				
Practical refusal to augering at 0.86m depth						3				
						4				
						5				
						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376378.444 **NORTHING:** 5018942.565 **ELEVATION:** 101.59

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 13, 2023

FILE NO. **PG6912**

HOLE NO. BH 6C-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	Monitoring Well Construction
Ground Surface EL 101.59 m										
TOPSOIL with organics 0.25 m EL 101.34 m						0				
GLACIAL TILL: Brown clayey silt, trace gravel and boulders 0.61 m EL 100.98 m										
GLACIAL TILL: Compacto to dense, brown silty sand with gravel, cobble and boulders						1				
- grey by 2.1m depth 2.21 m EL 99.38 m		SS 1	67	43		2				
GLACIAL TILL: Dense to very dense, grey silty sand with gravel, cobble and boulders, trace clay		SS 2	0	+50		3				
- boulders by 3.4m depth		RC 1	35			4				
4.62 m EL 96.97 m										
End of Test Hole						5				
(GWL @ 0.76 m - Dec. 15, 2023)						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 376042.873 **NORTHING:** 5018770.725 **ELEVATION:** 109.28 m

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 13, 2023

FILE NO. **PG6912**

HOLE NO. BH 7-23

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 109.28 m										
TOPSOIL with organics 0.18 m EL 109.1 m		AU 1				0				
GLACIAL TILL: Brown clayey silt with gravel 0.51 m EL 108.77 m										
GLACIAL TILL: Dense, brown silty sand to sandy silt with gravel and boulders, occasional cobble		SS 2	75	30		1				
- very dense by 1.5m depth		SS 3		+50		2				
		SS 4	50	+50						
3.28 m EL 106 m		SS 5	100	+50		3				
End of Test Hole						4				
Practical refusal to augering at 3.28m depth						5				
(GWL @ 0.66 m - Dec. 15, 2023)						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 375921.34 **NORTHING:** 5018806.672 **ELEVATION:** 106.96 m

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 13, 2023

FILE NO. **PG6912**

HOLE NO. BH 8-23

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 106.96 m										
TOPSOIL with organics 0.15 m EL 106.81 m						0				
GLACIAL TILL: Brown clayey silt with gravel 0.69 m EL 106.27 m		AU 1								
GLACIAL TILL: Very dense, brown silty sand to sandy silt with gravel and boulders, occasional cobble, trace clay 1.24 m EL 105.72 m		SS 2	100	+50		1				
End of Test Hole						2				
Practical refusal to augering at 1.24m depth						3				
						4				
						5				
						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 375924.947 **NORTHING:** 5018803.173 **ELEVATION:** 107.22 m

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 13, 2023

FILE NO. **PG6912**

HOLE NO. BH 8A-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 107.22 m										
Overburden Augered to 0.69 m depth						0				
0.69 m EL 106.54 m										
GLACIAL TILL: Very dense, brown silty sand to sandy silt with gravel and boulders, occasional cobble		SS 1	100	+50		1				
2.18 m EL 105.04 m						2				
End of Test Hole Practical refusal to augering at 2.18m depth (GWL @ 0.27 m - Dec. 15, 2023)						3				
						4				
						5				
						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 375914.663 **NORTHING:** 5018651.441 **ELEVATION:** 106.87 m

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

REMARKS:

DATE: December 13, 2023

FILE NO. **PG6912**

HOLE NO. BH 9-23

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 106.87 m										
TOPSOIL with organics 0.13 m EL 106.74 m		AU 1				0				
GLACIAL TILL: Brown clayey silt with gravel 0.48 m EL 106.39 m										
GLACIAL TILL: Very dense, brown silty sand to sandy silt with gravel and boulders, occasional cobble		SS 2	100	+50		1				
		SS 3	100	+50		2				
- grey by 2.2m depth 2.49 m EL 104.38 m		SS 4	80	+50		3				
End of Test Hole						4				
Practical refusal to augering at 2.49m depth						5				
(GWL @ 0.13 m - Dec. 15, 2023)						6				
						7				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

4850 Bank Street, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 375787.732 **NORTHING:** 5018720.138 **ELEVATION:** 103.35

PROJECT: Proposed Development

BORINGS BY: CME 55 Track-Mounted Mechanical Auger

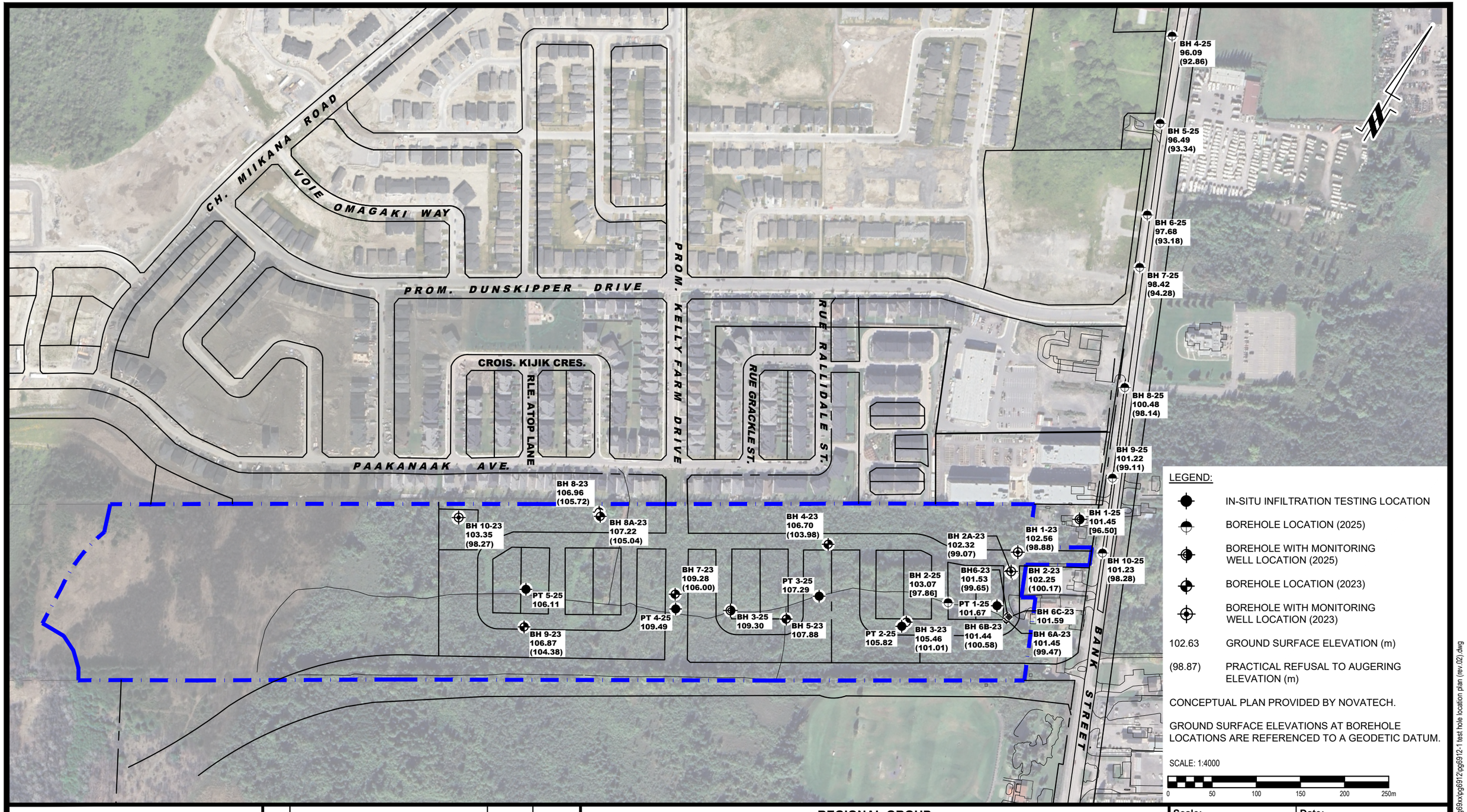
REMARKS:

DATE: December 13, 2023

FILE NO. **PG6912**

HOLE NO. BH10-23

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	Monitoring Well Construction
Ground Surface EL 103.35 m										
TOPSOIL with organics						0				
0.33 m EL 103.02 m		AU 1								
GLACIAL TILL: Compact, brown silty sand to sandy silt with gravel, occasional cobble		SS 2	46	10		1				
		SS 3	67	24		2				
2.21 m EL 101.14 m		SS 4A SS 4B	60	+50						
GLACIAL TILL: Dense to very dense, grey silty sand with gravel, cobble, and boulders		SS 5	88	48		3				
		SS 6	63	37		4				
		SS 7	58	+50		5				
5.08 m EL 98.27 m										
End of Test Hole						6				
Practical refusal to augering on inferred boulder or bedrock at 5.08m depth										
(GWL @ 0.39 m - Dec. 15, 2023)						7				



LEGEND:

- IN-SITU INFILTRATION TESTING LOCATION
- BOREHOLE LOCATION (2025)
- BOREHOLE WITH MONITORING WELL LOCATION (2025)
- BOREHOLE LOCATION (2023)
- BOREHOLE WITH MONITORING WELL LOCATION (2023)
- 102.63 GROUND SURFACE ELEVATION (m)
- (98.87) PRACTICAL REFUSAL TO AUGERING ELEVATION (m)

CONCEPTUAL PLAN PROVIDED BY NOVATECH.

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	DATE	INITIAL
2	ADDED 2025 IN-SITU INFILTRATION TESTING TO PLAN	08/08/2025	ZB
1	ADDED 2025 BOREHOLES BH 1-25 TO BH 10-25	09/07/2025	PB

REGIONAL GROUP

GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
4850 BANK STREET

OTTAWA, ONTARIO

Title:

TEST HOLE LOCATION PLAN

Scale: 1:4000	Date: 12/2023
Drawn by: GK	Report No.: PG6912-1
Checked by: DR	Dwg. No.: PG6912-1
Approved by: SD	Revision No.: 2

11x17

p:\autocad drawings\geotechnical\pg69xx\pg6912\pg6912-1 test hole location plan (rev.02).dwg

APPENDIX 2

TABLE 6 - MONTHLY WATER BALANCE FOR SOIL WITH 75 mm WATER HOLDING CAPACITY AT THE OTTAWA INTERNATIONAL AIRPORT

TABLE 7 - MONTHLY WATER BALANCE FOR SOIL WITH 300 mm WATER HOLDING CAPACITY AT THE OTTAWA INTERNATIONAL AIRPORT

TABLE 8 - PRE-DEVELOPMENT ANNUAL WATER BUDGET CALCULATIONS

TABLE 9 - POST-DEVELOPMENT ANNUAL WATER BUDGET CALCULATIONS

TABLE 10 - WESTERN CATCHMENT PRE-DEVELOPMENT ANNUAL WATER BUDGET CALCULATIONS

TABLE 11 - WESTERN CATCHMENT POST-DEVELOPMENT ANNUAL WATER BUDGET CALCULATIONS

TABLE 12 - EASTERN CATCHMENT PRE-DEVELOPMENT ANNUAL WATER BUDGET CALCULATIONS

TABLE 13 - EASTERN CATCHMENT POST-DEVELOPMENT ANNUAL WATER BUDGET CALCULATIONS

Table 6 - 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 7 - 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 8 - 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)**
Mature Forest (Fine Sandy Loam)	123,000	298	0.1	0.3	0.2	0.6	0.4	178.8	21,992,400	119.2	14,661,600
Total	**123,000**								**21,992,400**		**14,661,600**

Table 9 - 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	88,227	759	0	0	0	0	1	0	0	759.0	66,964,378
Urban Lawn/Shallow Rooted Crops (Fine Sandy Loam)	29,673	378	0.15	0.3	0.1	0.55	0.45	207.9	6,168,925	170.1	5,047,302
Stormwater Management Pond	5,100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Totals	**123,000**								**6,168,925**		**72,011,680**
Difference (L/year)									**-15,823,475**		**57,350,080**
Percentage Variation									**-72%**		**391%**

Table 10 - Western Catchment 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)**
Mature Forest (Fine Sandy Loam)	48,000	298	0.1	0.3	0.2	0.6	0.4	178.8	8,582,400	119.2	5,721,600
Total	**48,000**								**8,582,400**		**5,721,600**

Table 11 - Western Catchment 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	57,234	759	0	0	0	0	1	0	0	759.0	43,440,315
Urban Lawn/Shallow Rooted Crops (Fine Sandy Loam)	21,766	378	0.15	0.3	0.1	0.55	0.45	207.9	4,525,165	170.1	3,702,407
Totals	**79,000**								**4,525,165**		**47,142,722**
Difference (L/year)									**-4,057,235**		**41,421,122**
Percentage Variation									**-47%**		**724%**

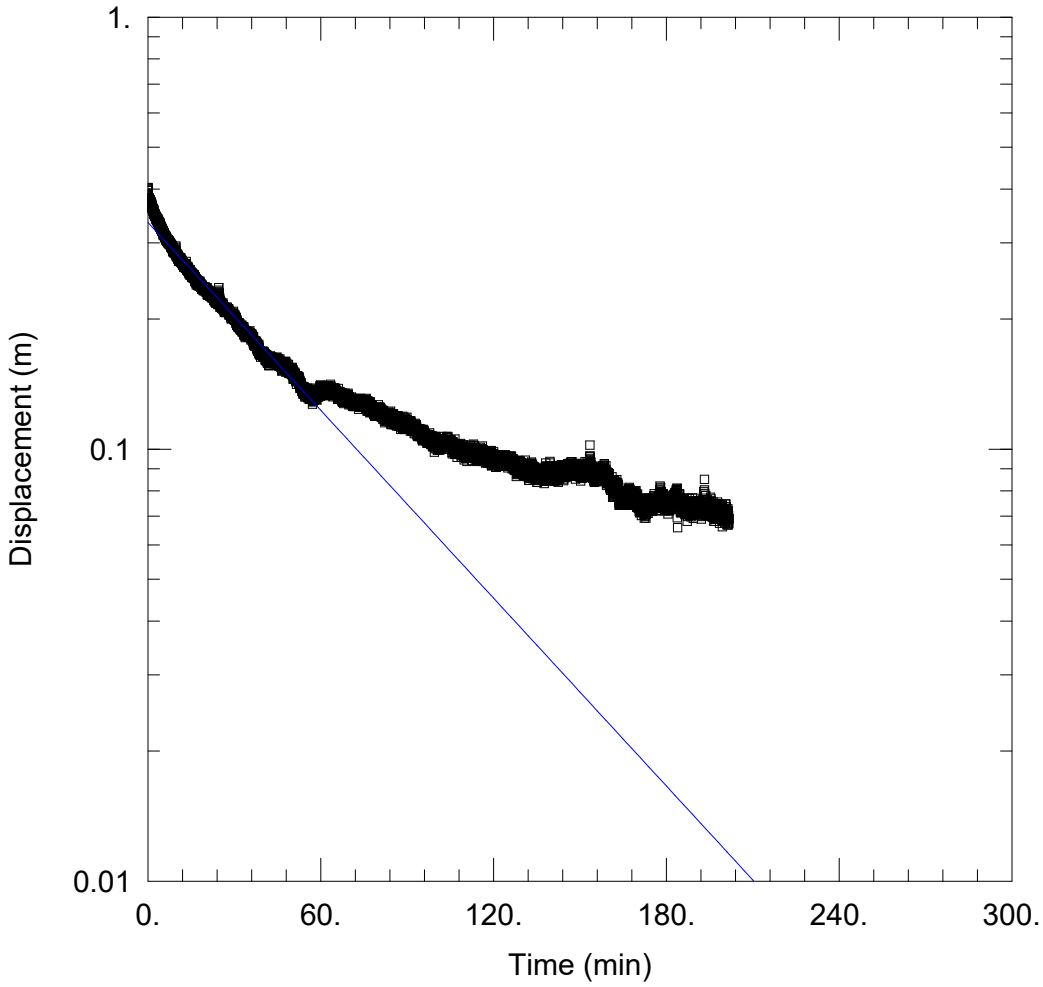
Table 12 - Eastern Catchment Pre-Development Annual Water Budget Calculations											
Land Use Unit	**Area (m^2)**	**Water Surplus (mm)**	**Topography Factor**	**Soil Factor**	**Vegetation Factor**	**Infiltration Factor**	**Runoff Factor**	**Total Infiltration (mm/year)**	**Total Infiltration (L/year)**	**Total Runoff (mm/year)**	**Total Runoff (L/year)**
Mature Forest (Fine Sandy Loam)	75,000	298	0.1	0.3	0.2	0.6	0.4	178.8	13,410,000	119.2	8,940,000
Total	**75,000**								**13,410,000**		**8,940,000**

Table 13 - Eastern Catchment 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	30,953	759	0	0	0	0	1	0	0	759.0	23,493,688
Urban Lawn/Shallow Rooted Crops (Fine Sandy Loam)	7,946	378	0.15	0.3	0.1	0.55	0.45	207.9	1,652,074	170.1	1,351,697
Stormwater Management Pond	5,100	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Totals	**44,000**								**1,652,074**		**24,845,385**
Difference (L/year)									**-11,757,926**		**15,905,385**
Percentage Variation									**-88%**		**178%**

APPENDIX 3

HYDRAULIC CONDUCTIVITY RESULTS - FALLING AND RISING HEAD TESTS

SAMPLE CALCULATIONS - DUPUIT FORCHHEIMER



BH1-23 - FALLING HEAD 1 OF 1

PROJECT INFORMATION

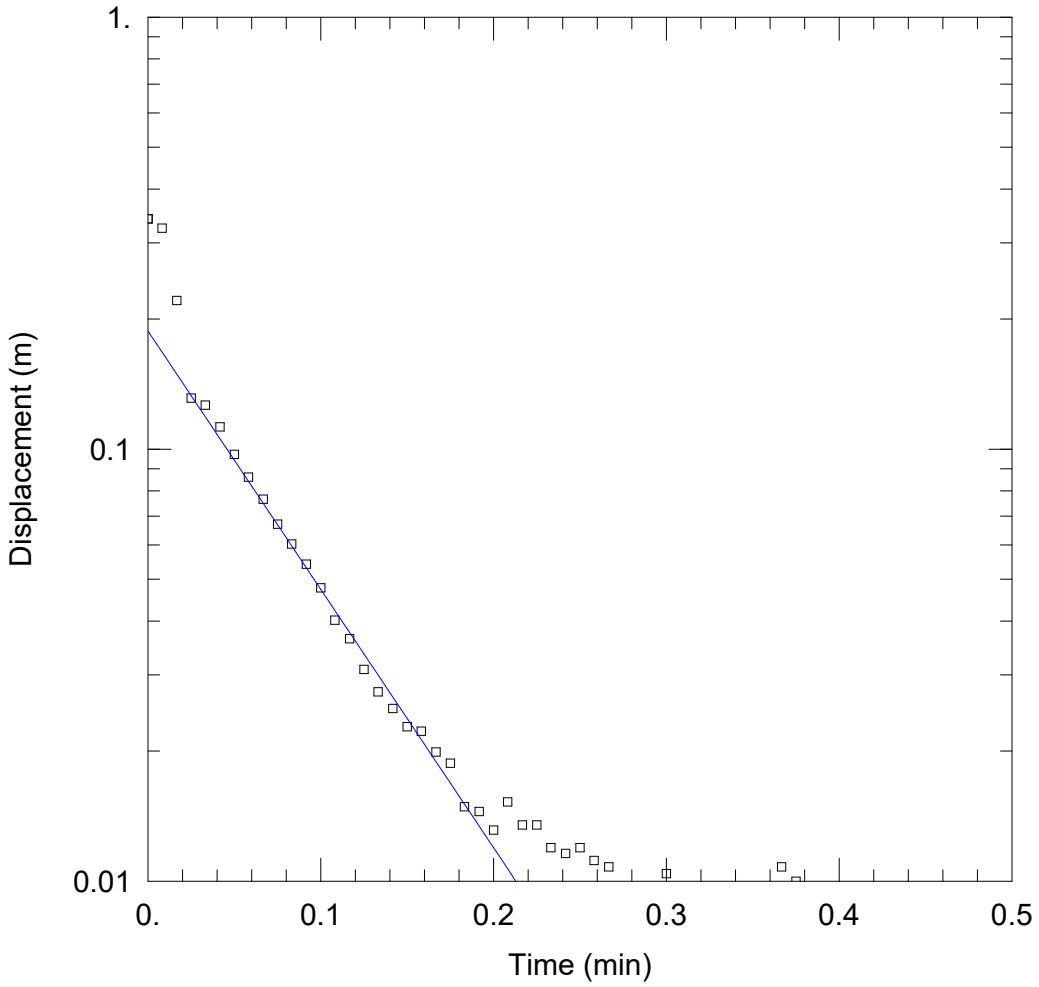
Company: Paterson Group Inc.
Client: Regional Group
Project: PH5087
Location: 4850 Bank Street
Test Well: BH1-23
Test Date: July 3, 2025

WELL DATA (BH1-23)

Initial Displacement: 0.403 m
Total Well Penetration Depth: 1.28 m
Casing Radius: 0.0254 m
Static Water Column Height: 1.28 m
Screen Length: 1.28 m
Well Radius: 0.1045 m

SOLUTION

Aquifer Model: Unconfined
K = 3.714E-7 m/sec
Solution Method: Hvorslev
y0 = 0.3347 m



BH1-25 - FALLING HEAD 1 OF 1

PROJECT INFORMATION

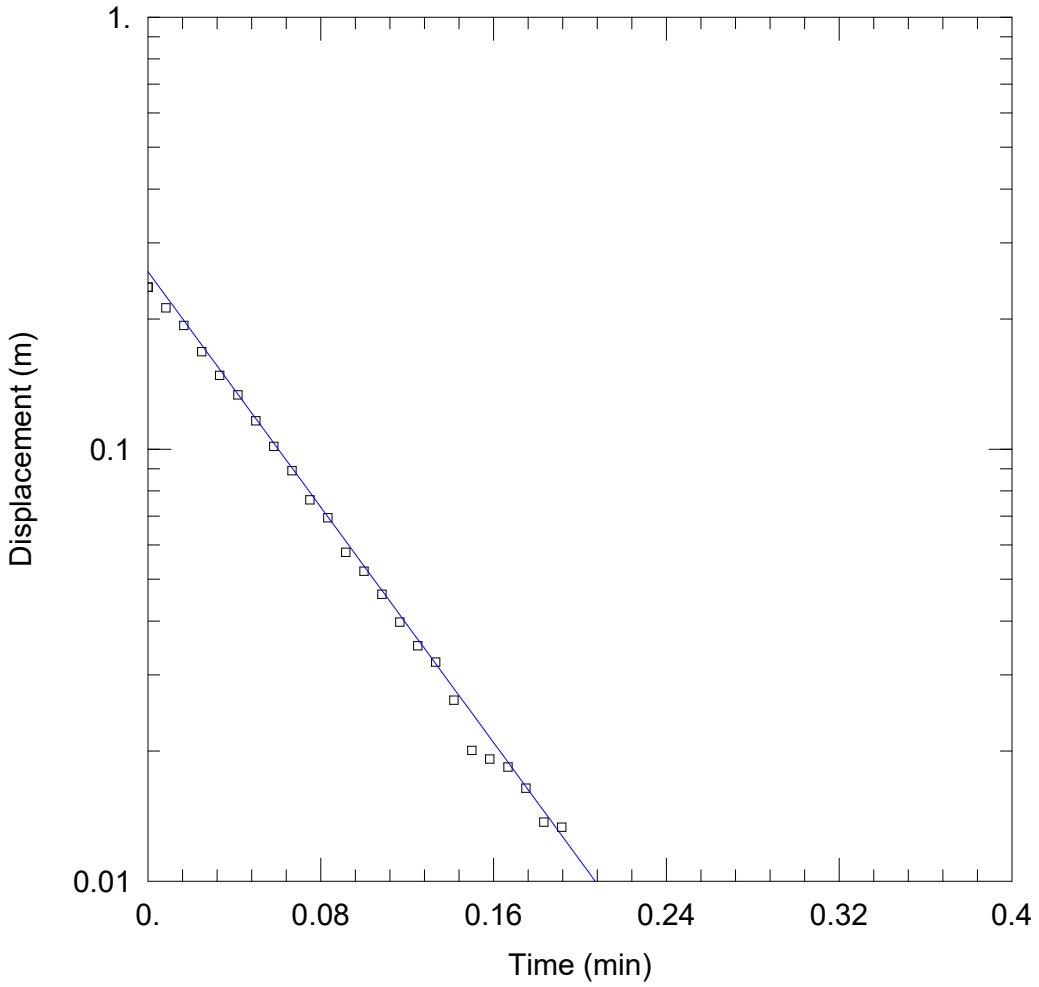
Company: Paterson Group Inc.
Client: Regional Group
Project: PH5087
Location: 4850 Bank Street
Test Well: BH1-25
Test Date: July 3, 2025

WELL DATA (BH1-25)

Initial Displacement: 0.341 m
Total Well Penetration Depth: 6.54 m
Casing Radius: 0.01588 m
Static Water Column Height: 6.54 m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined
K = 0.000105 m/sec
Solution Method: Hvorslev
y0 = 0.1876 m



BH1-25 - RISING HEAD 1 OF 1

PROJECT INFORMATION

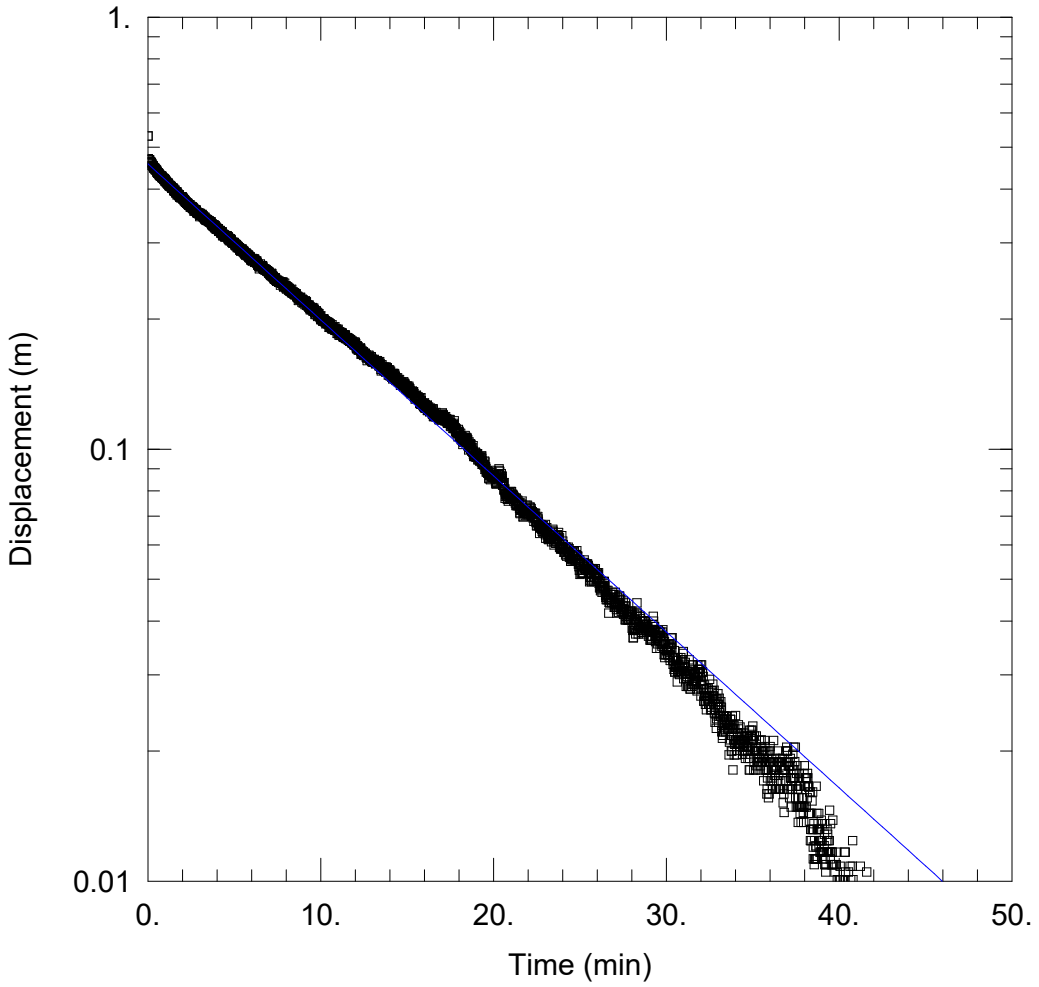
Company: Paterson Group Inc.
Client: Regional Group
Project: PH5087
Location: 4850 Bank Street
Test Well: BH1-25
Test Date: July 3, 2025

WELL DATA (BH1-25)

Initial Displacement: 0.237 m
Total Well Penetration Depth: 6.54 m
Casing Radius: 0.01588 m
Static Water Column Height: 6.54 m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined
K = 0.0001196 m/sec
Solution Method: Hvorslev
y0 = 0.2575 m



BH3-25 - FALLING HEAD 1 OF 1

PROJECT INFORMATION

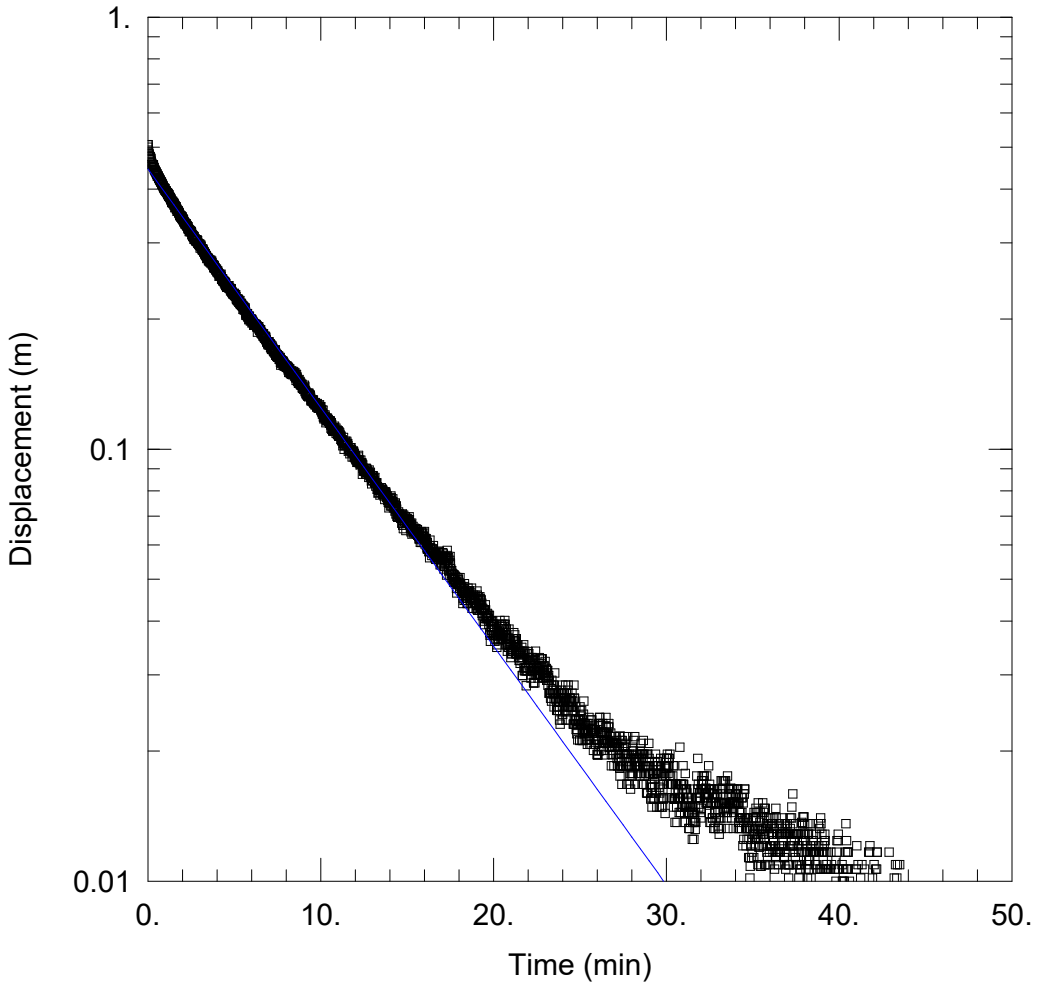
Company: Paterson Group Inc.
Client: Regional Group
Project: PH5087
Location: 4850 Bank Street
Test Well: BH3-25
Test Date: July 3, 2025

WELL DATA (BH3-25)

Initial Displacement: 0.531 m
Total Well Penetration Depth: 4.17 m
Casing Radius: 0.0254 m
Static Water Column Height: 4.17 m
Screen Length: 1.524 m
Well Radius: 0.1045 m

SOLUTION

Aquifer Model: Unconfined
K = 1.327E-6 m/sec
Solution Method: Hvorslev
y0 = 0.4572 m



BH3-25 - RISING HEAD 1 OF 1

PROJECT INFORMATION

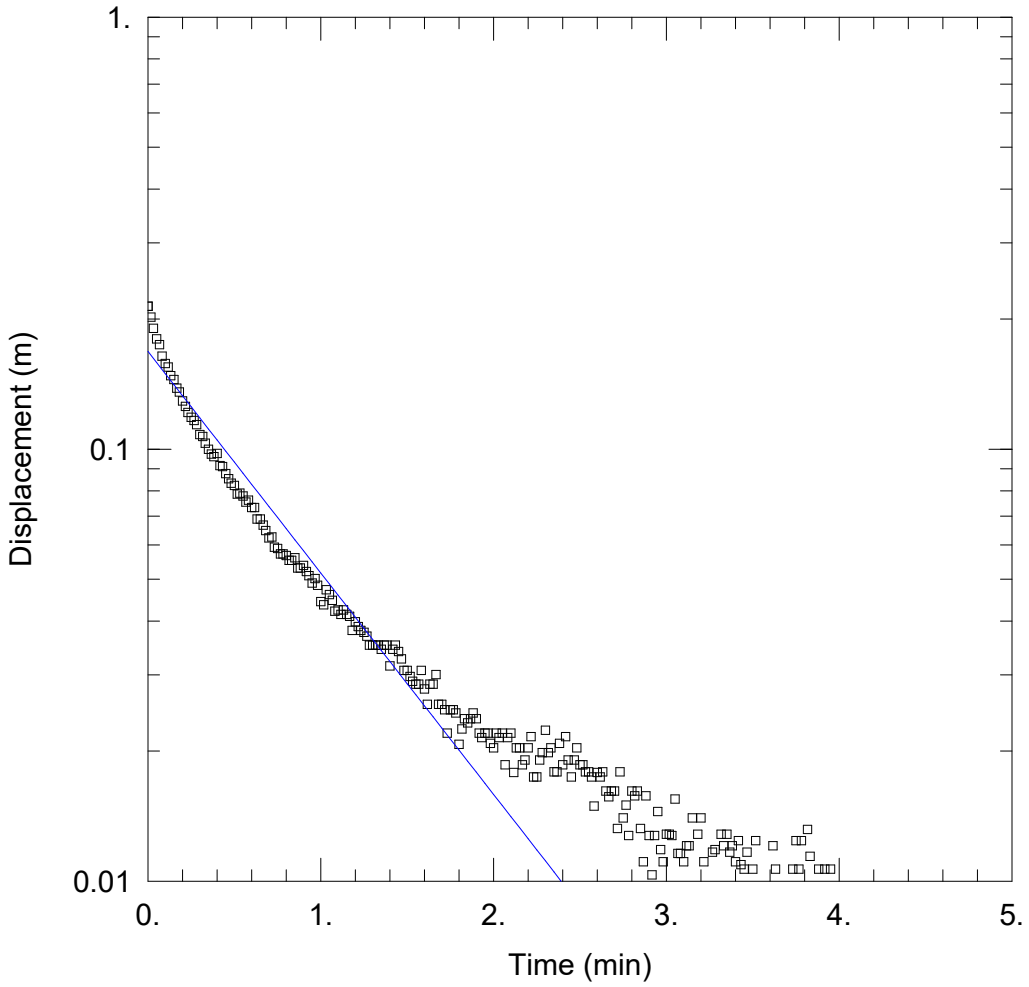
Company: Paterson Group Inc.
Client: Regional Group
Project: PH5087
Location: 4850 Bank Street
Test Well: BH3-25
Test Date: July 3, 2025

WELL DATA (BH3-25)

Initial Displacement: 0.506 m
Total Well Penetration Depth: 4.17 m
Casing Radius: 0.0254 m
Static Water Column Height: 4.16 m
Screen Length: 1.524 m
Well Radius: 0.1045 m

SOLUTION

Aquifer Model: Unconfined
K = 2.029E-6 m/sec
Solution Method: Hvorslev
y0 = 0.4448 m



BH6C-23 - FALLING HEAD 1 OF 1

PROJECT INFORMATION

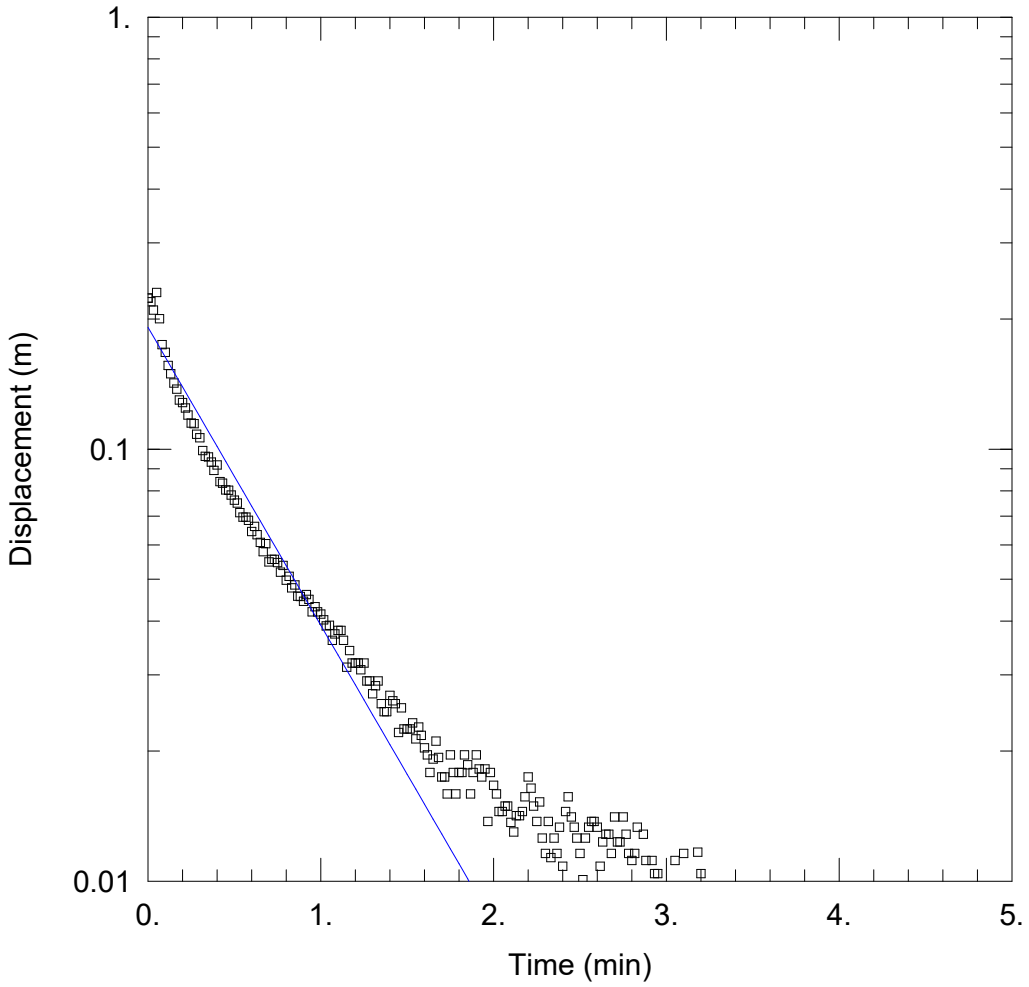
Company: Paterson Group Inc.
Client: Regional Group
Project: PH5087
Location: 4850 Bank Street
Test Well: BH6C-23
Test Date: July 3, 2025

WELL DATA (BH6C-23)

Initial Displacement: 0.214 m
Total Well Penetration Depth: 3.41 m
Casing Radius: 0.01588 m
Static Water Column Height: 3.41 m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined
K = 9.002E-6 m/sec
Solution Method: Hvorslev
y0 = 0.1683 m



BH6C-23 - RISING HEAD 1 OF 1

PROJECT INFORMATION

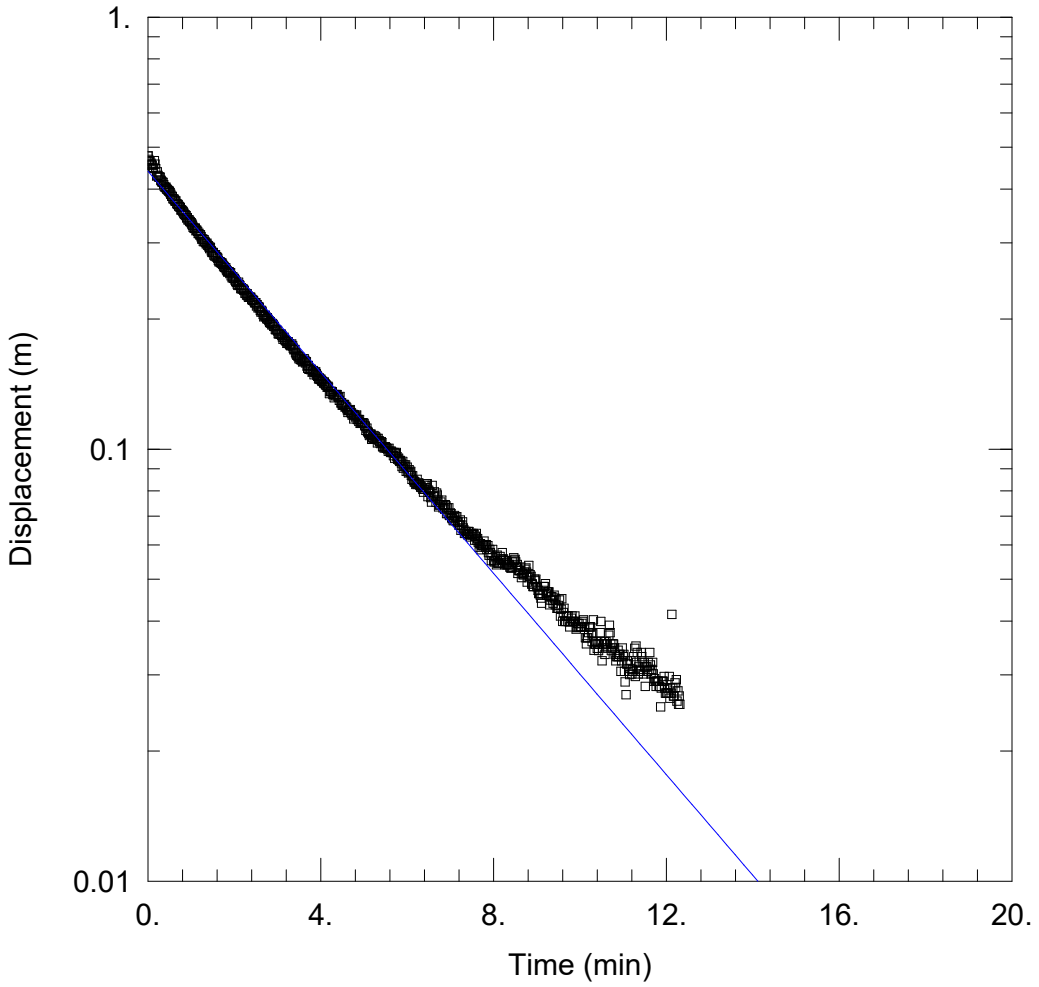
Company: Paterson Group Inc.
Client: Regional Group
Project: PH5087
Location: 4850 Bank Street
Test Well: BH6C-23
Test Date: July 3, 2025

WELL DATA (BH6C-23)

Initial Displacement: 0.224 m
Total Well Penetration Depth: 3.41 m
Casing Radius: 0.01588 m
Static Water Column Height: 3.41 m
Screen Length: 1.524 m
Well Radius: 0.0381 m

SOLUTION

Aquifer Model: Unconfined
K = 1.211E-5 m/sec
Solution Method: Hvorslev
y0 = 0.1914 m



BH10-23 - FALLING HEAD 1 OF 1

PROJECT INFORMATION

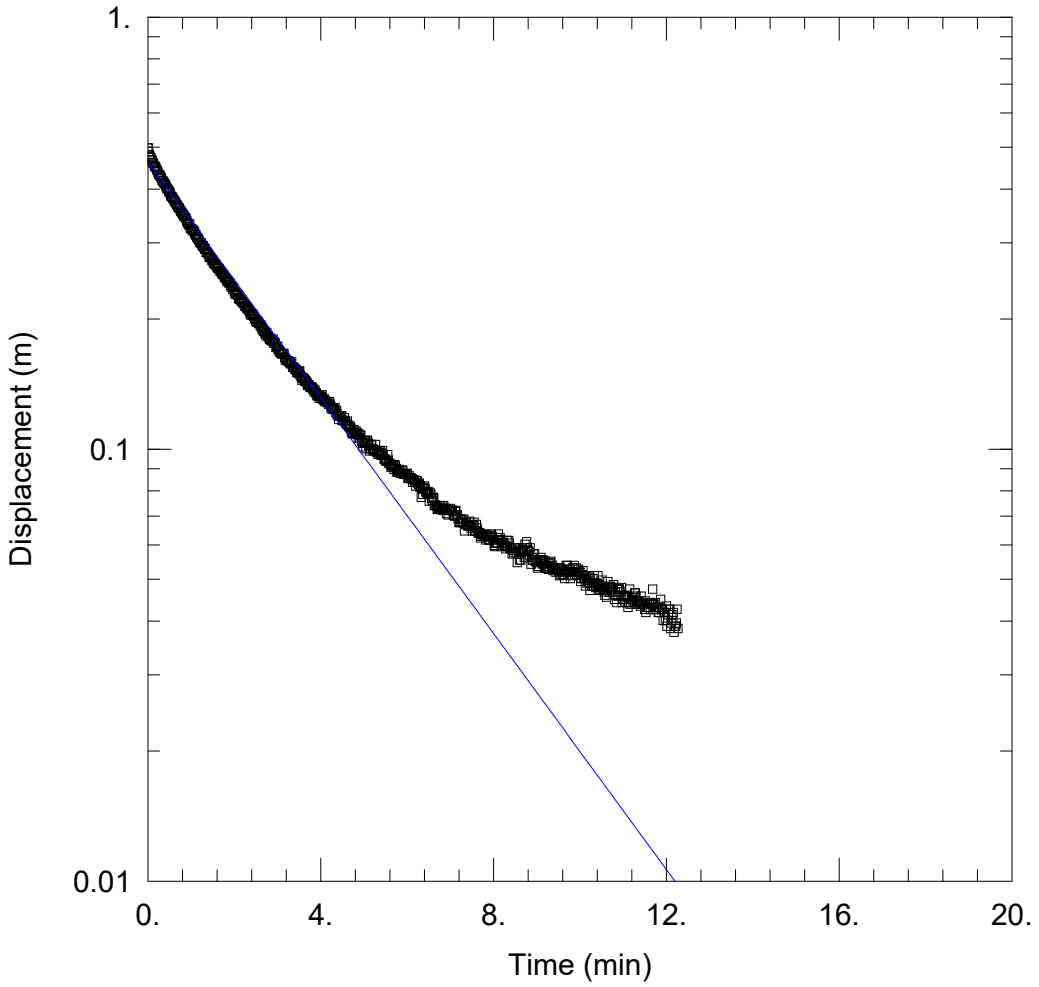
Company: Paterson Group Inc.
Client: Regional Group
Project: PH5087
Location: 4850 Bank Street
Test Well: BH10-23
Test Date: July 3, 2025

WELL DATA (BH10-23)

Initial Displacement: 0.477 m
Total Well Penetration Depth: 3.84 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.84 m
Screen Length: 1.524 m
Well Radius: 0.1045 m

SOLUTION

Aquifer Model: Unconfined
K = 4.275E-6 m/sec
Solution Method: Hvorslev
y0 = 0.4396 m



BH10-23 - RISING HEAD 1 OF 1

PROJECT INFORMATION

Company: Paterson Group Inc.
Client: Regional Group
Project: PH5087
Location: 4850 Bank Street
Test Well: BH10-23
Test Date: July 3, 2025

WELL DATA (BH10-23)

Initial Displacement: 0.498 m
Total Well Penetration Depth: 3.84 m
Casing Radius: 0.0254 m
Static Water Column Height: 3.84 m
Screen Length: 1.524 m
Well Radius: 0.1045 m

SOLUTION

Aquifer Model: Unconfined
K = 5.011E-6 m/sec
Solution Method: Hvorslev
y0 = 0.4612 m

File: PH5087

Estimated Groundwater Inflow

Regional Group - 4850 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

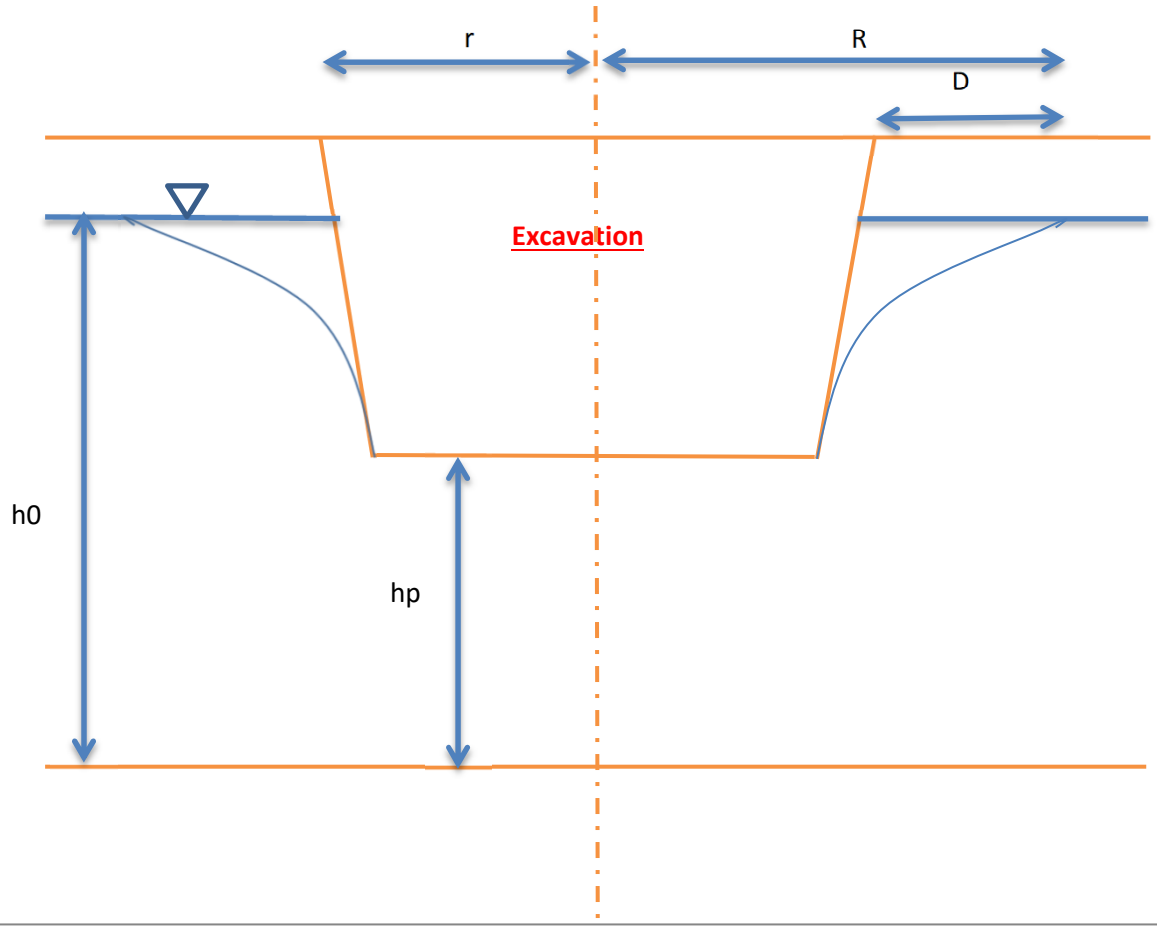
K (m/sec) =	3.03E-06
h0 (m) =	4
hp (m) =	2
r (m) =	17.35

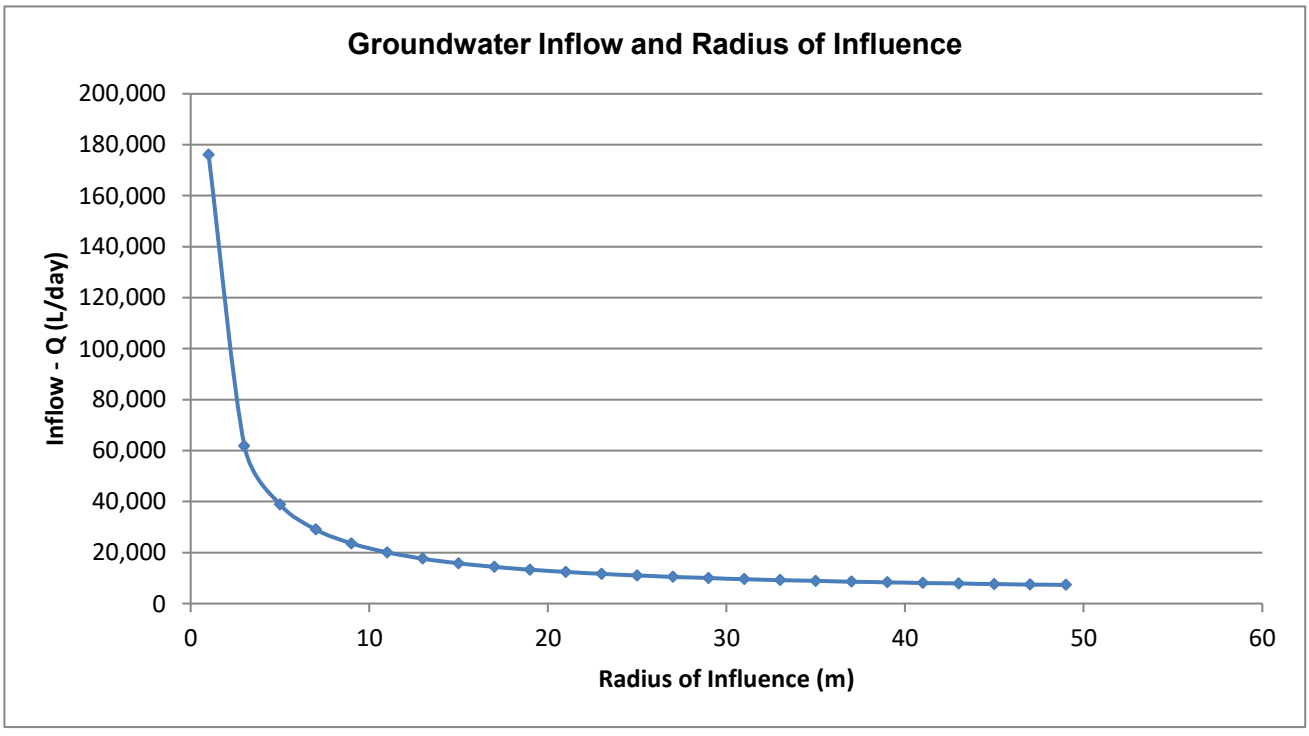
Excavation Width (A) =	26.5	m
Excavation Length (B) =	28	m
Perimeter Length =	109	m
Equivalent Radius (r) =	17.35	m

R	Distance to edge of excavation (D)	Q (m^3/s)	Q (m^3/day)	Q (L/day)
18.35	1.00	0.0020	176.1	176,101
20.35	3.00	0.0007	61.9	61,874
22.35	5.00	0.0005	39.0	38,969
24.35	7.00	0.0003	29.1	29,115
26.35	**9.00**	**0.0003**	**23.6**	**23,615**
28.35	**11.00**	**0.0002**	**20.1**	**20,097**
30.35	13.00	0.0002	17.6	17,647
32.35	15.00	0.0002	15.8	15,840
34.35	17.00	0.0002	14.4	14,448
36.35	19.00	0.0002	13.3	13,343
38.35	21.00	0.0001	12.4	12,442
40.35	23.00	0.0001	11.7	11,693
42.35	25.00	0.0001	11.1	11,059
44.35	27.00	0.0001	10.5	10,515
46.35	29.00	0.0001	10.0	10,043
48.35	31.00	0.0001	9.6	9,629
50.35	33.00	0.0001	9.3	9,263
52.35	35.00	0.0001	8.9	8,936
54.35	37.00	0.0001	8.6	8,643
56.35	39.00	0.0001	8.4	8,378
58.35	41.00	0.0001	8.1	8,137
60.35	43.00	0.0001	7.9	7,917
62.35	45.00	0.0001	7.7	7,715
64.35	47.00	0.0001	7.5	7,529
66.35	49.00	0.0001	7.4	7,357
68.35	51.00	0.0001	7.2	7,198
70.35	53.00	0.0001	7.0	7,050
72.35	55.00	0.0001	6.9	6,911
74.35	57.00	0.0001	6.8	6,782
76.35	59.00	0.0001	6.7	6,660

PATERSON GROUP

File: PH5087





PATERSON GROUP

File: PH5087

Estimated Groundwater Inflow

Regional Group - 4850 Bank Street - Servicing Excavation

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

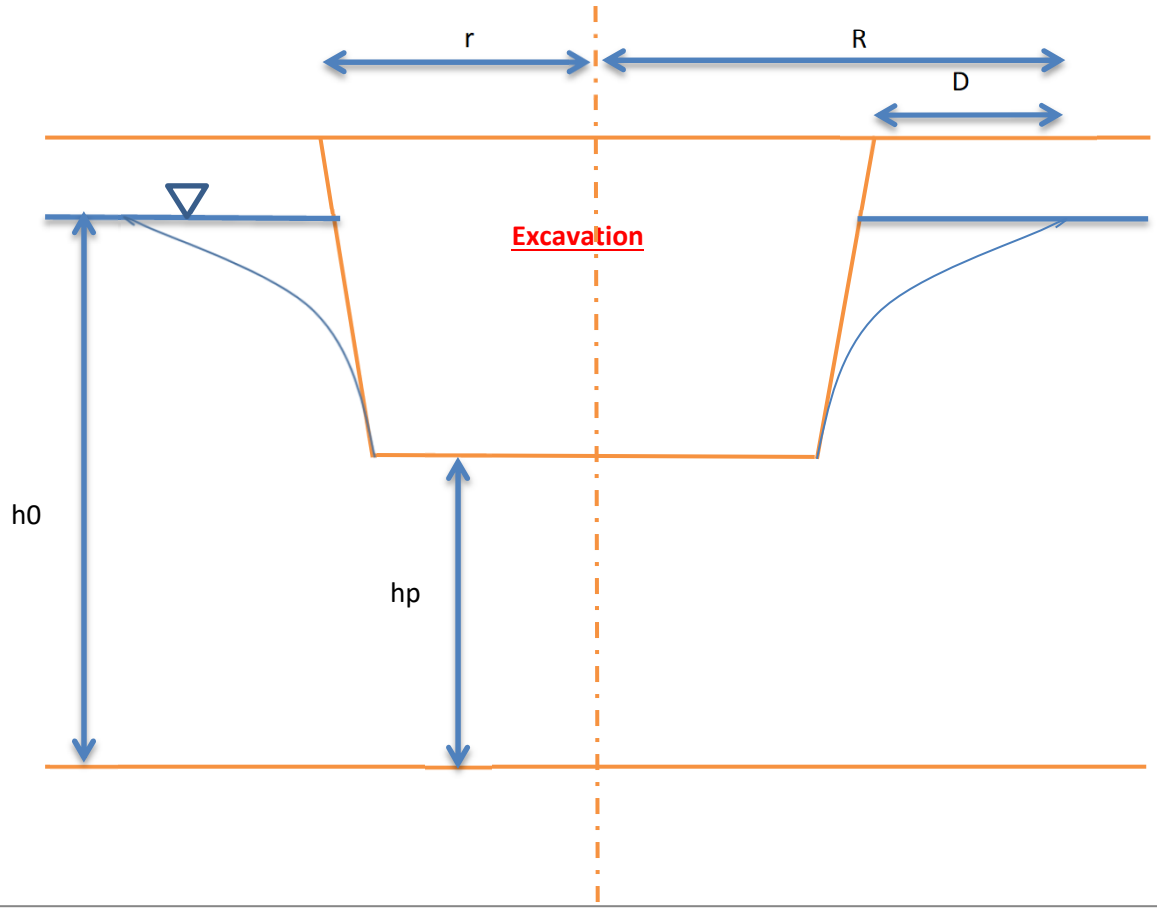
Equivalent Radius of Excavation = A+B=Pi*r

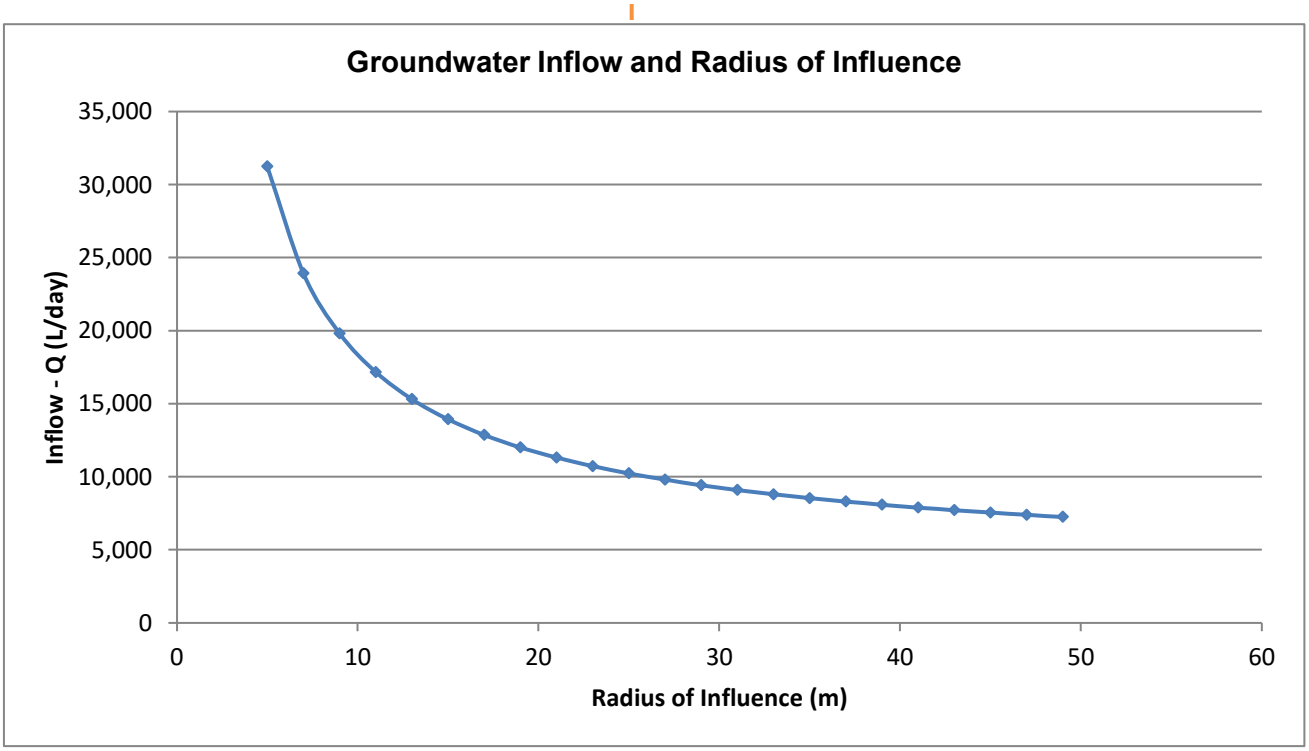
K (m/sec) =	3.03E-06		
h0 (m) =	4	Excavation Width (X) =	5 m
hp (m) =	0	Excavation Length (Y) =	25 m
r (m) =	9.55	Perimeter Length =	60 m
		Equivalent Radius (r) =	9.55 m

R	Distance to edge of excavation (D)	Q (m^3/s)	Q (m^3/day)	Q (L/day)
14.55	5.00	0.0004	31.3	31,251
16.55	7.00	0.0003	23.9	23,931
18.55	9.00	0.0002	19.8	19,819
20.55	11.00	0.0002	17.2	17,171
22.55	13.00	0.0002	15.3	15,315
24.55	15.00	0.0002	13.9	13,937
26.55	17.00	0.0001	12.9	12,869
28.55	**19.00**	**0.0001**	**12.0**	**12,016**
30.55	**21.00**	**0.0001**	**11.3**	**11,316**
32.55	23.00	0.0001	10.7	10,731
34.55	25.00	0.0001	10.2	10,233
36.55	27.00	0.0001	9.8	9,804
38.55	29.00	0.0001	9.4	9,430
40.55	31.00	0.0001	9.1	9,100
42.55	33.00	0.0001	8.8	8,807
44.55	35.00	0.0001	8.5	8,544
46.55	37.00	0.0001	8.3	8,307
48.55	39.00	0.0001	8.1	8,092
50.55	41.00	0.0001	7.9	7,896
52.55	43.00	0.0001	7.7	7,717
54.55	45.00	0.0001	7.6	7,551
56.55	47.00	0.0001	7.4	7,398
58.55	49.00	0.0001	7.3	7,257
60.55	51.00	0.0001	7.1	7,125
62.55	53.00	0.0001	7.0	7,001
64.55	55.00	0.0001	6.9	6,886
66.55	57.00	0.0001	6.8	6,778
68.55	59.00	0.0001	6.7	6,676
70.55	61.00	0.0001	6.6	6,580
72.55	63.00	0.0001	6.5	6,489

PATERSON GROUP

File: PH5087





PATERSON GROUP

File: PH5087

Estimated Groundwater Inflow

Regional Group - 4850 Bank Street - SWMP Excavation

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

K (m/sec) =	3.03E-06
h0 (m) =	4
hp (m) =	0
r (m) =	58.73

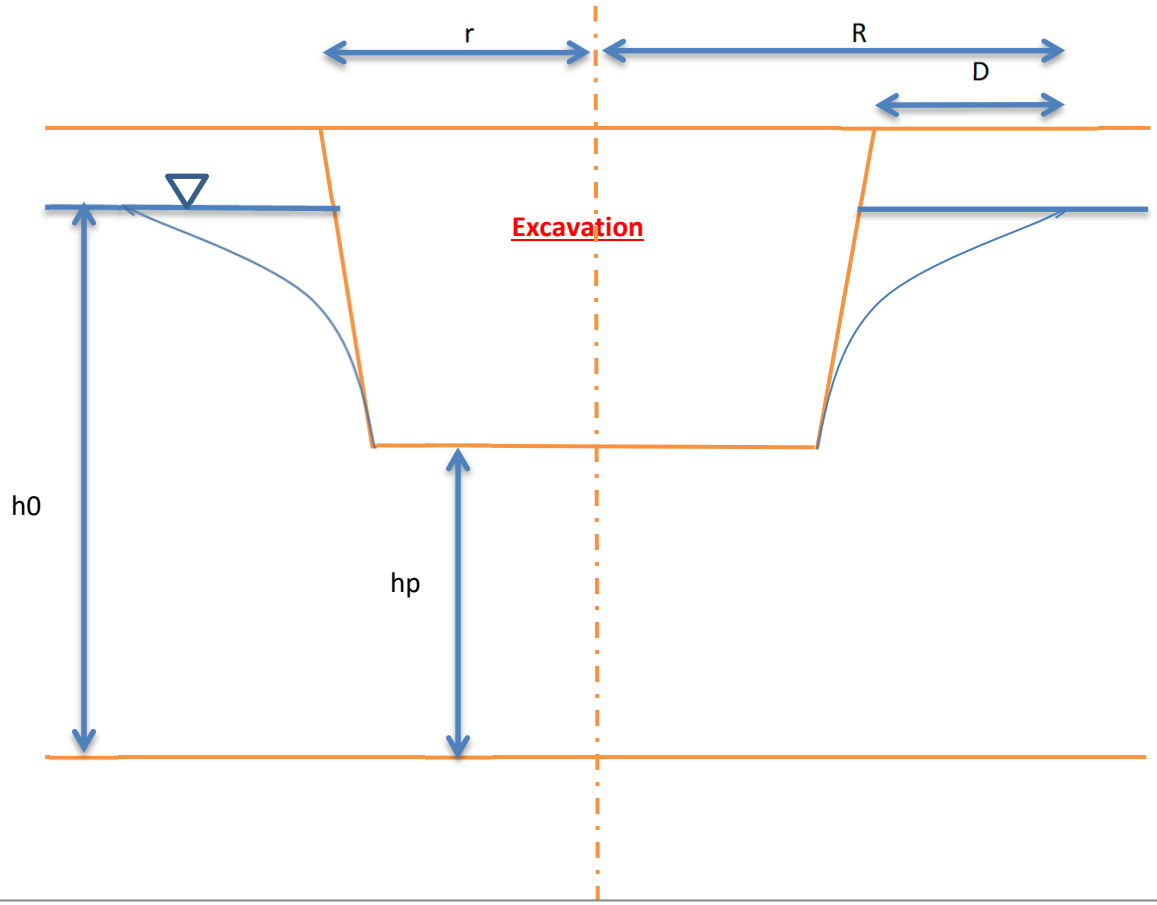
Equivalent Radius of Excavation = A+B=Pi + r

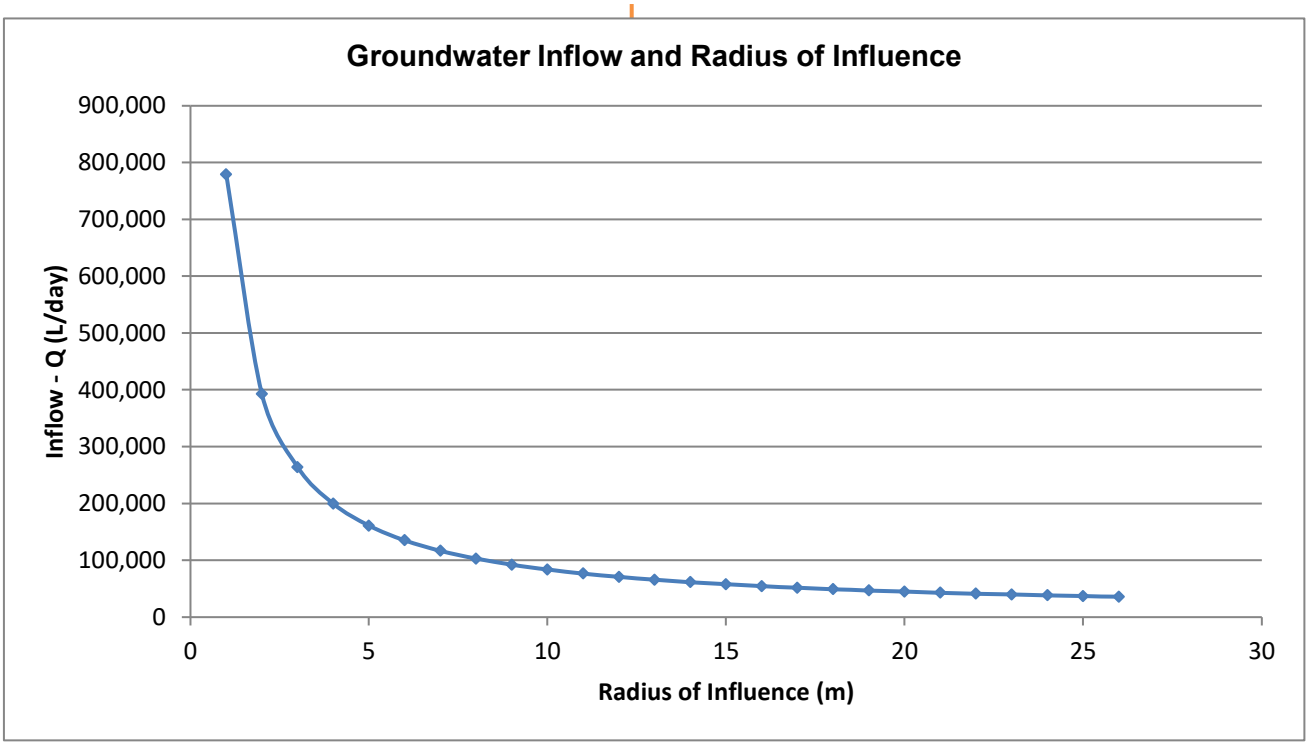
Excavation Width (X) =	32.5 m
Excavation Length (Y) =	152 m
Perimeter Length =	369 m
Equivalent Radius (r) =	58.73 m

R	Distance to edge of excavation (D)	Q (m^3/s)	Q (m^3/day)	Q (L/day)
59.73	1.00	0.0090	779.4	779,371
60.73	2.00	0.0045	392.9	392,948
61.73	3.00	0.0031	264.1	264,128
62.73	4.00	0.0023	199.7	199,710
63.73	5.00	0.0019	161.1	161,052
64.73	6.00	0.0016	135.3	135,275
65.73	7.00	0.0014	116.9	116,858
66.73	8.00	0.0012	103.0	103,041
67.73	9.00	0.0011	92.3	92,291
68.73	10.00	0.0010	83.7	83,688
69.73	11.00	0.0009	76.6	76,647
70.73	12.00	0.0008	70.8	70,777
71.73	13.00	0.0008	65.8	65,807
72.73	14.00	0.0007	61.5	61,546
73.73	15.00	0.0007	57.9	57,851
74.73	16.00	0.0006	54.6	54,616
75.73	17.00	0.0006	51.8	51,760
76.73	18.00	0.0006	49.2	49,221
77.73	19.00	0.0005	46.9	46,947
78.73	**20.00**	**0.0005**	**44.9**	**44,899**
79.73	**21.00**	**0.0005**	**43.0**	**43,045**
80.73	22.00	0.0005	41.4	41,359
81.73	23.00	0.0005	39.8	39,818
82.73	24.00	0.0004	38.4	38,405
83.73	25.00	0.0004	37.1	37,104
84.73	26.00	0.0004	35.9	35,902
85.73	27.00	0.0004	34.8	34,788
86.73	28.00	0.0004	33.8	33,753
87.73	29.00	0.0004	32.8	32,789
88.73	30.00	0.0004	31.9	31,889

PATERSON GROUP

File: PH5087





PATERSON GROUP

APPENDIX 4

CITY OF OTTAWA - SALT MANAGEMENT PLAN - APPENDIX A - OCTOBER 171, 2011

City of Ottawa
Public Works and Services Department
Surface Operations Branch

Salt Management Plan
Appendix A

MATERIAL APPLICATION POLICY

CONTENT

The Surface Operations Branch District Managers, Area Managers and Zone Supervisors have been consulted through the development of this document.

REVISION INFO

Rev	Date	By	Description
3.1	Jan 10 2007		
3.2	Oct 31 2011	D Vander Wal	• Removed 50/50 mix per Dan O'Keefe. • Removed specific references to Sodium and Calcium Chloride as new product for 2011 is a Multi-Chloride Brine. Changed liquid application rate from 46 (6%) to 39L/tonne (5%). • Removed Dry and Wet salt rates for pavement temperatures below -18C. • Updated Epoke rates to match Appendix B and added wet rates to obtain 20% reduction when pre-wetting. • Removed separate rate table for Hwy 174 Epoke spreaders since the resulting lane-km rates are the same as other bare pavement.

COUNCIL APPROVED MAINTENANCE QUALITY STANDARDS

For snow clearing, resources are to be deployed and snow clearing completed as defined in the Table below. If the depth of snow accumulation is less than the minimum for deployment, then resources may be deployed subject to road conditions resulting from previous snow accumulations or from forecasted weather conditions.

For treating icy roads, resources are to be deployed as soon as practicable after becoming aware of the icy conditions. Icy roads are to be treated within the times defined in the Table below after becoming aware of the icy conditions.

MAINTENANCE QUALITY STANDARD SNOW AND ICE CONTROL ON ROADS							
Road Maintenance Class		**Road Type**	**Minimum Depth of Snow Accumulation for Deployment of Resources** *(Depth as per MMSMH)*	**Time to Clear Snow Accumulation From the End of Snow Accumulation or Time to Treat Icy Conditions** *(Time as per MMSMH)*	**Treatment Standard**		
					Bare Pavement	**Centre Bare**	**Snow Packed**
1	A	High Priority Roads	As accumulation begins *(2.5-8 cm depending on class)*	2 h *(3-4 h)*	√		
	B				√		
2	A	Most Arterials		3 h *(3-6 h)*	√		
	B				√		
3	A	Most Major Collectors		4 h *(8-12 h)*	√		
	B				√		
4	A	Most Minor Collectors	5 cm *(8 cm)*	6 h *(12-16 h)*	√		
	B					√	
	C						√
5	A, C	Residential Roads and Lanes	7 cm *(10 cm)*	10 h *(16-24 h)*			√
	B		10 cm *(not defined)*	16 h *(not defined)*			√

Note - MMSMH refers to Ontario Regulation 239/02, Minimum Maintenance Standards for Municipal Highways shown for comparison purposes.

- **Bare Pavement:** requires that snow and ice be controlled, cleared and/or prevented for the full traveled road pavement width, including flush medians of 2 m width or less, paved shoulders and/or adjacent cycling lanes. It does not include parking lanes.
- **Centre-Bare:** requires that snow and ice be controlled, cleared and/or prevented in a strip down the middle of the road pavement width for a minimum width of 2.5 m on each side of centre-line.
- **Snow-Packed:** requires that snow and ice be cleared and that ruts and/or potholes that may cause poor vehicle control be leveled off. Abrasive or deicing materials are applied at intersections, hills and sharp curves.

LIQUID CHEMICALS

Application Rates and Reductions

USE OF LIQUID CHEMICALS					
Chemical	**Use**	**Application Ratio**	**Chemical Concentration**	**Application Rate**	**Dry Salt Reduction**
CaCl, MgCl, or Multi-Chloride	Pre-Wetting	5% by weight	Varies (28%-35%)	39L / t	20%[1]
CaCl, MgCl, or Multi-Chloride	Straight Liquid Application	N/A	Varies	60 to 100L/ lane-km	-

[1] The Epoke controller does not support setting a separate reduction percentage – the rate will only be reduced by the set liquid application ratio (5%).

Pre-Wetted Salt

- Pre-wetting salt is a recommended practice to enhance the performance of the road salt.
- When salt is pre-wet, the brine solution is formed quicker than dry salt and more material is retained on the road surface. It is the brine solution that prevents or breaks the bond between the road surface and snow/ice.
- The enhanced performance of the salt as well as the retention of salt on the road surface facilitates achieving a bare road more quickly and maintains bare pavement longer. As a result, a reduction in salt application rates can achieve the same effectiveness as dry salt application at traditional rates.

Practical temperature ranges for Pre-Wetted Salt (WET SALT)

- Sodium Chloride Brine (NaCl):
  - From 0 to –9ºC (0 to -12ºC as per pre-wetting practices in urban areas)
- Calcium Chloride ($CaCl_2$), Magnesium Chloride (MgCl), and Multi-Chloride Brines with a minimum eutectic temperature of -30°C:
  - From 0 to –15ºC (0 to -18ºC as per pre-wetting practices in urban areas)

Direct Liquid Applications (DLA)

- Anti-icing by Direct Liquid Application is a recommended practice to treat frost and black ice conditions in the shoulder seasons at pavement temperatures between 0 and –10ºC.
- Liquid should be applied to treat forecasted conditions at the following rates:

Winter Event	Litres / LaneKm	mL / m^2 (at 3m width)
Frost	60	20
Light Snow	60 to 80	25
Moderate to Heavy Snow, Freezing Rain	80 to 100	30

- DLA should be applied:
  - As close to the beginning of the winter event as possible
  - When the air and pavement temperatures are both below +5°C currently and forecasted to remain below +5°C within the next 12 hours.
  - When the air and pavement temperatures are a minimum of 10°C above the eutectic temperature of the DLA liquid and forecasted to do so for the next 24 hours.
- DLA should NOT be applied:

- When the relative humidity is below 60% and the air and pavement temperatures are between 0°C and +5°C.
- More than once in a three-day period unless a Winter Event (frost, snow, freezing rain or rain) has removed the product from the pavement. Note that DLA liquid can remain on the pavement up to several days after the initial application.

GENERAL INFORMATION

When the Pavement Temperature is below –18ºC

- Below –18ºC, the salt melting action is close to none.
- Below –18ºC, the use of salt shall be discontinued and replaced by an abrasive.
- Multiple factors can affect the performance of de-icing chemicals and abrasives below pavement temperature of –18ºC. Under such conditions, supervisors shall select the most appropriate material based on the current and expected traffic volume, current and forecasted weather and road conditions.

Abrasives

- Accepted abrasives are Sand and Grit
- Straight abrasive does contain salt to prevent the stockpile from freezing. The goal is to minimize the amount of salt mixed with the abrasives. The objective is to use an engineered abrasive of 5% salt / 95% sand or grit by volume. The following interim abrasive ratios are accepted (where the engineered ratio cannot be achieved due to equipment and material storage constraints)
  - 10% salt / 90% sand or grit by volume

Rush Hours and Forecasted Conditions

- Supervisors are responsible for making timely material application calls based on forecasted conditions and expected traffic peak hours.

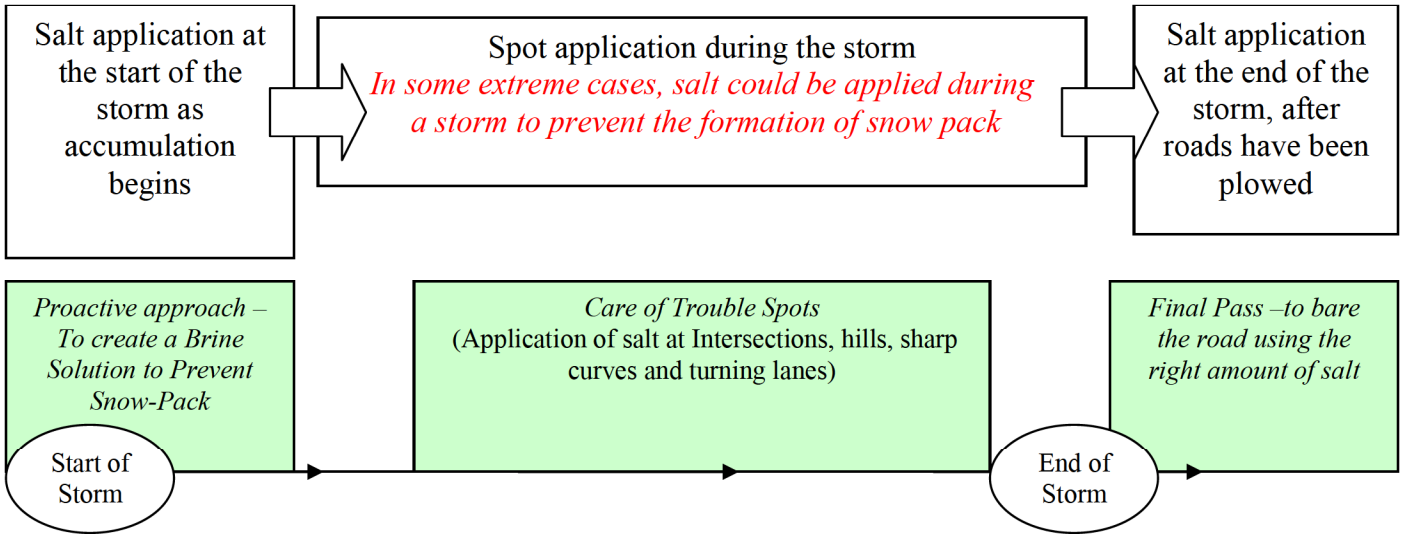
Freezing Rain

- When Freezing Rain occurs, abrasive materials (sand or grit) will be applied on snow packed roads on a continuous basis (to the full Road Width).
- Snow Packed Roads – where available, graders with ice blades shall drag the roads to aid traction.

MATERIAL APPLICATION POLICY BARE PAVEMENT					
Pavement Temperature °C	**Material**	**Frost and Black Ice *Kg/2-lane km***	**Light Snow <1cm/hr *Kg/2-lane km***	**Heavy Snow >1cm/hr *Kg/2-lane km***	**Freezing Rain *Kg/2-lane km***
0 to –5°C	DRY SALT	70	100	140	230
	WET SALT	55	80	110	185
-5 to –10°C	DRY SALT	85	140	180	230
	WET SALT	70	110	145	185
-10 to –18°C	DRY SALT	85	180	230	230
	WET SALT	70	145	185	185
< -18°C*	ABRASIVE	350	350	350	-

* Refer to the General Information Section for additional information when the Pavement Temperature is below –18°C. When forecasted warming conditions are expected, dry/wet rates of 180/145, and 230/185 may provide some baring-off benefit.
* Note: Use wet rates where pre-wetting capable spreaders and liquid supply is available.

Timing of Application – BARE PAVEMENT ROADS



Start of the Storm
Salt shall be spread just at the beginning of the icy precipitation.

End of Storm
Salt shall not be spread once bare pavement is achieved and when no further precipitation is forecasted.

MATERIAL APPLICATION POLICY

BARE PAVEMENT (EPOKE SPREADERS)

Pavement Temperature °C	Material	Frost and Black Ice		Light Snow <1cm/hr		Heavy Snow >1cm/hr		Freezing Rain	
		g/m2	*Width*	*g/m2*	*Width*	*g/m2*	*Width*	*g/m2*	*Width*
0 to –5°C	DRY Salt (WET Salt)*	70kg/2ln-km		100kg/2ln-km		140kg/2ln-km		230kg/2ln-km	
		35 (30)	2m	50 (43)	2m	70 (60)	2m	115 (98)	2m
		23 (20)	3m	35 (30)	3m	45 (38)	3m	77 (65)	3m
		17 (14)	4m	23 (20)	4m	35 (30)	4m	58 (49)	4m
		17 (14)	5m	20 (17)	5m	28 (24)	5m	45 (38)	5m
-5 to –10°C	DRY Salt (WET Salt)*	85kg/2ln-km		140kg/2ln-km		180kg/2ln-km		230kg/2ln-km	
		45 (38)	2m	70 (60)	2m	90 (77)	2m	115 (98)	2m
		28 (24)	3m	45 (38)	3m	58 (49)	3m	77 (65)	3m
		20 (17)	4m	35 (30)	4m	45 (38)	4m	58 (49)	4m
		17 (14)	5m	28 (24)	5m	35 (30)	5m	45 (38)	5m
-10 to –18°C	DRY Salt (WET Salt)*	85kg/2ln-km		180kg/2ln-km		230kg/2ln-km		230kg/2ln-km	
		45 (38)	2m	90 (77)	2m	115 (98)	2m	115 (98)	2m
		28 (24)	3m	58 (49)	3m	77 (65)	3m	77 (65)	3m
		20 (17)	4m	45 (38)	4m	58 (49)	4m	58 (49)	4m
		17 (14)	5m	35 (30)	5m	45 (38)	5m	45 (38)	5m
< -18°C†	ABRASIVE	350kg/2ln-km		350kg/2ln-km		350kg/2ln-km		-	
		175	2m	175	2m	175	2m		
		115	3m	115	3m	115	3m	-	-
		88	4m	88	4m	88	4m		
		70	5m	70	5m	70	5m		

* When the pre-wetting system is engaged, the dry material output is reduced. The Epoke controller does not support setting a separate reduction percentage – the rate is only reduced by the set liquid application ratio (5%). Material 2 was therefore configured with rates reduced by 15%.

* Use wet rates where pre-wetting capable spreaders and liquid supply is available.

† Refer to the General Information Section for additional information when the Pavement Temperature is below –18°C. When forecasted warming conditions are expected, dry/wet rates of 180/145, and 230/185 may provide some baring-off benefit.

Notes

There are 2 variables affecting the material output on an Epoke salt spreader:

-Material Application Rate in **g/m²** AND Application Width in **m**.

Examples:

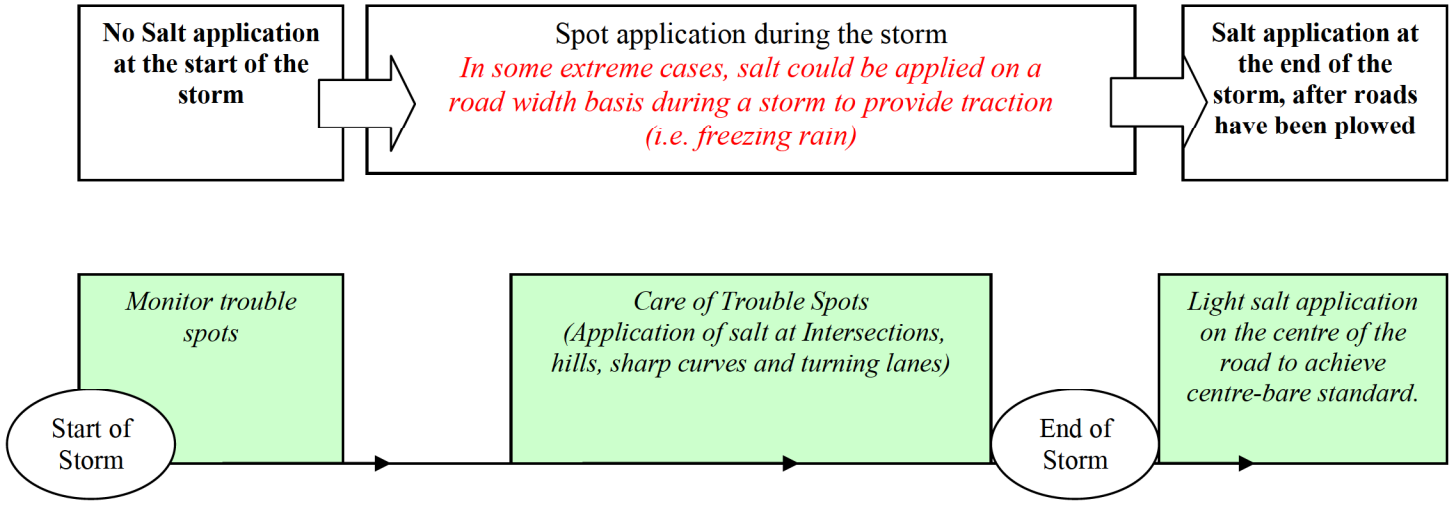
1- For a rate of 100kg/2ln-km, the Epoke Setup would be 25g/m² at a Width of 4m. **OR** a rate of 50g/m² at a Width of 2m.

2- For a rate of 170kg/2ln-km, the Epoke Setup would be 42g/m² at a Width of 4m. **OR** a rate of 57g/m² at a Width of 3m.

MATERIAL APPLICATION POLICY CENTRE-BARE PAVEMENT				
Pavement Temperature °C	**Material**	**Frost and Black Ice** ***Kg/2-lane km***	**Snow** ***Kg/2-lane km***	**Freezing Rain** ***Kg/2-lane km***
0 to –5°C	DRY SALT	70	100	230
	WET SALT	55	80	185
-5 to –18°C	DRY SALT	85	140	230
	WET SALT	70	110	185
< -18°C	ABRASIVE	350	350	-

Note: Use wet rates where pre-wetting capable spreaders and liquid supply is available.

Timing of Application – CENTRE-BARE PAVEMENT ROADS

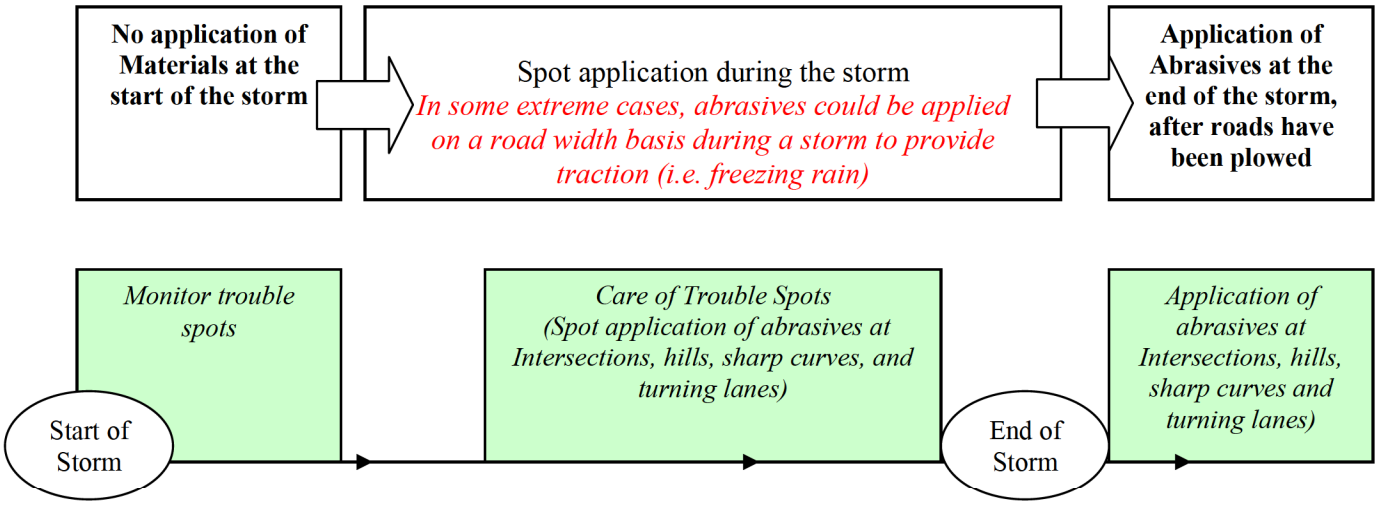


Start of the Storm
No Salt application at the start of the storm. Monitor trouble spots.

End of Storm
Salt shall not be spread once centre-bare pavement is achieved and when no further precipitation is forecasted.

MATERIAL APPLICATION POLICY (Intersections, Hills and Sharp Curves) SNOW PACKED				
Pavement Temperature °C	**Material**	**Frost and Black Ice** *Kg/2-lane km*	**Snow** *Kg/2-lane km*	**Freezing Rain** *Kg/2-lane km*
0 to –30°C and below	ABRASIVE	350	350	500

Timing of Application – SNOW PACKED ROADS



Start of the Storm
No application of abrasives at the start of the storm. Monitor trouble spots.

End of Storm
Abrasives shall not be spread once traction is provided.

BLASTING POLICY

The On-Board Electronic Controller's Blast function is an important tool for roadway de-icing operations. It allows operational staff to timely increase the amount of spread material at trouble locations such as steep hills and sharp curves. Although the blast function is indispensable, it should be used with care as it its liberal use can lead to significant increases in salt consumption and environmental impacts.

- Supervisory staff shall work toward minimizing the amount of salt being spread using the Blast function to achieve the required maintenance quality standard.
- Many variables come into play during a winter weather event. As such, the call to allow the use of the Blast Function during a winter event is left to the judgment of the supervisory staff, as the first priority is the safety of the traveling public.

The Blast function shall only be used at the following locations:

- Steep Hills
- Elevated Curves
- Intersections (within 30m of the stop line on the approach side only)
- Shade areas
- Right and Left Turning Lanes
- Bus Bays
- Railways (within 30m of the railway crossing on the approach side only)
- Bridge Decks

  Caution: when blasting salt on a bridge deck. Rock salt needs heat to dissolve. Spreading salt on a bridge deck could lower its surface temperature to a point where the brine solution will refreeze.

Application:

- The Blast function shall only be used under severe winter conditions
- The Blast function shall not be used during light winter weather events such as light snow, frost, etc.
- The blast function shall not be used while clearing the roads (stripping) at the end of a storm.

On-Board Electronic Controller's Blast function

- The Epoke controllers will blast at the highest material calibration setting.
- The CS-230 controller will blast to its maximum hydraulic power (which can be adjusted if too high)
- The CS-440 controller can be calibrated at a defined Blast rate for each material.
  - The Blast Rate for Salt is to be set at 300kg/2 lane-km
  - The Blast Rate for Abrasive is to be set at 500kg/2 lane-km. Note: Suburban/Rural District has a requirement to Blast Abrasives on gravel roads at a rate of 700kg/2 lane-km. To achieve this rate, the spreaders need to be calibrated using two gate settings. The District will provide, every fall, a list of spreaders requiring this specific calibration.

APPENDIX 5

SURROUNDING WATER WELL RECORDS

316/52

UTM 1/18 Z 4/5/3/7/6/0 E

15 R 5/0/1/1/7/5/6/0 N

Elev. 4 R 0/3/1/5

Basin 2/5

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.	Depth(s) at which water(s) found	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 MEAGHER

Address: [illegible]

Licence Number: 6?

Name of Driller or Borer: SIMMS

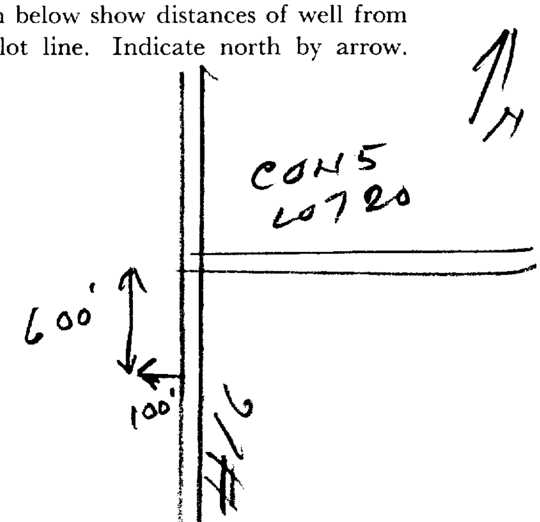
Address:

Date: Aug 6 28

M Meagher
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

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



Form 7 10M-62-1152

OWRC COPY

CSS.S8

316/50

567

UTM |1|8|Z |4|5|3|9|7|0|E
Rideau Front
|5|R |5|0|4|7|7|0|8|0|N

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

Basin |2|5| |2| | |

ONTARIO

15 № 2177

X

GROUND WATER BRANCH
19
MAY 20 1957
ONTARIO WATER
RESOURCES COMMISSION

The Water-well Drillers Act, 1954

Department of Mines

Water-Well Record

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

[redacted] in Village, Town or City)

Address 40 Lawrance St Ottawa

(day) (month) (year)

Pipe and Casing Record	
Casing diameter(s)	2"
Length(s)	21
Type of screen	
Length of screen	

Pumping Test	
Static level	6
Pumping rate	800 G.P.H
Pumping level	25 ft
Duration of test	2 hr

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)
Sand	0	7	60	54	Fresh
Bolders and Sand	7	20			
Wht Sand stone	20	60			

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

Is water clear or cloudy? Clear

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

Drilling firm F. R. Cornette

Address R.R. 2 Baseline R.D. City View

Name of Driller F. R. Cornette

Address —

Licence Number 395

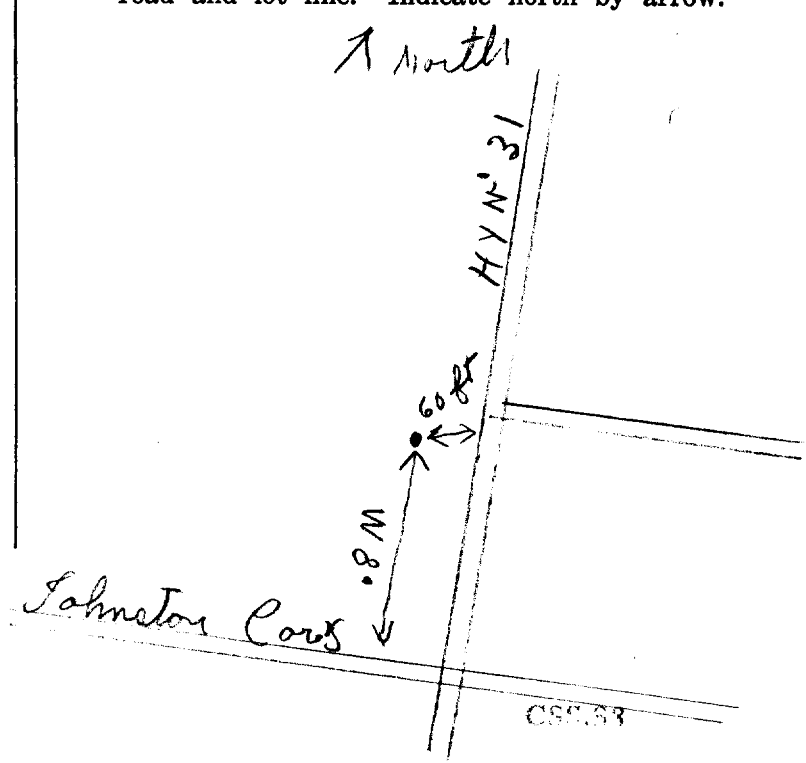
I certify that the foregoing statements of fact are true.

Date May 14/57 F. R. Cornette

Signature of Licensee

Location of Well

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



Form 5

CSS.53

316/52

UTM | 18 | Z | 4513990 | E
| 9 | R | 5101619910 | N

Elev. | 9 | R | 0153137

Basin | 215 | | |

Con IV
lot 22

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

GROUND WATER BRANCH
AUG 19 1957
ONTARIO WATER RESOURCES COMMISSION

15 NO 2178

Water-Well Record

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

[redacted] Village, Town or City)

Address Billings Bridge

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 23 ft
Type of screen 1
Length of screen

Pumping Test

Static level 13
Pumping rate 240 g.p.h PH
Pumping level 50 ft
Duration of test 1 hour

Well Log

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)
			48 feet	37'	fresh
hard gravelly clay & sand & boulders	0	18			very hard
very hard limestone Stone Rock	18	50			

Water Record

For what purpose(s) is the water to be used?
house hold use only
Is water clear or cloudy? Clear
Is well on upland, in valley, or on hillside?
upland

Drilling firm
Address

Name of Driller James Kettle
Address Ramsayville

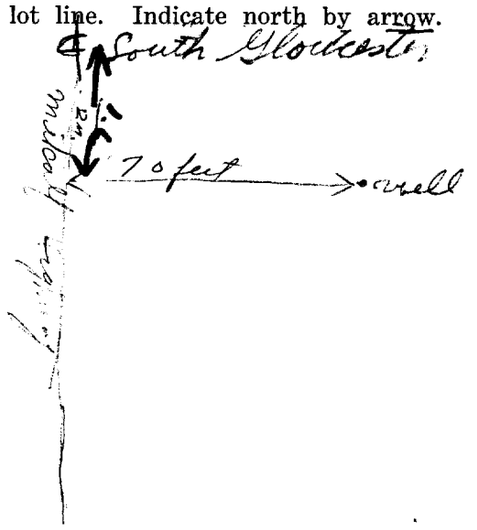
Licence Number 537

I certify that the foregoing statements of fact are true.

Date Aug 15 James Kettle
Signature of Licensee

Location of Well

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



N

Form 5

CSS.38

L.P. 310/52

UTM 18 Z 4 5 3 8 6 0 E
Rideau Front
5 R 5 0 1 7 3 3 0 N

Elev. 4 R 0 3 2 5

Basin 2 5 P.T. 22

№ 2170

The Ontario Water Resources Commission Act

WATER WELL RECORD

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

Con. 4 R F Lot P.T.22 Date completed 6 (day) 10 month 1961 year)

[redacted]ress 28 Clarence St. Ottawa 2, Ont.

Casing and Screen Record

Inside diameter of casing 6 3/16

Total length of casing 21'

Type of screen NONE

Length of screen

Depth to top of screen

Diameter of finished hole 6"

Pumping Test

Static level 20'

Test-pumping rate 80 G.P.H.

Pumping level 70'

Duration of test pumping 1 hr.

Water clear or cloudy at end of test clear

Recommended pumping rate 80 G.P.H.

with pump setting of 80 feet below ground surface

Well Log / Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
~~Till and Boulder rock. Grey hard lime stone~~	~~0~~	~~16~~	85	fresh
~~and sand stone.~~	~~16~~	~~25~~		
~~SAND STONE~~	~~25~~	~~89~~		
BOULDER TILL	0	16		
HARD GREY LIMESTONE	16	25		
SANDSTONE	25	89	85	FRESH

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

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

Drilling or Boring Firm J. B. Dufresne Co. Ltd.

Address Ottawa, Ontario.

Licence Number 194

Name of Driller or Borer W. Roy

Address Hull

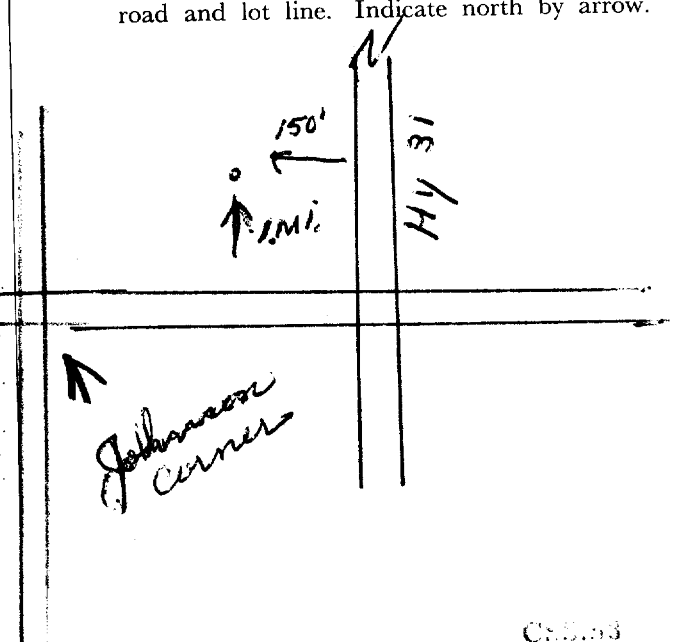
Date Oct 10/60

J B Dufresne

(Signature of Licensed Drilling or Boring Contractor)

Location of Well

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



Form 7 15M Sets 60-5930

OWRC COPY

316/52

UTM |1|8|Z |4|5|3|9|7|0| E
|5|R |5|0|1|7|1|2|0| N

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

Basin |2|5|

GROUND WATER BRANCH
15 № 2180
AUG 15 1961
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 RP Lot 22 Date completed 29 (day) JUNE month 61 year)

[redacted] ddress BILLINGS BRIDGE

Casing and Screen Record	
Inside diameter of casing	4"
Total length of casing	10'
Type of screen	—
Length of screen	—
Depth to top of screen	—
Diameter of finished hole	4"

Pumping Test	
Static level	6'
Test-pumping rate	4 G.P.M.
Pumping level	8
Duration of test pumping	1 HR
Water clear or cloudy at end of test	CLEAR
Recommended pumping rate	4 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	Kind of water (fresh, salty, sulphur)
LOAM	0	6		
GREY LIMESTONE	6	55	55	FRESH

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

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

Drilling or Boring Firm N MEAGHER

Address OTTAWA

Licence Number 245

Name of Driller or Borer SAME

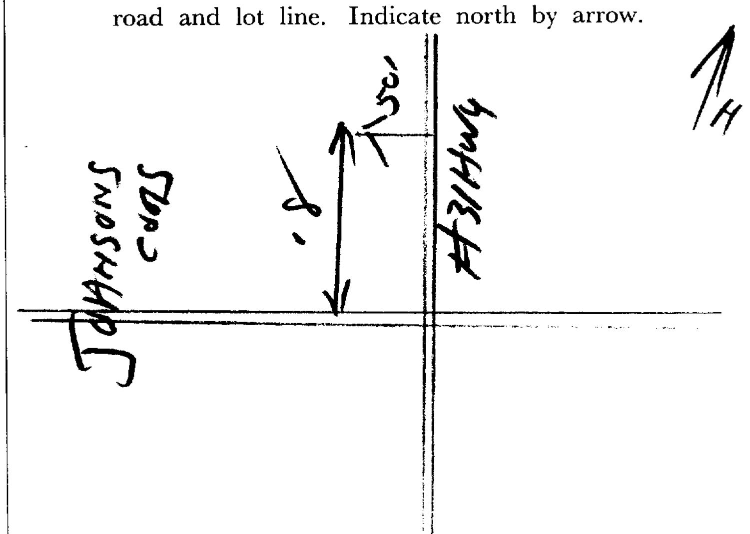
Address

Date AUG 9/61

M Meagher
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

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



Form 7 15M Sets 60-5930

OWRC COPY

up 31G/5a

UTM 18 Z 415318 1010 E
5 R 5011715 3 10 N

Elev. 4 R 0 31 15

Basin 25 Carleton
County or District

Con. 4 RF Lot 21 ~~22~~

2181

The Ontario Water Resources Commission Act

WATER WELL RECORD

Township, Village, Town or City Gloucester

Date completed 26 (day) July (month) 62 (year)

Address Billings Bridge

Casing and Screen Record

Inside diameter of casing 4
Total length of casing 21
Type of screen —
Length of screen —
Depth to top of screen
Diameter of finished hole 4

Pumping Test

Static level 8
Test-pumping rate 5 G.P.M.
Pumping level 10
Duration of test pumping 1 HR
Water clear or cloudy at end of test cc
Recommended pumping rate 5 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	21		
LIMESTONE	21	46	46	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 McMeagher

Address Ottawa

Licence Number 618

Name of Driller or Borer Sams

Address

Date Aug 24

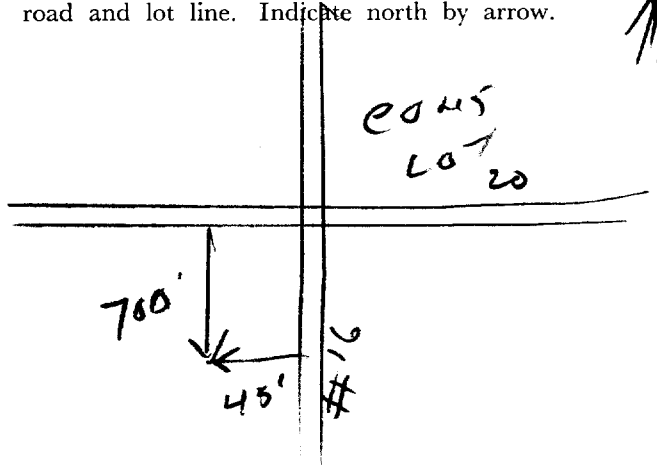
McMeagher
(Signature of Licensed Drilling or Boring Contractor)

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

316/50.

UTM | 18 Z | 4512131410 E
| 5 R | 5101157210 N
Elev. | 14 R | 6V8714
Basin | 2 ST | | |
Lot 23

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

15 No. 2183

GROUND WATER BRANCH
JAN 14 1958
ONTARIO WATER RESOURCES COMMISSION

Water-Well Record

[redacted] ip, Village, Town or City Gloucester
Village, Town or City)
ddress Johnstons Corners

Date completed 12th December 1957
(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 5"
Length(s) 85'
Type of screen -- None
Length of screen

Pumping Test

Static level 50'
Pumping rate 400 gph
Pumping level 55'
Duration of test 24 hr.

Well Log

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)
sand & boulders	0	85			
limestone	85	116	116	66	fresh

Water Record

For what purpose(s) is the water to be used?
~~clear~~ farm
Is water clear or cloudy? ~~farm~~ clear
Is well on upland, in valley, or on hillside?
upland
Drilling firm F.A. McLean & Son
Address

Name of Driller A. Scharf
Address

Licence Number

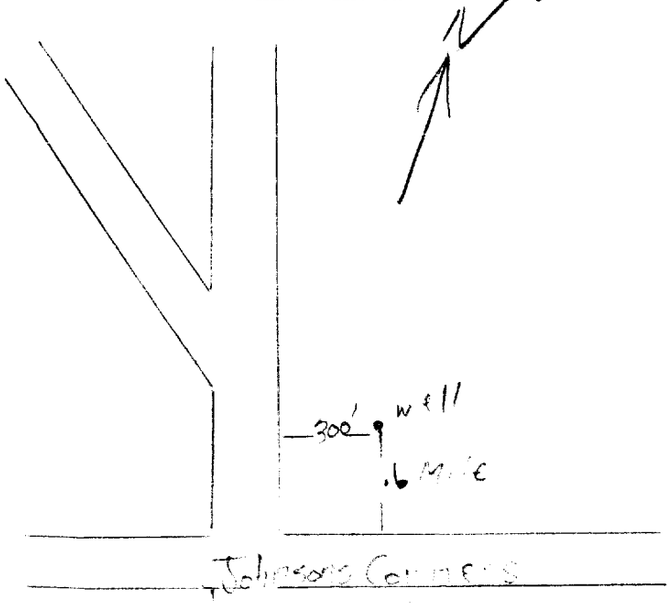
I certify that the foregoing statements of fact are true.

Date Jan 1

Signature of Licensee

Location of Well

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



Form 5

31G/5a.

GROUND WATER BRANCH
JUN 1 1962
15 No. 2184
ONTARIO WATER RESOURCES COMMISSION

UTM | 18 | Z | 4512171810 | E
| 5 | R | 5101591710 | N

The Ontario Water Resources Commission Act

Elev. | 4 | R | 013417 |

WATER WELL RECORD

Basin | 215 | County or District Carleton | Township, Village, Town or City Gloucester

Con IV RE Lot 23 | Date completed 9 (day) May (month) 1962 (year)

[redacted] Address c/o McRostie & Associates Ottawa

Casing and Screen Record

Inside diameter of casing 6 5/8"
Total length of casing 37'
Type of screen none
Length of screen —
Depth to top of screen —
Diameter of finished hole 6 1/2"

Pumping Test

Static level 7'
Test-pumping rate 100 G.P.M.
Pumping level 15'
Duration of test pumping 24 hrs
Water clear or cloudy at end of test clear
Recommended pumping rate 100 G.P.M.
with pump setting of 15 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)
C SANDY loam	0	3		
Fine Sand	3	36		
sandstone	36	51	47	Fresh

For what purpose(s) is the water to be used? Racetrack
Domestic & Other Uses

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 196

Name of Driller or Borer H. Sally

Address

Date May 10, 1962

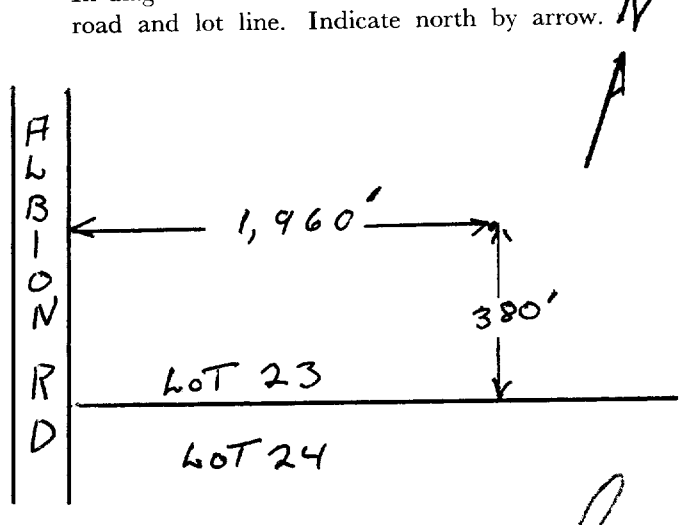
C D McLean
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M Sets 60-5930

OWRC COPY

Location of Well

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



CSS.38

316/52

UTM |1|8|z |4|5|4|1|1|3|0| E

|9|R |5|0|1|1|6|2|8|0| N

Elev. |9|R |0|3|8|0|

Rideau Front

Basin ~~Z15~~ | | | |

Lot - 24

ONTARIO

The Well Drillers Act

Department of Mines, Province of Ontario

RECEIVED DEC 12 1952 GEOLOGICAL BRANCH DEPARTMENT of MINES

15 No. ~~185~~

Water Well Record

County or District Carleton Tp. Gloucester Con. 4 RF Lot 24 Pt. Lot

[redacted] South Gloucester Acres

[redacted] (including pump)

Pipe and Casing Record		Pumping Test	
Casing diameter(s)	5 in	Date	
Length(s) of casing(s)	18 feet	Developed Capacity	
Length of screen		Duration of Test	1 hour
Type of screen		Pumping Rate	200 P.H.
Type of pump		Drawdown	22 feet
Capacity of pump		Static level of completed well	14 feet
Depth of pump setting		Is well a gravel-wall type?	

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? house

How far is well from possible source of contamination? 30 feet

What is source of contamination? septic

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
~~74 feet~~ 56'	fresh	42

Well Log

Drift and Bedrock Record	From 0 ft.	To ft.
Loam	0	18
Grey lime	18	38 56

Location of Well

In diagram below show distances of well from road and lot line

(over)

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

Drilling Firm Christy

Address

Recorded by W. C. Christy Address Navan

Date Dec 8 Licence Number 365

UTM 18 Z 4542110 E

5 R 5016440 N

Elev. 4 R 0384

Basin 25

Lot 24

316/52

ONTARIO

RECEIVED JAN 22 1957 GEOLOGICAL BRANCH DEPARTMENT OF MINES

15 № 2186

The Water-well Drillers Act, 1954

Department of Mines

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City [illegible]

[redacted] Village, Town or City)

[redacted] ddress Billings Bridge

(day) (month) (year)

Pipe and Casing Record	
Casing diameter(s)	4 inch
Length(s)	16 feet
Type of screen	
Length of screen	

Pumping Test	
Static level	5 ft
Pumping rate	219 gal PER-HR
Pumping level	8 feet
Duration of test	1 hr

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)
Black loam and gravel boulders	0	6		62 feet	fresh
Black hard limestone	6	35	33 feet		
hard grey limestone	35	60			
DOLOMITE	60	70	70		

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

Is water clear or cloudy? Clear

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

Drilling firm

Address

Name of Driller [illegible]

Address [illegible]

Licence Number 337

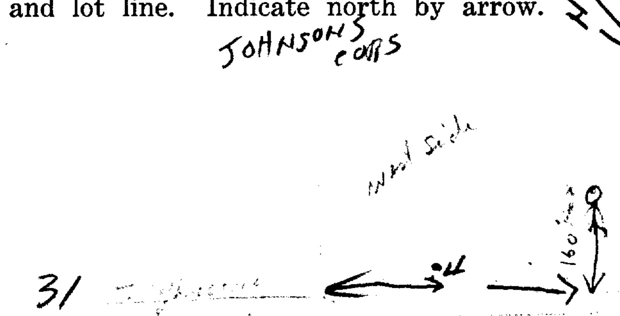
I certify that the foregoing statements of fact are true.

Date Dec 20 [illegible signature]

Signature of Licensee

Location of Well

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



Form 5

31G/5a.

UTM |18|Z |415216|210|E
|5|R |5011516|10|N

Elev. |4|R |013615|

Basin |215| |C|

County or District Carleton

Township, Village, Town or City Gloucester

Con. IV RF Lot 24

Date completed 25 (day) April (month) 1962 (year)

[redacted]

Address J. McBastie & Associates Ottawa

GROUND WATER BRANCH
JUN 15 1962
ONTARIO WATER RESOURCES COMMISSION
No 2189

The Ontario Water Resources Commission Act

WATER WELL RECORD

Casing and Screen Record

Inside diameter of casing 6 5/8"

Total length of casing 51'

Type of screen none

Length of screen —

Depth to top of screen —

Diameter of finished hole 6 1/2"

Pumping Test

Static level 30'

Test-pumping rate 8 G.P.M.

Pumping level 43'

Duration of test pumping 4 hrs

Water clear or cloudy at end of test cloudy

Recommended pumping rate 8 G.P.M.

with pump setting of 43' 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)
sandy loam	0	3		
gravel & boulders	3	47		
sandstone	47	60	60	Fresh

For what purpose(s) is the water to be used? RAGE TRACK
Domestic & Other uses

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

Drilling or Boring Firm McLean Water Supply Ltd.

Address 1532 Raven Ave
Ottawa

Licence Number 196

Name of Driller or Borer H. Sally

Address

Date May 10, 1962

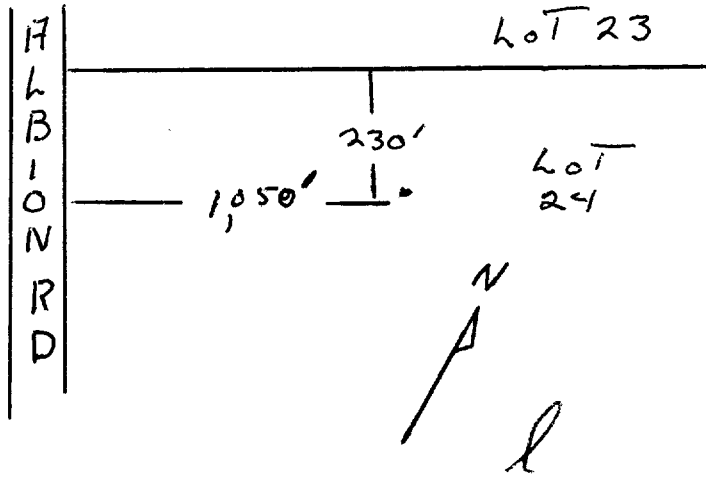
D McLean
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M Sets 60-5930

OWRC COPY

Location of Well

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



CS5.53

316/50

UTM |1|18|z |4|5|4|1|1|0| E
|5| R |5|0|1|6|9|2|0| N

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

Basin |2|5|

Kidan Front 50 Con V Lot 23

The Ontario Water Resources Commission Act

WATER WELL RECORD

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

Con. V RF Lot 23 Date completed 14 (day) Dec (month) 1964 (year)

[redacted] Address Box 254 RR6, Ottawa

Casing and Screen Record

Inside diameter of casing	5"
Total length of casing	10'
Type of screen	none
Length of screen	—
Depth to top of screen	—
Diameter of finished hole	5"

Pumping Test

Static level	20'
Test-pumping rate	4 G.P.M.
Pumping level	65'
Duration of test pumping	1 1/2 hrs
Water clear or cloudy at end of test	cloudy
Recommended pumping rate	4 G.P.M.
with pump setting of	75 feet below ground surface

Well Log / Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
loam	0	2		
Hard Sandstone	2	65		
Red Granite	65	79	60 - 79	fresh

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

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

Drilling or Boring Firm McLean Water Supply LTd

Address 1532 Raven Ave Ottawa

Licence Number 1328

Name of Driller or Borer H. Sally

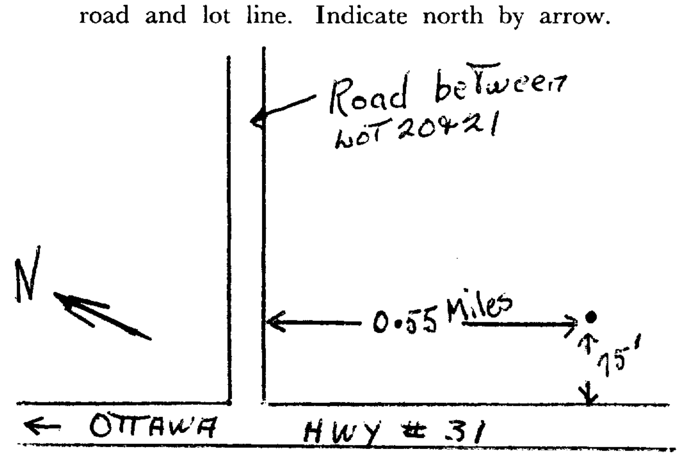
Address

Date Dec 14 1964

C. J. McLean
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

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



Form 7 15M-60-4138

OWRC COPY

316/58

UTM 18 Z 4543660 E
5 R 5016310 N
Rideau Front
Elev. 4 R 94012
Con V
Basin 25
Lot 24

ONTARIO

15 No. 2231
GROUND WATER BRANCH
JAN 13 1958
ONTARIO WATER RESOURCES COMMISSION

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District: Carleton
Township, Village, Town or City: Gloucester
Con. ~~24~~ 5 Lot ~~5~~ 24 Street and Number (if in Village, Town or City)
Owner [redacted] Address Billings Bridge P.O.
Date completed 20 (day) Sept (month) 57 (year)

Pipe and Casing Record		Pumping Test	
Casing diameter(s)	4"	Static level	16
Length(s)	11'	Pumping rate	300 gal/hr
Type of screen		Pumping level	68
Length of screen		Duration of test	1 hr

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)
fill	0	3			
Grey limestone	3	101	92	76	fresh

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: McJohnston Drilling Co Ltd
Address: 1340 Bank, Ottawa
Name of Driller: L. Kerr
Address: Here

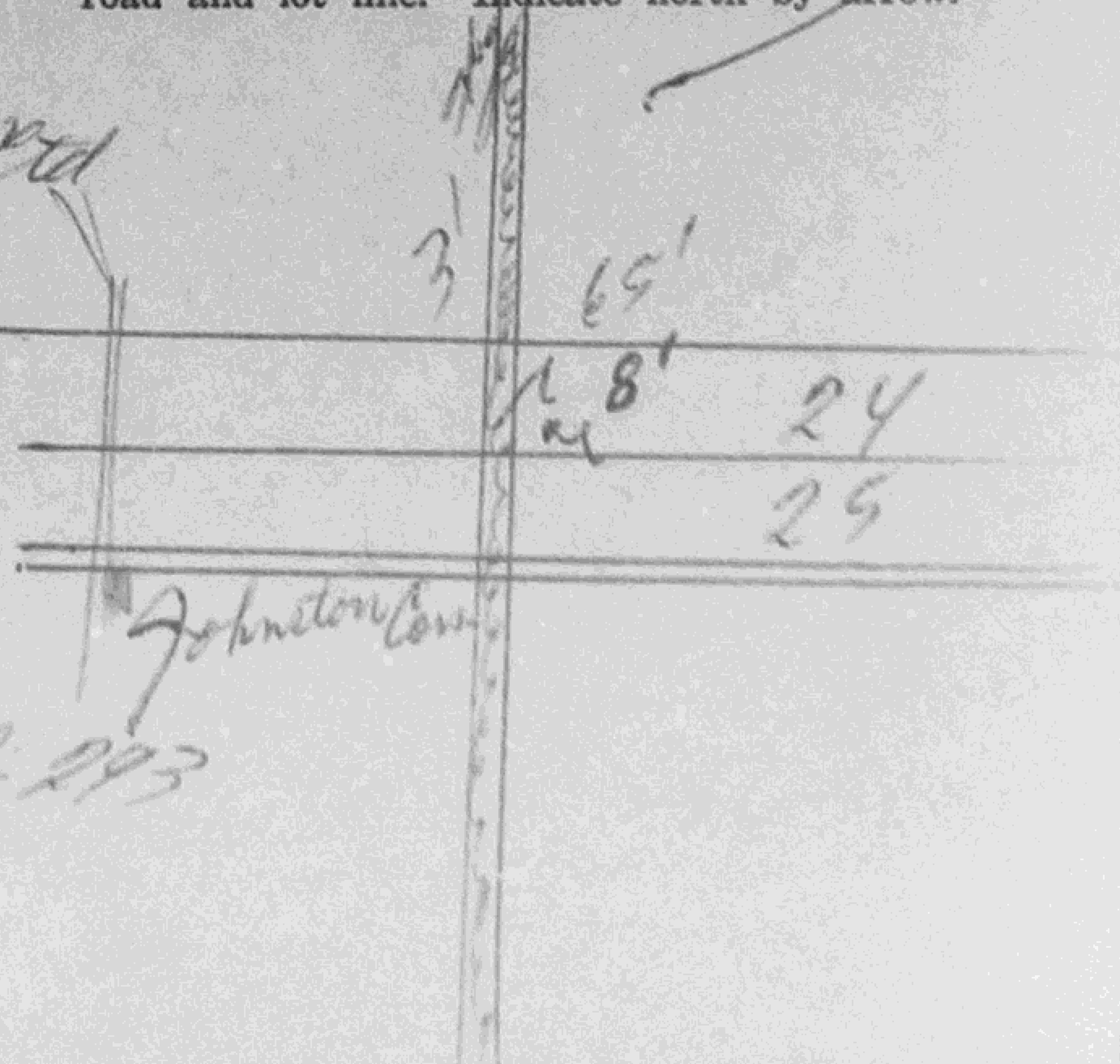
Licence Number

I certify that the foregoing statements of fact are true.

Date Jan 11/58 R. G. Rennick Lic 293
Signature of Licensee
Supt

Location of Well

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



Form 5

316/50

UTM | 1 | 8 | Z | 4 | 5 | 4 | 3 | 5 | 0 | E

| 5 | R | 5 | 0 | 1 | 6 | 4 | 3 | 0 | N

Elev. | 4 | R | 0 | 3 | 9 | 6 |

Basin | 23 | | 24 |

15 № 2252

The Ontario Water Resources Commission Act, 1957

WATER WELL RECORD

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

[redacted]ate completed October 31st, 1960 (day month year)

[redacted]ldress R.R. No 4, Ottawa Ont.

Casing and Screen Record	
Inside diameter of casing	6"
Total length of casing	18'
Type of screen	–
Length of screen	–
Depth to top of screen	–
Diameter of finished hole	100'

Pumping Test	
Static level	32'
Test-pumping rate	6 G.P.M.
Pumping level	90'
Duration of test pumping	1 hour.
Water clear or cloudy at end of test	cloudy
Recommended pumping rate	5 G.P.M.
with pumping level of	90'

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, sulphur)
Shaley Limestone.	0	22.	94		fresh.
Grey Limestone	22	100	98	68'	fresh

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

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

Drilling Firm F. E. Johnston Drilling Co. Ltd

Address 1348 Bank St.
Ottawa Ontario.

Licence Number 470

Name of Driller B. Klatt

Address Kars Ontario.

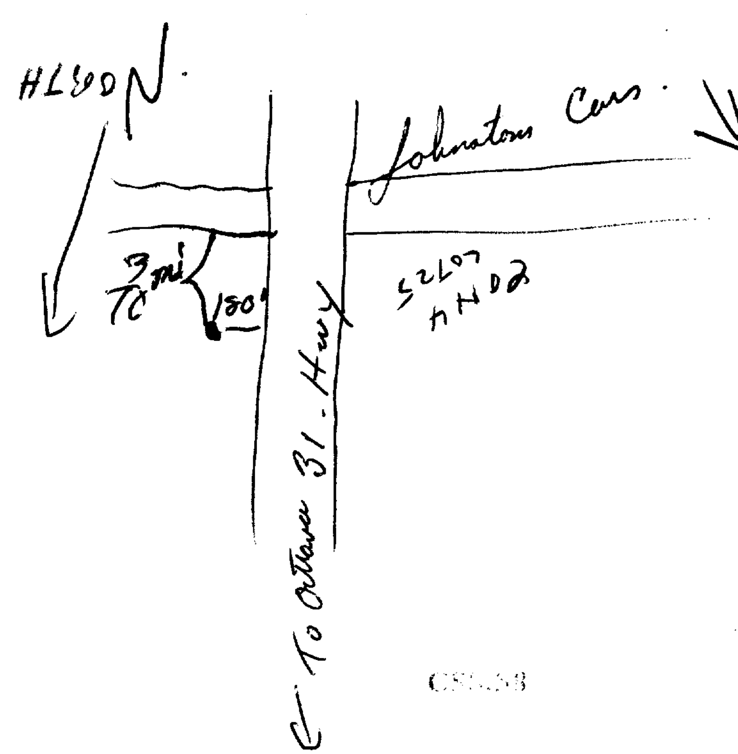
Date Feb 20, 1961.

F. E. Johnston Drilling
(Signature of Licensed Drilling Contractor)
Per [illegible]

Form 5

Location of Well

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



w Rideau Front 316/50

UTM |1|8| Z |4|5|4|3|2|0| E

|5| R |5|0|1|1|6|6|6|0| N

Elev. |4| R |0|3|8|0|

The Ontario Water Resources Commission Act

WATER WELL RECORD

Basin |2|5| County or District Carleton | Township, Village, Town or City Gloucester

Con. 5 RF Lot 24 | Date completed 7 (day) JAN (month) 63 (year)

[redacted]dress S. Gloucester

Casing and Screen Record

Inside diameter of casing 4

Total length of casing 12

Type of screen —

Length of screen —

Depth to top of screen

Diameter of finished hole 4

Pumping Test

Static level 9

Test-pumping rate 3 G.P.M.

Pumping level 12

Duration of test pumping 1 Hr

Water clear or cloudy at end of test Clear

Recommended pumping rate 3 G.P.M.

with pump setting of 70 feet below ground surface

Well Log / Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
Loam	0	10		
Limestone	10	75	70	F

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

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

Drilling or Boring Firm M. Meagher

Address Ottawa

Licence Number 618

Name of Driller or Borer Same

Address

Date Feb 8/63

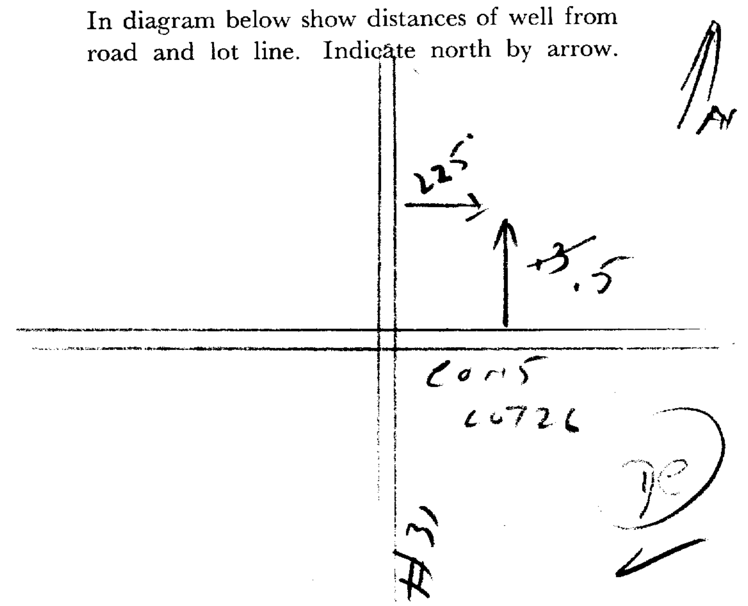
M Meagher
(Signature of Licensed Drilling or Boring Contractor)

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.



1-8-454130

4 R 5 X 1 1 6 6 4 0

5 P 0 3 6 5

2 5

6722

9622

The Ontario Water Resources Commission Act

WATER WELL RECORD

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

Con. 8 TW R.F. Lot 23 Date completed 25 (day) Aug. (month) 1968 (year)

[redacted] ress Manotick Ont.

Casing and Screen Record

Inside diameter of casing 4 inch

Total length of casing 79

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 4 inch

Pumping Test

Static level 30

Test-pumping rate 10 G.P.M.

Pumping level 35

Duration of test pumping 30 min.

Water clear or cloudy at end of test cloudy

Recommended pumping rate 4 G.P.M.

with pump setting of 70 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)
Sandy soil	0	3	[redacted]	fresh
Brown fine sand	3	60	80	
sand and gravel	60	[redacted]79		
Grey limestone	79	82		

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

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

Drilling or Boring Firm Maurice Cayer

Address Casselman Ont.

Licence Number 2911

Name of Driller or Borer

Address

Date 5 August 1968

Maurice Cayer

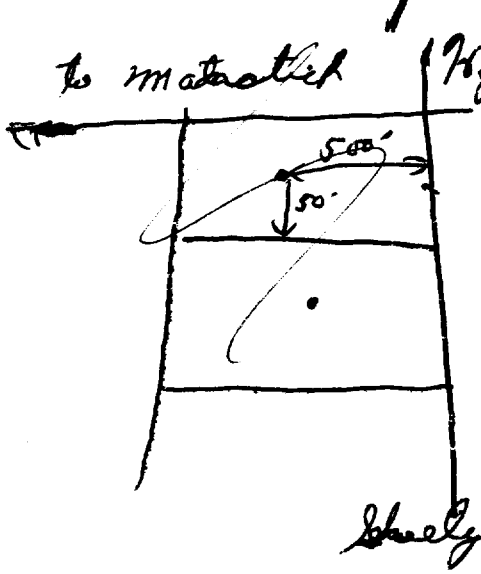
(Signature of Licensed Drilling or Boring Contractor)

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.



CSL 58

The Ontario Water Resources Commission Act

WATER WELL RECORD

Water management in Ontario

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

11 | 1510190 | MUNICIP 15002 | CON. RF | C | 05

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Gloucester	Con. 5 - R.F.	024

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Armstrong Bros. Const.	R.R. 6, Hwy. 31 Ottawa	DAY 23 MO 07 YR 69

UTM: ZONE 18 | EASTING 454260 | NORTHING 5010620 | RC. 4 | ELEVATION 0380 | RC. 5 | BASIN CODE 25

21

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
		Deepening Well			
Dark grey rock			Sandstone	99	224

31: 0099 23 | 0224 18

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0130	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0175	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0219	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
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	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	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER

PUMPING RATE: 0040 GPM. | DURATION OF PUMPING: 04 HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
100 FEET	135 FEET	1 ☑ PUMPING 2 ☐ RECOVERY	120 FEET	135 FEET	135 FEET	135 FEET

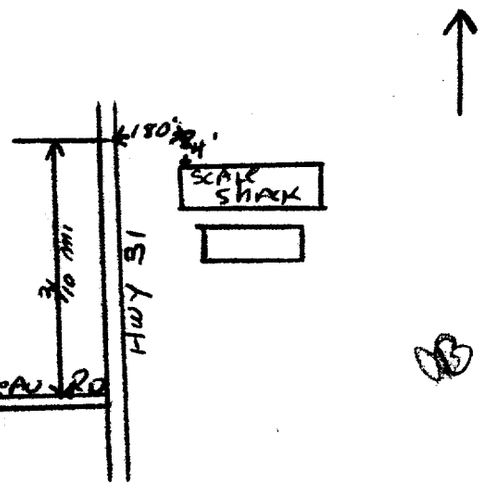
IF FLOWING, GIVE RATE: GPM. | PUMP INTAKE SET AT: 224 FEET | WATER AT END OF TEST: 1 ☑ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP | RECOMMENDED PUMP SETTING: 175 FEET | RECOMMENDED PUMPING RATE: 0020 GPM.

50-53: 001.1 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

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



DRILLERS REMARKS:

FINAL STATUS OF WELL

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

WATER USE 01

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

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: F.E. Johnston Drilling Co. Ltd | LICENCE NUMBER: 3492

ADDRESS: Box 4134, Stn. "E", Ottawa, Ont.

NAME OF DRILLER OR BORER: R. Bisson | LICENCE NUMBER

SIGNATURE OF CONTRACTOR: F.E. Johnston | SUBMISSION DATE: DAY 23 MO 7 YR 69

OWRC COPY

OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 3002 | DATE RECEIVED: 021069

DATE OF INSPECTION | INSPECTOR: Chilly PIP

REMARKS:

KF
CON 5
LOT 24

The Ontario Water Resources Commission Act

WATER WELL RECORD

Water management in Ontario

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

11 | 1510191 | MUNICIP. 15002 | CON. RF | C 05

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT 25-27
Carleton	Gloucester	Con. 5 - R.F.	024

OWNER (SURNAME FIRST) 28-47	ADDRESS	DATE COMPLETED 48-53
Armstrong Bros. Const.	R.R. 6, Hwy. 31, Ottawa, Ontario.	DAY 22 MO 07 YR 69

21 UTM ZONE 18 EASTING 454280 NORTHING 5012590 RC. 4 ELEVATION 9382 RC. 5 BASIN CODE 25

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	TO
Red	Clay	Sand	Ground	0	4
Grey	Rock		Limestone	4	60
Grey			Sandstone	60	194

31 | 0004705409 | 0060215 | 0194218

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0060	☒ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
0115	☒ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
0192	☒ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH – FEET FROM	TO
06 (6¼)	☒ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE	.188	0	25 (0025)
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☒ OPEN HOLE			0194
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ 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	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
0	25	fondu cement

71 PUMPING TEST

PUMPING TEST METHOD: ☒ PUMP ☐ BAILER | PUMPING RATE: 0040 GPM. | DURATION OF PUMPING: 04 HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
110 FEET	135 FEET	120 FEET	135 FEET	135 FEET	135 FEET

WATER LEVELS DURING: ☒ PUMPING ☐ RECOVERY

IF FLOWING, GIVE RATE: GPM. | PUMP INTAKE SET AT: BOTTOM FEET | WATER AT END OF TEST: ☒ CLEAR ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP | RECOMMENDED PUMP SETTING: 175 FEET | RECOMMENDED PUMPING RATE: 0010 GPM.

001.6 GPM./FT. SPECIFIC CAPACITY

FINAL STATUS OF WELL

☒ WATER SUPPLY ☐ OBSERVATION WELL ☐ TEST HOLE ☐ RECHARGE WELL ☐ ABANDONED, INSUFFICIENT SUPPLY ☐ ABANDONED, POOR QUALITY ☐ UNFINISHED

WATER USE 01

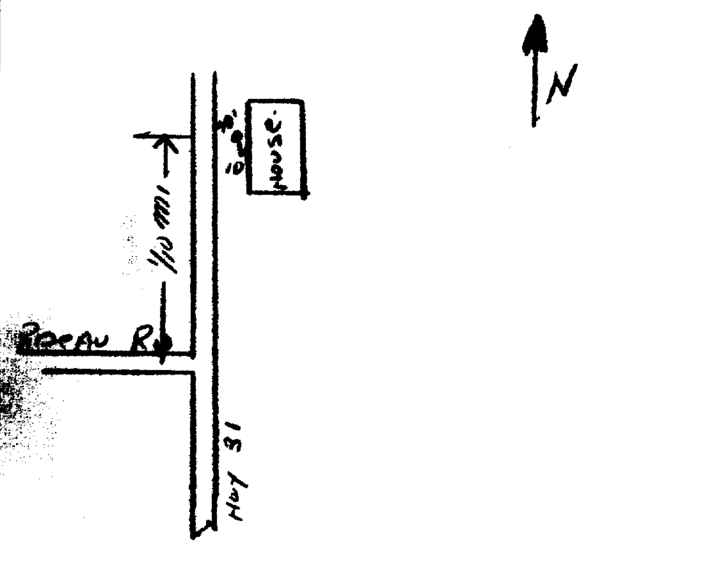
☒ DOMESTIC ☐ STOCK ☐ IRRIGATION ☐ INDUSTRIAL ☐ OTHER ☐ COMMERCIAL ☐ MUNICIPAL ☐ PUBLIC SUPPLY ☐ COOLING OR AIR CONDITIONING ☐ NOT USED

METHOD OF DRILLING

☐ CABLE TOOL ☐ ROTARY (CONVENTIONAL) ☐ ROTARY (REVERSE) ☒ ROTARY (AIR) ☐ AIR PERCUSSION ☐ BORING ☐ DIAMOND ☐ JETTING ☐ DRIVING

LOCATION OF WELL

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



DRILLERS REMARKS:

CONTRACTOR

NAME OF WELL CONTRACTOR: F.E. Johnston Drilling Co. Ltd. | LICENCE NUMBER: 3492

ADDRESS: P.O. Box 4134, Stn. "E", Ottawa, Ont.

NAME OF DRILLER OR BORER: R. Bisson | LICENCE NUMBER

SIGNATURE OF CONTRACTOR | SUBMISSION DATE: DAY 23 MO. 7 YR. 69

OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 3002 | DATE RECEIVED: 021069

DATE OF INSPECTION | INSPECTOR

REMARKS:

OWRC COPY

31 G/5a

The Ontario Water Resources Commission Act

WATER WELL RECORD

Water management in Ontario

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

11 | 1510717 | MUNICIP. 15002 | CON. RF | 95

COUNTY OR DISTRICT: CARLETON
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: GLOUCESTER
CON., BLOCK, TRACT, SURVEY, ETC.: ~~II~~ RF
LOT: 023
DATE COMPLETED: DAY 15 MO. ~~NOV~~ 11 YR. 70
[redacted] 31 HIGHWAY LEITRUM
ELEVATION: 0342 RC. 4 | BASIN CODE: 25T

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
BROWN	RUBBLE	(FILLED IN LOT TO HIGHWAY GRADE)		0	6
GREY	LIMESTONE			6	52

31 0000012 0052215

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0050	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	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	0020
~~04~~				~~20~~
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0052
	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	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	0006 GPM.	~~02~~ HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
007 FEET	015 FEET	1 [redacted] 2 ☒ RECOVERY	007 FEET	007 FEET	007 FEET	007 FEET

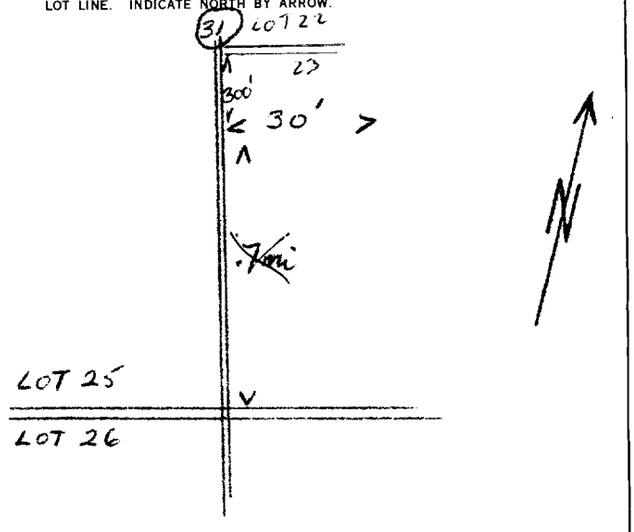
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM.	30 FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	040 FEET	0005 GPM.

50-53 0008 GPM./FT. SPECIFIC CAPACITY

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 (54)
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 ☒ 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: W. MOLOUGHNEY — LICENCE NUMBER: 3701
ADDRESS: 1110 FISHER
NAME OF DRILLER OR BORER: W. MOLOUGHNEY — LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: W. Moloughney — SUBMISSION DATE: DAY 11 MO. FEB YR. 71

OWRC COPY

OFFICE USE ONLY

DATA SOURCE (58): 1 | CONTRACTOR (59-62): 3701 | DATE RECEIVED (63-68): 230271
DATE OF INSPECTION | INSPECTOR
REMARKS:
P
WI

The Ontario Water Resources Commission Act

WATER WELL RECORD

3155a

Water management in Ontario

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

11 | 1511276 | MUNICIP. 15002 | CON. RF | C | 04

COUNTY OR DISTRICT: Reg Mun Ottawa-Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Gloucester
CON., BLOCK, TRACT, SURVEY, ETC.: 4 R.F.
LOT: ~~Pt 24~~ 024
DATE COMPLETED: DAY 26 MO. 06 YR. 71

[redacted], 6, Hwy 31, Ottawa, Ontario

UTM | RC. 4 | ELEVATION 0375 | RC. 5 | BASIN CODE 25

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
Brown	sand	loam	sandy loam	0	1
grey	limestone		medium	1	72

31 | 0001162802 | 0072215

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0043	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0049	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0058	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0067	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	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	~~20~~ 0020
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		20	~~72~~ 0072
	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	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

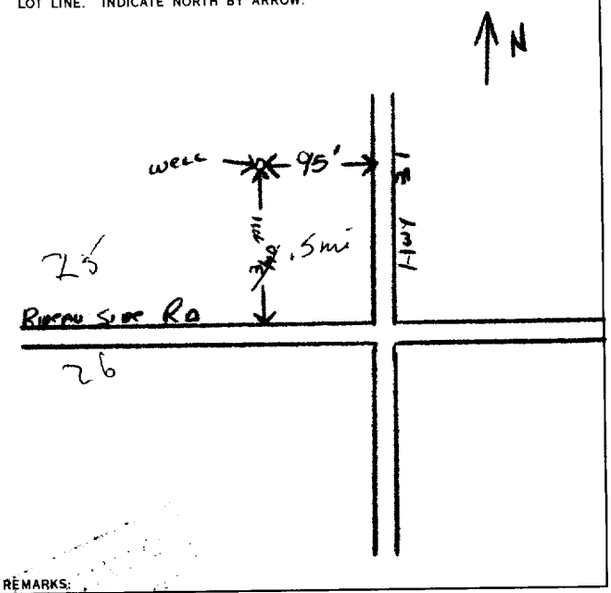
PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER
PUMPING RATE: 0015 GPM.
DURATION OF PUMPING: 01 HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☐ PUMPING 2 ☒ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
019	~~070~~	025	019	019	019
~~1811~~ FEET	~~70~~ FEET	~~2411~~ FEET	~~1912~~ FEET	~~1811~~ FEET	~~1811~~ FEET

IF FLOWING, GIVE RATE: N/A GPM.
PUMP INTAKE SET AT: 70 FEET
WATER AT END OF TEST: ☒ CLEAR 2 ☐ CLOUDY
RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP
RECOMMENDED PUMP SETTING: 070 FEET
RECOMMENDED PUMPING RATE: 0015 GPM.
50-53 000.3 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

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



DRILLERS REMARKS:

FINAL STATUS OF WELL

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

WATER USE 01

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

METHOD OF DRILLING

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: F.E. Johnston Drilling Co Ltd. | LICENCE NUMBER: 3002
ADDRESS: Box 4134, Stn. "E", Ottawa, Ontario.
NAME OF DRILLER OR BORER: R.W. Remick | LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: [signature] | SUBMISSION DATE: DAY 22 MO. 7 YR. 71

OWRC COPY

OFFICE USE ONLY

DATA SOURCE 1 | 58 | CONTRACTOR 3002 | 59-62 | DATE RECEIVED 270771 | 63-68 | 80
DATE OF INSPECTION | INSPECTOR
REMARKS:

The Ontario Water Resources Commission Act

WATER WELL RECORD

Water management in Ontario

1. PRINT ONLY IN SPACES PROVIDED
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11 | 1512265 | MUNICIP. 45002 | CON. RF 05

COUNTY OR DISTRICT: Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Gloucester
CON., BLOCK, TRACT, SURVEY, ETC.: 5 RF
LOT: S ½ 22
OWNER (SURNAME FIRST): [redacted]
ADDRESS:
DATE COMPLETED: DAY 24 MO. ~~Nov.~~ 11 YR. 72
HING: 01170150 | RC. 4 | ELEVATION 03316 | RC. 4 | BASIN CODE 25

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	Sand & Stones	Sandy Clay & Stones	0	3
			Med. gray limestone	3	48

31 | 00036 05 28 12 | 00048 2 15

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0008	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0001	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0034	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"~~	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.250	0+6"	0012 ~~12+6"~~
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0048
	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	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

PUMPING TEST

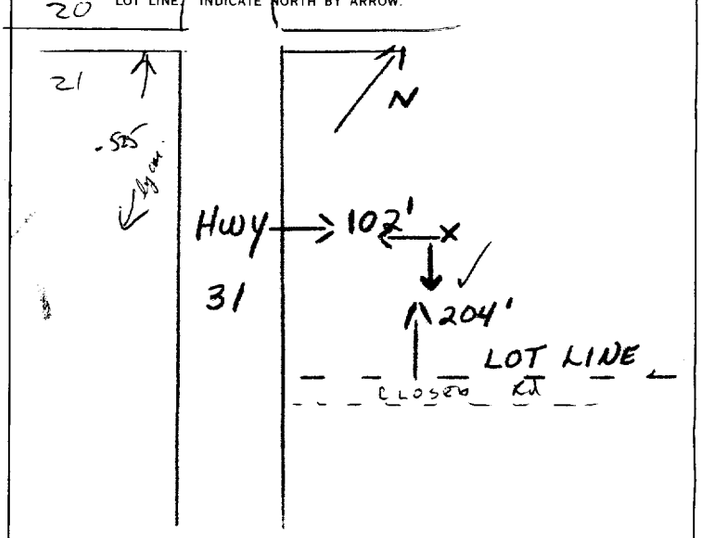
PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	0008 GPM.	01 HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
001 FEET	048 FEET	1 ☐ PUMPING 2 ☒ RECOVERY	~~0~~ FEET	004 FEET	~~0~~ FEET	004 FEET

IF FLOWING, GIVE RATE: GPM.
PUMP INTAKE SET AT: 48 FEET
WATER AT END OF TEST: ☒ 1 CLEAR 2 ☐ CLOUDY
RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP
RECOMMENDED PUMP SETTING: 030 FEET
RECOMMENDED PUMPING RATE: 0008 GPM.
000.2 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

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



DRILLERS REMARKS:

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

WATER USE 01: 1 ☒ DOMESTIC; 2 ☐ STOCK; 3 ☐ IRRIGATION; 4 ☐ INDUSTRIAL; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; ☐ OTHER; 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

NAME OF WELL CONTRACTOR: ~~F.E. Johnston Drilling Co.~~ | LICENCE NUMBER: 3002
ADDRESS: ~~P.O. Box 4134 Stn "E" Ottawa, Ont.~~
NAME OF DRILLER OR BORER: ~~J. Remick~~ | LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: | SUBMISSION DATE DAY MO. YR.

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OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 3002 | DATE RECEIVED: 150173
DATE OF INSPECTION: | INSPECTOR: K
REMARKS: P K WI

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

Ontario

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11 | 1513436 | MUNICIP. 15004 | CON. RF C04 | 31 G/5a

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
~~LETRIM~~ Ottawa-Carleton	GLOUCESTER	IV RFC	022

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
UNITED CO - OP OF ~~ONTARIO~~ ONT	R. R. #6 OTTAWA, ONTARIO.	DAY 16 MO. 08 YR. 73

21 | ZONE 18 | EASTING 453850 | NORTHING 5017215 | RC. 6 | ELEVATION 0323 | 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	Top Soil		Soft	0	4
Brown	Soil	Boulder	Hard	4	12
Grey	Limestone	Clay	Soft Porous	12	16
White	Limestone	Limestone Grey	Medium Hard	16	50

31 | 0004692 | 0012613 | 00162150 | 0050115

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0048	☒ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06	☒ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE	.188	0	~~22~~ 0022
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE			
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ 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	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
☐ PUMP ☒ BAILER	0005 GPM	01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
014 FEET	025 FEET	030 FEET	030 FEET	030 FEET	030 FEET

WATER LEVELS DURING: ☒ PUMPING ☐ RECOVERY

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: 030 FEET | RECOMMENDED PUMPING RATE: 0005 GPM

50-53: 000.3

FINAL STATUS OF WELL

☒ WATER SUPPLY ☐ OBSERVATION WELL ☐ TEST HOLE ☐ RECHARGE WELL ☐ ABANDONED, INSUFFICIENT SUPPLY ☐ ABANDONED, POOR QUALITY ☐ UNFINISHED

WATER USE 01

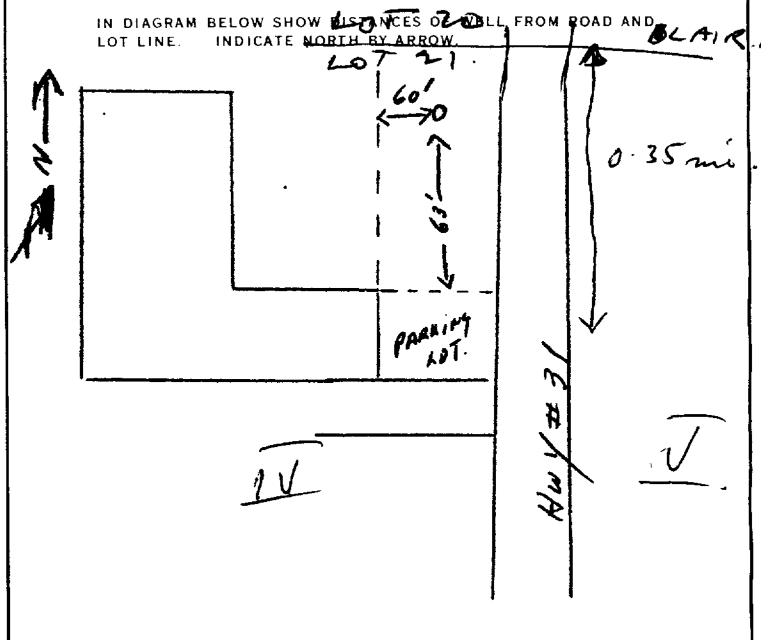
☒ DOMESTIC ☐ STOCK ☐ IRRIGATION ☐ INDUSTRIAL ☐ OTHER ☐ COMMERCIAL ☐ MUNICIPAL ☐ PUBLIC SUPPLY ☐ COOLING OR AIR CONDITIONING ☐ NOT USED

METHOD OF DRILLING

☐ CABLE TOOL ☐ ROTARY (CONVENTIONAL) ☐ ROTARY (REVERSE) ☒ ROTARY (AIR) ☐ AIR PERCUSSION ☐ BORING ☐ DIAMOND ☐ JETTING ☐ DRIVING

LOCATION OF WELL

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



DRILLERS REMARKS:

CONTRACTOR

NAME OF WELL CONTRACTOR	LICENCE NUMBER
HAWTHORNE DRILLING LIMITED	2557

ADDRESS: Box 4218 STATION "E" OTTAWA ONTARIO

NAME OF DRILLER OR BORER	LICENCE NUMBER
YVON AUBIN	2557

SIGNATURE OF CONTRACTOR: [signature] | SUBMISSION DATE: DAY 25 MO. 9 YR. 73

OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 2557 | DATE RECEIVED: 28 09 73

DATE OF INSPECTION | INSPECTOR

REMARKS: P-R

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 07-091

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

316/5a

Ontario

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11 — 1514664 — MUNICIP. 15002 — CON. RF — 04

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Gloucester	~~II~~ RF III	022.

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
CDR Canadian Industries Ltd.	Hwy #31 Ottawa Ont	DAY 20 M 02 YR. 25

21 — ZONE 18 — EASTING 453793 — NORTHING 5017090 — RC 4 — ELEVATION 0340 — 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	Sand Gravel	Boulders.	Dense	0	13
Black	Shale		Loose.	13	30
Grey	Limestone		Sound.	30	111
White	Sandstone		Sound	111	125

31 — 00136281113 00308117 01111215 01251118

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0032	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
0111	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 1/4 06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	22. 0022
5 7/8 06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		22 0125	
	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	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	PUMPING RATE GPM	DURATION OF PUMPING HOURS	MINS
1 ☒ PUMP 2 ☐ BAILER	0012	01	15

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
020 FEET	020 FEET	1 ☒ PUMPING 2 ☐ RECOVERY	020 FEET	020 FEET	020 FEET	020 FEET

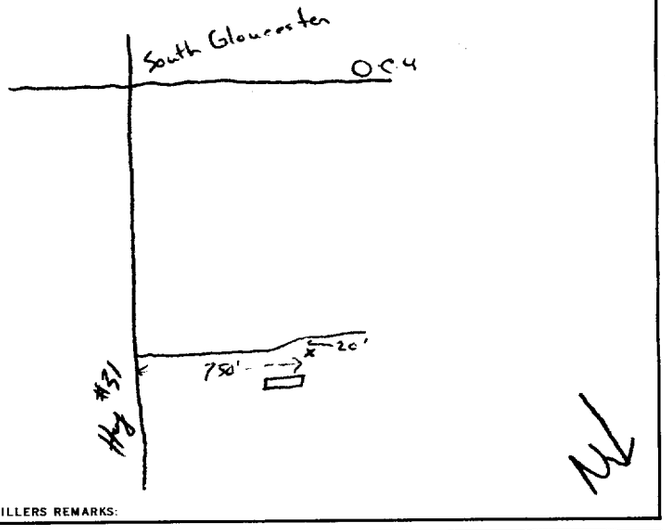
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
— GPM	80 FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	080 FEET	0008 GPM

50-53 0240 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 5317

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



DRILLERS REMARKS:

FINAL STATUS OF WELL 1

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

WATER USE 04

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 5

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: Hawthorne Drilling Ltd — LICENCE NUMBER: 2558

ADDRESS: PO Box 4218 Stat. E.

NAME OF DRILLER OR BORER: A. Emond — LICENCE NUMBER: 2558

SIGNATURE OF CONTRACTOR

SUBMISSION DATE: DAY 24 MO. 2 YR. 75

OFFICE USE ONLY

DATA SOURCE 1 — CONTRACTOR 2338 — DATE RECEIVED 2 2 75

DATE OF INSPECTION — INSPECTOR

REMARKS: CSS.58

P ✓

WI

FORM 7 MOE 07-091

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Ontario

The Ontario Water Resources Act

WATER WELL RECORD

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

11

514664

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Gloucester	III	22

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Canadian Industries Ltd	Hwy #31 Ottawa Ont	DAY 20 MO. 2 YR. 25

21 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	Sand Gravel	Boulders.	Dense	0	13
Black.	Shale		Loose.	13	30
Grey	Limestone		Sound.	30	111
White	Sandstone		Sound	111	125

31

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
32	1 ☒ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
111	1 ☒ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 1/4	1 ☒ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☐ OPEN HOLE	.188	0	22.
5 7/8	1 ☐ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☒ OPEN HOLE		22	125
	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	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	12 GPM	1 HOURS 15 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
20 FEET	20 FEET	1 ☐ PUMPING 2 ☐ RECOVERY	20 FEET	20 FEET	20 FEET	20 FEET

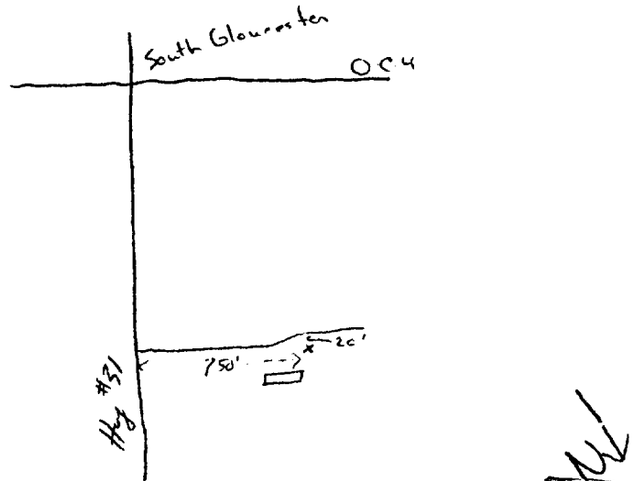
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
— GPM	80 FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	80 FEET	8 GPM

— — — • — GPM./FT. SPECIFIC CAPACITY

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; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; ☐ OTHER; 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	LICENCE NUMBER
Hawthorne Drilling Ltd	2558.

ADDRESS: PO Box 4218 Stat E.

NAME OF DRILLER OR BORER	LICENCE NUMBER
A. Emond.	2558

SIGNATURE OF CONTRACTOR

SUBMISSION DATE: DAY 24 MO. 2 YR. 25

OFFICE USE ONLY

DATA SOURCE	CONTRACTOR	DATE RECEIVED

DATE OF INSPECTION | INSPECTOR

REMARKS:

P

WI

FORM 7 MOE 07-0

MINISTRY OF THE ENVIRONMENT COPY

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

3165a

Ontario

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11 | 1514840 | MUNICIP. 15002 | CON. RF | 06

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Ottawa Carleton	Gloucester	~~Lot 23~~ Conc 5 RF	023

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Hume Trading Co Ltd	P O Box 254 R R #6.	DAY 11 MO 07 YR 75

21 | UTM ZONE 18 | EASTING 454143 | NORTHING 5016952 | RC 4 | ELEVATION 0345 | 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	Top Soil		Top Soil	0	3
Grey	Limestone		Hard	3	135

31 | 00036102 | 01357216

32

WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
010	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	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0	~~20~~ 0020
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		20	0135
	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	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: 0009 GPM | DURATION OF PUMPING: 01 HOURS 10 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING (1 ☒ PUMPING 2 ☐ RECOVERY)	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
020 FEET	090 FEET		090 FEET	090 FEET	090 FEET	090 FEET

IF FLOWING, GIVE RATE: — GPM | PUMP INTAKE SET AT: 90 FEET | WATER AT END OF TEST: 1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP | RECOMMENDED PUMP SETTING: 090 FEET | RECOMMENDED PUMP RATE: 0006 GPM

000.1 GPM./FT. SPECIFIC CAPACITY

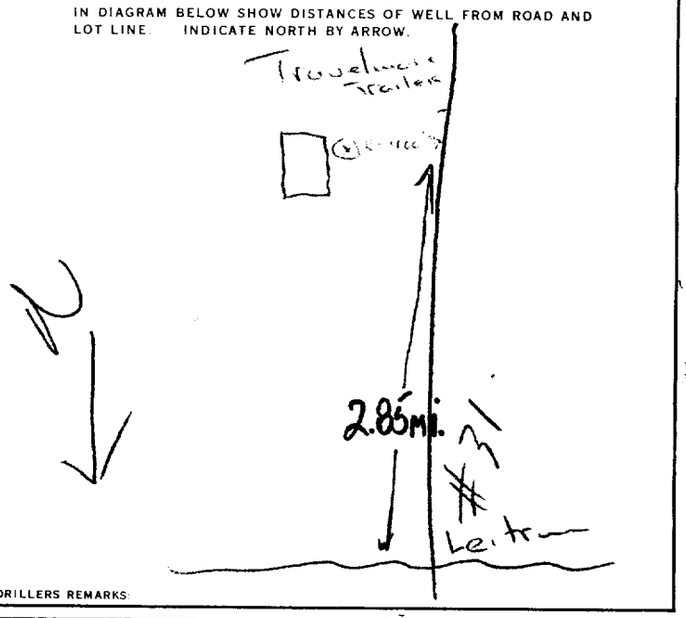
FINAL STATUS OF WELL 1: 1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE 01: 1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

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

LOCATION OF WELL 1654

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



DRILLERS REMARKS:

CONTRACTOR

NAME OF WELL CONTRACTOR: Hawthorne Drilling Ltd | LICENCE NUMBER: 2557

ADDRESS: P.O. Box 9218 Stn E. Ottawa

NAME OF DRILLER OR BORER: A. Emond. | LICENCE NUMBER: 2557

SIGNATURE OF CONTRACTOR | SUBMISSION DATE: DAY 15 MO. 7 YR. 75

OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 2557 | DATE RECEIVED: 06 08 75

DATE OF INSPECTION | INSPECTOR

REMARKS: P ✓ WI .

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FORM 7 MOE 07-091

MINISTRY OF THE ENVIRONMENT
The Ontario Water Resources Act

WATER WELL RECORD

3/65a

Ontario

2 P.M.

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(11) 1516052 | MUNICIP. 15002 | CON. RF | OS

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON. BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Gloucester	5 RF II	022

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Melco Investors Corp.	934 Sadler Cres. Ottawa, Ont. K2B 5H7	DAY 13 07 YR 77

(21) UTM ZONE 18 | EASTING 454099 | NORTHING 5017399 | RC 4 | ELEVATION 0330 | 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	sand	clay & boulders	fill	0	7
black	muck		soft	7	9
grey	hardpan	boulders	packed	9	26
grey	limestone		medium	26	43
grey	sandstone		hard	43	178

(31) 0007628051S | 0009803S5 | 0026214137S | 0043215785 | 0178218735

(32)

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0175	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
6¼	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0	028
06			28	178
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			178
	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	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

PUMPING TEST

(71) PUMPING TEST METHOD: 1 ☐ PUMP 2 ☒ BAILER | PUMPING RATE: 0015 GPM | DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
030 FEET	065 FEET		065 FEET	065 FEET	065 FEET	065 FEET

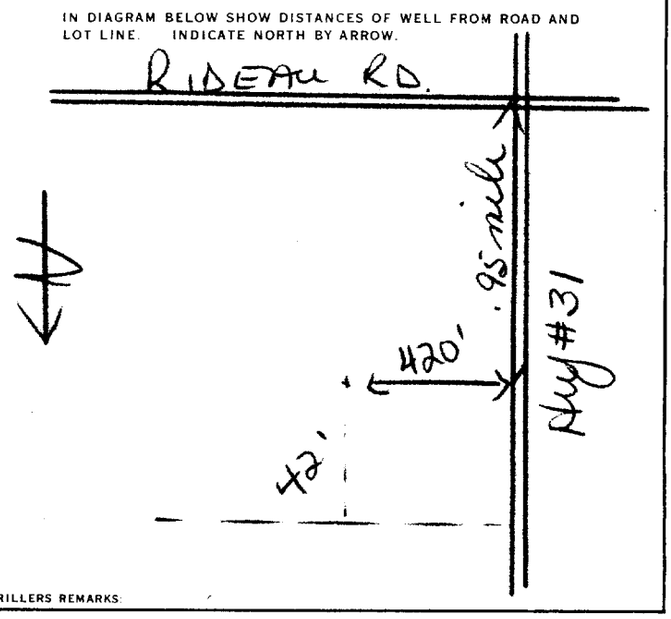
IF FLOWING, GIVE RATE: GPM | PUMP INTAKE SET AT: FEET | WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP | RECOMMENDED PUMP SETTING: 075 FEET | RECOMMENDED PUMPING RATE: 0005 GPM

50-53 ——.— GPM./FT. SPECIFIC CAPACITY

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

WATER USE 01: 1 ☐ DOMESTIC 2 ☒ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF DRILLING 5: 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: Capital Water Supply Ltd. | LICENCE NUMBER: 1558

ADDRESS: Box 490 Stittsville, Ontario

NAME OF DRILLER OR BORER: D. Kavanagh | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Walter Kavanagh | SUBMISSION DATE: DAY 15 MO. 7 YR. 77

OFFICE USE ONLY

DATA SOURCE 1 | CONTRACTOR 1558 | DATE RECEIVED 080877

DATE OF INSPECTION | INSPECTOR Kn

REMARKS: | P | WI

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FORM 7 MOE 07-091

Ministry of the Environment
Ontario

The Ontario Water Resources Act 31G5a
WATER WELL RECORD

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11 — 1517076 — MUNICIP 15002 — CON RF — 04

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY ETC	LOT
[redacted]	[redacted]cester	Con. 4 RF (RFIV)	23 (023)

[redacted] Hwy 31 Ottawa, Ontario — DATE COMPLETED: DAY 24 MO 07 YR 79

[redacted] 16599 — RC 4 — ELEVATION 0360 — 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	Clay	Sand pebbles	Brown sandy clay with pebbles	0'	6.5'
Grey	Sandstone	Grey and whitish	Grey sandstone	6.5'	92'
Grey	Limestone	~~XXXXXXXXX~~	Med. grey limestone	92'	106'
Grey	Sandstone	Grey and whitish	Grey sandstone	106'	185'
Brown	Clay	Sand stones	Mud seam	185'	187'
Grey	Sandstone	Grey and whitish	Grey sandstone	187'	245'

31 — 0007605281 2 | 0092218 | 0106215 | 0185218 | 0187605 1803 | 0245218

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0167'	☒ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
0198'	☒ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
0216'	☒ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
0238'	☒ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL
	☐ FRESH ☐ SALTY ☐ SULPHUR ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
01 / 1.25"	☒ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE	.188	0'	0150'
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE			
	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE			

Cement and grouting in place

SCREEN

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

MATERIAL AND TYPE — DEPTH TO TOP OF SCREEN — FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD: ☒ PUMP ☐ BAILER — PUMPING RATE 0010 GPM — DURATION OF PUMPING 12 HOURS 00 MINS

☒ PUMPING ☐ RECOVERY

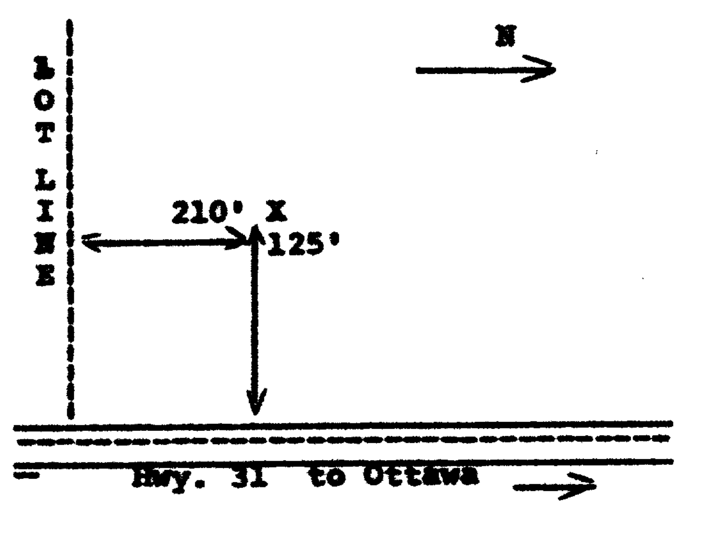
STATIC LEVEL	WATER LEVEL END OF PUMPING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
043 / 43.40'	049 / 49.23'	049 / 49.57'	049 / 49.42'	049 / 49.35'	049 / 49.23'

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 080' FEET — RECOMMENDED PUMPING RATE 0010 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 ☐ OBSERVATION WELL ☐ TEST HOLE ☐ RECHARGE WELL ☐ ABANDONED, INSUFFICIENT SUPPLY ☐ ABANDONED, POOR QUALITY ☐ UNFINISHED

WATER USE 05
☐ DOMESTIC ☐ STOCK ☐ IRRIGATION ☐ INDUSTRIAL ☐ OTHER ☒ COMMERCIAL ☐ MUNICIPAL ☐ PUBLIC SUPPLY ☐ COOLING OR AIR CONDITIONING ☐ NOT USED

METHOD OF DRILLING 2
☐ CABLE TOOL ☒ ROTARY (CONVENTIONAL) ☐ ROTARY (REVERSE) ☐ ROTARY (AIR) ☐ AIR PERCUSSION ☐ BORING ☐ DIAMOND ☐ JETTING ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Olympic Drilling Co. Ltd. — LICENCE NUMBER 4006
ADDRESS: Box 9180 Terminal "1" Ottawa, Ont.
NAME OF DRILLER OR BORER: Roy W. Renwick — LICENCE NUMBER 4006
SIGNATURE OF CONTRACTOR: G. W. Renwick (Sec) — SUBMISSION DATE DAY 14 MO. 8 YR. 79

OFFICE USE ONLY

DATA SOURCE 1 — CONTRACTOR 4006 — DATE RECEIVED 170879
DATE OF INSPECTION — INSPECTOR
REMARKS:

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FORM NO. 0506-4-77

Ministry of Environment and Energy
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

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Mark correct box with a checkmark, where applicable.

11 (1 2) **1530653** Municipality 15002 (10 14) Con. RF (15 22 23 24) 04

County or District: Ottawa-Carleton
Township/Borough/City/Town/Village: Gloucester
Con block tract survey, etc.: 2
Lot (25-27): 23
Address: 4837 Albion Rd
Date completed: 23 day 05 month 99 year

21 (1 2) T/M (10) (12 17) Northing (18 24) RC (25) Elevation (26) RC (30) Basin Code (31) ii iii iv (47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth – feet From	Depth – feet To
Brown	sand	stone		0	42
Black	shale			42	51
Grey	Limestone			51	123
Grey	Limestone w	sandstone layers		123	168
White	sandstone	sandstone		168	200
Green	Granite	granite		200	210

31 (10 14 15 21 32 43 54 65 75 80)
32

41 WATER RECORD

Water found at – feet	Kind of water
73 (10-13)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (14)
123 (15-18)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (19)
147 (20-23)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (24)
untested (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
8 (10-11)	1 ☐ Steel (12) 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic		0	42 (13-16)
6 (17-18)	1 ☐ Steel (19) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	+2	42 (20-23)
6 (24-25)	1 ☐ Steel (26) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic		42	210 (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.)
42 (10-13)	0 (14-17)	Bensal 10 bags (18-21) (22-25)
(26-29)	(30-33) (80)	

71 PUMPING TEST

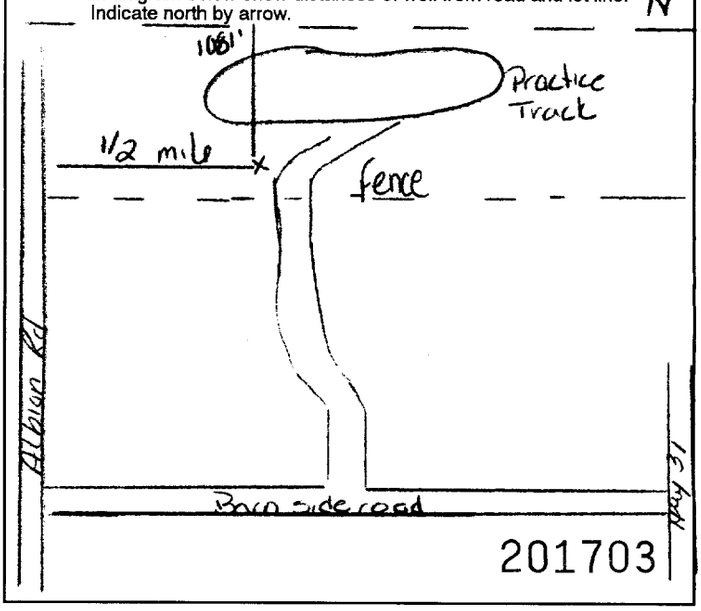
Pumping test method (10): 1 ☐ Pump 2 ☐ Bailer
Pumping rate (11-14): GPM
Duration of pumping (15-16) ..... Hours (17-18) ..... Mins

Static level feet (19-21)	Water level end of pumping feet (22-24)	Water levels during (25): 1 ☐ Pumping 2 ☐ Recovery			
		15 minutes feet (26-28)	30 minutes feet (29-31)	45 minutes feet (32-34)	60 minutes feet (35-37)

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.



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 used
10 ☐ Other monitoring

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	Well Contractor's Licence No.
Olympic Drilling Co Ltd	4006
Address: 2320 Scrivens Dr Hekaife	
Name of Well Technician: Wayne Renwick	Well Technician's Licence No.: TO-327
Signature of Technician/Contractor	Submission date: 08 day 05 mo 99 yr

MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68) (80)
	4006	AUG 09 1999
Date of inspection	Inspector	
Remarks: CSS.ES0		

0506 (07/94) Front Form 9

2 - MINISTER OF ENVIRONMENT & ENERGY COPY

Ministry of Environment and Energy
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

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Mark correct box with a checkmark, where applicable.

11 (1 2)

1530654

Municipality 15002 (10 14) Con. RF (15 22 23 24) 04

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot (25-27)
Ottawa Carleton	Gloucester	2	23

[redacted]

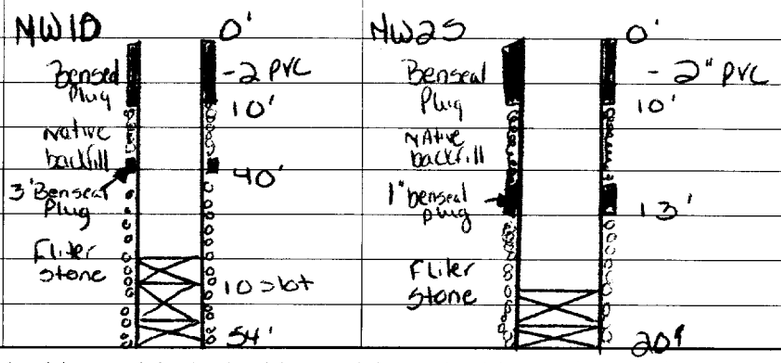
Address: 4637 Albion Rd

Date completed: 23 (day) 05 (month) 99 (year) (48-53)

21 (1 2) T/M (10) Northing (12 17 18 24) RC (25) Elevation (26 30) RC (30) Basin Code (31) ii iii iv (47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth – feet From	Depth – feet To
Brown	sand + stone		MW# 1 D	0	54
Brown	sand + stone		MW# 1S	0	20



31 (10 14 15 21) 32 (32 43 54 65 75 80)

41 WATER RECORD

Water found at – feet	Kind of water
(10-13)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ 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
NW1D (10-11)	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic (12)		0	54 (13-16)
MW2S (10-11)	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic (19)		0	20 (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 (34-38) inches	Length (39-40) feet

Material and type	Depth at top of screen (41-44) feet	(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.)
(10-13)	(14-17)	
(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	Water levels during (25) 1 ☐ Pumping 2 ☐ Recovery: 15 minutes (26-28) feet	30 minutes (29-31) feet	45 minutes (32-34) feet	60 minutes (35-37) feet

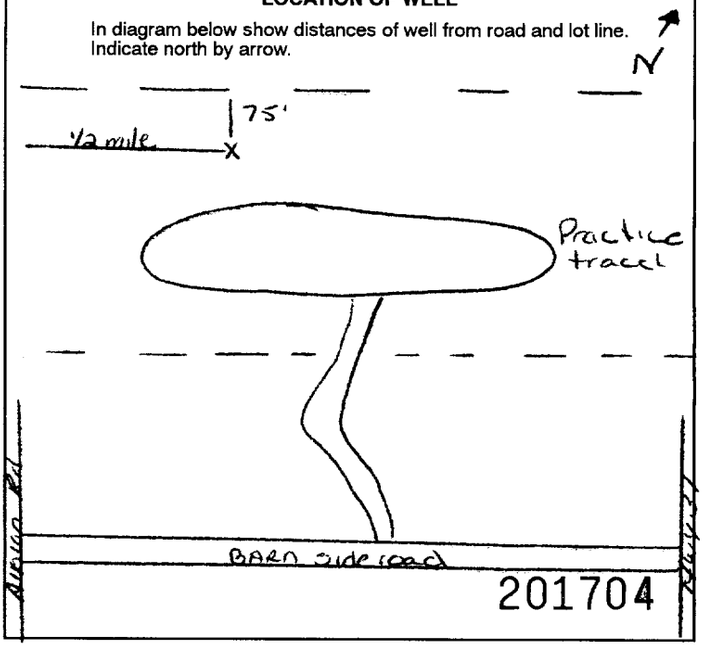
If flowing give rate (38-41) GPM	Pump intake set at feet	Water at end of test (42) ☐ Clear ☐ Cloudy

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.



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 used
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	Well Contractor's Licence No.
Olympic Drilling Co. Ltd	4006
Address: 2320 Scrivens Dr Metcalfe	
Name of Well Technician: Wayne Renwick	Well Technician's Licence No.: TO-327
Signature of Technician/Contractor: [signature]	Submission date: 08 (day) 06 (mo) 99 (yr)

MINISTRY USE ONLY

Data source (58)	Contracctor (59-62)	Date received (63-68) (80)
	4006	AUG 0 9 1999

Date of inspection	Inspector

Remarks: CSS.ES0

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Ministry of Environment and Energy
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

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

11 (1 2) **1530655**

Municipality (10 14) 15002 Con. (15) RF (22 23 24) 04

County or District: Ottawa Carleton

Township/Borough/City/Town/Village: Gloucester

Con block tract survey, etc.: 2

Lot (25-27): 23

[redacted]

Address: 4837 Albion Rd

Date completed (48-53): 23 day 05 month 99 year

21 (1 2) T M (10) (12) (17) Northing (18 24) (25) RC Elevation (26) (30) RC Basin Code (31) ii iii iv (47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth – feet From	Depth – feet To
Brown	sand	stone	MW#3	0	58

Bensead plug 0
10'
native material
Bensead plug 27'
30'
Filter sand
53'

31 (10 14 15 21 32 43 54 65 75 80)

32

41 WATER RECORD

Water found at – feet	Kind of water
10-13	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ 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 (12) 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic		0	58 (13-16)
6				
17-18	1 ☐ Steel (19) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			(20-23)
24-25	1 ☐ Steel (26) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			(27-30)

SCREEN

Sizes of opening (Slot No.) (31-33)	Diameter (34-38) inches	Length (39-40) feet
Material and type	Depth at top of screen (41-44) feet	(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.)
10-13	14-17	
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	Water levels during (25): 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.

N

¼ mile

1514'

Practice Tract

201705

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 used
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	Well Contractor's Licence No.
Olympic Drilling Co. Ltd	4006
Address: 2320 Screens Dr.	Metcalfe
Name of Well Technician: Wayne Renwick	Well Technician's Licence No.: TO-327
Signature of Technician/Contractor: C Renwick	Submission date: 09 day 06 mo 99 yr

MINISTRY USE ONLY

Data source (58)
Contractor (59-62): 4006
Date received (63-68): AUG 09 1999 (80)
Date of inspection
Inspector
Remarks: CSS.ES0

0506 (07/94) Front Form 9

2 - MINISTER OF ENVIRONMENT & ENERGY COPY

Ontario **Ministry of Environment and Energy**

The Ontario Water Resources Act

WATER WELL RECORD

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

11 (1–2) **1534131** Municipality 15002 (10–14) Con. RF (15–22) 04 (23–24)

County or District	Township/Borough/City/Town/Village	Con	block	tract	survey, etc.	Lot (25-27)
[redacted]	Gloucester	4				22
	Address of Well Location: Greely, Ont	Date completed (28-33): 10 day 10 month 03 year				

21 (1–2) UTM: Zone (10) Easting (12–17) Northing (18–24) RC (25) Elevation (26–30) RC (31) Basin Code (ii, iii, iv) (47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
	Sand	gravel		0	21
grey	limestone			21	40
	sandstone			40	62

31 (1–10) 32 (10–14, 15–21, 32–43, 54–65, 75–80)

41 WATER RECORD

Water found at - feet (10-13)	Kind of water (14)	(60)
48	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas	
55	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas	
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)	

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
10-11: 6 1/4	1 ☑ Steel (12) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	0	29 (13-16)
17-18: 6	1 ☐ Steel (19) 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		27	62 (20-23)
24-25	1 ☐ Steel (26) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			(27-30)

SCREEN

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

61 PLUGGING & SEALING RECORD

☑ Annular space ☐ Abandonment

Depth set at - feet From (49-52)	To (44-47)	Material and type (Cement grout, bentonite, etc.)
27	0	bentonite
18-21	22-25	
26-29	30-33	(80)

71 PUMPING TEST

Pumping test method (10): 1 ☑ Pump 2 ☐ Bailer
Pumping rate (11-14): 18 GPM
Duration of pumping (15-16): 1 Hours (17-18): Mins

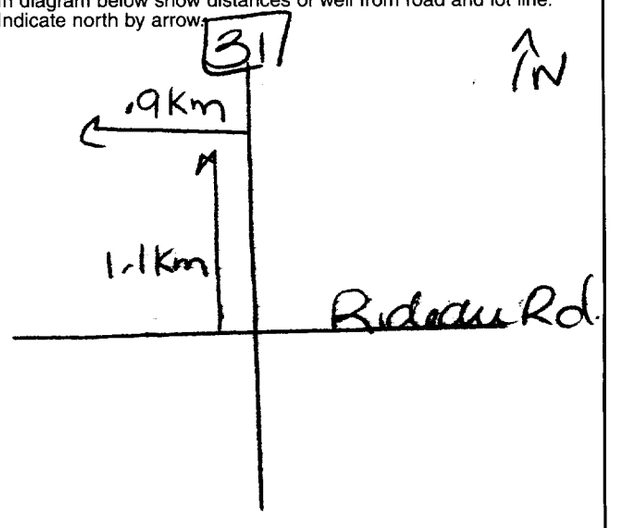
Static level (19-21)	Water level end of pumping (22-24)	Water levels during (25): 1 ☐ Pumping 2 ☑ Recovery			
16 feet	50 feet	15 minutes (26-28): 16 feet	30 minutes (29-31): 16 feet	45 minutes (32-34): 16 feet	60 minutes (35-37): 16 feet

If flowing give rate (38-41)	Pump intake set at	Water at end of test (42)
GPM	feet	☐ Clear ☑ Cloudy
Recommended pump type: ☐ Shallow ☑ Deep	Recommended pump setting (43-45): 50 feet	Recommended pump rate (46-49): 18 GPM

(50-53)

LOCATION OF WELL

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



265638

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	Well Contractor's Licence No.
Air Rock Drilling Ltd	1119
Address: RR#1 Richmond, ont	
Name of Well Technician: Shannon Purcell	Well Technician's Licence No.: T2122
Signature of Technician/Contractor: Kenny D	Submission date: day 30 mo 10 yr 03

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MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68) (80)
	1119	OCT 23 2003
Date of inspection	Inspector	
Remarks: CSS, ES3		

0506 (06/02) Front Form 9

Ontario **Ministry of Environment and Energy**

The Ontario Water Resources Act

WATER WELL RECORD

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

11 (1 2) **1534133** Municipality 15002 (10 14) Con. RF (15 22 23 24) 04

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot (25-27)
[redacted]	Gloucester	4	22.
	Address of Well Location Ottawa, ONT	**Date completed** (48-53) 26 day 09 month 03 year	

21 (1 2) UTM: Zone (10) Easting (12 17) Northing (18 24) RC (25) Elevation (26 30) RC (30) Basin Code (31) ii iii iv (47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
grey	sand			0	57
brown + grey	sandstone			57	101

31 (10 14 15 21 32 43 54 65 75 80)

32 (10 14 15 21 32 43 54 65 75 80)

41 WATER RECORD

Water found at - feet (10-13)	Kind of water
79	1 ☐ Fresh 2 ☒ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas (14)
83 (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) 6 1/4	1 ☒ Steel (12) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	0	69 (13-16)
(17-18) 6	1 ☐ Steel (19) 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic		67	101 (20-23)
(24-25)	1 ☐ Steel (26) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			(27-30)

SCREEN

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

61 PLUGGING & SEALING RECORD

☒ Annular space ☐ Abandonment

Depth set at - feet From (10-13)	Depth set at - feet To (14-17)	Material and type (Cement grout, bentonite, etc.)
67	0	bentonite
(18-21)	(22-25)	
(26-29)	(30-33)	(80)

71 PUMPING TEST

Pumping test method (10)	Pumping rate (11-14)	Duration of pumping (15-16 Hours, 17-18 Mins)
1 ☒ Pump 2 ☐ Bailer	6 GPM	1 Hours

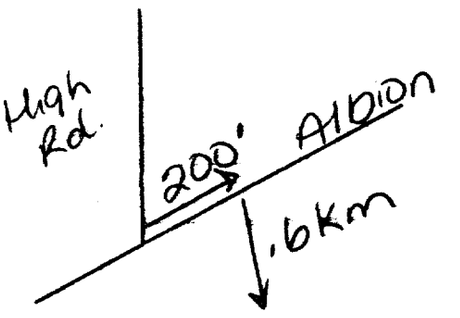
Static level (19-21)	Water level end of pumping (22-24)	Water levels during (25)	15 minutes (26-28)	30 minutes (29-31)	45 minutes (32-34)	60 minutes (35-37)
44 feet	90 feet	1 ☐ Pumping 2 ☒ Recovery	44 feet	44 feet	44 feet	44 feet

If flowing give rate (38-41)	Pump intake set at	Water at end of test (42)
GPM	feet	☐ Clear ☒ Cloudy
Recommended pump type	**Recommended pump setting (43-45)**	**Recommended pump rate (46-49)**
☐ Shallow ☒ Deep	90 feet	6 GPM

(50-53)

LOCATION OF WELL

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



265605

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	Well Contractor's Licence No.
Air Rock Drilling Ltd	1119
Address RR#1 Richmond, Ont	
Name of Well Technician Shannon Purcell	**Well Technician's Licence No.** T2122
Signature of Technician/Contractor Kenny	**Submission date** (day) 20 (mo) 10 (yr) 03

MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68) (80)
	1119	OCT 23 2003
Date of inspection	**Inspector**	
Remarks		CSS.ESS

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0506 (06/02) Front Form 9

Ontario — Ministry of the Environment

Well Tag Number (Put number below): A010015

A010015

Well Record

Regulation 903 Ontario Water Resources Act

page 1 of 2

Instructions for Completing Form

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

MUN 15002 CON RF 05 LOT 23

Well Owner's Information and Location of Well Information

First Name	Last Name	Mailing Address (Street Number/Name, RR, Lot, Concession)
Recon Ltd	Quarry	4949 Bank Street

County/District/Municipality	Township/City/Town/Village	Province	Postal Code	Telephone Number (include area code)
Ottawa-Carleton	Gloucester	Ontario	K1X 1G7	

Address of Well Location (County/District/Municipality)	Township	Lot	Concession
Ottawa-Carleton	Gloucester	23	5

RR#/Street Number/Name	City/Town/Village	Site/Compartment/Block/Tract etc.
4949 Bank Street	Ottawa	

GPS Reading	NAD	Zone	Easting	Northing	Unit Make/Model	Mode of Operation
	83	18	454395	5017092	Garmin	UTM

Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
Grey	Limestone		Layered	0	18.2
Grey	Sandstone		Layered	18.2	18.9
Grey	Limestone		Layered	18.9	22.1
White	Sandstone		Layered	22.1	23.0
Grey	Limestone		Layered	23.0	32.0
White	Sandstone		Layered	32.0	36.5

Hole Diameter

Depth From	Metres To	Diameter Centimetres
0	36.5	15.2

Water Record

Water found at ___ Metres / Kind of Water

☐ ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

☐ ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

☐ ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

After test of well yield, water was ☐ Clear and sediment free ☐ Other, specify

Chlorinated ☐ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.2	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	0.48	0	2.8
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
	☒ Open hole		2.8	36.5

Test of Well Yield

Pumping test method

	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Pump intake set at - (metres)	Static Level			
Pumping rate - (litres/min)	1		1	
Duration of pumping ___hrs +___ min	2		2	
Final water level end of pumping ___metres	3		3	
Recommended pump type. ☐ Shallow ☐ Deep	4		4	
Recommended pump depth. ___metres	5		5	
Recommended pump rate. (litres/min)	10		10	
If flowing give rate - (litres/min)	15		15	
If pumping discontinued, give reason.	20		20	
	25		25	
	30		30	
	40		40	
	50		50	
	60		60	

Plugging and Sealing Record

☐ Annular space ☐ Abandonment

Depth set at - From	Metres To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)

Method of Construction

☐ Cable Tool ☒ Rotary (air) ☐ Diamond ☐ Digging
☐ Rotary (conventional) ☐ Air percussion ☐ Jetting ☐ Other
☐ Rotary (reverse) ☐ Boring ☐ Driving

Water Use

☐ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☒ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

☐ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other)
☒ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

Well Contractor/Technician Information

Name of Well Contractor	Well Contractor's Licence No.
Roy's LBR Ltd	4609

Business Address (street name, number, city etc.): Cornwall

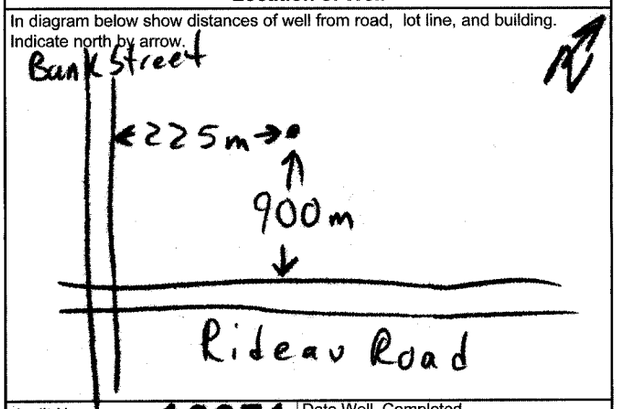
Name of Well Technician (last name, first name)	Well Technician's Licence No.
Jeff Skitch	T-1462

Signature of Technician/Contractor: X

Date Submitted: YYYY MM DD

Location of Well

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



Audit No. Z 10071

Date Well Completed: YYYY 2004 MM 5 DD 25

Was the well owner's information package delivered? ☐ Yes ☒ No

Date Delivered: YYYY MM DD

Ministry Use Only

Data Source

Contractor: 4609

Date Received: JUL 08 2004 YYYY MM DD

Date of Inspection: YYYY MM DD

Remarks

Well Record Number: 1534751

0506E (09/03)

Contractor's Copy ☐ Ministry's Copy ☐ Well Owner's Copy ☐

Cette formule est disponible en français

1B

Ontario — Ministry of the Environment

Well Tag Number (Place sticker and print number below): A010015

Well Record

Regulation 903 Ontario Water Resources Act

page 2 of 2

Instructions for Completing Form

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- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

MUN 15002 CON RF 05 LOT 23

Well Owner's Information and Location of Well Information

First Name	Last Name	Mailing Address (Street Number/Name, RR,Lot,Concession)
Aecon Ltd	Quarry	4949 Bank Street

County/District/Municipality	Township/City/Town/Village	Province	Postal Code	Telephone Number (include area code)
Ottawa - Carleton	Gloucester	Ontario	K1X 1G7	

Address of Well Location (County/District/Municipality)	Township	Lot	Concession
Ottawa - Carleton	Gloucester	23	5

RR#/Street Number/Name	City/Town/Village	Site/Compartment/Block/Tract etc.
4949 Bank Street	Ottawa	

GPS Reading	NAD	Zone	Easting	Northing	Unit Make/Model	Mode of Operation
	83	18	454395	5017092	Etrex	UTM

Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To
Grey	Limestone		Layered	0	18.0
Grey	Sandstone		Layered	18.0	18.8
Grey	Limestone		Layered	18.8	21.3

Hole Diameter

Depth From	Depth To (Metres)	Diameter (Centimetres)
0	21.3	15.2

Water Record

Water found at ___ Metres / Kind of Water

- ___ m ☐ Fresh ☒ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

After test of well yield, water was ☐ Clear and sediment free ☐ Other, specify

Chlorinated ☐ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.2	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	0.48	0	3.0
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
	☒ Open hole		3.0	≥21.3

Test of Well Yield

Pumping test method	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Pump intake set at - (metres)	Static Level			
Pumping rate - (litres/min)	1		1	
Duration of pumping ___hrs +___ min	2		2	
Final water level end of pumping ___metres	3		3	
Recommended pump type. ☐ Shallow ☐ Deep	4		4	
Recommended pump depth. ___metres	5		5	
Recommended pump rate. (litres/min)	10		10	
	15		15	
If flowing give rate - (litres/min)	20		20	
	25		25	
If pumping discontinued, give reason.	30		30	
	40		40	
	50		50	
	60		60	

Plugging and Sealing Record

☐ Annular space ☐ Abandonment

Depth set at - From	Metres To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)

Method of Construction

☐ Cable Tool ☒ Rotary (air) ☐ Diamond ☐ Digging
☐ Rotary (conventional) ☐ Air percussion ☐ Jetting ☐ Other
☐ Rotary (reverse) ☐ Boring ☐ Driving

Water Use

☐ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☒ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

☐ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other)
☒ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

Well Contractor/Technician Information

Name of Well Contractor	Well Contractor's Licence No.
Roy SLBR Ltd	4609

Business Address (street name, number, city etc.): Cornwall

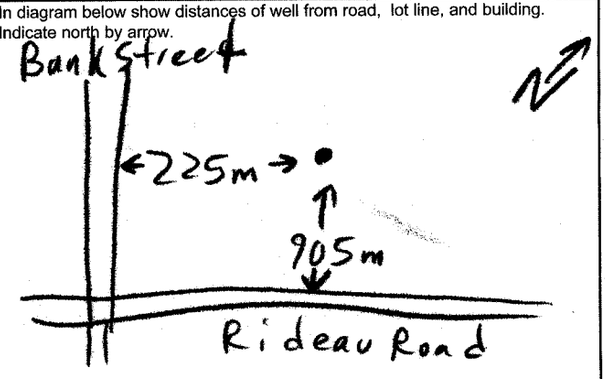
Name of Well Technician (last name, first name)	Well Technician's Licence No.
Jeff Skitch	T-1762

Signature of Technician/Contractor: X

Date Submitted YYYY MM DD

Location of Well

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



Audit No. Z 10072

Date Well Completed YYYY MM DD: 2004 5 26

Was the well owner's information package delivered? ☐ Yes ☒ No

Date Delivered YYYY MM DD

Ministry Use Only

Data Source	Contractor
	4609
Date Received YYYY MM DD: JUL 08 2004	Date of Inspection YYYY MM DD
Remarks	Well Record Number: 1534752

0506E (09/03)

Contractor's Copy ☐ Ministry's Copy ☐ Well Owner's Copy ☐

Cette formule est disponible en français

Ontario Ministry of the Environment

Well Tag Number (Place sticker and print number below)
A 030379
A030379

Well Record

Regulation 903 Ontario Water Resources Act

Instructions for Completing Form

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

MUN | CON | LOT

Well Owner's Information and Location of Well Information

[redacted]

RR#/Street Number/Name: 4667-Albion-Rd.
City/Town/Village: Gloucester
Site/Compartment/Block/Tract etc.: 4RP-4R-E Pack NTT

GPS Reading: NAD 83 | Zone 18 | Easting 452245 | Northing 5016408 | Unit Make/Model: Magellan | Mode of Operation: UTM | ☐ Undifferentiated ☑ Averaged 22 | ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth Metres From	Depth Metres To
Brown	Top Soil		Soft	0	0.60
Brown	Sand		Soft	0.60	21.21
Grey	Gravel		Soft	21.21	24.84
Grey	SHALE		Porous	24.84	25.75

Hole Diameter

Depth Metres From	Depth Metres To	Diameter Centimetres
0	6.06	25.40

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth Metres From	Depth Metres To
Casing				
15.55	☑ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	0.48	0	24.84
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen (Outside diam)	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
15.55	☑ Open hole		24.84	25.75

Water Record

Water found at Metres	Kind of Water
24.84	☑ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
m	☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
m	☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

After test of well yield, water was ☑ Clear and sediment free ☐ Other, specify

Chlorinated ☑ Yes ☐ No

Test of Well Yield

Pumping test method: Submersible
Pump intake set at - (metres): 15.15
Pumping rate - (litres/min): 54.00
Duration of pumping: 1 hrs + 00 min
Final water level end of pumping: 7.57 metres
Recommended pump type: ☐ Shallow ☑ Deep
Recommended pump depth: 15.15 metres
Recommended pump rate: 45.50 (litres/min)
If flowing give rate - (litres/min):
If pumping discontinued, give reason.

Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Static Level	7.34		7.57
1	7.57	1	7.34
2	7.57	2	
3	7.57	3	
4	7.57	4	
5	7.57	5	
10	7.57	10	
15	7.57	15	
20	7.57	20	
25	7.57	25	
30	7.57	30	
40	7.57	40	
50	7.57	50	
60	7.57	60	

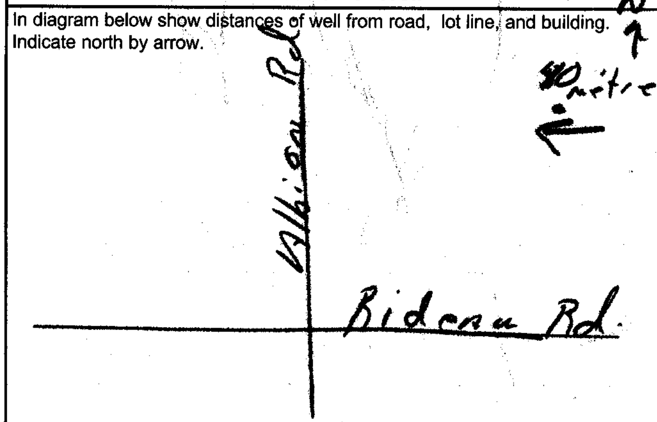
Plugging and Sealing Record

☑ Annular space ☐ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
0	6.06	Cement Grouts	160Kg

Location of Well

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



Method of Construction

☐ Cable Tool ☑ Rotary (air) ☐ Diamond ☐ Digging
☐ Rotary (conventional) ☐ Air percussion ☐ Jetting ☐ Other
☐ Rotary (reverse) ☐ Boring ☐ Driving

Water Use

☑ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

☑ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other)
☐ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering
☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well

Audit No. Z 32795
Date Well Completed (YYYY MM DD): 2005 10 05
Was the well owner's information package delivered? ☑ Yes ☐ No
Date Delivered (YYYY MM DD): 2005 10 05

Well Contractor/Technician Information

Name of Well Contractor: DXB-WATER-well-Drilling
Well Contractor's Licence No.: 6006
Business Address (street name, number, city etc.): CP. 98- St-Albert -ON
Name of Well Technician (last name, first name): Desnoyers Louis
Well Technician's Licence No.: T-625
Signature of Technician/Contractor: x [signature]
Date Submitted (YYYY MM DD): 2005 10 05

Ministry Use Only

Data Source | Contractor: 6006
Date Received (YYYY MM DD): NOV 04 2005 | Date of Inspection (YYYY MM DD)
Remarks | Well Record Number

0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☑ Well Owner's Copy ☐ *Cette formule est disponible en français*

Ontario — Ministry of the Environment

Measurements recorded in: ☐ Metric ☒ Imperial

Well Tag No. (Print Below) A 066507

A066507

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
#6391 Blossom Trail	Osgoode	PL6	3
County/District/Municipality	**City/Town/Village**	**Province**	**Postal Code**
Ottawa-Carleton	Greely	Ontario	
UTM Coordinates Zone / Easting / Northing	**Municipal Plan and Sublot Number**	**Other**	
NAD 83 18 / 453564 / 5016637	PLAN 4M-1295	S/L23	

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
	Sand & Boulders			0	12'
	Grey Limestone			12'	207'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
22'	12'	Neat Cement Slurry	4.68
12'	0	Bentonite Slurry	8.4

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
6"	Steel	.188	+2'	22'
6"	Open Hole		22'	207'

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*

Construction Record - Screen

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

Water Details

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

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0'	207'	6"

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, *specify* NOT TESTED

If pumping discontinued, give reason: X

Pump intake set at (m/ft) 180'

Pumping rate (l/min / GPM) 20

Duration of pumping 1 hrs + 0 min

Final water level end of pumping (m/ft) 77'7"

If flowing give rate (l/min / GPM) X

Recommended pump depth (m/ft) (1/2HP) 140'

Recommended pump rate (l/min / GPM) 20

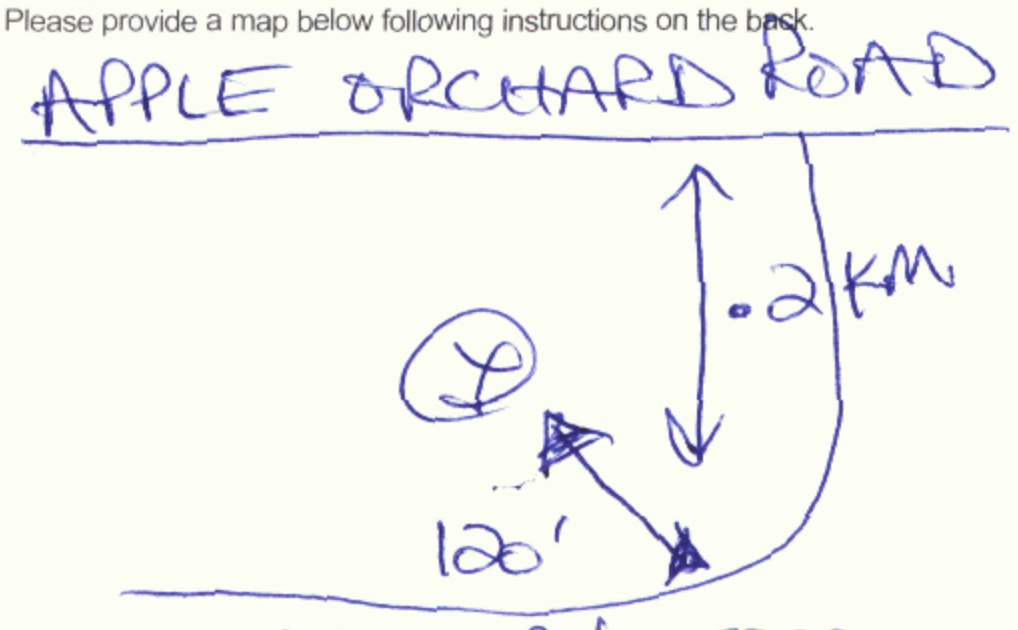
Well production (l/min / GPM) 20

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	25'7"		77'7"
1	34'5"	1	55'
2	40'2"	2	45'6"
3	45'1"	3	40'
4	48'4"	4	37'
5	51'3"	5	33'4"
10	60'8"	10	28'2"
15	66'	15	25'7"
20	68'5"	20	
25	70'9"	25	
30	73'4"	30	
40	75'8"	40	
50	76'3"	50	
60	77'7"	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.
AirRock Drilling Co Ltd	1119
Business Address (Street Number/Name)	**Municipality**
RR#1	Richmond
Province	**Postal Code**	**Business E-mail Address**
ONT	K0A2Z0	
Bus. Telephone No. (inc. area code)	**Name of Well Technician (Last Name, First Name)**
613 838 2170	Hogan Dan
Well Technician's Licence No.	**Signature of Technician and/or Contractor**	**Date Submitted**
T3058		2009 05 25

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☒ Yes ☐ No	2009 04 16	2009 04 15

Ministry Use Only

Audit No. Z 94625

JUN 03 2009

Received

0506E (12/2007)

Ministry's Copy

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Place Sticker and/or Print Below)* A110683

Master Well Record for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Master Well Owner's and Land Owner's Information

First Name	Last Name	E-mail Address
[redacted]	Leclerc Associates	

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
1-2884 Chamberland Street	Rockland	ON	K4K1M6	6134467777

Location and Construction of the Master Well in the Cluster

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
4880 Bank Street			

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

UTM Coordinates	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation
NAD 83	18	454195	5016848	Garmin	Etrex	☐ 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	To
1		Asphalt			0.0	0.20
	Brownish grey	Sandy loam	gravel fill	dry	0.20	0.69
	black	Sand	gravel/silt	dry/moist	0.69	1.48
	dark grey	Silt	sand	moist	1.48	1.80
	grey	Limestone			1.80	5.79

Hole Details

Depth (*Metres*) From	To	Diameter (*Centimetres*)
0.00	5.79	20

Water Use

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

Method of Construction

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

Status of Well

☒ Test Hole ☐ Abandoned, Insufficient Supply
☐ Replacement Well ☐ Abandoned, Poor Water Quality
☐ Dewatering Well ☐ Other, *specify*
☐ Alteration (Construction) ☐ Abandoned, other, *specify*

Construction Details

Inside Diameter (*Centimetres*)	Material (*steel, plastic, fibreglass, concrete, galvanized*)	Wall Thickness	Depth (*Metres*) From	To
5.1	PVC	SCHED 40	2.98	5.79

No Casing and Screen Used

Open Hole ☐ Yes ☒ No

Static Water Level Test

Metres

Screen

☐ Galvanized ☐ Steel ☐ Fibreglass ☐ Concrete ☒ Plastic

Outside Diameter (*Centimetres*)	Slot No.
5.8	10

Water Details

Water found at Depth	Kind of Water
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Water found at Depth	Kind of Water
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Annular Space/Abandonment Sealing Record

Depth Set at (*Metres*) From	To	Type of Sealant Used (*Material and Type*)	Volume Used (*Cubic Metres*)
1.01	1.30	Bentonite	20 Kg

Disinfected ☐ Yes ☒ No If no, provide reason: Monitoring Well

Date Master Well Completed (*yyyy/mm/dd*) 2011/07/22

Cluster Information *(Please also fill out the additional Cluster Well Information for Well Construction for each parcel of land and cluster.)*

Total Wells in Cluster	Please indicate Number of Cluster Well Information Log Sheets Submitted
3	1
Total Wells on this Property: unknown	

Location of Well Cluster

Detailed Map must be provided as an attachment no larger than legal size (8.5" x 14"). Sketches are not allowed.

☒ Check box to confirm detailed map is provided as per Section 11.1 (3)

Consent to release additional information concerning the cluster to the Director upon request

[redacted] Date (*yyyy/mm/dd*) 2012/01/06

Master Well Owner's/Land Owner's consent to use Cluster Form

Signature [signature] Date (*yyyy/mm/dd*) 2012/01/11

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
George Downing Estate Drilling Ltd	1844

Business Address (Street No./Name, number, RR)	Municipality
410 rue principale	Grenville-sur-la-Rouge

Province	Postal Code	Business E-mail Address
Qc	J0V1B0	downing@hawk.igs.net

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
8192426469	Downing, Bruce

Well Technician's Licence No.	Signature of Technician	Date Submitted (*yyyy/mm/dd*)
2173	[signature]	2012/01/06

Ministry Use Only

Audit No.	Well Contractor No.
M 08719	
Date Received (*yyyy/mm/dd*) JAN 26 2012	Date of Inspection (*yyyy/mm/dd*)
Remarks	

1992 (11/2006) Ministry's Copy

Ontario Ministry of the Environment

Well Tag No. for Master Well *(Print Well Tag No.)*
A110683

Cluster Well Information for Cluster Well Construction

Regulation 903 Ontario Water Resources Act

Property Owner's Information

First Name	Last Name	Mailing Address (Street No./Name, RR)	Municipality
[redacted]	Leclerc Association	1-2884 Chamberland Street	Rockland

Province	Postal Code	E-mail Address	Telephone No. (inc. area code)
ON	K4K1M6		6134467777

Cluster Well Information

Address of Well Location (Street Number/Name, RR)	Lot	Concession	Township	County/District/Municipality
4880 Bank Street	10			

City/Town/Village	Province	Postal Code	GPS Unit Make	Model	Unit Mode of Operation
Ottawa	Ontario		Garmin	Etrex	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify:

Consent

Property Owner's Consent to use cluster form

Signature [redacted] Date (yyyy/mm/dd)

Consent to release additional information to the Director upon request

Signature of Technician/Contractor	Date (yyyy/mm/dd)
Bruce Downing	2012/01/06

Well # on Sketch	UTM Coordinates Zone	Easting	Northing	Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing Material	Casing Length (metres)	Screen Interval (metres) From	To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used	Comments	Date of Completion (yyyy/mm/dd)
mw 4	18	451418	5011684	5.60	20	HSA	PVC	2.72	2.72	5.60	Bentonite				2011/07/2
mw 1	18	451416	5011681	5.60	20	HSA	PVC	2.74	2.74	5.60	Bentonite				2011/07/2

Well Contractor and Well Technician Information

Business Name of Well Contractor	Business Address (Street Number/Name, RR)	Municipality	Province
George Downing Estate Drilling Ltd	410 rue principale	Brenville-sur-la-Rouge	Qc

Postal Code	Business Telephone No. (inc. area code)	Well Contractor's Licence No.	Business E-mail Address
J0V1B0	8192426469	1844	downing@hawk.iq.s.net

Name of Well Technician (First Name, Last Name)	Well Technician's Licence No.	Date Submitted (yyyy/mm/dd)	Signature of Technician
Bruce Downing	2173	2012/01/06	Bruce Downing

Date 1st Well in Cluster Constructed (yyyy/mm/dd)	Date Last Well in Cluster Constructed (yyyy/mm/dd)
2011/07/21	2011/07/21

Ministry Use Only

Date Received (yyyy/mm/dd)	Date Inspected (yyyy/mm/dd)
JAN 26 2012	
Audit No. C 13690	Remarks mos-79

1991 (11/2006)

Ministry's Copy

PROJECT

PHASE II ENVIRONMENTAL SITE ASSESSMENT
4880 BANK STREET
OTTAWA, ONTARIO

DRAWING TITLE

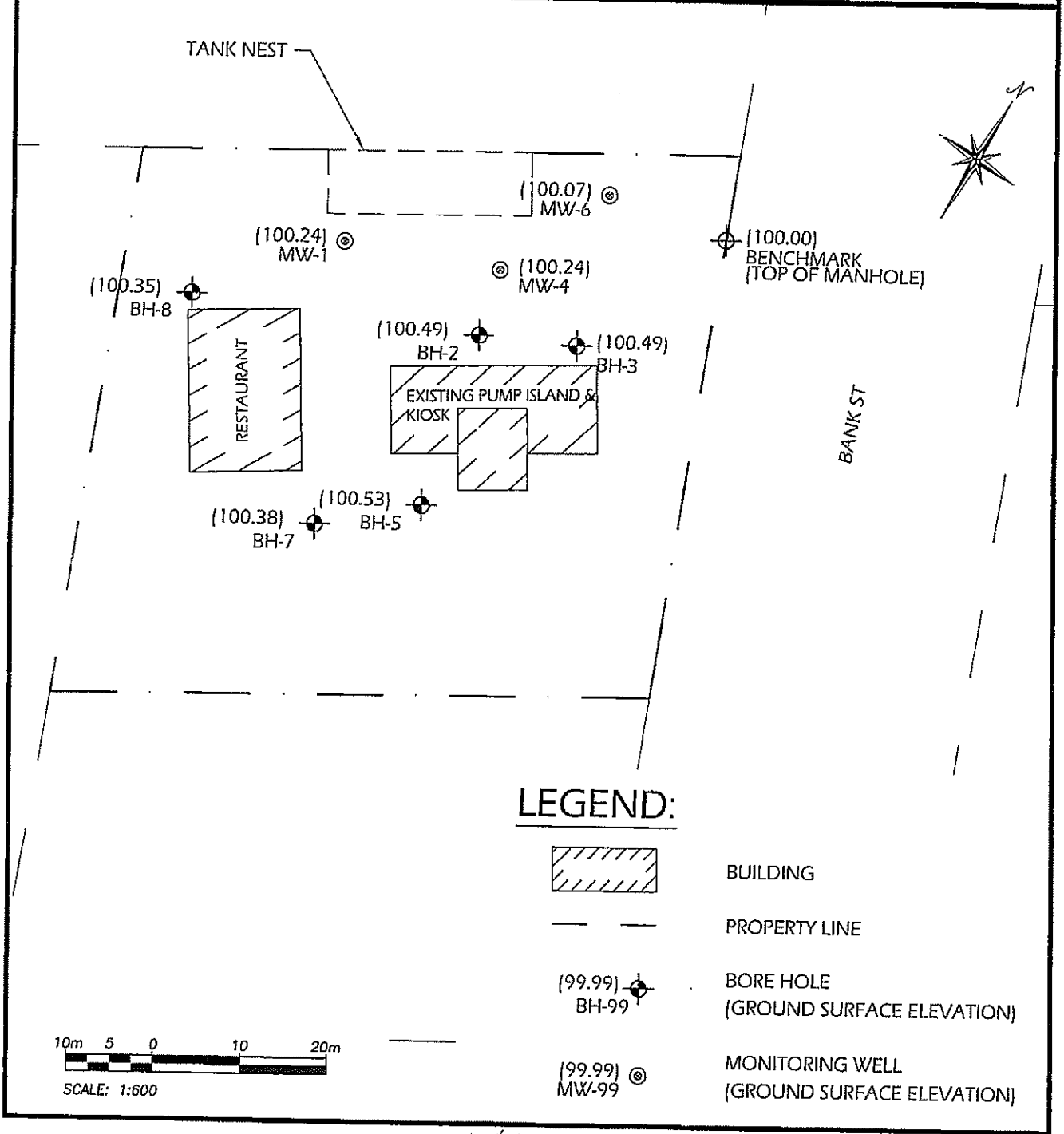
SITE PLAN

LEVAC ROBICHAUD LECLERC ASSOCIATES LTD.
Project Managers and Consulting Engineers
1-2884 CHAMBERLAND ST. • ROCKLAND, ONTARIO • K4K 1M6
T:(613) 446-7777 • 1 (877) 632-5664 • F:(613) 446-1427

CLIENT

LOK VANIAK

DATE	FILE	DWG No.
JULY 28, 2011	110678	FIGURE 2



C-1544 m05419 C13690.

JAN 2 6 2012

Ontario — Ministry of the Environment and Climate Change

Well Tag No. *(Place Sticker and/or Print Below)* Tag#: A 225648

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Measurements recorded in: ☐ Metric ☒ Imperial

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	RIDEAU CARLETON RACEWAY		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
4837 ALBION ROAD	GLOUCESTER	ONT	K1X1A3	6138222211

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
4837 ALBION ROAD	OTTAWA	23	IV

County/District/Municipality	City/Town/Village	Province	Postal Code
GLOUCESTER	OTTAWA	Ontario	K1X1A3

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	452780	5015910		

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
	SANDY LOAM			0	3
	FINE SAND			3	36
	SANDSTONE			36	51

WELL CONTRUCTION DATA FROM ORIGIONAL WELL RECORD, UNTAGGED JUNE 15, 1962 DRILLER LICENSE #196 MCLEAN WATER SUPPLY

WORK ~~Syd~~ AUG 30 2017 EMERGENCY PUMP REPLACEMENT ONLY

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)

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	

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
6 5/8"	STEEL	3/16"	0	37

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
	NONE			

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

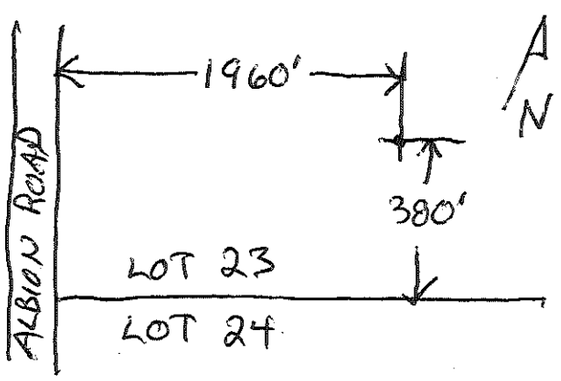
Water found at Depth (m/ft)	Gas	Kind of Water	Other, specify
47	☐	☒ Fresh ☐ Untested	
	☐	☐ Fresh ☐ Untested	
	☐	☐ Fresh ☐ Untested	

Hole Diameter

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

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.
THE PUMP HOUSE INC	6378

Business Address (Street Number/Name)	Municipality
848 CLYDE AVE	

Province	Postal Code	Business E-mail Address
ONT	K1Z5A2	INFO@THEPUMPHOUSE.CA

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
6137224226	MACINTYRE DJ

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3853		2017 08 30

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☒ Yes ☐ No	2017 08 30	2017 08 30

Ministry Use Only

Audit No. Z256899

Received SEP 22 2017

0506E (2014/11) Ministry's Copy

Ontario — Ministry of the Environment and Climate Change

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

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Measurements recorded in: [X] Metric [ ] Imperial

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	Well Constructed by Well Owner
LEITRIM SOUTH	HOLDINGS C/O OTTAWA GREENBELT CONSTRUCTION		[ ]

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
100 CITYGATE DRIVE	OTTAWA	ON	K2J 0A6	(613) 822-6611

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
4028 4058 BANK ST.	GLOUCESTER	22	4 (RF)

County/District/Municipality	City/Town/Village	Province	Postal Code
OTTAWA	OTTAWA	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3		Below			

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
WELL	DIA.	STATIC WATER LEVEL	GRS (Existing)	GRS (Working)	(DEPTH)
13-29A	32mm	OAD	1845290Z	5016829	0.00	7.20
13-29B	38mm	PVC	1845290Z	5016829	0.00	5.20

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
Seal	ore	Hole plug and Pel-Plug Bentonite grout.	0.03

Method of Construction

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

Well Use

[ ] Public [ ] Commercial [X] Not used
[ ] Domestic [ ] Municipal [ ] Dewatering
[ ] Livestock [X] Test Hole [X] 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
	PVC			

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
[X] Test Hole
[ ] Recharge Well
[ ] Dewatering Well
[X] Observation and/or Monitoring Hole
[ ] Alteration (Construction)
[ ] Abandoned, Insufficient Supply
[ ] Abandoned, Poor Water Quality
[X] Abandoned, other, *specify* Construction 2019
[ ] Other, *specify*

Water Details

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

Hole Diameter

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

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)*

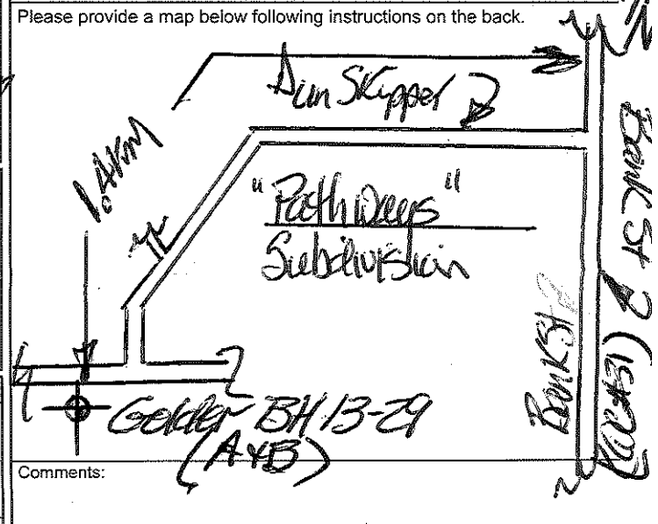
Well production *(l/min / GPM)*

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.
STANTON DRILLING INC	4875

Business Address (Street Number/Name)	Municipality
157 FIVE ARCHES RD, BOX 219	PAKENHAM

Province	Postal Code	Business E-mail Address
ON	K0A 2X0	stanton.drilling@bell.net

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
(613) 624-5622	STANTON, PETER

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
0086		2019/09/13

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[ ] Yes [X] No		2019/08/13

Ministry Use Only

Audit No. Z252131

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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)*

Tag#: A247971

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	Hindu Temple of Ottawa Carleton	hinduteampleottawa@gmail.com	

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
4875 Bank St	Ottawa	ON	K1X1G6	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
4875 Bank St			

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa	Ottawa	Ontario	K1X1G6

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	453954	5017560		

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
Grey	Till	Fill, Sand	Very Dense	0'	19'10"

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used *(Material and Type)*	Volume Placed (m^3/ft^3)
0'	8'8"	Bentonite	~~2.7 m³~~ 29 ft³
8'8"	9'10"	Silica Sand	3.8 ft³

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
2.067	PVC	0.154	0'	9'10"

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
2.375	PVC	3	9'10"	19'10"

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 (m/ft)	Kind of Water	Hole Diameter Depth From	Hole Diameter Depth To	Hole Diameter (cm/in)
11' ☐ Gas	☐ Fresh ☑ Untested ☐ Other, *specify*	0'	19'10"	8"
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, *specify*			
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, *specify*			

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
CC Geotechnical and Environmental Drilling	7513

Business Address (Street Number/Name)	Municipality
48-2271 Edinburgh Place	Ottawa

Province	Postal Code	Business E-mail Address
ON	K1B5M1	mwebb@cccgroup.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
6137375229	Seymour, Vincent

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3180		2019/10/18

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)*

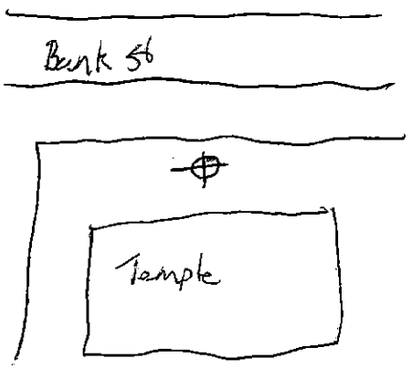
Well production *(l/min / GPM)*

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 owner's information package delivered ☐ Yes ☑ No

Date Package Delivered: Y Y Y Y M M D D

Date Work Completed: 2019/09/24

Ministry Use Only

Audit No. Z286383

Received OCT 22 2019

0506E (2014/11)

Ministry's Copy

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Ministry of the Environment and Climate Change

Measurements recorded in: ☐ Metric ☐ Imperial

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

Tag#: A247970

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
	Hindu Temple of Ottawa Collection	hindutempleottawa@gmail.com	

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
4935 Bank St	Ottawa	ON	K1K1G6	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
4935 Bank St			

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	455396	5017542		

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
Grey	Till	Fill Sand	Very Dense	0'	13'

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0'	7'	Bentonite 3/8 chips	2
7'	13'	Silica Sand	2.98

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
2.067	PVC	0.154	0'	8'

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
2.375	PVC	3	8'	13'

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	Hole Diameter Depth From	Hole Diameter Depth To	Hole Diameter (cm/in)
10' (m/ft) ☐ Gas	☐ Fresh ☑ Untested ☐ Other, *specify*	0'	13'	8"
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, *specify*			
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, *specify*			

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)*

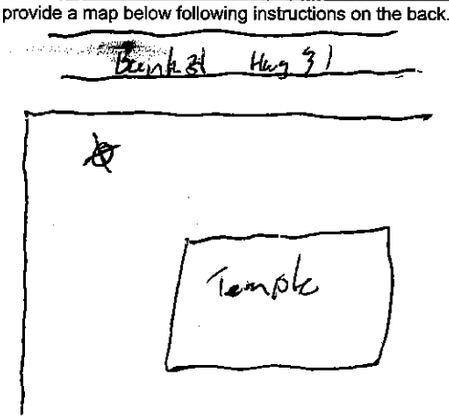
Well production *(l/min / GPM)*

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.
CCC Geotechnical and Environmental Drilling	7543

Business Address (Street Number/Name)	Municipality
46-2627 Edinburgh Place	Ottawa

Province	Postal Code	Business E-mail Address
ON	K1B5M1	

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
613 730 5227	Seymour Vincent

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3380		2019 09 24

Well owner's information package delivered ☐ Yes ☑ No

Date Package Delivered: _____

Date Work Completed: 2019 09 24

Ministry Use Only

Audit No. Z286385

Received: OCT 22 2019

0506E (2014/11)

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Measurements recorded in: ☐ Metric ☑ Imperial

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

Tag#: A247972

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	Hindu Temple of Ottawa Carleton	hindutemple@gmail.com	

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
4835 Bank St	Ottawa	ON	K1X1G6	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
4835 Bank St			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Ottawa	Ontario	K1X1G6

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	453946	5017598		

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
Grey	Till	Sand, Fill	Very Dense	0'	13'3"

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used *(Material and Type)*	Volume Placed (m^3/ft^3)
0'	7'	Bentonite	2.5 ft
7'	13'3"	Silica Sand	3A3

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
2.067	PVC	0.154	0'	8'3"

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	Depth (m/ft) To
2.375	PVC	3	8'3"	13'3"

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 (m/ft)	Kind of Water	
10'	☐ Fresh ☑ Untested	☐ Gas ☐ Other, *specify* _____
	☐ Fresh ☐ Untested	☐ Gas ☐ Other, *specify* _____
	☐ Fresh ☐ Untested	☐ Gas ☐ Other, *specify* _____

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0"	13'3"	8"

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)

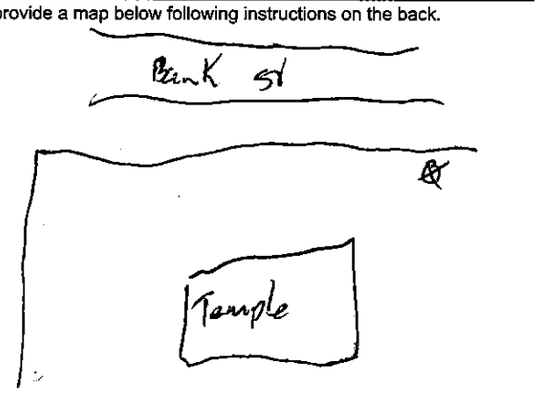
Well production (l/min / GPM)

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.
CCC Geotechnical and Environmental Drilling	7543

Business Address (Street Number/Name)	Municipality
48-2627 Edinburgh Pl	Ottawa

Province	Postal Code	Business E-mail Address
ON	K1B5M1	Mwebb@ccgroup.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
6137375277	Seymour, Vincent

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3380		2019/09/24

Well owner's information package delivered: ☐ Yes ☑ No

Date Package Delivered: YYYY MM DD

Date Work Completed: 2019/09/24

Ministry Use Only

Audit No. Z286384

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Ministry's Copy

Ontario — Ministry of the Environment and Climate Change

Measurements recorded in: ☐ Metric ☑ Imperial

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

Well Record

Regulation 903 Ontario Water Resources Act

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Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
Erin	Oconnor Regional Group	eoconnore regionalgroup.com	

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
1737 Woodward Drive	Ottawa	Ont	K2C0P9	6132302102

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
4840 Bank Street	Ottawa		

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa Carleton	Ottawa	Ontario	K1X1G6

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	457519	5016368		

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
Decommission of Stone	Dug well		36inch Diam +12Ft Depth		
Clean	Clay material			-5	10Ft
Bentonite	Hole Plug		4 Bag	10F	12Ft
Decommission of Drilled well			5inch Diam +75Ft Depth		
Drilled well inside dug well			Bentonite 4 Bag	-5	30Ft
Clean	Clear stone		6 Bucketh	30Ft	60Ft
Bentonite	Hole Plug		3 Bag	60Ft	75Ft

Annular Space

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

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

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* not in use
☐ Other, *specify* ____

Water Details

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

Hole Diameter

Depth (m/ft) From	Depth (m/ft) 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)*

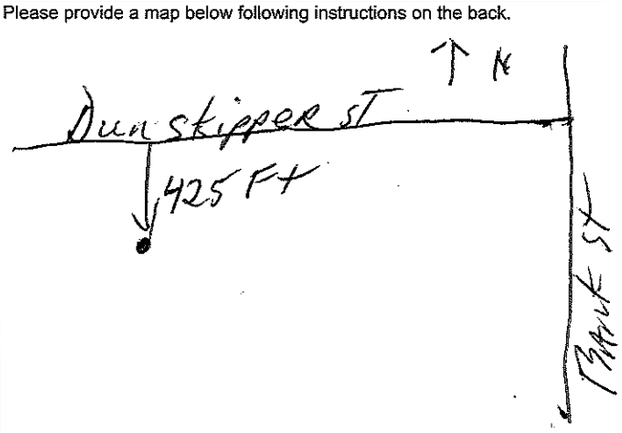
Well production *(l/min / GPM)*

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.
Raymond Pump + well	7260

Business Address (Street Number/Name)	Municipality
Box 18, 147 Principale st St-Albert	Nation

Province	Postal Code	Business E-mail Address
On	K0A3C0	labrosse_09@Hotmail.com

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
6137913924	Raymond Jacques

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
0264		2019/12/02

Well owner's information package delivered ☐ Yes ☑ No

Date Package Delivered ____

Date Work Completed 2019/12/02

Ministry Use Only

Audit No. Z307113

Received JAN 10 2020

0506E (2014/11) — Ministry's Copy

Ontario

Ministry of the Environment, Conservation and Parks

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

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Measurements recorded in: [X] Metric [ ] Imperial

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	
	LENRIN SOUTH HOLDINGS INC C/O TOWNSON GROUP		[ ] Well Constructed by Well Owner

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
100 CITIGATE	OTTAWA	ON	K2J 6A7	(613) 690-3242

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
N/A.	GLOUCESTER (CF)	21	A

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		See table below.			

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
WELL	N/A. (mm)	STATIC WATER LEVEL (m)	GPS EASTING	GPS NORTHING	UTM	DEPTH	
13.1 a	38	3.09	18453880	5017309	—	0	3.21
13.1 b	38	3.47	〃	〃		0	6.91
13.1 a	50	1.88	18453156	5017343	—	0	2.0
13.1 b	50	2.20	18453154	5017343	—	0	4.1

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
See above		Holeplug / Red-Plug Bentonite grout	0.083

Method of Construction

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

Well Use

[ ] Public [ ] Commercial [X] Not used
[ ] Domestic [ ] Municipal [ ] Dewatering
[ ] Livestock [ ] Test Hole [X] 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
	PVC			

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
[X] Observation and/or Monitoring Hole
[ ] Alteration (Construction)
[ ] Abandoned, Insufficient Supply
[ ] Abandoned, Poor Water Quality
[X] Abandoned, other, *specify* Constructed 2020.
[ ] Other, *specify*

Water Details

Water found at Depth (m/ft)	Kind of Water	Hole Diameter Depth From (m/ft)	Depth To (m/ft)	Diameter (cm/in)
[ ] Gas	[ ] Fresh [ ] Untested [ ] Other, *specify*			
[ ] Gas	[ ] Fresh [ ] Untested [ ] Other, *specify*			
[ ] Gas	[ ] Fresh [ ] Untested [ ] Other, *specify*			

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)

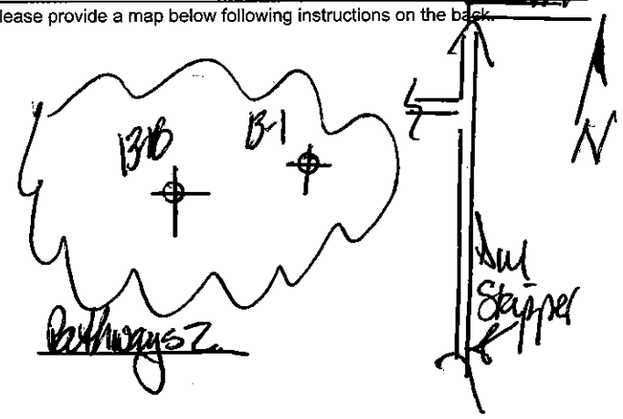
Disinfected? [ ] Yes [ ] No

	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.

Metric



Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
STANTON DRILLING INC	4875

Business Address (Street Number/Name)	Municipality
157 FIVE ARCHES DR, BOX 219	PAKENHAM

Province	Postal Code	Business E-mail Address
ON	K0A 2X0	stantondrilling@bellnet.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
(613) 624-5622	STANTON, PETER

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
0086		2020/04/16

Comments: Refer to Golder 13-1121-0083 for borehole site plan

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[ ] Yes [X] No		2020/04/22

Ministry Use Only

Audit No. Z322883

Received APR 08 2020

0506E (2018/12)

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Ministry of the Environment, Conservation and Parks

Well Record - Regulation 903

Ontario Water Resources Act

Notice of Collection of Personal Information

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

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A219864

Type *

☑ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☑ Imperial

1. Well Owner's Information

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

Last Name	First Name

Organization	Email Address
Aecon Construction and Materials Limited	

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
	4949	Bank Street	Gloucester

Country	Province	Postal Code	Telephone Number
Canada	Ontario	K1X 1G7	

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	4949	Bank Street	Gloucester

Lot	Concession	County/District/Municipality
		Carleton

City/Town	Province	Postal Code
Gloucester	Ontario	K1X 1G7

UTM Coordinates	Zone *	Easting *	Northing *		Municipal Plan and Sublot Number
NAD 83	18	454374	5016659	Test UTM in Map	

Other
BH2-23

3. Overburden and Bedrock Material *

Well Depth * 50 (ft)

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

				(ft)	(ft)
Grey	Gravel	Sand		0	5
Grey	Limestone			5	50

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	49	Hole Plug	4.54
49	50	Sand	0.07

5. Method of Construction *

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

6. Well Use *

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

7. Status of Well *

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

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

Inside Diameter (in)	Open Hole **or** Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
2	Plastic	0.25	0	40

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
2	Plastic	10	40	50

10. Water Details

Water found at Depth 2 (ft)	☐ Gas	Kind of water	☐ Fresh	☐ Untested	☐ Other	
Water found at Depth 40	☐ Gas	Kind of water	☐ Fresh	☐ Untested	☐ Other	

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	5	8
5	50	4

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

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

Recovery

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

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

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

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

13. Map of Well Location *

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

14. Information

Well owner's information package delivered	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) *
☐ Yes ☐ No		2023/03/29

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *	Well Contractor's License Number *
Aardvark Drilling Inc.	7675

Business Address

Unit Number	Street Number	Street Name *
C	25	Lewis Road

City/Town/Village *	Province	Postal Code *
Guelph	ON	N1H 1E9

Business Telephone Number	Business Email Address
519-826-9340	info@aardvarkdrillinginc.com

Last Name of Well Technician *	First Name of Well Technician *	Well Technician's License Number *
Tabbert	Devin	4557

16. Declaration *

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

Last Name	First Name	Email Address
England	Matthew	mengland@aardvarkdrillinginc.com

Signature		Date Submitted (yyyy/mm/dd)
Matt England	Digitally signed by Matt England Date: 2023.04.12 09:20:13 -04'00'	2023/04/12

17. Ministry Use Only

Audit Number

UJW8 VM4D

Ontario

Ministry of the Environment, Conservation and Parks

Well Record - Regulation 903

Ontario Water Resources Act

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Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A219865

Type *

☑ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☑ Imperial

1. Well Owner's Information

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

Last Name	First Name

Organization	Email Address
Aecon Construction and Materials Limited	

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
	4949	Bank Street	Gloucester

Country	Province	Postal Code	Telephone Number
Canada	Ontario	K1X 1G7	

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	4949	Bank Street	Gloucester

Lot	Concession	County/District/Municipality
		Carleton

City/Town	Province	Postal Code
Gloucester	Ontario	K1X 1G8

UTM Coordinates	Zone *	Easting *	Northing *		Municipal Plan and Sublot Number
NAD 83	18	454398	5016664	Test UTM in Map	

Other
MW5-23

3. Overburden and Bedrock Material *

Well Depth * 45 (ft)

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

				(ft)	(ft)
Grey	Gravel	Sand		0	2
Grey	Limestone			2	45

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	34	Hole Plug	2.77
34	45	Sand	0.73

5. Method of Construction *

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

6. Well Use *

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

7. Status of Well *

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

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

Inside Diameter (in)	Open Hole **or** Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
2	Plastic	0.25	0	35

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
2	Plastic	10	35	45

10. Water Details

Water found at Depth 1.5 (ft)	☐ Gas	Kind of water	☐ Fresh	☐ Untested	☐ Other	
Water found at Depth 33	☐ Gas	Kind of water	☐ Fresh	☐ Untested	☐ Other	

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	2	8
2	45	4

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

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

Recovery

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

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

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

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

13. Map of Well Location *

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

14. Information

Well owner's information package delivered	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) *
☐ Yes ☐ No		2023/03/28

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *	Well Contractor's License Number *
Aardvark Drilling Inc.	7675

Business Address

Unit Number	Street Number	Street Name *
C	25	Lewis Road

City/Town/Village *	Province	Postal Code *
Guelph	ON	N1H 1E9

Business Telephone Number	Business Email Address
519-826-9340	info@aardvarkdrillinginc.com

Last Name of Well Technician *	First Name of Well Technician *	Well Technician's License Number *
Tabbert	Devin	4557

16. Declaration *

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

Last Name	First Name	Email Address
England	Matthew	mengland@aardvarkdrillinginc.com

Signature		Date Submitted (yyyy/mm/dd)
Matt England	Digitally signed by Matt England Date: 2023.04.12 09:17:58 -04'00'	2023/04/12

17. Ministry Use Only

Audit Number

O85E RJ9U

Ontario

Ministry of the Environment, Conservation and Parks

Well Record - Regulation 903

Ontario Water Resources Act

Notice of Collection of Personal Information

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Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A219866

Type *

☑ Construction ☐ Abandonment

Measurement recorded in: *

☐ Metric ☑ Imperial

1. Well Owner's Information

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

Last Name	First Name

Organization	Email Address
Aecon Construction and Materials Limited	

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
	4949	Bank Street	Gloucester

Country	Province	Postal Code	Telephone Number
Canada	Ontario	K1X 1G7	

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	4949	Bank Street	Gloucester

Lot	Concession	County/District/Municipality
		Carleton

City/Town	Province	Postal Code
Gloucester	Ontario	K1X 1G8

UTM Coordinates	Zone *	Easting *	Northing *		Municipal Plan and Sublot Number
NAD 83	18	454374	5016605	Test UTM in Map	

Other
MW1-23

3. Overburden and Bedrock Material *

Well Depth * 66 (ft)

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

				(ft)	(ft)
Brown	Gravel	Sand		0	8
Grey	Limestone			8	66

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	53	Hole Plug	5.59
53	55	Pellet Plug	0.13
55	66	Sand	0.73

5. Method of Construction *

- [ ] Cable Tool
- [ ] Rotary (Conventional)
- [ ] Rotary (Reverse)
- [ ] Boring
- [ ] Air percussion
- [ ] Diamond
- [ ] Jetting
- [ ] Driving
- [ ] Digging
- [x] Rotary (Air)
- [x] Augering
- [ ] Direct Push
- [ ] Other (specify) _____

6. Well Use *

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

7. Status of Well *

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

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

Inside Diameter (in)	Open Hole **or** Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
2	Plastic	0.25	0	56

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
2	Plastic	10	56	66

10. Water Details

Water found at Depth 5 (ft)	☐ Gas	Kind of water	☐ Fresh	☐ Untested	☐ Other	
Water found at Depth 57	☐ Gas	Kind of water	☐ Fresh	☐ Untested	☐ Other	

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	8	8
8	66	4

12. Results of Well Yield Testing

☐ Pumping Discontinued

Explain _____

If flowing give rate

☐ Flowing _____ (GPM)

Draw down

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

Recovery

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

After test of well yield, water was

☐ Clear and sand free ☐ Other (specify)

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

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

13. Map of Well Location *

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

14. Information

Well owner's information package delivered	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) *
☐ Yes ☐ No		2023/03/28

Comments

15. Well Contractor and Well Technician Information

Business Name of Well Contractor *	Well Contractor's License Number *
Aardvark Drilling Inc.	7675

Business Address

Unit Number	Street Number	Street Name *
C	25	Lewis Road

City/Town/Village *	Province	Postal Code *
Guelph	ON	N1H 1E9

Business Telephone Number	Business Email Address
519-826-9340	info@aardvarkdrillinginc.com

Last Name of Well Technician *	First Name of Well Technician *	Well Technician's License Number *
Tabbert	Devin	4557

16. Declaration *

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

Last Name	First Name	Email Address
England	Matthew	mengland@aardvarkdrillinginc.com

Signature		Date Submitted (yyyy/mm/dd)
Matt England	Digitally signed by Matt England Date: 2023.04.12 09:19:07 -04'00'	2023/04/12

17. Ministry Use Only

Audit Number

YTCY BLDC