



July 31, 2026

PH5068-LET.01.REV.01

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Attention: Nikhil Sarna

Subject: **Hydrogeological Assessment and Terrain Analysis**
3113 Carp Road
Ottawa (Carp), Ontario

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INTRODUCTION

Further to your request, Paterson has conducted a Hydrogeological Assessment and Terrain Analysis in support of a Site Plan Control Application for the proposed commercial building to be located at 3113 Carp Road in Ottawa (Carp), Ontario.

The purpose of this work has been to determine the suitability of the water supply aquifer underlying the site to support the Site Plan Application for a proposed commercial development.

The subject site consists of a 3.06 ha lot which is currently vacant and has been historically used as an agricultural area. The ground surface generally slopes towards the southeast while the general overburden groundwater flow direction is inferred to be northeast towards the Carp River.

The subject site is bordered to the north by institutional land use and agricultural properties, to the east by Carp Road followed by residential and commercial properties, to the south by residential properties and agricultural lands, and to the west by vacant lands. The subject site itself and the surrounding properties are zoned RC9 or variations of RC9 for Carp Road Corridor (Highway Commercial Restricted) with various limitations (GeoOttawa).



Previous applications

A Hydrogeological Assessment and Terrain Analysis (HATA) completed by Paterson was submitted to the City as part of an earlier Site Plan application for the subject site. The previous HATA was titled Hydrogeological Assessment and Terrain Analysis - 3113 Carp Road, Ottawa (Carp), Ontario with report number PH4654-LET.01-REV.01 dated December 11, 2023, and hereafter referred to as the previous HATA. The previous HATA should be read in conjunction with this HATA.

Hydrogeological Pre-Consultations

A hydrogeological pre-consultation was completed with a City of Ottawa Hydrogeologist on July 25, 2025.

As part of the Site Plan application, the drinking water well that is to support the current application needed to be moved approximately 20 m away from the well which was assessed as part of the previous HATA (Test Well 1 - TW1). As the previous HATA was recently completed for this site, a scoped Hydrogeological Assessment was proposed. It was agreed upon that the newly installed well (Test Well 2 - TW2) would be considered representative if it could be demonstrated that it encountered similar groundwater quality as TW1. If TW2 was geochemically similar to TW1, then the groundwater quantity assessment completed as part of the previous HATA could be used to support this application.

Description of Subject Site

The subject site is an approximately 3.06 ha lot and is currently vacant. Historically it has been used for agricultural activities. The Site Plan Application is for a proposed new commercial building and associated infrastructure. Please refer to Figure 1 - Key Plan and Studio G-68 & RP Ancheta Architect Drawing A-012 Rev.0.10 dated July 27, 2026 attached for the proposed site location and site layout.

A new sewage system to service the commercial building has been proposed. A septic flow calculation was completed as part of the Ottawa Sewage System Office (OSSO) Sewage System Installation Permit (SSIP) and resulted in a total daily water demand calculation of 5,400 L/day. An approved OSSO SSIP has been included with this submission.

A drilled potable supply well was installed on March 8, 2023, hereafter referred to as Test Well 1 (TW1) and extends to a maximum depth of 54.9 m below existing ground surface (bgs). Due to a change in the proposed site plan, a new drilled potable supply well was installed on August 26, 2025, hereby referred to as Test Well 2 (TW2) and extends to 48.76 m bgs.



The suitability of the aquifer to supply the subject site was assessed using the methodology provided in City of Ottawa Hydrogeological and Terrain Analysis Guidelines (HTAG).

MISSISSIPPI-RIDEAU SOURCE PROTECTION PLAN

The Mississippi-Rideau Source Protection Plan (MRSP) provides guidance as to which policies apply to a given property, municipality or specific activity and if there are specific designations that apply to the area. The subject site and surrounding areas have been designated as a Significant Groundwater Recharge Area (SGRA), and Highly Vulnerable Aquifer (HVA) within the MRSP and are identified as two of four groundwater related vulnerable areas identified within the Clean Water Act (2006). The four vulnerable areas consist of SGRA, HVA, Intake Protection Zone (IPZ) and Wellhead Protection Area (WHPA).

Based upon the designation of an SGRA, and HVA, the MRSP provides a list of activities that are prohibited, managed or encouraged to change dependent upon the vulnerable area type. Therefore, there is no prohibition of land uses on the subject site based upon its proposed usage. Therefore, there are no related requirements for an HVA, or SGRA at this location.

FIELDWORK PROGRAM

TW1

As a means to demonstrate the adequacy of the aquifer underlying the subject lands, with respect to water quality and quantity, the drilled well (TW1) on the subject site was tested as part of the previous HATA. TW1 has a Water Well Record (WWR) Well ID of A318705. TW1 has a 152.4 mm diameter steel casing that extends to 22.4 m bgs with a 0.59 m stick up. The well itself extends to a depth of 54.9 m bgs. Based on available geological mapping, the drift thickness at TW1 varies from 3 to 10 m.

As a means to evaluate the water supply aquifer intercepted by the well, TW1 was subjected to an 8-hour constant rate pumping test. The pumping test was conducted on March 21, 2023 under the full-time supervision of Paterson personnel. Prior to the pumping test, a datalogger was installed to monitor background groundwater levels and the well was disinfected by Air Rock Drilling Co. Ltd. (Air Rock) personnel.

A submersible pump was provided by Air Rock for the 8-hour pumping test. A licensed water well technician completed the necessary plumbing related activities. A discharge hose assembly with a gate valve was connected to the rented pump. The discharge line was placed at a sufficient distance to ensure that the discharge water was being directed away from the well as well as any septic systems in the area. Upon completion of the test, the pump was removed, and the well was disinfected by Air Rock.



The pumping test was carried out at a pumping rate of 45 L/min for a duration of 8 hours, after which the pumping rate was reduced to approximately 24 L/min for approximately an hour in an attempt to lower turbidity levels. During the pumping test, the pumping rate was periodically measured using the timed volume correlation method. The pump rate was maintained within 5% of the selected pump rate. The static water level was recorded manually and an electronic datalogger (VanEssen TD-Diver) was installed in the test well prior to the start of the pumping test. The selected rate of 45 L/min provides approximately 4 times the maximum total daily design volume for the septic system during the 8-hour pumping test. The rate was determined to be representative of a flow rate which would be in excess of what the development would require.

The datalogger recorded water levels at 30 second intervals. In addition, manual water level readings were taken at periodic intervals during the test.

Recovery data was collected from the well following the completion of the pumping. The well was noted to have achieved 95% recovery approximately 5 minutes after the completion of pumping.

Groundwater samples were collected 4 hours and 9 hours after the start of pumping. Prior to collection of the groundwater samples, the free chlorine residual was verified as non-detectable. The water samples were submitted for comprehensive testing of bacteriological, chemical, and physical water quality parameters consistent with the standard "Subdivision Supply" suite of parameters plus trace metals, Volatile Organic Compounds (VOCs), and Petroleum hydrocarbons (PHCs).

All samples were collected unfiltered and unchlorinated and were placed directly into clean bottles supplied by the analytical laboratory. Samples were placed immediately into a cooler with ice and were transported directly to Environmental Testing Canada Inc. (Eurofins) laboratory in Ottawa. All samples were received by the laboratory within 24 hours of collection.

A series of field tests of the pumped water were carried out at the well head during the 8-hour pumping test. The parameters tested at the well head included: pH, total dissolved solids, conductivity, turbidity, true colour, and temperature.

Calibration / confirmation of calibration of all field-testing equipment was performed in Paterson's laboratory the day prior to the pumping test. Values are then confirmed again onsite prior to the start of the pumping test.

The following field equipment was used during the pumping test:

- ☐ Free Chlorine – HACH Pocket Colorimeter II;
- ☐ TDS/Conductivity/pH – Hanna Instruments 2328 BW combo pH/EC/TDS Tester;
- ☐ Colour – HACH DR 900 Colorimeter;
- ☐ Turbidity – Hanna Instruments HI98703 Turbidimeter



Once TW1 is no longer be in use, it will need to be decommissioned in accordance with O.Reg 903.

TW2

An additional water supply well (TW2) was installed approximately 20 m south of the location of TW1 due to a change in site plan that took place after TW1 was installed and tested. TW2 has a Water Well ID number of A437749 and was installed on August 26, 2025. TW2 has a 152.4 mm diameter steel casing that extends to 18.3 m bgs with a 0.5 m stick up. The well itself extends to a depth of 48.8 m bgs. Refer to Studio G-68 & RP Ancheta Architect Drawing A-012 Rev.0.10 dated July 27, 2026, attached, for the approximate location of TW2.

An O.Reg 903 1-hour pumping test was completed on August 28, 2025 at a rate of 76 L/min. The pumping test was extended to 3 hours to confirm water quality and quantity, as per the hydrogeological pre-consultation requirements. After 3 hours, the field testing results indicated that elevated apparent colour and turbidity was still present in the groundwater. The discharge rate was decreased to 38 L/min for a further 4 hours, after which samples were obtained and submitted for laboratory analysis. The water samples were submitted for comprehensive testing of bacteriological, chemical, and physical water quality parameters consistent with the standard "Subdivision Supply" suite of parameters plus trace metals, Volatile Organic Compounds (VOCs), and Petroleum hydrocarbons (PHCs).

The submersible pump was provided by Air Rock. A licensed water well technician completed the necessary plumbing related activities. The discharge line was placed at a sufficient distance to ensure that the discharge water was being directed away from the well as well as any septic systems in the area. Upon completion of the test, the pump was removed, and the well was disinfected by Air Rock.

An elevated aluminum concentration was encountered in the laboratory results at levels exceeding the operational guideline of 0.1 mg/L. Elevated aluminum levels are often associated with newly drilled wells. Air Rock returned to site on September 19, 2025 to purge the well at a rate of 23 L/min for 6 hours. Paterson returned to site after the well was purged for 6 hours, completed field testing, and obtained additional samples that were submitted to an analytical laboratory for trace metals analysis. The sample results from September 19, 2025 showed an aluminum concentration that did not exceed the operational guideline, and can be found attached.



Aquifer Analysis

Due to the proximity of TW1 to TW2, and the similarity in the geochemistry encountered in both wells, it can be inferred that both TW1 and TW2 access the same aquifer.

Water Quantity

Pumping test data was analyzed using AQTESOLV Pro Version 4 aquifer analysis software package by HydroSOLVE Inc. Drawdown data was measured using an electronic water level tape and an electronic datalogger unit.

Table 1: SUMMARY OF WATER SUPPLY AQUIFER CHARACTERISTICS OF TW1	
AQUIFER PARAMETER	RESULT OF ANALYSIS
Transmissivity (m ² /day)	94.2
Pumping Rate (L/min)	45
Pre-test Static Water Level (m btoc)	1.8
Drawdown (m)	Max – 4.8, End – 4.7
Available Drawdown (m)	53.1
% Drawdown During Pump Test (%)	9
Specific Capacity (L/min/m drawdown)	9.5

The drawdown data in TW1 was analyzed using the Theis and Cooper-Jacob methods of analysis. Aquifer transmissivity is estimated to be 94.21 m²/day. Refer to the Theis and Cooper-Jacob methods of analysis data sheets attached to this report.

As demonstrated by the measured values, the water level in the well was increasing consistently (however slightly) as the pumping test was performed. As the water level increased slightly during the constant pumping portion of the test, it is expected that continued pumping of the well cleared out fissures in the bedrock allowing for an increase in the aquifers ability to flow.

The pumping test results show that TW1 has a high yield to support the water demands that may be required. Overall maximum drawdown at a constant pumping rate for a period of 8 hours was approximately 4.8 m at approximately 80 minutes into the pumping test (9% of the available drawdown). The final drawdown at the end of the 8-hour pumping test was 4.7 m (9% of the available drawdown). 95% recovery was achieved approximately 5 minutes after the end of pumping.

The total volume of water pumped during the 8-hour pumping event was approximately 21,600 L. This is approximately 4 times the maximum total daily design sanitary sewage flow (TDDSSF) volume of water (5,400 L/day) required to support the Site Plan Control Application.



According to the WWR for TW2, TW2 was purged at a rate of 74 L/min and experienced a total drawdown of 1.1 m. After 3 hours of discharging at 74 L/min, a total drawdown of 1.1 m was observed by Paterson personnel. After the 3-hour mark, the discharge rate was decreased to 38 L/min for an additional 4 hours. The total quantity discharged during the well purge of TW2 on August 28, 2025 was 22,440 L.

The suitability of the aquifer to supply the proposed Site Plan Application for the proposed commercial development was assessed using the methodology provided in the City of Ottawa Hydrogeological and Terrain Analysis Guidelines (HTAG).

Based on the information summarized in Table 1, it is readily apparent that both water supply wells have intercepted an adequately strong water supply aquifer which has sufficient quantity to service the proposed Site Plan Control Application.

Given the analyses presented and summarized above, it is our opinion that there is an adequate supply of water to support the proposed Site Plan Control Application. Available water well records (WWR) of the neighboring properties on the MECP Well Record mapping website indicated that the surrounding wells were screened in limestone. Surrounding WWR's are attached to this report.

Water Quality

Field Data

Turbidity, electrical conductivity, total dissolved solids (TDS), pH, true colour and temperature were measured at the wellhead during the pumping test. The measurements and time intervals for each of these parameters are summarized on the graphical representation below. In addition, a HACH Pocket Colorimeter II chlorine reader was used to measure the free chlorine residual level. No chlorine residual was detected in the discharged water prior to the collection of the water samples.

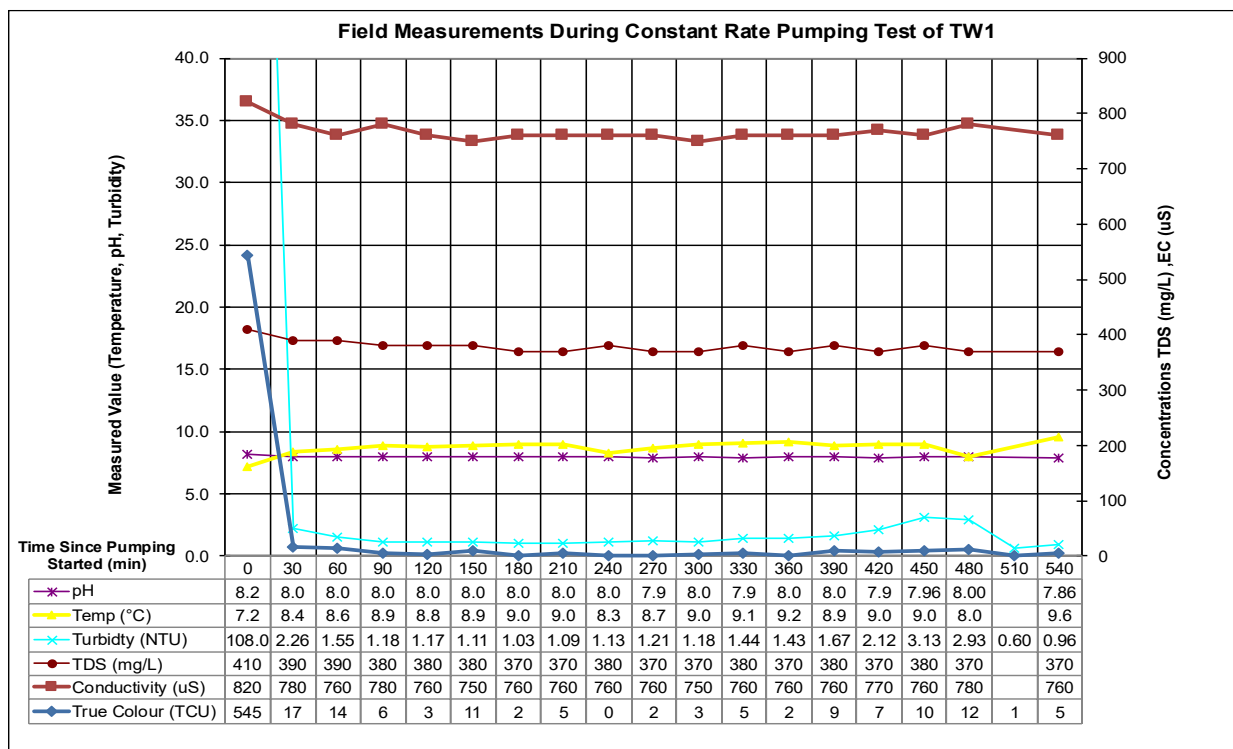


Figure 1: Field Measurements During Constant Rate Pumping Test of TW1

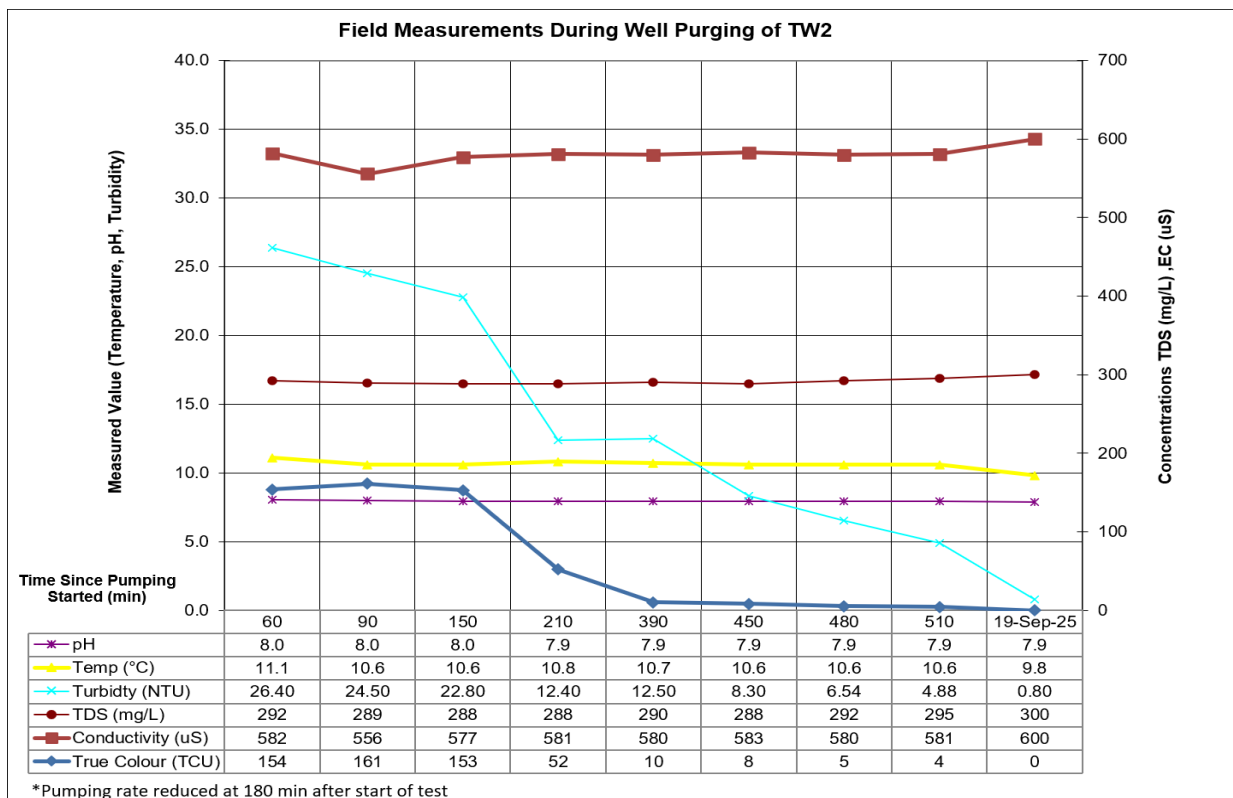


Figure 2: Field Measurements During Well Purging of TW2 on August 28, 2025 and September 19, 2025



Laboratory Data

The Subdivision Package suite of parameters and trace metals laboratory water quality obtained from the pumping test of TW1 and TW2 are provided in Table 2a and 2b below and the laboratory analyses reports can be found attached. VOC and PHC laboratory analytical testing were completed and measured to be non-detect in the sample results. All laboratory test results can be found attached to this report.

TABLE 2a: GROUNDWATER MICROBIOLOGY & GENERAL GEOCHEMISTRY							
PARAMETER	UNITS	ODWS		TW1		TW2	
		LIMIT	TYPE	GW1 (4 hr) 2023-03-21	GW2 (9 hr) 2023-03-21	TW2-GW1 2025-08-28	TW2-GW3 2025-09-19
MICROBIOLOGICAL							
Escherichia Coli (E.Coli)	ct/100mL	0	MAC	0	0	0	-
Total Coliforms	ct/100mL	0	MAC	0	0	0	-
GENERAL CHEMICAL - HEALTH RELATED							
Fluoride (F)	mg/L	1.5	MAC	0.11	0.10	0.12	-
Ammonia (N-NH ₃)	mg/L	-	-	<0.020	<0.020	<0.020	-
Nitrite (N-NO ₂)	mg/L	1	MAC	<0.10	<0.10	<0.1	-
Nitrate (N-NO ₃)	mg/L	10	MAC	0.41	0.48	0.81	-
Total Kjeldahl Nitrogen	mg/L	-	-	0.286	<0.100	0.156	-
Turbidity (Field)	NTU	1.0 (5.0)	MAC/AO	1.13	0.96	4.88	0.8
Turbidity (Laboratory)	NTU	1.0 (5.0)	MAC/AO	1.0	2.9	3.7	-
GENERAL CHEMICAL - AESTHETIC RELATED							
Alkalinity (as CaCO3)	mg/L	30-500	OG	207	198	193	-
Chloride (Cl)	mg/L	250	AO	78	79	80.1	-
Colour (Field - Apparent)	TCU	5	AO	0	5	24	0
Colour (Lab - Apparent)	TCU	5	AO	3	8	155	-
Colour (Field - True)	TCU	5	AO	-	-	0	0
Colour (Lab - True)	TCU	5	AO	-	-	<2	-
Conductivity	uS/cm	-	-	735	744	713	-
Dissolved Organic Carbon	mg/L	5	AO	1.00	1.00	1.3	-
Hardness (as CaCO3)	mg/L	100	OG	304	306	309	-
Ion Balance	unitless	-	-	0.94	0.97	1.04	-
pH	unitless	6.5-8.5	AO	8.07	8.04	7.94	-
Phenols	mg/L	-	-	<0.001	<0.001	<0.001	-
Sulphate (SO ₄)	mg/L	500	AO	61	61	58	-
Sulphide (S ₂ ⁻)	mg/L	0.05	AO	<0.01	<0.01	<0.02	-
Tannin & Lignin	mg/L	-	-	<0.5	<0.5	<0.1	-
Total Dissolved Solids	mg/L	500	AO	478	484	463	-

- ODWS identifies the following types of parameters:
MAC = Maximum Allowable Concentration
AO = Aesthetic Objective
OG = Operational Guideline
- Shaded Concentration Indicates an Exceedance of the ODWS Objective

**TABLE 2b: GROUNDWATER GEOCHEMISTRY - METALS**

PARAMETER	UNITS	ODWS		TW1			
		LIMIT	TYPE	GW1 (4 hr) 2023-03-21	GW2 (9 hr) 2023-03-21	TW2-GW1 2025-08-28	TW2-GW3 2025-09-19
METALS							
Aluminum (Al)	mg/L	0.1	OG	<0.01	<0.01	0.19	0.02
Antimony (Sb)	mg/L	0.006	IMAC	<0.0005	<0.0005	<0.0005	<0.0005
Arsenic (As)	mg/L	0.01	IMAC	<0.001	<0.001	<0.001	<0.001
Barium (Ba)	mg/L	1.0	MAC	0.25	0.25	0.26	0.26
Beryllium (Be)	mg/L	-	-	<0.0005	<0.0005	<0.0005	<0.0005
Boron (B)	mg/L	5.0	IMAC	0.03	0.02	0.03	0.03
Cadmium (Cd)	mg/L	0.005	MAC	<0.0001	<0.0001	<0.0001	<0.0001
Calcium (Ca)	mg/L	-	-	87	88	89	-
Chromium (Cr)	mg/L	0.05	MAC	<0.001	<0.001	<0.001	<0.001
Cobalt (Co)	mg/L	-	-	0.0003	0.0003	0.0003	0.0002
Copper (Cu)	mg/L	1.0	AO	<0.001	<0.001	0.002	<0.001
Iron (Fe)	mg/L	0.3	AO	0.08	0.30	0.44	0.05
Lead (Pb)	mg/L	0.01	MAC	<0.001	<0.001	<0.001	<0.001
Magnesium (Mg)	mg/L	-	-	21	21	21	-
Manganese (Mn)	mg/L	0.05	AO	0.04	0.04	0.02	-
Molybdenum (Mo)	mg/L	-	-	<0.005	<0.005	<0.005	<0.005
Nickel (Ni)	mg/L	-	-	<0.005	<0.005	<0.005	<0.005
Potassium (K)	mg/L	-	-	5	5	4	-
Selenium (Se)	mg/L	0.05	MAC	<0.001	<0.001	<0.001	<0.001
Silver (Ag)	mg/L	-	-	<0.0001	<0.0001	<0.0001	<0.0001
Sodium (Na)	mg/L	200	AO	23	23	32	-
Strontium (Sr)	mg/L	-	-	0.678	0.667	0.769	0.983
Thallium (Tl)	mg/L	-	-	<0.0001	<0.0001	<0.0001	<0.0001
Uranium (U)	mg/L	0.02	MAC	0.005	0.005	0.005	0.004
Vanadium (V)	mg/L	-	-	<0.001	<0.001	<0.001	<0.001
Zinc (Zn)	mg/L	5.0	AO	<0.01	<0.01	<0.01	<0.01

1. ODWS identifies the following types of parameters:

MAC = Maximum Acceptable Concentration

IMAC = Interim Maximum Acceptable Concentration

AO = Aesthetic Objective

OG = Operational Guideline

2. Shaded Concentration Indicates an Exceedance of the ODWS Objective

The bacteriological test results from the pumping test of TW1 (Certificate of Analysis – Report No. 1995000) indicated that the test samples at the 4- and 9-hour interval were non-detect (0 ct/100 mL) for E.Coli and Total Coliforms. The bacteriological test results (Certificate of Analysis – Report No. 9072775) from the well purge of TW2 indicated that the test samples were non-detect (0 ct/100 mL) for E.Coli and Total Coliforms.

The water quality of the subject water supply well meets all the Ontario Drinking Water Standards maximum acceptable concentrations (MAC). Furthermore, the water meets all of the Aesthetic Objectives (AO) and Operational Guidelines (OG) with the exception of the following.

- ☐ Hardness (as CaCO₃)



Exceedances of the above parameter are not uncommon for the water supply in the subject aquifer or after the construction of a new well. Each of these groundwater parameters are discussed in detail below.

Hardness as CaCO₃

Hardness, expressed as calcium carbonate, is an operational guideline and does not appear in the ODWS. Rather, it appears in the Technical Support Documents for Ontario Drinking Water Standards, Objectives and Guidelines as a parameter with an operational guideline at 100 mg/L. At the measured concentrations of 304, 306 and 309 mg/L, the water is considered to be very hard, however, it is below the reasonable treatable limit of 500 mg/L specified in Table 3 of the MOECC guidance document Procedure D-5-5 (1996).

The hardness concentration can be treated using conventional water softening technologies, if desired by the owner. Should conventional water softening technologies be used for treatment, the elevated sodium levels may increase even further and individuals on a sodium-restricted diet should be warned that there is an increase in sodium levels due to the water softening process. Alternatively, a separate tap which bypasses the conventional water softening technologies may be installed.

Sodium

Sodium (Na), an aesthetic parameter, was detected in the laboratory test samples at a concentration of 23 and 32 mg/L, which does not exceed the ODWS aesthetic objective of 200 mg/L. Although sodium is not toxic and no maximum acceptable concentration has been set, concentrations above 20 mg/L require that the Medical Officer of Health be notified of the water quality results, so that this information may be passed on to local physicians for use in treatment of those requiring a sodium-restricted diet.

Representative Well

Based on the similarity in water quantity and water quality results from the well purging and associated well sampling of TW2, TW2 is inferred to have encountered the same aquifer as TW1. Therefore, the aquifer analysis (quantity) performed on TW1 is considered valid to support the current Site Plan application.



Terrain Analysis

Surficial Geology

A series of boreholes were put down on the subject site to delineate the subsurface soil conditions as part of the Geotechnical Investigation (Paterson Report PG7598-REP.01 dated July 31, 2026). Between June 23 and 28, 2022 seven (7) boreholes were completed on the property for the design of the proposed commercial building and its associated infrastructure. The boreholes were advanced to a maximum depth of 7.3 m below ground surface (bgs). One borehole was subjected to a Dynamic Cone Penetration Test (DCPT) which extended to a depth of 13.9 m bgs. Six (6) boreholes were completed within the proposed footprint of the commercial building, and one (1) borehole was completed in the proposed septic bed area. The locations of the boreholes on the property are delineated on the Test Hole Location Plan, drawing PG7598-1, attached.

The borehole locations were recorded and the subsurface conditions, including the soil morphology and depth to the groundwater table (if encountered), were carefully observed and recorded. The soils encountered were classified texturally in the field, and later reviewed in the laboratory.

Generally, the subsurface profile at the test hole locations were observed to consist of topsoil overlying a silty sand to sandy silt layer. BH1-22 through BH5-22 encountered intermixed layers of silty clay and silty sand to sandy silt below the silty sand to sandy silt layer. BH5-22, BH6-22 and BH7-22 (western side of the site) encountered a stiff to hard clay below the silty sand to sandy silt layer. Refusal to DCPT was encountered in BH5-22 at a depth of 13.9 m bgs. Two PVC monitoring wells and 5 flexible piezometers were installed as part of the Geotechnical Investigation. Groundwater levels were measured and varied between 0.7 and 1.7 m bgs.

It should be noted that groundwater levels can fluctuate both seasonally and in conjunction with precipitation events. Therefore, the groundwater levels could vary at the time of construction.

Reference should be made to the borehole logs appended to this report for the details of the soil profiles encountered at each test hole location. The client should be aware that any information pertaining to soils are furnished as a matter of general information only and borehole descriptions are not to be interpreted as descriptive of conditions at locations other than those described by the boreholes themselves.

Two samples taken from the native material in the proposed commercial building footprint were submitted for sieve and Atterberg Limit analyses. The samples were collected during the geotechnical program at a depth of 1.4 m bgs and are labeled BH3-22–SS2 and BH5-22–SS2. Analytical results from the sieve and Atterberg Limit analysis can be found attached.



Hydrogeological Sensitivity of the Site

The subject site is currently vacant and has been historically used for agricultural purposes. A commercial building with associated infrastructure and private servicing is proposed for the site. The subject site fronts onto Carp Road and is bordered by developed residential and commercial properties as well as agricultural or vacant lands. The adjacent properties are serviced by private wells and septic systems.

The overburden at the test hole locations generally consists of a topsoil overlying silty sand to sandy silt which was either interbedded with a silty clay or overlying a silty clay deposit. Refusal to DCPT was encountered in BH5-21 at a depth of 13.9 m bgs. The WWR from TW1 indicated that a limestone bedrock was encountered at 20.4 m bgs while the WWR from TW2 indicated that a limestone bedrock was encountered at 16.46 m bgs. According to available geological mapping, the drift thickness within the site varies from 3 to 10 m bgs.

According to the geotechnical field investigation, and corroborated by the onsite WWR and overburden mapping, the overburden thickness is noted to be greater than 2 m. As the proposed site does not have bedrock within 2 m of the ground surface, the site is not considered hydrogeologically sensitive. Separation distances are not required to be increased between the septic components and the onsite well.

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 allowed to infiltrate the top of the bedrock to dissolutionally enlarge previously existing joints and bedding planes. Based on available mapping by the Ontario Geological Survey, there is no inferred, potential or known karstification in the subject area.

Conceptual Lot Development Plan

It is proposed to construct a single-story commercial building on the subject site. The location of the proposed building can be found on the attached Studio G-68 & RP Ancheta Architect Drawing A-012 Rev.10 dated July 27, 2026.

Theoretical Sewage System Volumes

An approved Sewage System Installation Permit (SSIP) will be provided by the Ottawa Sewage System Office (OSSO) and submitted as part of the application package. The design will be reviewed by the OSSO and will be constructed in accordance with the required regulations. The OSSO requires inspections during construction in order to ensure compliance.

The Sewage System Design is for a sewage system with a total daily design sanitary sewage flow (TDDSSF) of 5,400 L/day.



The Sewage System Design which was submitted to the OSSO included an NSF 245 denitrification system (Eljen DN450) capable of reducing the nitrate concentration of the effluent by 57 %. Refer to the NSF 245 report for the Eljen DN450 system attached for additional details.

Predictive Nitrate Impact Assessment

In order to demonstrate that private services would adequately support the proposed commercial development, a predictive nitrate impact assessment for the subject site was completed. The values shown in the Predictive Nitrate Impact Assessment attached to this report are summarized below.

☐ Site area	3.05 ha
☐ Impervious area (%)	68 %
☐ Daily sewage flow	5.4 m ³ /d
☐ Concentration of nitrate in effluent with treatment (Value based on nitrate reduction system (Eljen DN450) with 57% nitrate reduction)	17.2 mg/L
☐ Surplus Water (The surplus water value was estimated based on Environment Canada Climate Office values with a soil type comprised of a fine sandy loam (Urban lawns / Shallow Rooted Crops) and anthropogenic sources.)	379 mm/yr
☐ Combined infiltration factor based on:	0.70
• Topography infiltration factor	0.20
• Soil texture infiltration factor	0.40
• Cover infiltration factor	0.10

The topography infiltration factor of 0.20 is based upon a generally rolling land with an average slope of 2.8 to 3.8 m/km. The soil texture infiltration factor was based upon an “open sandy loam” with a value of 0.4 which is a reasonable generalization based upon the site investigations and available geological mapping. The “cover infiltration factor” was calculated at 0.10 based upon a cultivated land type cover.

An existing approved tertiary treatment system capable of reducing the nitrate loading in the effluent is from the Eljen Corporation brand and is called the Eljen Corporation GSF Denitrification System DN450. This Eljen system has passed the NSF/ANSI Standard 245 (American / International Testing standard) with a nitrate reduction value of 57% for influent Total Nitrogen. Using a 57% nitrate reduction technology, with an effluent nitrate concentration of 17.2 mg/L, the predicted nitrate concentration for a TDDSSF of 5,400 L/day would be **7.44 mg/L**.



Based on the results of the predicted nitrate impact assessment, it is our opinion that the property can adequately support the proposed commercial building without having an adverse impact on the underlying bedrock aquifer, provided that an Eljen Corporation GSF Denitrification System DN450 is used in the septic system.



Site Specific Water Balance

The site-specific water balance assessment (SSWB) was completed in accordance with City of Ottawa Memo “Carp Road Corridor – Nitrate Impact Assessment Recommendations” dated September 27, 2016, section 7.a to determine the change in recharge and potential impact to the regional hydrogeological system. At the time of the field investigations the study area mainly consisted of mainly agricultural land and minimal impervious areas. The pre and post-development terrain compositions are illustrated on Drawings PH5068-3 - Pre-Development Terrain Composition Plan and PH5068-4 - Post-Development Terrain Composition Plan appended to this report.

Calculations

Thornthwaite and Mather Water Balance Calculation

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 subject site generally consisted of topsoil overlying silty sand which is underlain by a silty clay deposit. Given the similar soil profiles across the entire subject site, the above noted calculations were carried out for the soil moisture holding capacity of a 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 (attached).

Table 3, below, displays the soil types present within the study area and their associated water holding capacities (WHC) as well as the actual evapotranspiration (AET) and surplus data. For the purposes of this study, AET values were used as they account for accumulated soil moisture deficit. This deficit represents the volume of water retained within the available pore spaces of the soil and is subtracted from the potential evapotranspiration (PET) value to more accurately calculate the water surplus. The monthly/annual water balance is presented in Tables 5-8, attached.

Table 3 - Site Specific Water Surplus Information			
Land Use Unit	Water Holding Capacity (mm)	Actual Evapotranspiration (mm/year)	Surplus Water (mm/year)
Impervious Surfaces	5	457	449
Urban Lawn (fine sandy loam)	75	523	379

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.

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 land, rolling land and hilly land. Flat land provides the greatest potential for infiltration and has the largest infiltration factor applied to it (0.3), while the other two have progressively lower infiltration factors (rolling land is 0.2 and hilly land is 0.1).

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

The final factor the MOE manual uses to partition infiltration from runoff is land cover. It is broken down into two sections: open fields/cultivated lands and woodlands. Woodlands have greater infiltration potential and an infiltration factor of 0.2. Open fields and cultivated



lands have lower potential and with an infiltration factor of 0.1. A summary of the MOE manual's descriptors and their associated infiltration factors is shown below in Table 4.

Table 4 - MOE (2003) Infiltration Factors	
Description of Area/Development Site	Value of Infiltration Factor
Topography	
Flat land (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 subject site is fairly uniform and is classified as rolling land (generally 2 to 4 m/km throughout that portion), largely covered by agricultural farmland and cultivated lands. Therefore, a pre-development topography infiltration factor of 0.2 was given for the subject site. 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. However, the topography of the post-development site will still consist of rolling land and was therefore assigned a post-development topography infiltration factor of 0.2. A topography infiltration factor of 0 was assigned to the impervious surfaces due to its negligible infiltration capacity.

As previously discussed, soils within the subject site generally consisted of topsoil overlying a sandy loam layer. Therefore, a pre-development soil infiltration factor of 0.4 was given for the materials analyzed on this property. Under post-development conditions, the majority of the site will consist of landscaped areas and impervious surfaces with soil infiltration factors of 0.4 for urban lawn (open sandy loam) and 0 for impervious surfaces.

At the time of the field investigations, the subject site generally consisted of cultivated farmland. A pre-development vegetation infiltration factor of 0.1 was assigned to the subject site. Post-development, areas of cultivated farmland are expected to be removed to accommodate buildings, landscaped areas and roadways. As such, a post-development vegetation infiltration factor of 0.1 was assigned to the developed areas. Impervious surfaces were given a vegetation infiltration factor of 0 due to their 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 7 and Table 8 (attached).

Pre- and Post-Construction Water Balance

The pre-development water budget analysis conducted for the study area determined that an estimated 8,103,058 L/year of surplus water currently infiltrates the surface soils. The remaining estimated 3,472,739 L/year of surplus leaves the site as runoff, draining towards localized surface water features near the subject site or to nearby existing municipal storm sewer systems.

The post-development water budget analysis determined that an estimated 2,586,004 L/year of surplus water will infiltrate the surface soils and approximately 10,445,480 L/year will leave the site as runoff. These values equate to an approximate decrease in infiltration of 68.1 % and an increase in runoff of 200.8 %.

The main variable that changed from pre-development conditions to post-development conditions was the addition of approximately 20,796 m² 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 (open sandy loam) material. These landscaped areas have similar infiltration potential to the native silty sand soils (open sandy loam).

It is important to note that the post-development water budget analysis for the subject site does not consider any potential infiltration of the anthropogenic sources (100% runoff was taken as a conservative approach). In reality, some portion (15 to 30%) of surface water that lands on impervious surfaces either evaporates, 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 pre-development and post-development water budget analyses are presented in Table 7 and 8 included in this report.



CONCLUSIONS

Based on the information contained within the body of this report the following conclusions can be drawn:

1. The water supply aquifer intercepted by TW2 is considered to be adequate to support the water quantity demands for the proposed development.
2. The preferred water supply intercepted by TW2 contains a water supply that is potable and contains only elevated concentrations of hardness. The noted parameters can be treated with current readily available water conditioning equipment.
3. A residential grade water softener is recommended to facilitate the reduction of the hardness concentration, if desired by the owner. If a water softener is used for the proposed development, the owner should be made aware that additional sodium will be added to the water to reduce hardness.
4. The sodium concentration was measured to be above the 20 mg/L reporting limit and, as such, the Medical Officer of Health for the City of Ottawa should be informed to assist area physicians in the treatment of local residents on sodium reduced diets.
5. The site is not considered hydrogeologically sensitive.
6. All wells need to be maintained in accordance with O.Reg 903. If TW1 or any other well is no longer in use, it needs to be decommissioned in accordance with O.Reg 903.
7. The site is not located in an area of potential or inferred karst.
8. The predicted nitrate concentrations at the property boundary are calculated to be below the required 10 mg/L threshold when a standard denitrification system (NSF 245 certified) with minimum nitrate reduction of 57%, such as the Eljen Corporation GSF Denitrification System DN450, is used.
9. A Sewage System Permit needs to be issued as part of the Site Plan Application and a Building Permit needs to be issued prior to the commencement of construction on the proposed development.
10. Based on the results of the water balance assessment, the proposed site development is projected to decrease the annual infiltration by approximately 68.1% and increase runoff by approximately 200.8 % compared to existing conditions.



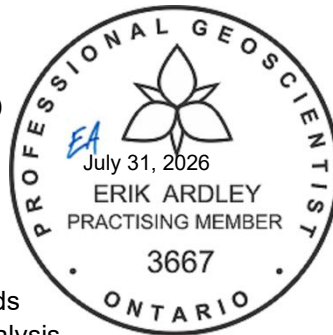
11. The results of the Hydrogeological Assessment and Terrain Analysis have provided satisfactory evidence that the subject site can support the proposed commercial development with respect to water quality, quantity and sewage system flow volumes.

We trust that the current submission satisfies your immediate requirements.

Best Regards,

Paterson Group Inc.

Alexander Schopf, EIT, PhD



Erik Ardley, P. Geo

Attachments:

- ☐ Key Plan
- ☐ MECP Water Well Records
- ☐ Eurofins Certificate of Analysis
- ☐ Paterson Borehole Logs
- ☐ Sieve and Atterberg Limit Test Results
- ☐ AQTESOLV - Pumping Test Analysis Reports
- ☐ Nitrate Impact Assessment Calculations
- ☐ NSF 245 Standard for Eljen Corporation GSF Denitrification System DN450
- ☐ Tables 5 & 6 - Water Balance Data Tables
- ☐ Table 7 & 8 - Pre and Post Development Water Balance Tables
- ☐ Studio G-68 & RP Ancheta Architect Drawing A-012 Rev.10 dated July 27, 2026
- ☐ Paterson Drawing PG7598-1 - Test Hole Location Plan
- ☐ Paterson Drawing PH5068-3 - Pre-development Terrain Composition Plan
- ☐ Paterson Drawing PH5068-4 - Post-development Terrain Composition Plan



Measurements recorded in: ☐ Metric ☒ Imperial

A437749

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

First Name	Last Name/Organization Megha Holdings Inc	E-mail Address	☐ Well Constructed by Well Owner
Mailing Address (Street Number/Name) 1558 Blohm Drive	Municipality Ottawa	Province ON	Postal Code K1G 4R7

Well Location

Address of Well Location (Street Number/Name) 3113 Carp Road	Township Huntley	Lot P/L6	Concession 3
County/District/Municipality Ottawa-Carleton	City/Town/Village Carp	Province Ontario	Postal Code
UTM Coordinates Zone, Easting NAD 83 18 421219	Northing 5018757	Municipal Plan and Sublot Number	Other 5R11999 PT LT 12

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 To
	Clay	Gravel	Boulders	0' 54'
Grey	Limestone			54' 138'
Grey	Limestone			138' 154'
Grey	Limestone			154' 160'

Do NOT SET PUMP PAST 130 FEET

Annular Space			Results of Well Yield Testing			
Depth Set at (m/ft) From To	Type of Sealant Used (Material and Type)	Volume Placed (m³/gal)	After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify Not tested			
60' 50'	Neat cement	10.92	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
50' 0'	Bentonite slurry	12.60	Static Level	7.9"		11.6"
			1	9.6	1	9.4
			2	10.8	2	8.5
			3	10.9	3	8
			4	11	4	7.9
			5	11.1	5	7.9
			10	11.2	10	7.9
			15	11.3	15	7.9
			20	11.3	20	7.9
			25	11.4	25	7.9
			30	11.4	30	7.9
			40	11.5	40	7.9
			50	11.5	50	7.9
			60	11.6	60	7.9

Method of Construction		Well Use	
☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☒ Air percussion ☐ Other, specify	☐ Diamond ☐ Jetting ☐ Driving ☐ Digging	☐ Public ☒ Domestic ☐ Livestock ☐ Industrial ☐ Other, specify	☐ Commercial ☐ Municipal ☐ Test Hole ☐ Cooling & Air Conditioning ☐ Not used ☐ Dewatering ☐ Monitoring

Construction Record - Casing			Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	
6 1/4"	Steel	.188"	From To	
5 15/16"	Open Hole		60' 160'	

Construction Record - Screen		Status of Well	
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)
			From To

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify	Depth (m/ft)	Diameter (cm/in)
138'		From To	
154'		0' 60' 9 3/4"	
		60' 160' 5 15/16"	

Well Contractor and Well Technician Information	
Business Name of Well Contractor Air Rock Drilling Co. Ltd.	Well Contractor's Licence No. C7681
Business Address (Street Number/Name) 6059 Frankton Road	Municipality Richmond
Province ON	Postal Code K0A 2Z0
Business E-mail Address air-rock@sympatico.ca	

Bus. Telephone No. (inc. area code) 613882170	Name of Well Technician (Last Name, First Name) Gauthier, Chris
Well Technician's Licence No. T5044	Signature of Technician and/or Contractor <i>[Signature]</i>
Date 20250731	

Map of Well Location			
Please provide a map below following instructions on the back.			

Comments: 1HP - 20 GPM Set @ 100 FT	
Well owner's information package delivered ☒ Yes ☐ No	Date Package Delivered 20250826
Ministry Use Only Audit No. 2421762 Received	

Measurements recorded in: ☐ Metric ☒ Imperial

Page _____ of _____

Well Owner's Information

First Name _____ Last Name/Organization Canadian Rural Development Services Inc. E-mail Address _____
 Mailing Address (Street Number/Name) #206555 Leget Drive Municipality Kanata Province Ont Postal Code K2K 2X3 Telephone No. (inc. area code) _____
☐ Well Constructed by Well Owner

Well Location

Address of Well Location (Street Number/Name) 2113 CARP ROAD Township Huntley Lot 12 Concession 3
 County/District/Municipality Ottawa-Carleton City/Town/Village Carp Province Ontario Postal Code _____
 UTM Coordinates Zone 18 Easting 83 Northing 184212145018772 Municipal Plan and Sublot Number Plan 5R-11999 Other Part 6

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)	From	To
	Brown & Blue Clay			0'	62'	
	Gravel & Boulders			62'	67'	
	Grey & Black limestone (fractured)			67'	180'	
* #2835251 ONTARIO INC.						
* PO# CRDS - 100427						

Annular Space			Results of Well Yield Testing			
Depth Set at (m)	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)	After test of well yield, water was:		Draw Down	
From	To		☐ Clear and sand free	☐ Other, specify	Time (min)	Water Level (m/ft)
73'	63'	Neat Cement Slurry	If pumping discontinued, give reason: _____		Static Level	6'0"
63'	0'	Portland Slurry			1	14.7
			Pump Intake set at (m/ft)		2	19.6
					3	23.2
			Pumping rate (l/min / GPM)		4	25.9
			Duration of pumping		5	28.1
			hrs + min		10	33.8
			Final water level end of pumping (m/ft)		15	36.2
			If flowing give rate (l/min/GPM)		20	37.3
					25	38.1
			Recommended pump depth (m/ft)		30	38.5
			Recommended pump rate (l/min/GPM)		40	39.1
			Well production (l/min/GPM)		50	39.4
			Disinfected?		60	39.7"
			☒ Yes ☐ No			

Method of Construction		Well Use	
☐ Cable Tool	☐ Diamond	☐ Public	☐ Commercial
☐ Rotary (Conventional)	☐ Jetting	☒ Domestic	☐ Municipal
☐ Rotary (Reverse)	☐ Driving	☐ Livestock	☐ Test Hole
☐ Boring	☐ Digging	☐ Irrigation	☐ Cooling & Air Conditioning
☒ Air percussion		☐ Industrial	
☐ Other, specify		☐ Other, specify	

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	From	To
6 1/4"	Steel	188"	73'	73'	180'
6"	Open hole				
☐ 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 To

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☒ Untested	Depth (m/ft)	Diameter (cm/in)
164'	☐ Gas ☐ Other, specify	0'	73'
		73'	180'
			6"

Business Name of Well Contractor AIR LOCK DRILLING Co LTD Well Contractor's Licence No. C7681
 Business Address (Street Number/Name) 6659 Frankston Road Municipality Richmond
 Province Ont Postal Code K9A2Z0 Business E-mail Address _____
 Bus. Telephone No. (inc. area code) 613 8382170 Name of Well Technician (Last Name, First Name) HANNA TERRY
 Well Technician's Licence No. T3632 Signature of Technician and/or Contractor [Signature] Date Submitted 20230308

Map of Well Location			
Please provide a map below following instructions on the back.			

Comments: Y2HP 106GPM @ 140FT

Well owner's information package delivered ☒ Yes ☐ No	Date Package Delivered <u>20230310</u>	Ministry Use Only
Date Work Completed <u>20230308</u>	Audit No. <u>2394501</u>	Received

28

254



GROUND WATER BRANCH
15 No. 3125
JUN 1 1962
ONTARIO WATER
RESOURCES COMMISSION

UTM 18Z 421400E

5R 5018440N

The Ontario Water Resources Commission Act

Elev. 5R 0390

WATER WELL RECORD

Basin 25 Carleton

County or District

Township, Village, Town or City Huntley

Con. 3 Lot 11

Date completed 5 May 1962
(day month year)

Address RR 2 Camp

Casing and Screen Record

Inside diameter of casing 4" / 2.5"
Total length of casing 25'
Type of screen —
Length of screen —
Depth to top of screen —
Diameter of finished hole 4"

Pumping Test

Static level 16'
Test-pumping rate 6 G.P.M.
Pumping level 35'
Duration of test pumping 1 hr.
Water clear or cloudy at end of test clear
Recommended pumping rate 5 G.P.M.
with pump setting of 60 feet below ground surface

Well Log

Overburden and Bedrock Record

clay
limestone

From ft

To ft

Depth(s) at which water(s) found

Kind of water (fresh, salty, sulphur)

0

6

6

127

125

fresh

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

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

Drilling or Boring Firm Ben Sparks

Address

Licence Number 700

Name of Driller or Borer Ben Sparks

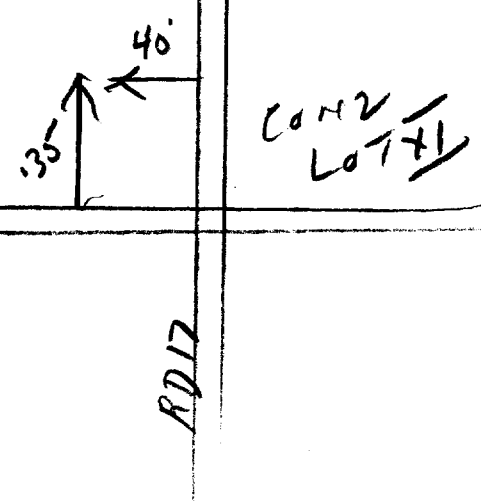
Address 413 Edgeworth

Date May 28/62

(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.





WATER WELL RECORD

31 F/80

Water management in Ontario

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

11

1512197

15005

CON. C/N

03

COUNTY OR DISTRICT Carleton	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE Huntley	LOT 012
OWNER (SURNAME FIRST) Clark R. S.	ADDRESS Smith Falls	DATE COMPLETED DAY 06 MO. 12 YR. 72

1512197 18 421095 5018774 4 382 4 26 JUL 08, 1977 299

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
brown	gravel	sand fill	packed	0	3
brown	sand		packed	3	18
Grey & black sand			packed	18	32
grey	clay		loose	32	42
grey	sand	gravel & stone		42	47
black&gray	limestone			47	188

31 00036112879 001862879 003222879 004220577 00472281112 0188815

WATER FOUND AT - FEET	KIND OF WATER
0080 10-13	1 ☐ FRESH 3 ☒ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
0187 15-18	1 ☐ FRESH 3 ☒ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
20-23	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
25-28	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
30-33	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
10-11	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE	274	0 0048
17-18	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		48 188
24-25	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE		0188

SIZE(S) OF OPENING (SLOT NO. 1)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN	

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

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☒ BAILER	0015 GPM	02 HOURS 00 MINS.
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
010 FEET	050 FEET	15 MINUTES 050 FEET 30 MINUTES 050 FEET 45 MINUTES 050 FEET 60 MINUTES 050 FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	070 GPM	
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	070	0005 GPM

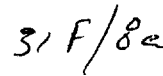
FINAL STATUS OF WELL	1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL	5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED
WATER USE	1 ☐ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☒ INDUSTRIAL 5 ☐ OTHER	5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING 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

LOCATION OF WELL 2118
IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.

NAME OF WELL CONTRACTOR	LICENCE NUMBER
Capital Water Supply Ltd.	1558
Box 490, Stittsville, Ontario.	
NAME OF DRILLER OR BORER	LICENCE NUMBER
Eugene Maurice	
SIGNATURE OF CONTRACTOR	SUBMISSION DATE
	DAY 8 MO 12 YR 72

DATA SOURCE	CONTRACTOR	DATE RECEIVED
1	1558	120173
DATE OF INSPECTION	INSPECTOR	
May 26, 1976	U.E. Bentley	
REMARKS		
Now owned by Federal Ministry of Transport		

OWRC COPY



Water management in Ontario 1. PRINT ONLY IN SPACES PROVIDED

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LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

OFFICE USE ONLY	DATA SOURCE		58 CONTRACTOR	59-62 DATE RECEIVED	63-66	67
	1		3503	110173		
	DATE OF INSPECTION		INSPECTOR			
			K			
REMARKS:					P	R
					WI	



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The Ontario Water Resources Act

WATER WELL RECORD

1517897

MUNICIP 15005 CON. CON

Q.1

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON. BLOCK, TRACT, SURVEY, ETC.	LOT
	Huntley	1	011 14
DATE COMPLETED			48-53
R. 3, Carp, Ont.			DAY 24 MO 06 YR 82
DEPTH	RC	ELEVATION	BASIN CODE
018399	4	0380	4 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

[illegible]

31	0008305	0128821				
32						

1	2	10	14	15	21
41		WATER RECORD			
WATER FOUND AT - FEET		KIND OF WATER			
10-15		1 ☒ FRESH	3 ☐ SULPHUR	14	
0125		2 ☐ SALTY	4 ☐ MINERAL		
15-18		1 ☐ FRESH	3 ☐ SULPHUR	19	
		2 ☐ SALTY	4 ☐ MINERAL		
20-23		1 ☐ FRESH	3 ☐ SULPHUR	24	
		2 ☐ SALTY	4 ☐ MINERAL		
25-28		1 ☐ FRESH	3 ☐ SULPHUR	29	
		2 ☐ SALTY	4 ☐ MINERAL		
30-33		1 ☐ FRESH	3 ☐ SULPHUR	34	
		2 ☐ SALTY	4 ☐ MINERAL		

CASING & OPEN HOLE RECORD			
INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
			FROM TO
10-11	☒ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE	12	13-16
06		.188	0 0022
17-18	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE	19	20-23
24-25	☐ STEEL ☐ GALVANIZED ☐ CONCRETE ☐ OPEN HOLE	26	27-30

SCREEN	SIZE(S) OF OPENING (SLOT NO.)	31-33	DIAMETER	34-38	LENGTH	39-40
	INCHES			FEET		
	MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN		41-44	1
					FEET	

61 PLUGGING & SEALING RECORD			
DEPTH SET AT - FEET		MATERIAL AND TYPE	CEMENT GROUT LEAD PACKER, ETC)
FROM	TO		
10-13	14-17		
18-21	22-25		
26-29	30-33	80	

<div style="border: 1px solid black; border-radius: 50%; width: 40px; height: 40px; display: flex; align-items: center; justify-content: center; margin: 5px;">71</div> <div style="writing-mode: vertical-rl; transform: rotate(180deg); font-weight: bold; padding: 5px;">PUMPING TEST</div>	PUMPING TEST METHOD		PUMPING RATE		DURATION OF PUMPING	
	1 ☒ PUMP	2 ☐ BAILER	0020		GPM	00 15-16 30 17-18 HOURS MINS
	STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING		1 ☐ PUMPING 2 ☒ RECOVERY	
	19-21	22-24	15 MINUTES 26-28	30 MINUTES 29-31	45 MINUTES 32-34	60 MINUTES 35-37
	020 FEET	120 FEET	030 FEET	028 FEET	026 FEET	
IF FLOWING, GIVE RATE		PUMP INTAKE SET AT		WATER AT END OF TEST		
38-41		GPM		FEET		
RECOMMENDED PUMP TYPE		RECOMMENDED PUMP SETTING		RECOMMENDED PUMPING RATE		
☐ SHALLOW ☒ DEEP		110 FEET		0010 GPM		

<p>54</p> <p>FINAL STATUS OF WELL</p> <p>1</p>	<p>1 ☒ WATER SUPPLY</p> <p>2 ☐ OBSERVATION WELL</p> <p>3 ☐ TEST HOLE</p> <p>4 ☐ RECHARGE WELL</p>	<p>5 ☐ ABANDONED, INSUFFICIENT SUPPLY</p> <p>6 ☐ ABANDONED POOR QUALITY</p> <p>7 ☐ UNFINISHED</p>
<p>55-56</p> <p>WATER USE</p> <p>01</p>	<p>1 ☒ DOMESTIC</p> <p>2 ☐ STOCK</p> <p>3 ☐ IRRIGATION</p> <p>4 ☐ INDUSTRIAL</p> <p>☐ OTHER</p>	<p>5 ☐ COMMERCIAL</p> <p>6 ☐ MUNICIPAL</p> <p>7 ☐ PUBLIC SUPPLY</p> <p>8 ☐ COOLING OR AIR CONDITIONING</p> <p>9 ☐ NOT USED</p>
<p>57</p> <p>METHOD OF DRILLING</p> <p>4</p>	<p>1 ☐ CABLE TOOL</p> <p>2 ☐ ROTARY (CONVENTIONAL)</p> <p>3 ☐ ROTARY (REVERSE)</p> <p>4 ☒ ROTARY (AIR)</p> <p>5 ☐ AIR PERCUSSION</p>	<p>6 ☐ BORING</p> <p>7 ☐ DIAMOND</p> <p>8 ☐ JETTING</p> <p>9 ☐ DRIVING</p>

LOCATION OF WELL

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

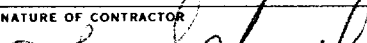
OLD HWY # 17

OLD CARP ROAD

1.6 MILE

120'0'

DRILLERS REMARKS

CONTRACTOR	NAME OF WELL CONTRACTOR		LICENCE NUMBER	
	McLean Water Supply Ltd.		3504	
	ADDRESS			
	1532 Raven Ave., Ottawa, Ont.			
CONTRACTOR	NAME OF DRILLER OR BORER		LICENCE NUMBER	
	A. Scharf			
	SIGNATURE OF CONTRACTOR		SUBMISSION DATE	
			DAY 25 MO. 6 YR. 84	

OFFICE USE ONLY	DATA SOURCE	58 1	CONTRACTOR	59-62 3504	DATE RECEIVED	63-68 10 09 82	69-74
	DATE OF INSPECTION		INSPECTOR				
	REMARKS						

Instructions for Completing Form

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 • 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

Well Owner's Information and Location of Well Information	
Well Owner Name	
Well Owner Address	
Well Owner City	
Well Owner State	
Well Owner Zip	
Well Owner Phone	
Well Owner Email	
Well Location	
Well Location Address	
Well Location City	
Well Location State	
Well Location Zip	
Well Location Phone	
Well Location Email	

First Name TREMBLING		Last Name ASPEN LTD		Mailing Address (Street Number/Name, RR, Lot, Concession) 3228 MOODIE DRIVE			
County/District/Municipality OTTAWA / CARLETON		Township/City/Town/Village NEPEAN		Province Ontario	Postal Code K2H 7V1	Telephone Number (include area code) 613-839-0006	
Address of Well Location (County/District/Municipality) OTTAWA / CARLETON				Township HUNTLEY		Lot 12	Concession 2
RR#/Street Number/Name 3106 CAMP ROAD				City/Town/Village OTTAWA		Site/Compartment/Block/Tract etc.	
GPS Reading	NAD 83	Zone 18	Easting 921096	Northing 5018982	Unit Make/Model MAGELLAN	Mode of Operation: ☐ Undifferentiated ☐ Differentiated, specify _____	☒ Averaged

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Metres To
BROWN	SAND		MEG	0	5
GRY	CLAY			5	8
GRY	GRAVEL			8	8.8
GRY	LIMESTONE			8.8	8.9

Hole Diameter			Construction Record						Test of Well Yield				
Depth From	Metres To	Diameter Centimetres	Inside diam centimetres	Material	Wall thickness centimetres	Depth Metres		Pumping test method <i>SUB. PUMP</i>	Draw Down		Recovery		
						From	To		Time min	Water Level Metres	Time min	Water Level Metres	
<i>0</i>	<i>6</i>	<i>30</i>						Pump intake set at - (metres) <i>8</i>	Static Level	<i>6.28</i>		<i>6.97</i>	
<i>6</i>	<i>8.5</i>	<i>15.8</i>						Pumping rate - (litres/min) <i>100</i>	<i>1</i>	<i>6.97</i>	<i>1</i>	<i>6.90</i>	
								Duration of pumping ____ hrs + ____ min	<i>2</i>	<i>6.97</i>	<i>2</i>	<i>6.28</i>	
								Final water level end of pumping <i>6.37</i> metres	<i>3</i>	<i>6.97</i>	<i>3</i>	<i>6.28</i>	
								Recommended pump type ☒ Shallow ☐ Deep	<i>4</i>	<i>6.97</i>	<i>4</i>	<i>6.28</i>	
								Recommended pump depth <i>7</i> metres	<i>5</i>	<i>6.97</i>	<i>5</i>	<i>6.28</i>	
								Recommended pump rate <i>50</i> (litres/min)	<i>10</i>	<i>6.97</i>	<i>10</i>	<i>6.28</i>	
								If flowing give rate - (litres/min)	<i>15</i>	<i>6.97</i>	<i>15</i>	<i>6.28</i>	
									<i>20</i>	<i>6.97</i>	<i>20</i>	<i>6.28</i>	
									<i>25</i>	<i>6.97</i>	<i>25</i>	<i>6.28</i>	
								If pumping discontinued, give reason.	<i>30</i>	<i>6.97</i>	<i>30</i>	<i>6.28</i>	
									<i>40</i>	<i>6.97</i>	<i>40</i>	<i>6.28</i>	
									<i>50</i>	<i>6.97</i>	<i>50</i>	<i>6.28</i>	
									<i>60</i>	<i>6.97</i>	<i>60</i>	<i>6.28</i>	

[illegible]

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 <i>Blomberg Village</i>		Well Contractor's Licence No. <i>6574</i>	
Business Address (street name, number, city etc.) <i>Box 324 CAMP ONT HOA ILU</i>			
Name of Well Technician (last name, first name) <i>SIMON SIKUSE</i>		Well Technician's Licence No. <i>310</i>	
Signature of Technician/contractor <i>[Signature]</i>		Date Submitted <i>yyyy mm dd</i> <i>2005 11 18</i>	

Location of Well

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

CARP ROAD

55m
50m
WELL
HOUSE
LANEWAY
N

Audit No.	z 28740	Date Well Completed	2005	MM	11	DD	12
Was the well owner's information package delivered?	☒ Yes ☐ No	Date Delivered	2005	MM	11	DD	15

Ministry Use Only					
Data Source			Contractor 6 57 4		
Date Received	yyyy	DD	Date of Inspection	yyyy	MM DD
NOV	24	2005			
Remarks			Well Record Number		

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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.

Well Owner's Information and Location of Well Information:

Ministry Use Only

MUN	CON	LOT
-----	-----	-----

RR#/Street Number/Name	3116 CARP RD	OTAWA CARLETON WEST CARLETON	City/Town/Village	Site/Compartment/Block/Tract etc.
GPS Reading	NAD 83	Zone 18T	Unit Make/Model	Mode of Operation: ☐ Undifferentiated ☐ Averaged ☐ Differentiated, specify
	833	18T	5018933	

Log of Overburden and Bedrock Materials (see instructions)
--

General Colour	Most common material	Other Materials	General Description	Depth	Metres
				From	To
			THIS DOCUMENT IS TO INFORM		
			THAT THE WELL CASING HAS		
			BEEN EXTENDED ABOVE THE		
			GROUND SURFACE		
			THIS IS AN ATTEMPT TO		
			THE ORIGINAL WELL RECORD		
			WHICH MAY OR MAY NOT		
			EXIST.		

Hole Diameter			Construction Record					Test of Well Yield								
Depth	Metres	Diameter	Inside diam centimetres	Material	Wall thickness centimetres	Depth		Pumping test method	Draw Down		Recovery					
From	To	Centimetres				From	To		Time min	Water Level Metres	Time min	Water Level Metres				
			Casing					Pump intake set at - (metres)	Static Level							
			☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized					Pumping rate - (litres/min)	1		1					
											Duration of pumping _____ hrs + _____ min	2		2		
											Final water level end of pumping _____ metres	3		3		
			☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized					Recommended pump type.	4		4					
											☐ Shallow ☐ Deep					
											Recommended pump depth. _____ metres	5		5		
			☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized					Recommended pump rate.	10		10					
											(litres/min)	15		15		
											If flowing give rate - (litres/min)	20		20		
			☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized						25		25					
												If pumping discontinued, give reason.	30		30	
													40		40	
			☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized						50		50					
													60		60	
Water Record			Screen													
Water found at _____ Metres	Kind of Water		Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.											
☐ m ☐ Gas ☐ Other: _____	☐ Fresh ☐ Salty	☐ Sulphur ☐ Minerals														
☐ m ☐ Gas ☐ Other: _____	☐ Fresh ☐ Salty	☐ Sulphur ☐ Minerals														
☐ m ☐ Gas ☐ Other: _____	☐ Fresh ☐ Salty	☐ Sulphur ☐ Minerals														
After test of well yield, water was			No Casing or Screen													
☐ Clear and sediment free			☐ Open hole													
☐ Other, specify _____																
Chlorinated ☐ Yes ☐ No																

Depth set at - Metres		Material and type (bentonite slurry, neat cement slurry) etc.	Plugging and Sealing Record	
From	To		☐ Annular space	☐ Abandonment
<p align="center">Method of Construction</p> <div> ☐ Cable Tool ☐ Rotary (air) ☐ Diamond ☐ Digging </div> <div> ☐ Rotary (conventional) ☐ Air percussion ☐ Jetting ☐ Other </div> <div> ☐ Rotary (reverse) ☐ Boring ☐ Driving ☒ <i>Well casing extending</i> </div>				
<p align="center">Water Use</p> <div> ☐ Domestic ☐ Industrial ☐ Public Supply ☐ Other </div> <div> ☐ Stock ☐ Commercial ☐ Not used </div> <div> ☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning </div>				
<p align="center">Final Status of Well</p> <div> ☐ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other) </div> <div> ☐ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering </div> <div> ☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well </div>				

Location of Well

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

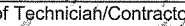
CARP RD.

Audit No. Z 50987

Date Well Completed YYYY MM DD
2007 05 24

Date Delivered YYYY MM DD

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

Well Contractor/Technician Information		
Name of Well Contractor	Well Contractor's Licence No.	
AQUA AMP SERVICE	6907	
Business Address (street name, number, city etc.)		
2019 RICHARDSON SIDE RD OTTAWA		
Name of Well Technician (last name)	Well Technician's Licence No.	
WEDD BARRY	T-2489	
Signature of Technician/Contractor	Date Submitted	
	YYYY MM DD 2017 05 24	

Ministry Use Only					
Data Source			Contractor		
Date Received YYYY MM DD SEP 24 2007			Date of Inspection YYYY MM DD 2007 09 24		
Remarks			Well Record Number		



Ministry of
the Environment

Measurements recorded in: ☒ Metric ☐ Imperial

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

A 130166

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

WESA

Well Location

Address of Well Location (Street Number/Name)		Township		Lot		Concession	
3096 CARP ROAD							
County/District/Municipality		City/Town/Village		Province		Postal Code	
Ottawa		OTTAWA CARP		Ontario			
UTM Coordinates		Zone		Easting		Northing	
NAD 83		18		4215		405018740	
				Municipal Plan and Sublot Number		Other	

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	To
Dark Brown	Sand		moist	0	0.76
Dark Brown	Sand & Gravel	silt & potential till	moist	0.76	2.29
Light Grey	Sand & Gravel	silt & clay	dry	2.29	6.55
Light Grey	Limestone	Biотurbated, fossilifer	Fine to medium grained	6.55	10.44

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
From To		
0.3 3.7	Bentonite Gravel Seal	0.067

Method of Construction	Well Use
☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☐ Air percussion ☒ Other, specify HSA/Diamond	☐ Public ☐ Domestic ☐ Livestock ☐ Industrial ☐ Commercial ☐ Municipal ☐ Test Hole ☐ Cooling & Air Conditioning ☐ Not used ☐ Dewatering ☒ Monitoring

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		
			From To		
5.1	PVC	SCHED 40	0 4.2		

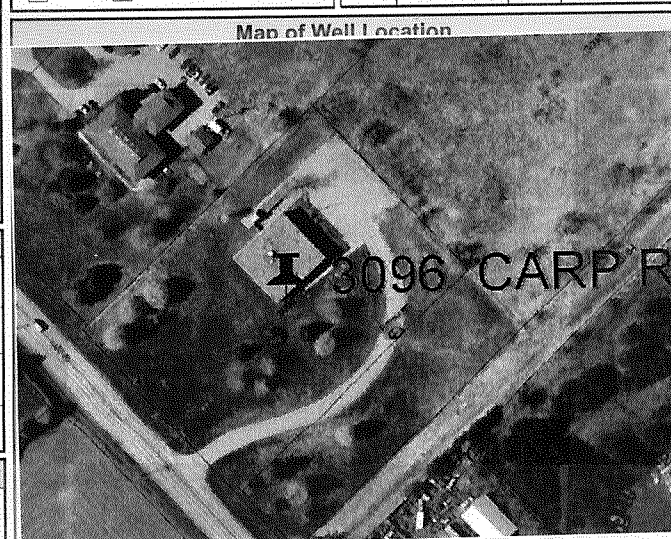
☐ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☒ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply ☐ Abandoned, Poor Water Quality ☐ Abandoned, other, specify ☐ Other, specify
--

Construction Record - Screen			
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)
			From To
5.8	PVC	10	4.2 10.3

Water Details		Hole Diameter	
Water found at Depth	Kind of Water: ☐ Fresh ☐ Untested	Depth (m/ft)	Diameter (cm/in)
9.2 (m/ft) ☐ Gas	☐ Other, specify	From To	
		0 6.55	20
Water found at Depth	Kind of Water: ☐ Fresh ☐ Untested		
(m/ft) ☐ Gas	☐ Other, specify	6.55 10.44	10.16
Water found at Depth	Kind of Water: ☐ Fresh ☐ Untested		
(m/ft) ☐ Gas	☐ Other, specify		

Well Contractor and Well Technician Information			
Business Name of Well Contractor		Well Contractor's Licence No.	
George Downing Estate Drilling LTD		1 8 4 4	
Business Address (Street Number/Name)		Municipality	
410 Rue Principale		Grenville-sur-la-Rouge	
Province	Postal Code	Business E-mail Address	
QC	J0V 1B0	downing@hawk-igs.net	
Bus. Telephone No. (inc. area code)		Name of Well Technician (Last Name, First Name)	
819 242 6469		Stephen Downing	
Well Technician's Licence No.		Signature of Technician/and/or Contractor	
3 3 2 6		[Signature]	
		Date Submitted	
		20121121	

Results of Well Yield Testing				
After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason:	Static Level			
	1		1	
Pump intake set at (m/ft)	2		2	
Pumping rate (l/min / GPM)	3		3	
Duration of pumping hrs + min	4		4	
Final water level end of pumping (m/ft)	5		5	
If flowing give rate (l/min / GPM)	10		10	
Recommended pump depth (m/ft)	15		15	
Recommended pump rate (l/min / GPM)	20		20	
Well production (l/min / GPM)	25		25	
Disinfected?	30		30	
☐ Yes ☐ No	40		40	
	50		50	
	60		60	



Comments:	
Well owner's information package delivered ☐ Yes ☒ No	Date Package Delivered Y Y Y Y M M D D 20121024
Date Work Completed 20121024	
Ministry Use Only Audit No. Z 153945 Received 11 2012	

A138239

Measurements recorded in: ☐ Metric ☒ Imperial

Address of Well Location (Street Number/Name) 3119 CARP RD		Township FORMERLY HUNTLEY	Lot 12	Concession 3
County/District/Municipality OTTAWA CARELTON		City/Town/Village CARP		Province Ontario
UTM Coordinates NAD 83 Zone 18 Easting 42109550 Northing 18561		Municipal Plan and Sublot Number		Postal Code K0A 1A0

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 To
RED	SAND			0 7½
GREY	LIMESTONE		FRACTURED	7½ 9
GREY	LIMESTONE			9 258

Annular Space			
Depth Set at (m/ft) From To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)	
0 24	BENTONITE SLURRY	0.256	
24 34	CEMENT GROUT	0.150	

Method of Construction	Well Use
☐ Cable Tool ☒ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☒ Air percussion ☐ Other, specify _____	☐ Public ☒ Domestic ☐ Livestock ☐ Irrigation ☐ Industrial ☐ Other, specify _____
☐ Diamond ☐ Jetting ☐ Driving ☐ Digging	☐ Commercial ☐ Municipal ☒ Test Hole ☐ Cooling & Air Conditioning ☐ Not used ☐ Dewatering ☐ Monitoring

Construction Record - Casing				Status of Well
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From To	
6 ¼	STEEL	0.188	0 34	☒ Water Supply
6	OPEN HOLE		34 258	☐ 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 To

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☒ Untested	Depth (m/ft) From To	Diameter (cm/in)
160-180	☐ Gas ☐ Other, specify HYDROFRAC	34 258	6"
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☐ Untested		
230-258	☐ Gas ☐ Other, specify HYDROFRAC		
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☐ Untested		
	☐ Gas ☐ Other, specify _____		

Well Contractor and Well Technician Information			
Business Name of Well Contractor SAUNDERS WELL DRILLING		Well Contractor's Licence No. 4 8 7 9	
Business Address (Street Number/Name) RR#1		Municipality BRAESIDE	
Province ONT	Postal Code K0A1G0	Business E-mail Address	
Bus. Telephone No. (inc. area code) 613 623 5648	Name of Well Technician (Last Name, First Name) SAUNDERS TROY		
Well Technician's Licence No. 1517	Signature of Technician and/or Contractor <i>Troy Saunders</i>	Date Submitted 2013 06 13	

Results of Well Yield Testing			
After test of well yield, water was:		Draw Down	
☐ Clear and sand free ☐ Other, specify CLEARING		Time (min)	Water Level (m/ft)
If pumping discontinued, give reason:		Static Level	
Pump intake set at (m/ft) 230		1	14.30
Pumping rate (l/min / GPM) 5		2	17.80
Duration of pumping 1 hrs + 0 min		3	21.79
Final water level end of pumping (m/ft) 71.45		4	24.36
If flowing give rate (l/min / GPM)		5	27.04
Recommended pump depth (m/ft) 248		10	36.48
Recommended pump rate (l/min / GPM) 4.5		15	42.34
Well production (l/min / GPM) 4.5		20	47.24
Disinfected? ☒ Yes ☐ No		25	51.61
		30	55.39
		40	61.62
		50	66.42
		60	71.45

Map of Well Location
Please provide a map below following instructions on the back.
Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☒ Yes	2013 06 13	Audit No. 2158244
☐ No	2013 06 13	Received JUL 31 2013

A 138241

Measurements recorded in: ☐ Metric ☒ Imperial

Address of Well Location (Street Number/Name) 3119 CARP RD				Township FORMERLY HUNTLEY		Lot 12		Concession 3			
County/District/Municipality OTTAWA CARELTON				City/Town/Village CARP				Province Ontario		Postal Code K0A1L0	
UTM Coordinates NAD 83		Zone 18		Easting 421108		Northing 5018864		Municipal Plan and Sublot Number			

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)					Depth (m/ft)	
General Colour	Most Common Material	Other Materials	General Description		From	To
RED	SAND				0	6 1/2
GREY	CLAY				6 1/2	25 1/2
GREY/RED	SAND	GRAVEL + STONES			25 1/2	36
GREY	LIMESTONE				36	159

Annular Space			
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)	
0 31	BENTONITE SLURRY	0.256	
31 41	CEMENT GROUT	0.150	

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				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		
6 1/4	STEEL	0.188	0 + 2 41	☒ 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 _____	
6	OPEN HOLE		41 159		

Construction Record - Screen				Status of Well	
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		
			From To		

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☒ Untested	Depth (m/ft)	Diameter (cm/in)
147	☐ Gas ☐ Other, specify _____	From To	
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☐ Untested	41 159	6
(m/ft) ☐ Gas ☐ Other, specify _____			
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☐ Untested		
(m/ft) ☐ Gas ☐ Other, specify _____			

Well Contractor and Well Technician Information Business Name of Well Contractor SAUNDERS WELL DRILLING Business Address (Street Number/Name) RR#1 Province ONT Postal Code K0A1G0 Business E-mail Address Bus. Telephone No. (inc. area code) 6136235048 Name of Well Technician (Last Name, First Name) SAUNDERS TROY Well Technician's Licence No. 1517 Signature of Technician And/or Contractor Troy Saunders Date Submitted 20130707				Well Contractor's Licence No. 4879 Municipality BRAESIDE	
--	--	--	--	---	--

Results of Well Yield Testing					
After test of well yield, water was:		Draw Down		Recovery	
☐ Clear and sand free		Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
☐ Other, specify CLEARING		Static Level	5.0		
If pumping discontinued, give reason:		1	8.45	1	50.39
Pump intake set at (m/ft)		2	10.81	2	46.6
Pumping rate (l/min / GPM)		3	12.96	3	43.6
Duration of pumping		4	15.77	4	41.02
/ hrs + 0 min		5	17.69	5	38.30
Final water level end of pumping (m/ft)		10	25.03	10	26.78
If flowing give rate (l/min / GPM)		15	31.85	15	18.13
Recommended pump depth (m/ft)		20	36.87	20	11.94
150		25	41.13	25	8.15
Recommended pump rate (l/min / GPM)		30	44.88	30	6.43
5		40	50.18	40	5.18
Well production (l/min / GPM)		50	54.19	50	5.0
7		60	57.18	60	5.0
Disinfected?					
☒ Yes ☐ No					

Map of Well Location

Please provide a map below following instructions on the back.

Well owner's information package delivered ☒ Yes ☐ No	Date Package Delivered 20130607 Date Work Completed 20130607	Ministry Use Only Audit No. Z 158245 JUL 31 2013 Received
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Measurements recorded in: ☐ Metric ☒ Imperial

Page ____ of ____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	Alan Gale Agencies Limited		
Mailing Address (Street Number/Name)	Municipality	Province	Postal Code
1870 Sixth Line Road RR1	Dunrobin	ON	K0A 1T0

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
3160 Carp Road	West Carleton	P/L 11-12	2
County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa-Carleton	Carp	Ontario	
UTM Coordinates Zone Easting Northing	Municipal Plan and Sublot Number	Other	
NAD 8 3 18 421446 5018944	RP-5R-7272		Parts 1 & 3

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)
	Sand	Stones		0' to 15'
	Sand	Gravel		15' to 27'
Grey	Limestone			27' to 187'
Grey	Sandstone	w/ Grey Limestone	Mix	187' to 200'
TEST WELL # 4 OF # 4				

Annular Space			
Depth Set at (m)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)	
42' to 32'	Neat cement	10.92	
32' to 0'	Bentonite slurry	16.8	

Method of Construction	Well Use
☐ Cable Tool ☐ Rotary (Conventional) ☐ Rotary (Reverse) ☐ Boring ☒ Air percussion ☐ Other, specify <u>HYDROFRACKED</u>	☐ Public ☒ Domestic ☐ Livestock ☐ Irrigation ☐ Industrial ☐ Other, specify _____ ☐ Commercial ☐ Municipal ☐ Test Hole ☐ Cooling & Air Conditioning ☐ Not used ☐ Dewatering ☐ Monitoring

Construction Record - Casing				Status of Well
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m)	
6 1/4"	Steel	.188"	+2' to 42'	☒ Water Supply
6 1/8"	Open Hole		42' to 200'	☐ 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 To

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: ☐ Fresh ☒ Untested ☐ Gas ☐ Other, specify _____	Depth (m/ft)	Diameter (cm/in)
193 (m/ft)		From To	
		0' to 42'	9 3/4"
		42' to 200'	6 1/8"

Business Name of Well Contractor	Well Contractor's Licence No.
Air Rock Drilling Co. Ltd.	1119
Business Address (Street Number/Name)	Municipality
6659 Franktown Road, RR#1	Richmond

Province	Postal Code	Business E-mail Address
ON	K0A 2Z0	air-rock@sympatico.ca
Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	
613-8382-170	Purcell, Shannon	
Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
T4033		2019 04 30

Results of Well Yield Testing			
After test of well yield, water was: ☐ Clear and sand free ☐ Other, specify <u>Not tested</u>	Draw Down	Recovery	
If pumping discontinued, give reason: <u>X</u>	Time (min)	Water Level (m/ft)	Time (min)
	Static Level	13.5"	63.2"
Pump intake set at (m/ft) 190	1	20.3	1
Pumping rate (l/min / GPM) 3	2	23	2
Duration of pumping 1 hrs + 0 min	3	25.2	3
Final water level end of pumping (m/ft) 63.2"	4	27.1	4
If flowing give rate (l/min / GPM) <u>X</u>	5	28.5	5
	10	38.6	10
	15	42.7	15
	20	40.4	20
	25	49.8	25
Recommended pump depth (m/ft) 190'	30	54.5	30
Recommended pump rate (l/min / GPM) 3	40	57.8	40
Well production (l/min / GPM) 3	50	60.7	50
Disinfected? ☒ Yes ☐ No	60	63.2'	60

Map of Well Location
Please provide a map below following instructions on the back.

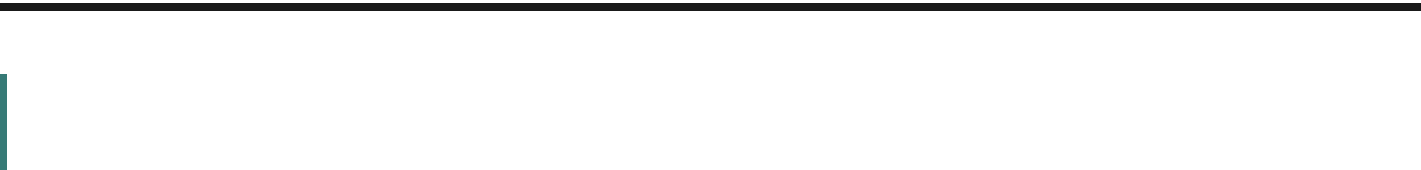
Comments:
1/2 HP - 5 GPM SET @ 190 FEET

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☒ Yes ☐ No	2019 04 28	Audit No. Z302437
	Date Work Completed	JUN 12 2019
	2019 03 06	Received

Map: Well records

This map allows you to search and view well record information from reported wells in Ontario.

Full dataset is available in the Open Data catalogue (<https://data.ontario.ca/dataset/well-records>) .



[Go Back to Map](#)

Well ID

Well ID Number: 1513273
Well Audit Number:
Well Tag Number:

This table contains information from the original well record and any subsequent updates.

Well Location

Address of Well Location		
Township	HUNTLEY TOWNSHIP	
Lot	012	
Concession	CON 03	

County/District/Municipality	OTTAWA-CARLETON
City/Town/Village	
Province	ON
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 18 Easting: 421226.50 Northing: 5018949.00
Municipal Plan and Sublot Number	
Other	

Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
YLLW	SAND			0 ft	20 ft
	HPAN			20 ft	32 ft
GREY	LMSN			32	260

				ft	ft
--	--	--	--	----	----

Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed	

Method of Construction & Well Use

Method of Construction	Well Use	
Rotary (Air)		
	Domestic	

Status of Well

Water Supply

Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To	
6 inch	STEEL		35 ft	

--	--	--	--

Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To	

Well Contractor and Well Technician Information

Well Contractor's Licence Number: 1836

Results of Well Yield Testing

After test of well yield, water was	CLEAR	
If pumping discontinued, give reason		
Pump intake set at		
Pumping Rate	8 GPM	
Duration of Pumping	1 h:0 m	
Final water level	100 ft	
If flowing give rate		

Recommended pump depth	150 ft
Recommended pump rate	5 GPM
Well Production	PUMP
Disinfected?	

Draw Down & Recovery

Draw Down Time(min)	Draw Down Water level	Recovery Time(min)	Recovery Water level
SWL	15 ft		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	

20		20	
25		25	
30		30	
40		40	
45		45	
50		50	
60		60	

Water Details

Water Found at Depth	Kind	
256 ft	Sulphur	

Hole Diameter

Depth From	Depth To	Diameter	
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Audit Number:

Date Well Completed: April 18, 1973

Date Well Record Received by MOE: June 22, 1973

Related

How to use a Ministry of the Environment map (<https://www.ontario.ca/page/how-use-ministry-environment-map#wells>)

Technical documentation: Metadata record (<https://data.ontario.ca/dataset/well-records/resource/3031344e-e3f2-48d5-888c-c1deadfd2f77>)

Updated: October 18, 2021
Published: March 20, 2014

OFFICIAL CERTIFICATE OF ANALYSIS : 4484448
WORK REQUEST : 100389538
Report Date : 2025-10-03
Paterson Group

9 Auriga Dr
Nepean, Ontario
K2E 7T9
Attention : Alex Schopf

Reception Date : 2025-08-29
Project : PH5068
Sampler : NA
PO Number : 63929
Temperature : 11 °C

Analysis	Quantity	External Method
Alkalinity (Water, Automated)	1	Modified from SM 2320 B
Ammonia, Total (Water, Colorimetry)	1	Modified from EPA 350.1
Chloride (Water, IC)	1	Modified from SM 4110 B and C
Colour, Apparent (Water, Spectrophotometry)	1	Modified from SM 2120 C
Colour, True (Water, Spectrophotometry)	1	Modified from SM 2120 C
Conductivity (Water, Automated)	1	Modified from SM 2510 B
DOC (Water, IR)	1	Modified from SM 5310 B
Escherichia coli (DC Plate)	1	Modified from MECP E3407
Fluoride (Water, Auto/ISE)	1	Modified from SM 4500-F A and 4500-F C
Hardness (Water, Calculation Only)	1	SM 2340 B
Ion Balance (Water, Calculation)	1	Modified from SM1030 E
Metals Scan (Water, ICP/MS)	1	Modified from EPA 200.8
Metals Scan (Water, ICP/OES)	1	Modified from SM 3120 B
Nitrate (Water, IC)	1	Modified from SM 4110 B and C
Nitrite (Water, IC)	1	Modified from SM 4110 B and C
pH (25°C) (Water, Automated)	1	Modified from SM 4500-H+ B
PHCs F1 (Water, GC-FID)	1	Modified from ON MECP E3421
PHCs F2-F4 (Water, GC-FID)	1	Modified from ON MECP E3421
Phenols (Water, Colorimetry)	1	Modified from EPA 420.2
Sulphate (Water, IC)	1	Modified from SM 4110 B and C
Sulphide (Water, Colorimetry)	1	Modified from SM 4500-S2 D
Tannin and Lignin (Water, Spec)	1	Modified from SM 5550 B
TDS (Estimated)	1	Modified from SM 2510 A
Total Coliforms (DC Plate)	1	Modified from MECP E3407
Total Kjeldahl Nitrogen (Water, Colorimetry)	1	Modified from EPA 351.2
Turbidity (Water, Turbidimeter)	1	Modified from SM 2130 B
VOCs (Water, GC/MS)	1	Modified from EPA 8260

Criteria :

A : Ontario Regulation 169/03 (Non-Regulated Drinking Water)

Sample status upon receipt :

9072775

Compliant

Certificate Comments :

Revision 1: This is an amendment and supersedes certificate 4449755. The full list of VOCs has been added.

9072775

Color (true & apparent) were analyzed on September 4, 2025. S2-, tannin and lignin, DOC, conductivity, pH, alkalinity, F, metals, N-NH3 and TKN were analyzed September 2, 2025. VOCs and F1-F4 analysed on 2025-09-03. S2- MRL was increased due to matrix interference.

Notes :

- All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated.

- Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at <https://directory.cala.ca/>
- Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Legend :

RL : Reporting limit

N/A : Not applicable

* : Analysis conducted by external subcontracting

QC : Reference material (QC)

1 : Results in annex

^ : Analysis not accredited

OFFICIAL CERTIFICATE OF ANALYSIS - EXCEEDENCE SUMMARY

Client : Paterson Group

Project : PH5068

Reception Date : 2025-08-29

Eurofins Sample No	Client Sample Identification	Analyte	Result	Units	Exceeded Criteria		
					A	B	C
Colour, Apparent (Water, Spectrophotometry)							
9072775	TW1 - GW1	Colour (Apparent)	155	TCU	5		
Hardness (Water, Calculation Only)							
9072775	TW1 - GW1	Hardness as CaCO3 (Calculation)	309	mg/L	80-100		
Metals Scan (Water, ICP/MS)							
9072775	TW1 - GW1	Aluminum	0.19	mg/L	0.1		
9072775	TW1 - GW1	Iron	0.44	mg/L	0.3		
Sulphide (Water, Colorimetry)							
9072775	TW1 - GW1	Sulphide (S2-)	<0.20	ma/L	0.05		

OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH5068

Reception Date: 2025-08-29

			Eurofins Sample No : 9072775						
			Matrix : Groundwater						
			Sampling Date : 2025-08-28						
			Client Sample Identification : TW1 - GW1						
Anions	RL	Unit	Criteria						
			A	B	C				
Chloride	0.5	mg/L	250			80.1			
Sulphate	1	mg/L	500			58			
			Eurofins Sample No : 9072775						
			Matrix : Groundwater						
			Sampling Date : 2025-08-28						
			Client Sample Identification : TW1 - GW1						
Calculations	RL	Unit							
Ion Balance (Calculation)^	0.1		1.04						
			Eurofins Sample No : 9072775						
			Matrix : Groundwater						
			Sampling Date : 2025-08-28						
			Client Sample Identification : TW1 - GW1						
General Chemistry	RL	Unit	Criteria						
			A	B	C				
Alkalinity (as CaCO3)	5	mg/L	500			193			
Colour (Apparent)	2	TCU	5			155			
Colour (True)	2	TCU				<2			
Conductivity @ 25°C	5	µS/cm				713			
Dissolved Organic Carbon	0.5	mg/L	5			1.3			
Fluoride	0.1	mg/L	1.5			0.12			
Hardness as CaCO3 (Calculation)	1	mg/L	80-100			309			
pH @ 25°C	1		6.5-8.5			7.94			
Phenols-4AAP	0.001	mg/L				<0.001			
Sulphide (S2-)	0.2	mg/L	0.05			<0.20			
Tannin and Lignin	0.1	mg/L				<0.1			
TDS (Estimated)^	5	mg/L	500			463			
Turbidity	0.1	NTU	5			3.7			

OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH5068

Reception Date: 2025-08-29

Eurofins Sample No : 9072775									
Matrix : Groundwater									
Sampling Date : 2025-08-28									
Client Sample Identification : TW1 - GW1									
Metals	RL	Unit	Criteria						
			A	B	C				
Metals Scan (Water, ICP/MS)									
Aluminum	0.01	mg/L	0.1			0.19			
Antimony	0.0005	mg/L	0.006			<0.0005			
Arsenic	0.001	mg/L	0.01			<0.001			
Barium	0.001	mg/L	1			0.261			
Beryllium	0.0005	mg/L				<0.0005			
Boron	0.01	mg/L	5			0.03			
Cadmium	0.0001	mg/L	0.005			<0.0001			
Chromium	0.001	mg/L	0.05			<0.001			
Cobalt	0.0002	mg/L				0.0003			
Copper	0.001	mg/L	1			0.002			
Iron	0.03	mg/L	0.3			0.44			
Lead	0.001	mg/L	0.01			<0.001			
Manganese	0.01	mg/L	0.05			0.02			
Mercury	0.0001	mg/L	0.001			<0.0001			
Molybdenum	0.005	mg/L				<0.005			
Nickel	0.005	mg/L				<0.005			
Selenium	0.001	mg/L	0.05			<0.001			
Silver	0.0001	mg/L				<0.0001			
Strontium	0.001	mg/L				0.769			
Thallium	0.0001	mg/L				<0.0001			
Uranium	0.001	mg/L	0.02			0.005			
Vanadium	0.001	mg/L				<0.001			
Zinc	0.01	mg/L	5			<0.01			
Metals Scan (Water, ICP/OES)									
Calcium	1	mg/L				89			
Magnesium	1	mg/L				21			
Potassium	1	mg/L				4			
Sodium	1	mg/L	200			32			

Eurofins Sample No : 9072775									
Matrix : Groundwater									
Sampling Date : 2025-08-28									
Client Sample Identification : TW1 - GW1									
Microbiology	RL	Unit	Criteria						
			A	B	C				
Escherichia coli (DC)	0	CFU/100mL	0			0			
Total Coliforms (DC)	0	CFU/100mL	0			0			

OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH5068

Reception Date: 2025-08-29

			Eurofins Sample No : 9072775						
			Matrix : Groundwater						
			Sampling Date : 2025-08-28						
			Client Sample Identification : TW1 - GW1						
Nutrients	RL	Unit	Criteria						
			A	B	C				
Ammonia (Total, as Nitrogen)	0.02	mg/L				<0.020			
Nitrate (as Nitrogen)	0.1	mg/L	10.0			0.81			
Nitrite (as Nitrogen)	0.1	mg/L	1.0			<0.1			
Total Kjeldahl Nitrogen	0.1	mg/L				0.156			

Eurofins Sample No :			9072775						
Matrix :			Groundwater						
Sampling Date :			2025-08-28						
Client Sample Identification :			TW1 - GW1						
Petroleum Hydrocarbons	RL	Unit							
F1 (C6 to C10)	20	ug/L	<20						
PHCs F2-F4 (Water, GC-FID)									
F2 (C10 to C16)	20	ug/L	<20						
F3 (C16 to C34)	50	ug/L	<50						
F4 (C34 to C50)	50	ug/L	<50						
5-alpha-Androstane (surrogate)	1	%	93						

OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH5068

Reception Date: 2025-08-29

Eurofins Sample No : 9072775					Groundwater	2025-08-28	TW1 - GW1	
Matrix :								
Sampling Date :								
Client Sample Identification :								
Volatile Organic Compounds	RL	Unit	Criteria					
			A	B	C			
VOCs (Water, GC/MS)								
1,1,1,2-Tetrachloroethane	0.5	ug/L				<0.5		
1,1,1-Trichloroethane	0.4	ug/L				<0.4		
1,1,2,2-Tetrachloroethane	0.5	ug/L				<0.5		
1,1,2-Trichloroethane	0.4	ug/L				<0.4		
1,1-Dichloroethane	0.4	ug/L				<0.4		
1,1-Dichloroethene	0.5	ug/L	14			<0.5		
1,2,4-Trichlorobenzene	0.5	ug/L				<0.5		
1,2-Dibromoethane	0.2	ug/L				<0.2		
1,2-Dichlorobenzene	0.4	ug/L	200			<0.4		
1,2-Dichloroethane	0.2	ug/L	5			<0.2		
1,2-dichloroethene, cis + trans^	0.5	ug/L				<0.5		
1,2-Dichloropropane	0.5	ug/L				<0.5		
1,3,5-Trimethylbenzene	0.3	ug/L				<0.3		
1,3-Dichlorobenzene	0.4	ug/L				<0.4		
1,3-Dichloropropene, cis + trans	0.5	ug/L				<0.5		
1,4-Dichlorobenzene	0.4	ug/L	5			<0.4		
Acetone	5	ug/L				<5		
Benzene	0.5	ug/L	1			<0.5		
Bromodichloromethane	0.3	ug/L				<0.3		
Bromoform	0.4	ug/L				<0.4		
Bromomethane	0.5	ug/L				<0.5		
Carbon tetrachloride	0.2	ug/L	2			<0.2		
Chloroethane	0.5	ug/L				<0.5		
Chloroform	0.5	ug/L				<0.5		
Chloromethane	0.2	ug/L				<0.2		
cis-1,2-Dichloroethene	0.4	ug/L				<0.4		
cis-1,3-Dichloropropene	0.5	ug/L				<0.5		
Dibromochloromethane	0.3	ug/L				<0.3		
Dichlorodifluoromethane	0.5	ug/L				<0.5		
Dichloromethane	4	ug/L	50			<4		
Diethyl ether	5	ug/L				<5		
Ethylbenzene	0.5	ug/L	140			<0.5		
Hexane	5	ug/L				<5		
m/p-Xylene	0.4	ug/L				<0.4		
Methyl butyl ketone (MBK)	5	ug/L				<5		
Methyl ethyl ketone (MEK)	2	ug/L				<2		
Methyl isobutyl ketone (MIBK)	5	ug/L				<5		
Methyl tert-butyl ether (MTBE)	2	ug/L				<2		
Monochlorobenzene	0.5	ug/L	80			<0.5		
o-Xylene	0.4	ug/L				<0.4		
Styrene	0.5	ug/L				<0.5		
Tetrachloroethylene (PCE)	0.3	ug/L	10			<0.3		
Toluene	0.4	ug/L	60			<0.4		
trans-1,2-dichloroethene	0.4	ug/L				<0.4		
trans-1,3-dichloropropene	0.5	ug/L				<0.5		

OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH5068

Reception Date: 2025-08-29

			Eurofins Sample No : 9072775						
			Matrix : Groundwater						
			Sampling Date : 2025-08-28						
			Client Sample Identification : TW1 - GW1						
Volatile Organic Compounds	RL	Unit	Criteria						
			A	B	C				
Trichloroethylene (TCE)	0.3	ug/L	5			<0.3			
Trichlorofluoromethane	0.5	ug/L				<0.5			
Vinyl chloride	0.2	ug/L	1			<0.2			
Xylene (Total)	0.5	ug/L	90			<0.5			
1,2-dichloroethane-d4 (surrogate)	0	%				105			
4-bromofluorobenzene (surrogate)	0	%				118			
Toluene-d8 (surrogate)	0	%				111			

Approved by :

Patrick Jacques, B.Sc, C. Chem
Environmental Chemist, Ottawa

Approved by :

Jason Kennedy,
Project Manager

OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group

Project : PH5068

Reception Date: 2025-08-29

Parameter	Unit	RL	Blank	QC		Matrix Spike		Duplicate	
				Recovery %	Range %	Recovery %	Range %	RPD %	Range %
Alkalinity (Water, Automated)									
Method : Alkalinity (water, titration to pH 4.5, automated). Internal method: OTT-I-AT-WI45398.									
Alkalinity (as CaCO3)	mg/L	5	<5	97	95-105			3	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Ammonia, Total (Water, Colorimetry)									
Method : Ammonia (Water, Colorimetry). Internal method: OTT-I-NUT-WI46201.									
Ammonia (Total, as Nitrogen)	mg/L	0.02	<0.020	98	80-120	106	80-120	-	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Chloride (Water, IC)									
Method : Anions (Water, Ion Chromatography). Internal method: OTT-I-IC-WI45985.									
Chloride	mg/L	0.5	<0.5	104	80-120	114	80-120	1	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Colour, Apparent (Water, Spectrophotometry)									
Method : Colour (Water, Spectrophotometric). Internal method: OTT-I-SPEC-WI45980.									
Colour (Apparent)	TCU	2	<2	96	78-116			0	0-40
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Colour, True (Water, Spectrophotometry)									
Method : Colour (Water, Spectrophotometric). Internal method: OTT-I-SPEC-WI45980.									
Colour (True)	TCU	2	<2	96	78-116			-	0-40
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Conductivity (Water, Automated)									
Method : Conductivity (Water, Autotitrator). Internal Method: OTT-I-AT-WI45398.									
Conductivity @ 25°C	uS/cm	5	<5	99	98-102			1	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
DOC (Water, IR)									
Method : Organic carbon (water, IR, combustion). Internal method: OTT-I-DEM-WI46148.									
Dissolved Organic Carbon	mg/L	0.5	<0.5	100	88-112	97	80-120	-	0-15
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Escherichia coli (DC Plate)									
Method : Total Coliforms and E.Coli by MF (Water, DC plate). Internal method: OTT-M-BAC-WI45296.									
Escherichia coli (DC)	CFU/100mL	0	0					-	0-30
Associated Samples : 9072775								Prep Date: 2025-08-29 Analysis Date: 2025-08-30	
Fluoride (Water, Auto/ISE)									
Method : Fluoride by autotitrator, ion selective electrode. Internal method: OTT-I-AT-WI45398.									
Fluoride	mg/L	0.1	<0.10	94	90-110			-	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	

OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group
Project : PH5068

Reception Date: 2025-08-29

Parameter	Unit	RL	Blank	QC		Matrix Spike		Duplicate	
				Recovery %	Range %	Recovery %	Range %	RPD %	Range %
Metals Scan (Water, ICP/MS)									
Method : Metals (Water, ICP/MS). Internal method: AMMTFQE1.									
Aluminum	mg/L	0.01	<0.01	100	80-120	109	70-130	0	0-20
Antimony	mg/L	0.0005	<0.0005	89	80-120	99	70-130	-	0-20
Arsenic	mg/L	0.001	<0.001	100	80-120	97	70-130	-	0-20
Barium	mg/L	0.001	<0.001	90	80-120	82	70-130	0	0-20
Beryllium	mg/L	0.0005	<0.0005	110	80-120	112	70-130	-	0-20
Boron	mg/L	0.01	<0.01	100	80-120	111	70-130	-	0-20
Cadmium	mg/L	0.0001	<0.0001	100	80-120	92	70-130	-	0-20
Chromium	mg/L	0.001	<0.001	110	80-120	97	70-130	-	0-20
Cobalt	mg/L	0.0002	<0.0002	104	80-120	91	70-130	-	0-20
Copper	mg/L	0.001	<0.001	110	80-120	88	70-130	-	0-20
Iron	mg/L	0.03	<0.03	100	80-120	93	70-130	0	0-20
Lead	mg/L	0.001	<0.001	100	80-120	88	70-130	-	0-20
Manganese	mg/L	0.01	<0.01	100	80-120	94	70-130	0	0-20
Mercury	mg/L	0.0001	<0.0001	115	80-120	110	70-130	-	0-20
Molybdenum	mg/L	0.005	<0.005	90	80-120	92	70-130	-	0-20
Nickel	mg/L	0.005	<0.005	110	80-120	91	70-130	-	0-20
Selenium	mg/L	0.001	<0.001	101	80-120	93	70-130	-	0-20
Silver	mg/L	0.0001	<0.0001	99	80-120	86	70-130	-	0-20
Strontium	mg/L	0.001	<0.001	90	80-120	88	70-130	2	0-20
Thallium	mg/L	0.0001	<0.0001	103	80-120	89	70-130	-	0-20
Uranium	mg/L	0.001	<0.001	100	80-120	90	70-130	-	0-20
Vanadium	mg/L	0.001	<0.001	100	80-120	99	70-130	-	0-20
Zinc	mg/L	0.01	<0.01	110	80-120	90	70-130	-	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-09-30	
Metals Scan (Water, ICP/OES)									
Method : Metals (Water, ICP/OES). Internal method: OTT-I-MET-WI48491.									
Calcium	mg/L	1	<1	99	86-115	100	70-130	0	0-20
Magnesium	mg/L	1	<1	95	91-109	106	70-130	0	0-20
Potassium	mg/L	1	<1	101	87-113	110	70-130	-	0-20
Sodium	mg/L	1	<1	102	85-115	112	70-130	0	0-20
Associated Samples : 9072775								Prep Date: 2025-09-02 Analysis Date: 2025-09-30	
Nitrate (Water, IC)									
Method : Anions (Water, Ion Chromatography). Internal method: OTT-I-IC-WI45985.									
Nitrate (as Nitrogen)	mg/L	0.1	<0.1	105	80-120	114	80-120	0	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Nitrite (Water, IC)									
Method : Anions (Water, Ion Chromatography). Internal method: OTT-I-IC-WI45985.									
Nitrite (as Nitrogen)	mg/L	0.1	<0.1	105	80-120	111	80-120	-	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
pH (25°C) (Water, Automated)									
Method : pH (Water, Automated Meter). Internal method: OTT-I-AT-WI45398.									
pH @ 25°C		1	7.54	100	97-103			0	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	

OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group

Project : PH5068

Reception Date: 2025-08-29

Parameter	Unit	RL	Blank	QC		Matrix Spike		Duplicate	
				Recovery %	Range %	Recovery %	Range %	RPD %	Range %
PHCs F1 (Water, GC-FID)									
Method : Petroleum Hydrocarbons (Water, GC-FID). Internal method: OTT-O-PHC-WI45386.									
F1 (C6 to C10)	ug/L	20	<20	98	70-130	111	70-130	-	0-30
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
PHCs F2-F4 (Water, GC-FID)									
Method : Petroleum Hydrocarbons (Water, GC-FID). Internal method: OTT-O-PHC-WI45386.									
F2 (C10 to C16)	ug/L	20	<20	68	60-140				
F3 (C16 to C34)	ug/L	50	<50	68	60-140				
F4 (C34 to C50)	ug/L	50	<50	68	60-140				
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Phenols (Water, Colorimetry)									
Method : Phenols (Water, Colorimetry). Internal method: OTT-I-4AAP-WI46150.									
Phenols-4AAP	mg/L	0.001	<0.001	100	75-125	106	70-130	-	0-20
Associated Samples : 9072775								Prep Date: 2025-09-02 Analysis Date: 2025-09-02	
Sulphate (Water, IC)									
Method : Anions (Water, Ion Chromatography). Internal method: OTT-I-IC-WI45985.									
Sulphate	mg/L	1	<1	103	90-110	113	80-120	0	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Sulphide (Water, Colorimetry)									
Method : Sulphide, S2- (Water, Colorimetry). Internal method: OTT-I-SPEC-WI45931.									
Sulphide (S2-)	mg/L	0.01	<0.01	84	80-120				
Associated Samples : 9072775								Prep Date: 2025-10-02 Analysis Date: 2025-10-02	
Tannin and Lignin (Water, Spec)									
Method : Tannin and Lignin (Water, Spec), Internal method: OTT-I-SPEC-WI57693.									
Tannin and Lignin	mg/L	0.1	<0.1	108	80-120				
Associated Samples : 9072775								Prep Date: 2025-10-02 Analysis Date: 2025-10-02	
Total Coliforms (DC Plate)									
Method : Total Coliforms and E.Coli by MF (Water, DC plate). Internal method: OTT-M-BAC-WI45296.									
Total Coliforms (DC)	CFU/100mL	0	0					-	0-30
Associated Samples : 9072775								Prep Date: 2025-08-29 Analysis Date: 2025-08-30	
Total Kjeldahl Nitrogen (Water, Colorimetry)									
Method : TKN (Water, colorimetry). Internal method: OTT-I-NUT-WI46201.									
Total Kjeldahl Nitrogen	mg/L	0.1	<0.100	97	70-130	117	70-130	4	0-20
Associated Samples : 9072775								Prep Date: 2025-10-01 Analysis Date: 2025-10-01	
Turbidity (Water, Turbidimeter)									
Method : Turbidity (Water, Turbidimeter). Internal method: OTT-I-TUR-WI46288.									
Turbidity	NTU	0.1	<0.1	104	80-120				
Associated Samples : 9072775								Prep Date: 2025-08-30 Analysis Date: 2025-08-30	

OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group

Project : PH5068

Reception Date: 2025-08-29

Parameter	Unit	RL	Blank	QC		Matrix Spike		Duplicate	
				Recovery %	Range %	Recovery %	Range %	RPD %	Range %
VOCs (Water, GC/MS)									
Method : Volatile Organic Compounds (Water, GC/MS). Internal method: AMVOMSE8.									
1,1,1,2-Tetrachloroethane	ug/L	0.5	<0.5	119	70-130	122	70-130	-	0-30
1,1,1-Trichloroethane	ug/L	0.4	<0.4	123	70-130	109	70-130	-	0-30
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.5	130	70-130	130	70-130	-	0-30
1,1,2-Trichloroethane	ug/L	0.4	<0.4	115	70-130	118	70-130	-	0-30
1,1-Dichloroethane	ug/L	0.4	<0.4	105	70-130	121	70-130	-	0-30
1,1-Dichloroethene	ug/L	0.5	<0.5	89	70-130	118	70-130	-	0-30
1,2,4-Trichlorobenzene	ug/L	0.5	<0.5				-		-
1,2-Dibromoethane	ug/L	0.2	<0.2	94	70-130	89	70-130	-	0-30
1,2-Dichlorobenzene	ug/L	0.4	<0.4	85	70-130	96	70-130	-	0-30
1,2-Dichloroethane	ug/L	0.2	<0.2	89	70-130	89	70-130	-	0-30
1,2-dichloroethene, cis + trans^	ug/L	0.5	<0.5				-		-
1,2-Dichloropropane	ug/L	0.5	<0.5	116	70-130	91	70-130	-	0-30
1,3,5-Trimethylbenzene	ug/L	0.3	<0.3	121	70-130	112	70-130	-	0-30
1,3-Dichlorobenzene	ug/L	0.4	<0.4	82	70-130	121	70-130	-	0-30
1,3-Dichloropropene, cis + trans	ug/L	0.5	<0.5				-		-
1,4-Dichlorobenzene	ug/L	0.4	<0.4	115	70-130	96	70-130	-	0-30
Acetone	ug/L	5	<5	130	70-130	102	70-130	-	0-30
Benzene	ug/L	0.5	<0.5	120	70-130	119	70-130	-	0-30
Bromodichloromethane	ug/L	0.3	<0.3	118	70-130	94	70-130	-	0-30
Bromoform	ug/L	0.4	<0.4	105	70-130	121	70-130	-	0-30
Bromomethane	ug/L	0.5	<0.5	79	70-130	115	70-130	-	0-30
Carbon tetrachloride	ug/L	0.2	<0.2	91	70-130	112	70-130	-	0-30
Chloroethane	ug/L	0.5	<0.5	94	70-130	130	70-130	-	0-30
Chloroform	ug/L	0.5	<0.5	86	70-130	89	70-130	-	0-30
Chloromethane	ug/L	0.2	<0.2	123	70-130	120	70-130	-	0-30
cis-1,2-Dichloroethene	ug/L	0.4	<0.4	109	70-130	100	70-130	-	0-30
cis-1,3-Dichloropropene	ug/L	0.5	<0.5	117	70-130	100	70-130	-	0-30
Dibromochloromethane	ug/L	0.3	<0.3	121	70-130	122	70-130	-	0-30
Dichlorodifluoromethane	ug/L	0.5	<0.5	102	70-130	113	70-130	-	0-30
Dichloromethane	ug/L	4	<4	130	70-130	130	70-130	-	0-30
Diethyl ether	ug/L	5	<5	89	70-130	89	70-130	-	0-30
Ethylbenzene	ug/L	0.5	<0.5	91	70-130	91	70-130	-	0-30
Hexane	ug/L	5	<5	130	70-130	130	70-130	-	0-30
m/p-Xylene	ug/L	0.4	<0.4	99	70-130	100	70-130	-	0-30
Methyl butyl ketone (MBK)	ug/L	5	<5	122	70-130	121	70-130		
Methyl ethyl ketone (MEK)	ug/L	2	<2	76	70-130	91	70-130	-	0-30
Methyl isobutyl ketone (MIBK)	ug/L	5	<5	96	70-130	123	70-130	-	0-30
Methyl tert-butyl ether (MTBE)	ug/L	2	<2	121	70-130	112	70-130	-	0-30
Monochlorobenzene	ug/L	0.5	<0.5	112	70-130	130	70-130	-	0-30
o-Xylene	ug/L	0.4	<0.4	121	70-130	100	70-130	-	0-30
Styrene	ug/L	0.5	<0.5	98	70-130	89	70-130	-	0-30
Tetrachloroethylene (PCE)	ug/L	0.3	<0.3	130	70-130	70	70-130	-	0-30
Toluene	ug/L	0.4	<0.4	89	70-130	79	70-130	-	0-30
trans-1,2-dichloroethene	ug/L	0.4	<0.4	89	70-130	100	70-130	-	0-30
trans-1,3-dichloropropene	ug/L	0.5	<0.5	99	70-130	100	70-130	-	0-30
Trichloroethylene (TCE)	ug/L	0.3	<0.3	102	70-130	102	70-130	-	0-30
Trichlorofluoromethane	ug/L	0.5	<0.5	113	70-130	119	70-130	-	0-30

OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group
Project : PH5068

Reception Date: 2025-08-29

Parameter	Unit	RL	Blank	QC		Matrix Spike		Duplicate	
				Recovery %	Range %	Recovery %	Range %	RPD %	Range %
VOCs (Water, GC/MS)									
Method : Volatile Organic Compounds (Water, GC/MS). Internal method: AMVOMSE8.									
Vinyl chloride	ug/L	0.2	<0.2	121	70-130	123	70-130	-	0-30
Xylene (Total)	ug/L	0.5	<0.5				-		-
Associated Samples : 9072775									
Prep Date: 2025-10-01 Analysis Date: 2025-10-01									

Where RPD % is reported as "-" the calculation is not available because one or both of the duplicates is within 5 times the RL.

[illegible]

OFFICIAL CERTIFICATE OF ANALYSIS : 4473014**WORK REQUEST : 100387023****Report Date : 2025-09-23****Paterson Group**

9 Auriga Dr
Nepean, Ontario
K2E 7T9
Attention : Alex Schopf

Reception Date : 2025-09-19

Project : PH5068

Sampler : NA

PO Number : 64085

Temperature : 9 °C

Analysis	Quantity	External Method
Metals Scan (Water, ICP/MS)	1	Modified from EPA 200.8

Criteria :**A :** Ontario Regulation 169/03 (Groundwater, Non-Potable)**Sample status upon receipt :**

9043227

Compliant**Certificate Comments :****Revision 1:** This is an amendment and supersedes certificate 4471523. Result for iron has been added as per client's request.

9043227

Ag spike recovery not available due to matrix interference.**Notes :**

- All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise stated.
- Eurofins Environment Testing Canada Inc. is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at <https://directory.cala.ca/>
- Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline or regulatory limits listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official guideline or regulation as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

Legend :

RL : Reporting limit

N/A : Not applicable

* : Analysis conducted by external subcontracting

QC : Reference material (QC)

1 : Results in annex

^ : Analysis not accredited

OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH5068

Reception Date: 2025-09-19

				Eurofins Sample No : 9043227					
				Matrix : Groundwater					
				Sampling Date : 2025-09-19					
				Client Sample Identification : TW1-GW3					
Metals	RL	Unit	Criteria						
			A	B	C				
Metals Scan (Water, ICP/MS)									
Aluminum	0.01	mg/L	0.1			0.02			
Antimony	0.0005	mg/L	0.006			<0.0005			
Arsenic	0.001	mg/L	0.01			<0.001			
Barium	0.001	mg/L	1			0.264			
Beryllium	0.0005	mg/L				<0.0005			
Boron	0.01	mg/L	5			0.03			
Cadmium	0.0001	mg/L	0.005			<0.0001			
Chromium	0.001	mg/L	0.05			<0.001			
Cobalt	0.0002	mg/L				0.0002			
Copper	0.001	mg/L	1			<0.001			
Iron	0.03	mg/L	0.3			0.05			
Lead	0.001	mg/L	0.01			<0.001			
Molybdenum	0.005	mg/L				<0.005			
Nickel	0.005	mg/L				<0.005			
Selenium	0.001	mg/L	0.05			<0.001			
Silver	0.0001	mg/L				<0.0001			
Strontium	0.001	mg/L				0.983			
Thallium	0.0001	mg/L				<0.0001			
Uranium	0.001	mg/L	0.02			0.004			
Vanadium	0.001	mg/L				<0.001			
Zinc	0.01	mg/L	5			<0.01			

Approved by :

Patrick Jacques, B.Sc, C.Chem
Environmental Chemist, Ottawa



OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group

Project : PH5068

Reception Date: 2025-09-19

Parameter	Unit	RL	Blank	QC		Matrix Spike		Duplicate	
				Recovery %	Range %	Recovery %	Range %	RPD %	Range %
Metals Scan (Water, ICP/MS)									
Method : Metals (Water, ICP/MS). Internal method: AMMTFQE1.									
Aluminum	mg/L	0.01	<0.01	100	80-120	104	70-130	0	0-20
Antimony	mg/L	0.0005	<0.0005	81	80-120	85	70-130	-	0-20
Arsenic	mg/L	0.001	<0.001	101	80-120	102	70-130	-	0-20
Barium	mg/L	0.001	<0.001	100	80-120	97	70-130	0	0-20
Beryllium	mg/L	0.0005	<0.0005	110	80-120	110	70-130	-	0-20
Boron	mg/L	0.01	<0.01	100	80-120	111	70-130	-	0-20
Cadmium	mg/L	0.0001	<0.0001	104	80-120	103	70-130	-	0-20
Chromium	mg/L	0.001	<0.001	110	80-120	102	70-130	-	0-20
Cobalt	mg/L	0.0002	<0.0002	107	80-120	102	70-130	-	0-20
Copper	mg/L	0.001	<0.001	110	80-120	96	70-130	0	0-20
Iron	mg/L	0.03	<0.03	100	80-120	101	70-130	-	0-20
Lead	mg/L	0.001	<0.001	110	80-120	99	70-130	-	0-20
Molybdenum	mg/L	0.005	<0.005	100	80-120	97	70-130	-	0-20
Nickel	mg/L	0.005	<0.005	120	80-120	104	70-130	-	0-20
Selenium	mg/L	0.001	<0.001	104	80-120	103	70-130	-	0-20
Silver	mg/L	0.0001	<0.0001	82	80-120			-	0-20
Strontium	mg/L	0.001	<0.001	100	80-120	95	70-130	1	0-20
Thallium	mg/L	0.0001	<0.0001	105	80-120	99	70-130	-	0-20
Uranium	mg/L	0.001	<0.001	100	80-120	100	70-130	-	0-20
Vanadium	mg/L	0.001	<0.001	100	80-120	101	70-130	-	0-20
Zinc	mg/L	0.01	<0.01	110	80-120	103	70-130	-	0-20
Associated Samples : 9043227								Prep Date: 2025-09-21	
								Analysis Date: 2025-09-21	

Where RPD % is reported as "-" the calculation is not available because one or both of the duplicates is within 5 times the RL.

STANDARD CHAIN-OF-CUSTODY

der: _____

[illegible]

DATUM Geodetic

REMARKS

BORINGS BY Track-Mount Power Auger

DATE June 23, 2022

FILE NO.
PG6308

HOLE NO.
BH 1-22

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %				
								20	40	60	80	
GROUND SURFACE												
TOPSOIL	0.28					0	117.21					
Loose, brown SILTY SAND	0.69	AU	1									
Very stiff, brown SILTY CLAY	1.45	SS	2	75	5	1	116.21					
Loose to compact, brown SILTY SAND to SANDY SILT - intermittent layers of silty clay by 2.2m depth		SS	3	67	7	2	115.21					
		SS	4	83	17							
		SS	5	75	13	3	114.21					
End of Borehole	3.66											
(GWL @ 1.67m - July 8, 2022)												

DATUM	Geodetic
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REMARKS

BORINGS BY Track-Mount Power Auger

DATE June 23, 2022

FILE NO.
PG6308

HOLE NO.
BH 2-22

[illegible]

DATUM Geodetic

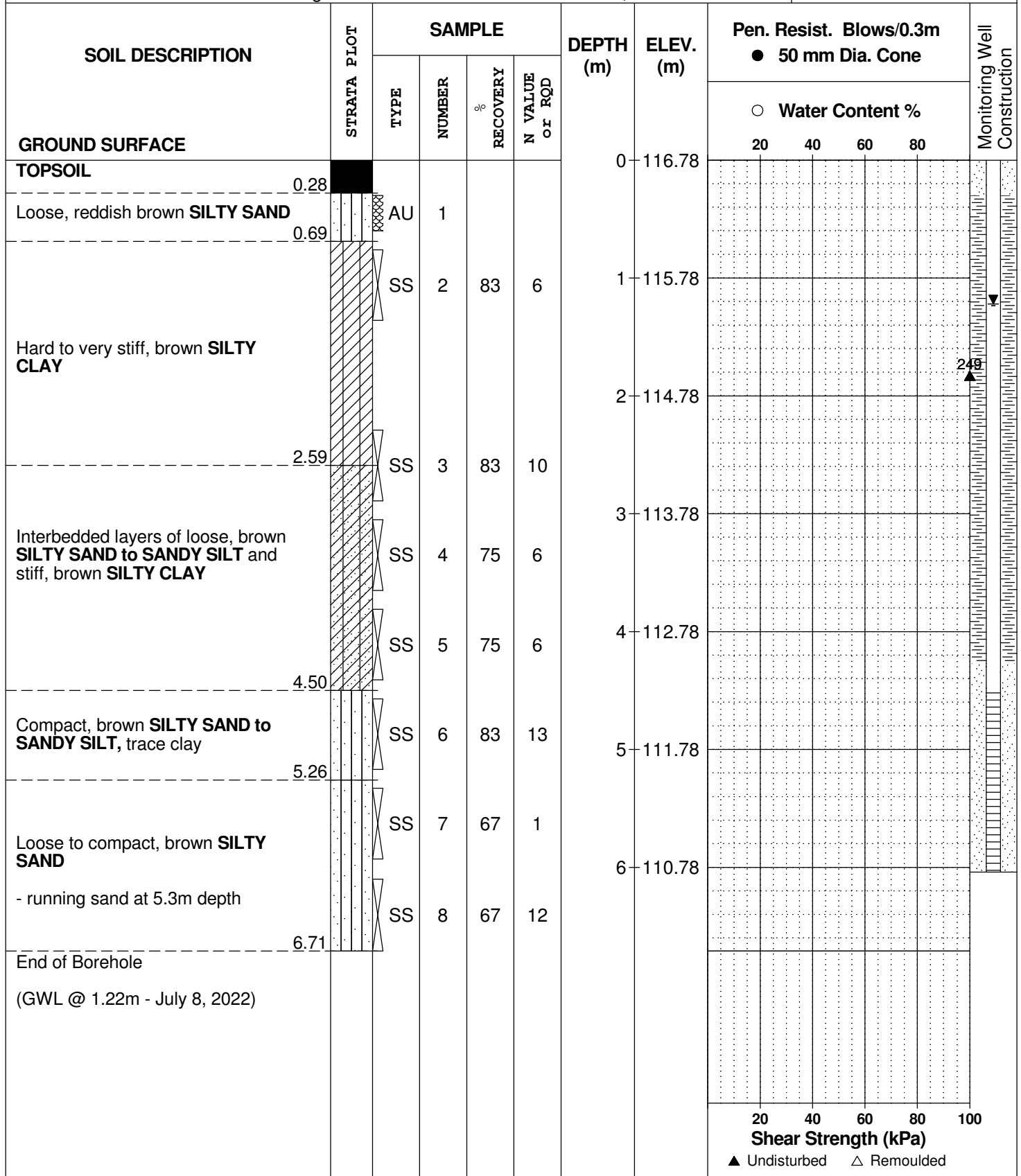
REMARKS

BORINGS BY Track-Mount Power Auger

DATE June 23, 2022

FILE NO.
PG6308

HOLE NO.
BH 3-22



DATUM Geodetic

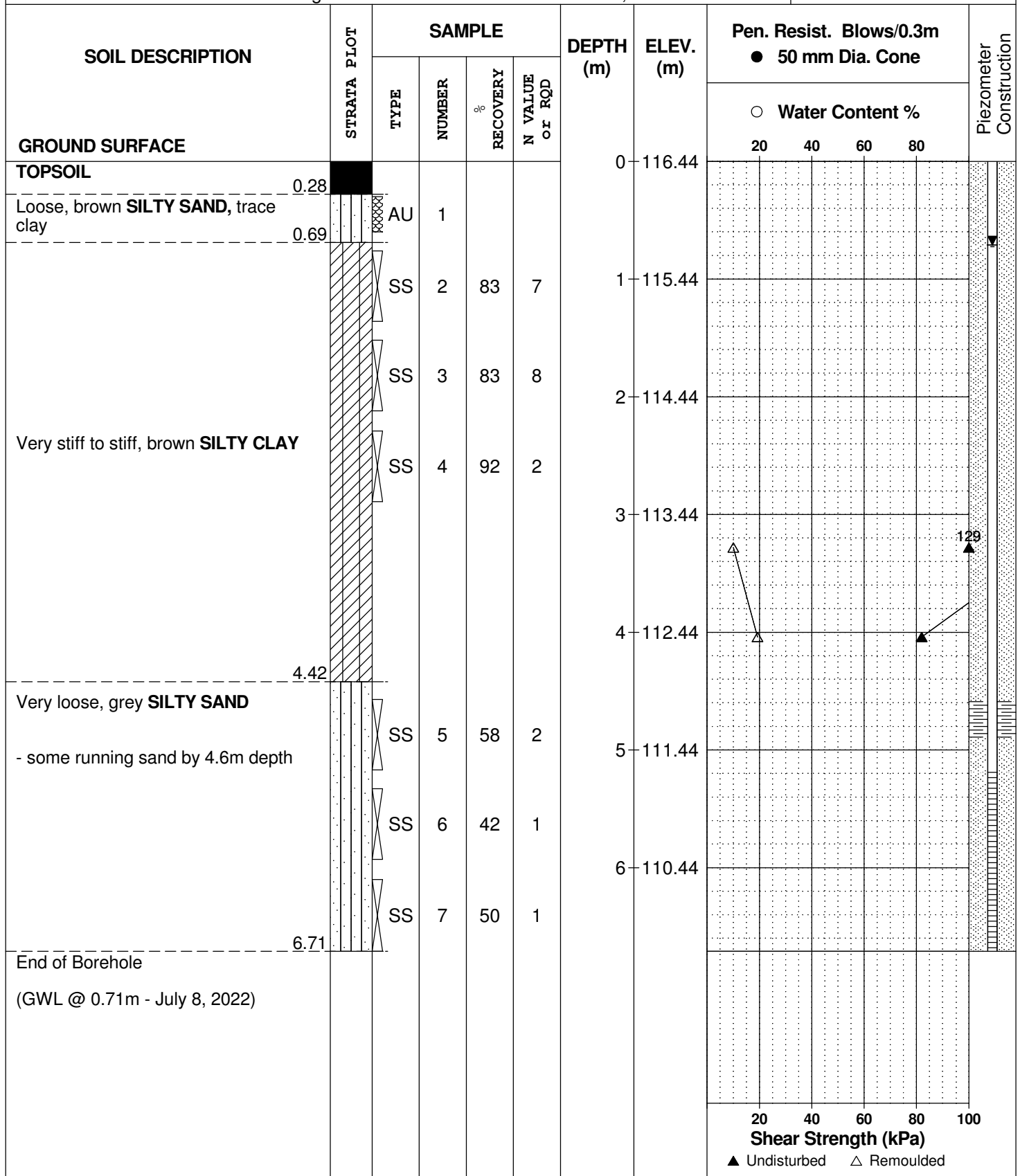
REMARKS

BORINGS BY Track-Mount Power Auger

DATE June 23, 2022

FILE NO.
PG6308

HOLE NO.
BH 4-22



SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Piezometer Construction	
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %					
								20	40	60	80		
GROUND SURFACE						0	116.44						
OVERBURDEN						1	115.44						
						2	114.44						
						3	113.44						
						4	112.44						
	4.57		SS	1	25	3	5	111.44					
Very loose, grey SILTY SAND - some running at 5.3m depth			SS	2	33	1	6	110.44					
End of Borehole	6.10												
								20	40	60	80	100	
								Shear Strength (kPa)					
								▲ Undisturbed △ Remoulded					

DATUM Geodetic

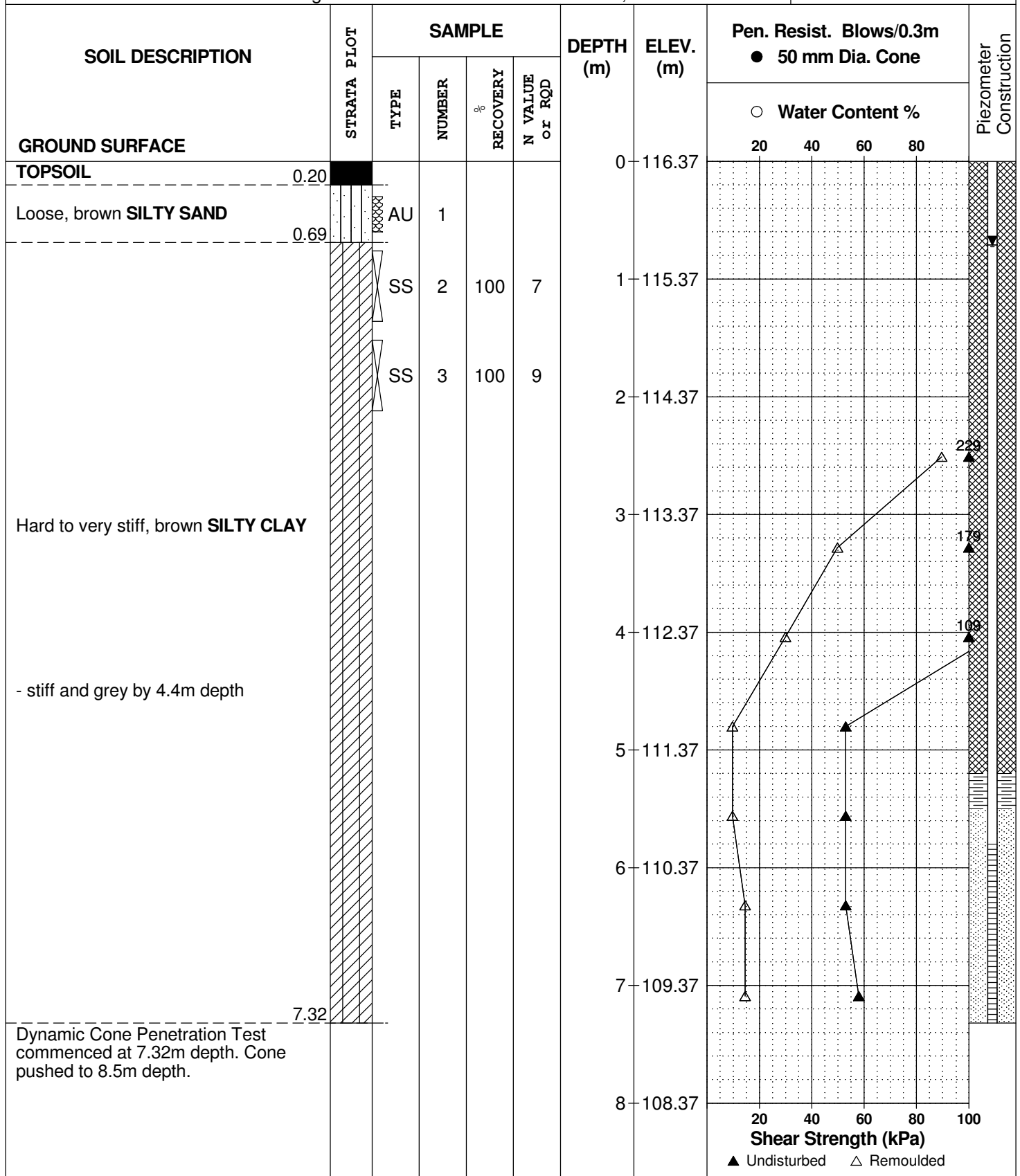
REMARKS

BORINGS BY Track-Mount Power Auger

DATE June 28, 2022

FILE NO.
PG6308

HOLE NO.
BH 5-22



DATUM Geodetic

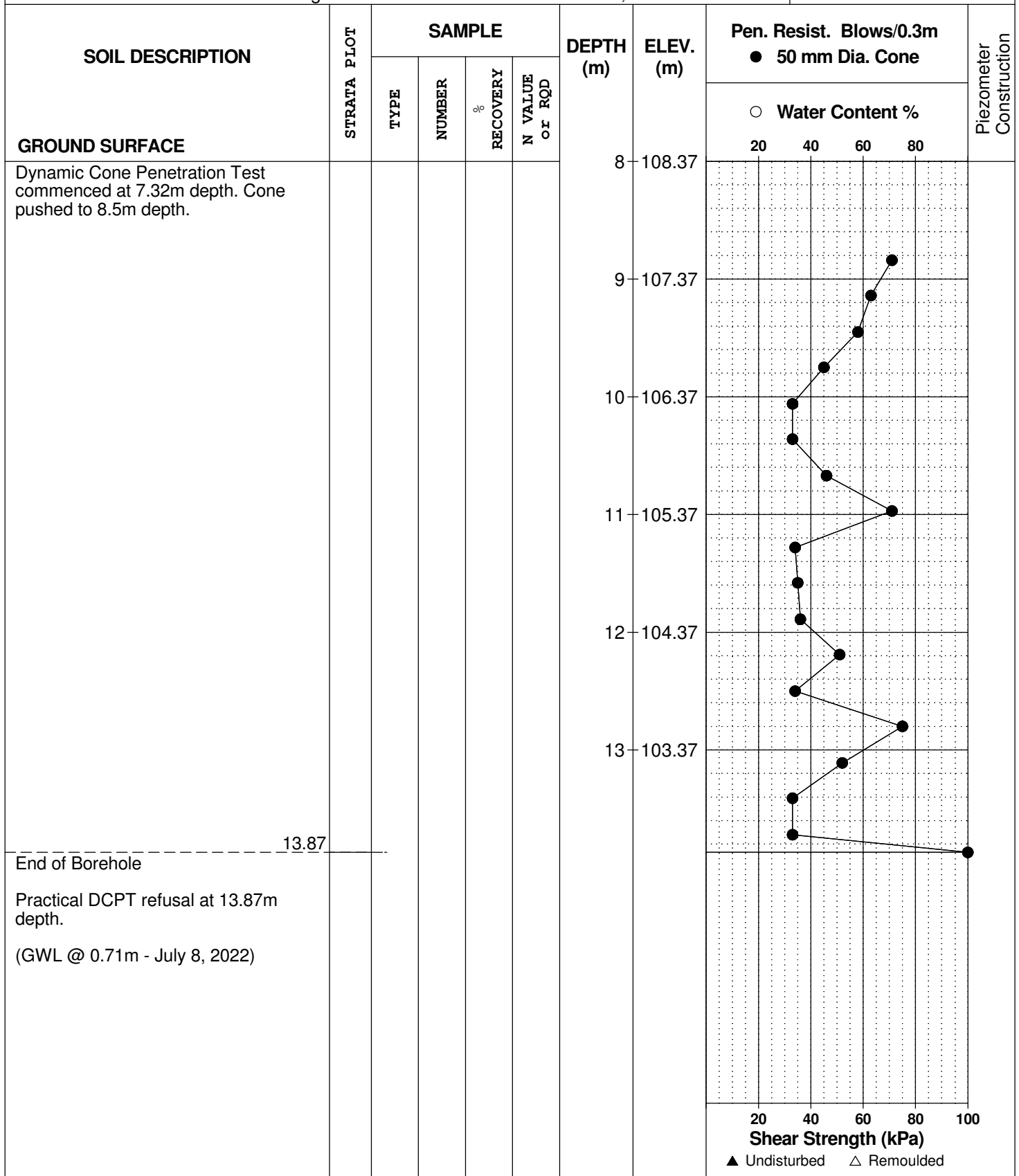
REMARKS

BORINGS BY Track-Mount Power Auger

DATE June 28, 2022

FILE NO.
PG6308

HOLE NO.
BH 5-22



DATUM Geodetic

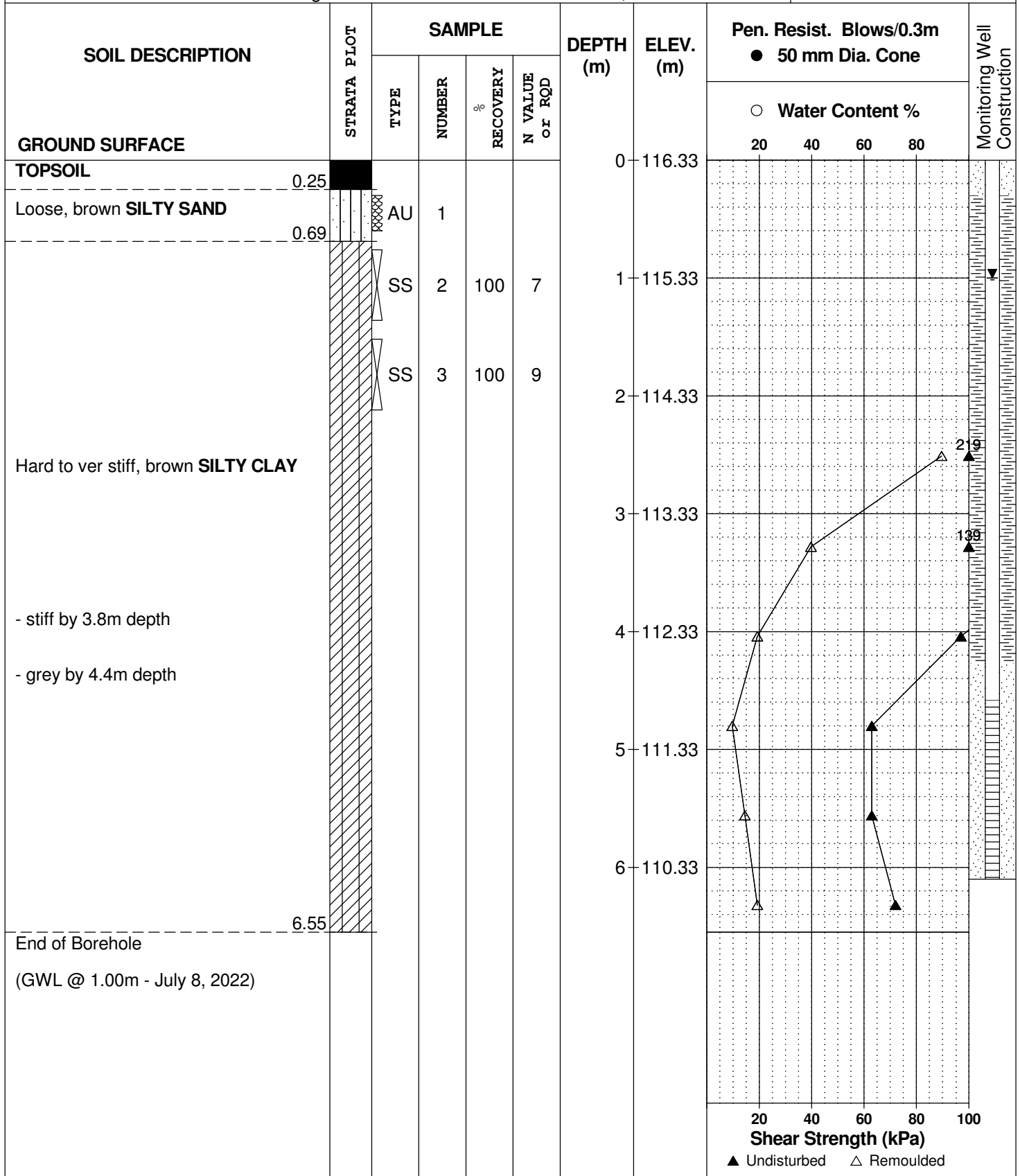
REMARKS

BORINGS BY Track-Mount Power Auger

DATE June 28, 2022

FILE NO.
PG6308

HOLE NO.
BH 6-22



DATUM Geodetic

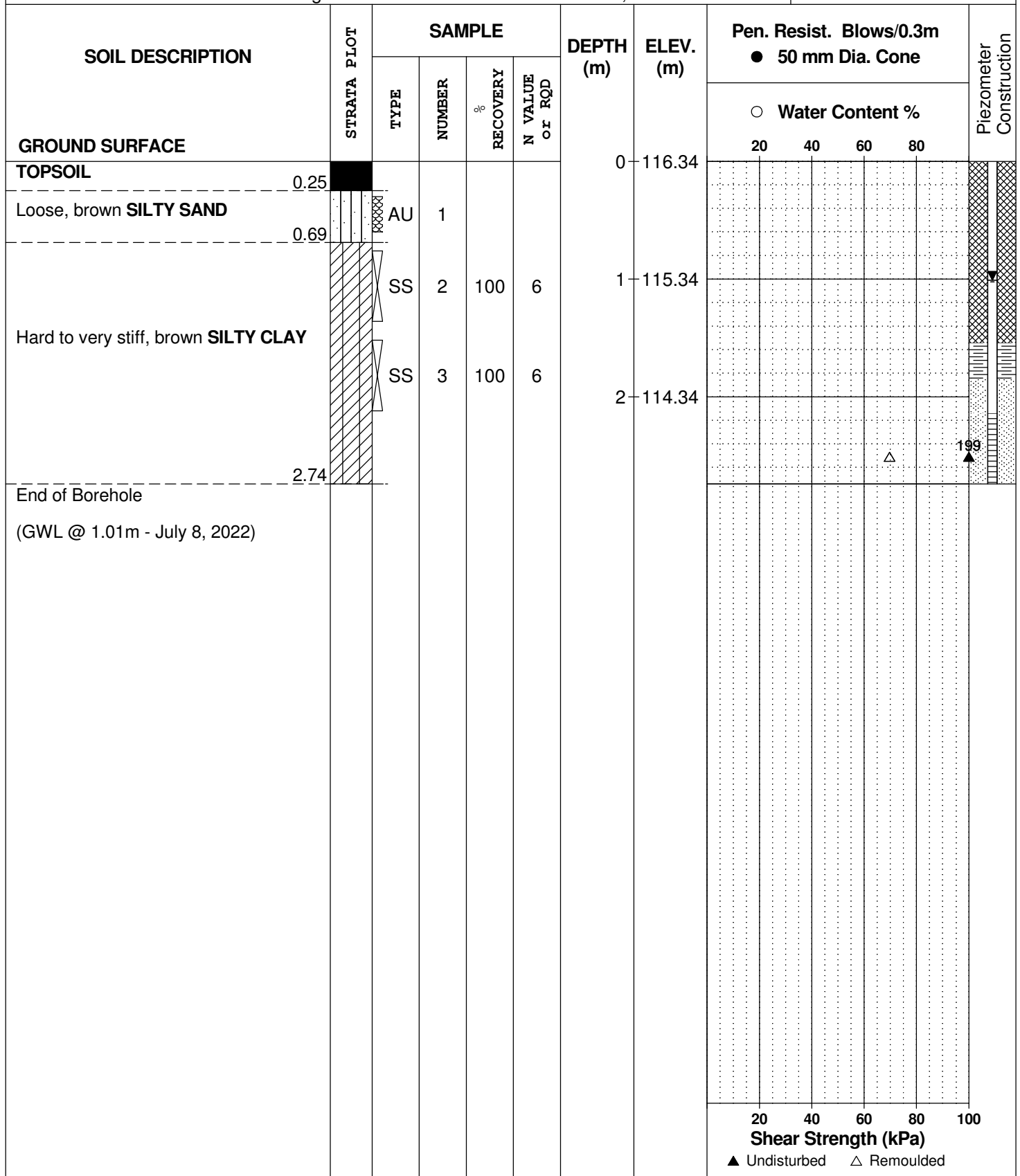
REMARKS

BORINGS BY Track-Mount Power Auger

DATE June 28, 2022

FILE NO.
PG6308

HOLE NO.
BH 7-22



SYMBOLS AND TERMS

SOIL DESCRIPTION

Behavioural properties, such as structure and strength, take precedence over particle gradation in describing soils. Terminology describing soil structure are as follows:

Desiccated	-	having visible signs of weathering by oxidation of clay minerals, shrinkage cracks, etc.
Fissured	-	having cracks, and hence a blocky structure.
Varved	-	composed of regular alternating layers of silt and clay.
Stratified	-	composed of alternating layers of different soil types, e.g. silt and sand or silt and clay.
Well-Graded	-	Having wide range in grain sizes and substantial amounts of all intermediate particle sizes (see Grain Size Distribution).
Uniformly-Graded	-	Predominantly of one grain size (see Grain Size Distribution).

The standard terminology to describe the strength of cohesionless soils is the relative density, usually inferred from the results of the Standard Penetration Test (SPT) 'N' value. The SPT N value is the number of blows of a 63.5 kg hammer, falling 760 mm, required to drive a 51 mm O.D. split spoon sampler 300 mm into the soil after an initial penetration of 150 mm.

Relative Density	'N' Value	Relative Density %
Very Loose	<4	<15
Loose	4-10	15-35
Compact	10-30	35-65
Dense	30-50	65-85
Very Dense	>50	>85

The standard terminology to describe the strength of cohesive soils is the consistency, which is based on the undisturbed undrained shear strength as measured by the in situ or laboratory vane tests, penetrometer tests, unconfined compression tests, or occasionally by Standard Penetration Tests.

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

SYMBOLS AND TERMS (continued)

SOIL DESCRIPTION (continued)

Cohesive soils can also be classified according to their “sensitivity”. The sensitivity is the ratio between the undisturbed undrained shear strength and the remoulded undrained shear strength of the soil.

Terminology used for describing soil strata based upon texture, or the proportion of individual particle sizes present is provided on the Textural Soil Classification Chart at the end of this information package.

ROCK DESCRIPTION

The structural description of the bedrock mass is based on the Rock Quality Designation (RQD).

The RQD classification is based on a modified core recovery percentage in which all pieces of sound core over 100 mm long are counted as recovery. The smaller pieces are considered to be a result of closely-spaced discontinuities (resulting from shearing, jointing, faulting, or weathering) in the rock mass and are not counted. RQD is ideally determined from NXL size core. However, it can be used on smaller core sizes, such as BX, if the bulk of the fractures caused by drilling stresses (called “mechanical breaks”) are easily distinguishable from the normal in situ fractures.

RQD %	ROCK QUALITY
90-100	Excellent, intact, very sound
75-90	Good, massive, moderately jointed or sound
50-75	Fair, blocky and seamy, fractured
25-50	Poor, shattered and very seamy or blocky, severely fractured
0-25	Very poor, crushed, very severely fractured

SAMPLE TYPES

SS	-	Split spoon sample (obtained in conjunction with the performing of the Standard Penetration Test (SPT))
TW	-	Thin wall tube or Shelby tube
PS	-	Piston sample
AU	-	Auger sample or bulk sample
WS	-	Wash sample
RC	-	Rock core sample (Core bit size AXT, BXL, etc.). Rock core samples are obtained with the use of standard diamond drilling bits.

SYMBOLS AND TERMS (continued)

GRAIN SIZE DISTRIBUTION

MC%	-	Natural moisture content or water content of sample, %
LL	-	Liquid Limit, % (water content above which soil behaves as a liquid)
PL	-	Plastic limit, % (water content above which soil behaves plastically)
PI	-	Plasticity index, % (difference between LL and PL)
Dxx	-	Grain size which xx% of the soil, by weight, is of finer grain sizes These grain size descriptions are not used below 0.075 mm grain size
D10	-	Grain size at which 10% of the soil is finer (effective grain size)
D60	-	Grain size at which 60% of the soil is finer
Cc	-	Concavity coefficient = $(D_{30})^2 / (D_{10} \times D_{60})$
Cu	-	Uniformity coefficient = D_{60} / D_{10}

Cc and Cu are used to assess the grading of sands and gravels:

Well-graded gravels have: $1 < Cc < 3$ and $Cu > 4$

Well-graded sands have: $1 < Cc < 3$ and $Cu > 6$

Sands and gravels not meeting the above requirements are poorly-graded or uniformly-graded.

Cc and Cu are not applicable for the description of soils with more than 10% silt and clay
(more than 10% finer than 0.075 mm or the #200 sieve)

CONSOLIDATION TEST

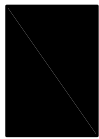
p'_o	-	Present effective overburden pressure at sample depth
p'_c	-	Preconsolidation pressure of (maximum past pressure on) sample
Ccr	-	Recompression index (in effect at pressures below p'_c)
Cc	-	Compression index (in effect at pressures above p'_c)
OC Ratio		Overconsolidation ratio = p'_c / p'_o
Void Ratio		Initial sample void ratio = volume of voids / volume of solids
Wo	-	Initial water content (at start of consolidation test)

PERMEABILITY TEST

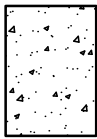
k	-	Coefficient of permeability or hydraulic conductivity is a measure of the ability of water to flow through the sample. The value of k is measured at a specified unit weight for (remoulded) cohesionless soil samples, because its value will vary with the unit weight or density of the sample during the test.
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SYMBOLS AND TERMS (continued)

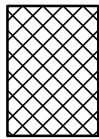
STRATA PLOT



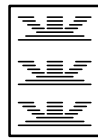
Topsoil



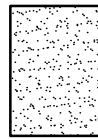
Asphalt



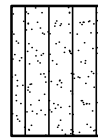
Fill



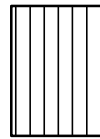
Peat



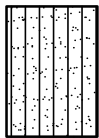
Sand



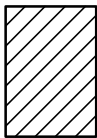
Silty Sand



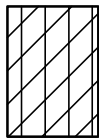
Silt



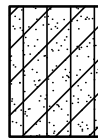
Sandy Silt



Clay



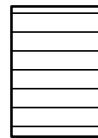
Silty Clay



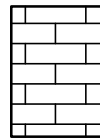
Clayey Silty Sand



Glacial Till



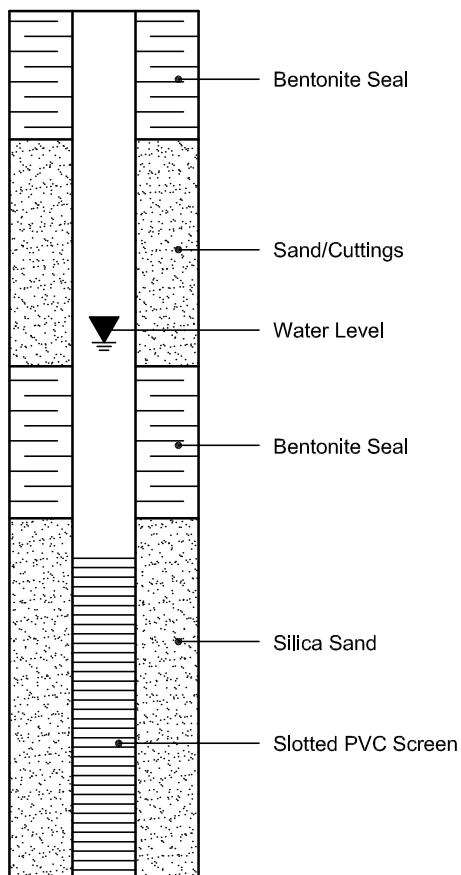
Shale



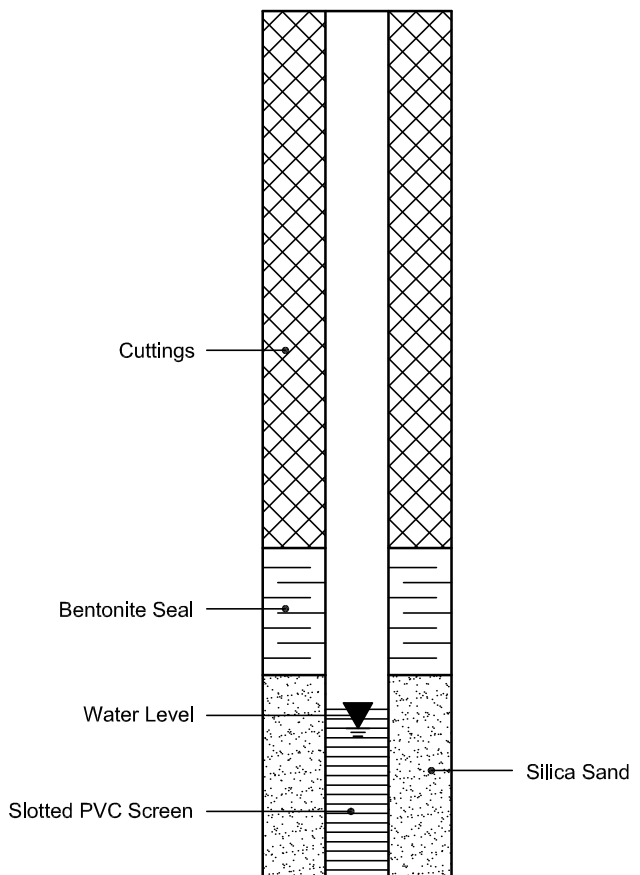
Bedrock

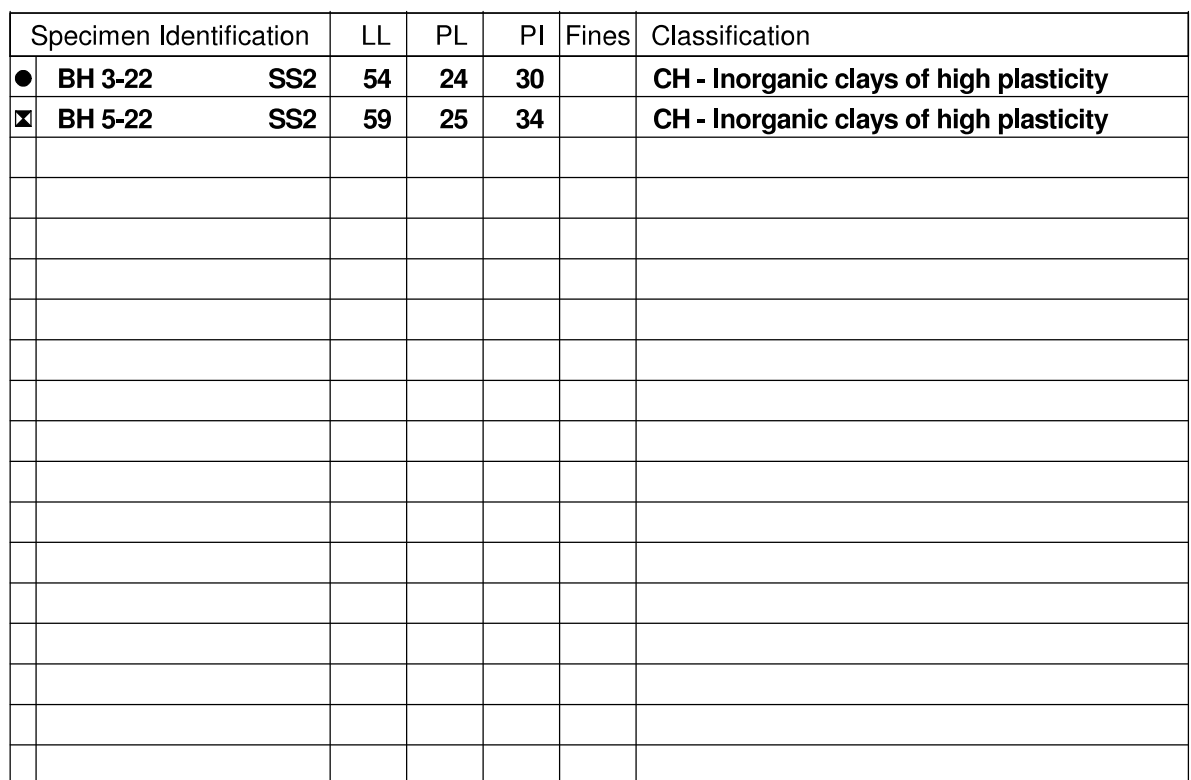
MONITORING WELL AND PIEZOMETER CONSTRUCTION

MONITORING WELL CONSTRUCTION

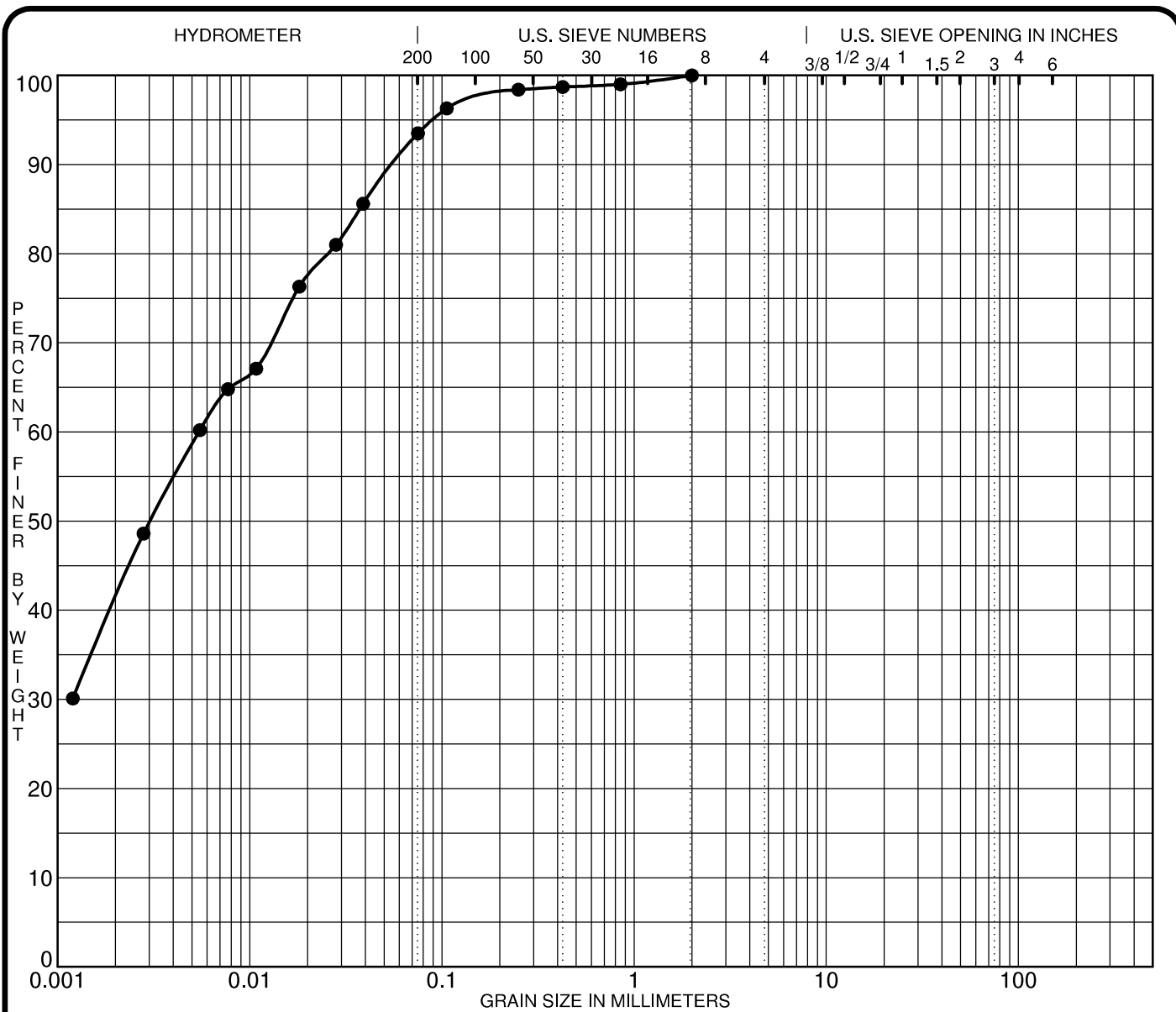


PIEZOMETER CONSTRUCTION





FILE NO.	<u>PG6308</u>
DATE	28 Jun 22



SILT OR CLAY	SAND			GRAVEL		COBBLES
	fine	medium	coarse	fine	coarse	

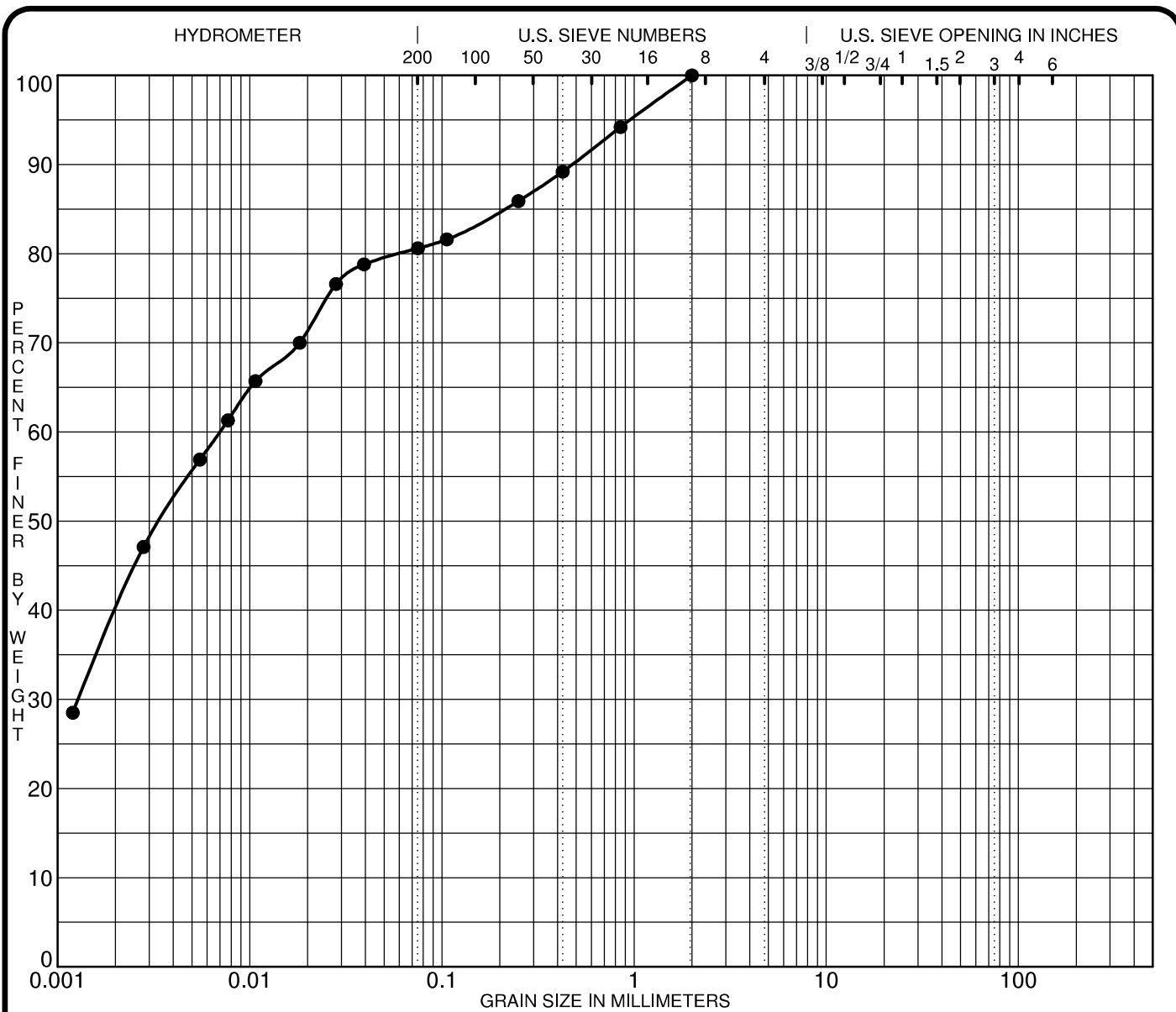
Specimen Identification			Classification				MC%	LL	PL	PI	Cc	Cu
●	BH 3-22	SS2	CH - Inorganic clays of high plasticity					54	24	30		
☒												
▲												
★												
Specimen Identification			D100	D60	D30	D10	%Gravel	%Sand	%Silt	%Clay		
●	BH 3-22	SS2	2.00	0.01			0.0	6.5	93.5			
☒												
▲												
★												

CLIENT Canadian Rental Development Services

PROJECT Geotechnical Investigation - Proposed Industrial Building - 3113 Carp Road

FILE NO. PG6308

DATE 23 Jun 22



SILT OR CLAY	SAND			GRAVEL		COBBLES
	fine	medium	coarse	fine	coarse	

Specimen Identification	Classification				MC%	LL	PL	PI	Cc	Cu
● BH 5-22 SS2	CH - Inorganic clays of high plasticity					59	25	34		
☒										
▲										
★										
Specimen Identification	D100	D60	D30	D10	%Gravel	%Sand	%Silt		%Clay	
● BH 5-22 SS2	2.00	0.01	0.001		0.0	19.4	80.6			
☒										
▲										
★										

CLIENT Canadian Rental Development Services

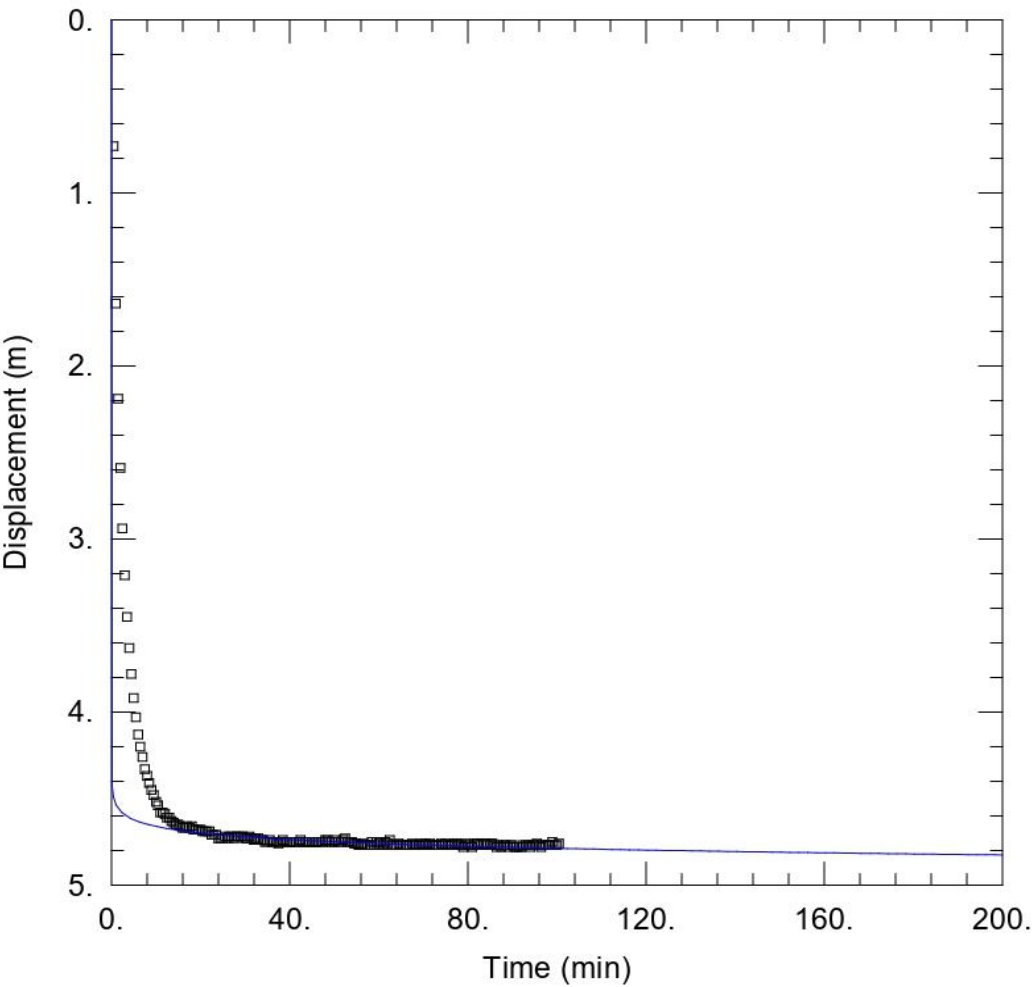
PROJECT Geotechnical Investigation - Proposed Industrial Building - 3113 Carp Road

FILE NO. PG6308

DATE 28 Jun 22

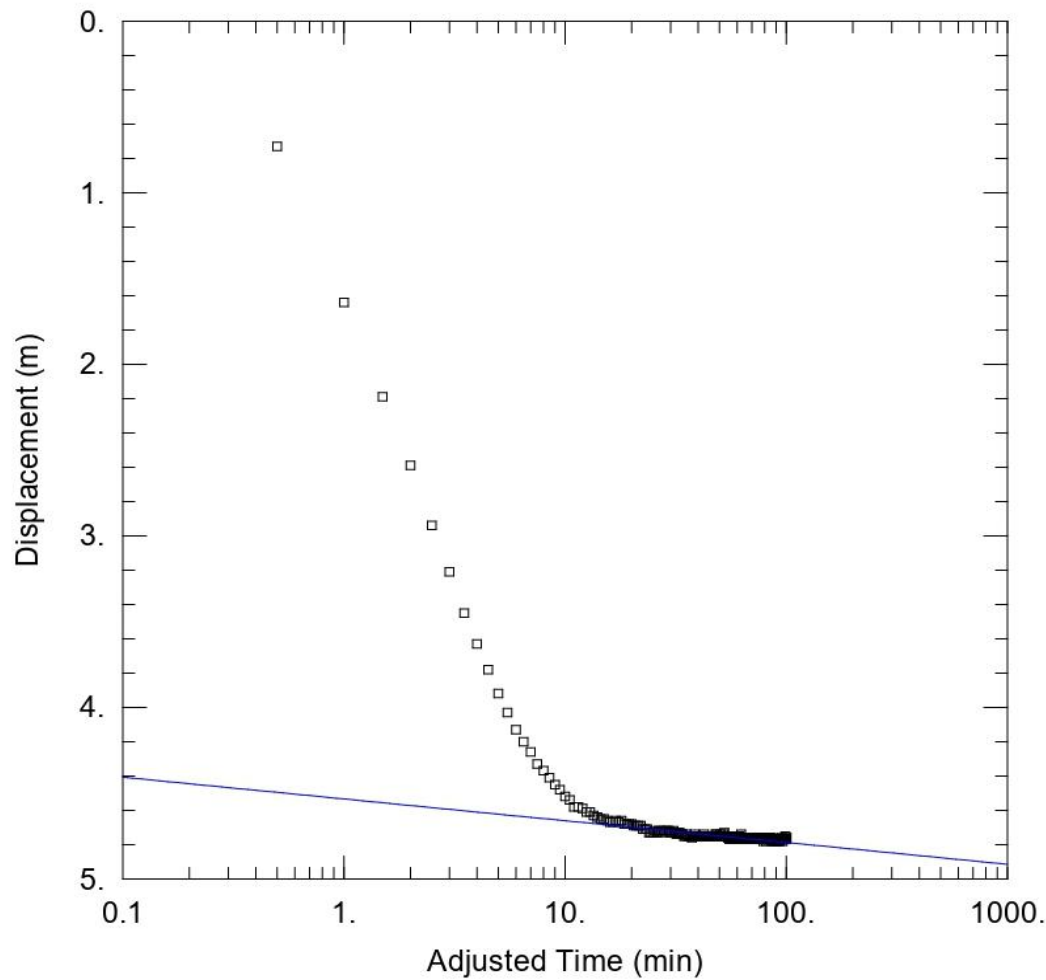
Pumping Test Analysis Report

File No.	PH5068	Well ID:	TW1
Date:	March 21, 2023	Solution Method:	Theis
Client:	Megha Holdings Inc	Transmissivity (m2/day):	94.21
Site Address:	3113 Carp Road, Ottawa	Discharge Rate (L/min)	45.4
Project:	Site Plan Control Application	Analysis performed by:	ZB



Pumping Test Analysis Report

File No.	PH5068	Well ID:	TW1
Date:	March 21, 2023	Solution Method:	Cooper-Jacob
Client:	Megha Holdings Inc	Transmissivity (m2/day):	94.21
Site Address:	3113 Carp Road, Ottawa	Discharge Rate (L/min)	45.4
Project:	Site Plan Control Application	Analysis performed by:	ZB



Pumping Test Analysis Report

File No. PH5068
Date: March 21, 2023
Client: Megha Holdings Inc
Site Address: 3113 Carp Road, Ottawa
Project: Site Plan Control Application

Summary Table:		
Solution Method:	Well ID:	Transmissivity (m ² /day):
Theis	TW1	94.21
Cooper-Jacob	TW1	94.21
Average:		94.21

PREDICTIVE NITRATE IMPACT ASSESSEMENT		
Infiltration Factors		
Topography	0.20	
Soil	0.40	
Cover	0.10	
Total	0.70	
Site Characteristics		
Area of Site :	30543	m ²
Total of roof areas:	10018	m ²
Total area of paved driveway areas:	10778	m ²
Roof + paved driveway areas	20796	m ²
Impervious Area	20796	m ²
Percent Impervious Area =	68	%
Infiltration Area =	9747	m ²
Septic Effluent		
Concentration of Effluent (Cs) =	17.2	mg/L
Daily Sewage Flow (Qs) =	5.4	m ³
Infiltration Calculation		
Nitrate concentration in precipitation (C _i) =	0	mg/L
Surplus Water (Environment Canada)	379	mm/yr
Factored Water Surplus =	265	mm/yr
Infiltration % due to stormwater management measures	-	%
Infiltration rate from stormwater management measures =	0	mm/yr
Infiltration Flow Entering the System (Q _i) =	7	m ³ /day
Mass Balance Model (MOEE, 1995)		
$C_T = (Q_b C_b + Q_e C_e + Q_i C_i) / (Q_b + Q_e + Q_i) = \text{Cumulative Nitrate Concentration}$		
Q _b = flow entering the system across the upgradient area	0	m ³ /day
C _b = background nitrate concentration	0	mg/L
Q _e = flow entering the system from the septic drainfield	5.4	m ³ /day
C _e = concentration of nitrates in the septic effluent	17.2	mg/L
Q _i = flow entering the system from infiltration	7	m ³ /day
C _i = Concentration of nitrates in the infiltrate	0	mg/L
C_T =	7.44	mg/L
<i>Notes: Site characteristic values were measured as approximate values from the available site plans and GeoOttawa.</i>		

WASTEWATER TECHNOLOGY

NSF/ANSI Standard 245 - *Wastewater Treatment Systems – Nitrogen Reduction*

Final Report:

**Eljen Corporation
GSF Denitrification System DN450
15/10/055/0030**



NSF International
789 N. Dixboro Road
PO Box 130140
Ann Arbor, Michigan 48113-0140 USA

Submitted to Ontario Ministry of Environment
8.13.19

**Evaluation Report:
Eljen Corporation
GSF Denitrification System DN450
Wastewater Treatment System**

**Under the provisions of NSF/ANSI Standard 245
Wastewater Treatment Systems – Nitrogen Reduction**

Submitted to Ontario Ministry of Environment
June 2019
8.13.19

EXECUTIVE SUMMARY

Testing of the Eljen Corporation GSF Denitrification System DN450 was conducted under the provisions of NSF/ANSI Standard 245 for Residential Wastewater Treatment Systems (April 2013 revision). NSF/ANSI Standard 245 was developed by the NSF Joint Committee on Wastewater Technology.

The performance evaluation was conducted at the Massachusetts Alternative Septic System Test Center (MASSTC), located in Bourne, Massachusetts, using wastewater diverted from the Otis Air National Guard Base municipal wastewater collection system, which serves the base residential development. The evaluation consisted of sixteen weeks of dosing at design flow, seven and one half weeks of stress testing and an additional two and one half weeks of dosing at design flow. Sampling started in the summer and continued through the fall and winter, covering a range of operating temperatures.

Over the course of the evaluation, the average influent Total Nitrogen was 35 mg/L, ranging between 26 mg/L and 57 mg/L. The DN450 produced an average effluent Total Nitrogen of 15 mg/L, which resulted in a 57% reduction in the influent Total Nitrogen. The DN450 produced an effluent that successfully met the performance requirements established by NSF/ANSI Standard 245.

The DN450 produced an effluent that successfully met the performance requirements established by NSF/ANSI Standard 40 for Class I effluent:

The maximum 7-day arithmetic mean was 34 mg/L for CBOD₅ and 32 mg/L for total suspended solids, both below the allowed maximums of 40 and 45 mg/L respectively. The maximum 30-day arithmetic mean was 25 mg/L for CBOD₅ and 21 mg/L for total suspended solids, both below the allowed maximums of 25 mg/L and 30 mg/L respectively.

The effluent pH during the entire evaluation ranged between 6.0 and 6.8, within the required range of 6.0 to 9.0. The DN450 met the requirements for noise levels (less than 60 dbA at a distance of 20 feet), color, threshold odor, oily film and foam.

Submitted to Ontario Ministry of Environment
8.13.19

Table 5 - Monthly Water Balance for Material With 5 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	56	1	27
March	-2.8	65	6	103
April	5.7	73	31	110
May	13.1	75	64	14
June	18.3	85	82	5
July	20.9	88	83	5
August	19.7	85	80	5
September	14.8	82	64	17
October	8.3	77	35	41
November	1.3	76	10	56
December	-6.8	79	1	41
Annual	6	904	457	449

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	56	1	26
March	-2.8	65	6	103
April	5.7	73	31	110
May	13.1	75	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	77	36	14
November	1.3	76	10	38
December	-6.8	79	1	37
Annual	6	904	525	378

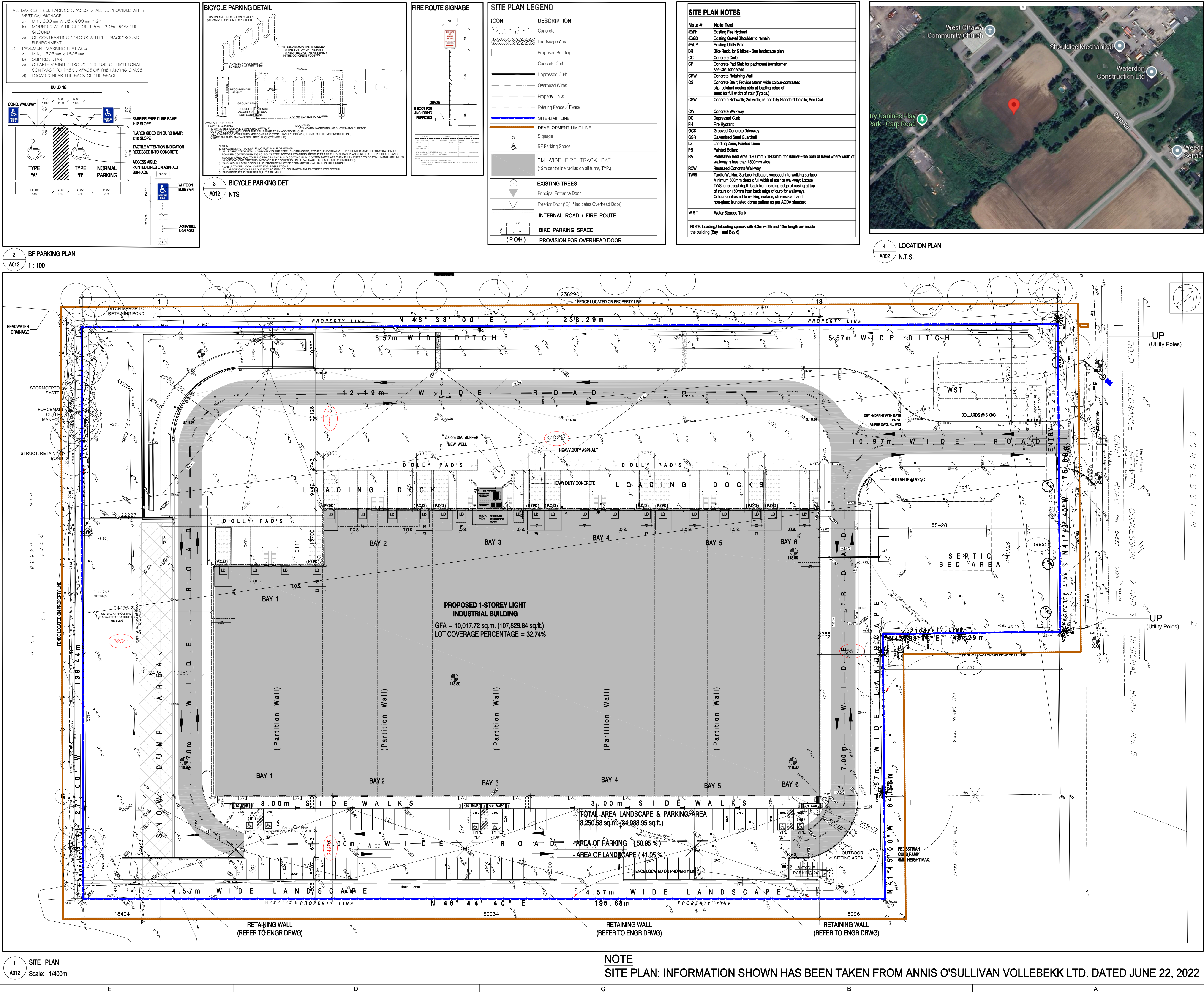
Table 7 - Pre-Development Annual Water Budget Calculations - 3113 Carp Road

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	0	449	0	0	0	0	1	0	0.00	449	0.00
Urban Lawn (Open Sandy Loam)	30,543	379	0.2	0.4	0.1	0.7	0.3	265.3	8,103,057.90	113.7	3,472,739.10
Total	30,543								8,103,057.90		3,472,739.10

Table 8 - Post-Development Annual Water Budget Calculations - 3113 Carp Road

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	20,796	449	0	0	0	0	1	0	0.00	449	9,337,192.97
Urban Lawn (Open Sandy Loam)	9,747	379	0.2	0.4	0.1	0.7	0.3	265.3	2,586,003.79	113.7	1,108,287.34
Totals	30,543								2,586,003.79		10,445,480.31
Difference (L/year)									-5,517,054.11		6,972,741.21
Percentage Variation									-68.09%		200.79%

C:\Users\curley\Documents\Revit Local\1943_1243 Teton Rd Central -curley\KVF66.kit



DATE	ISSUED FOR	REV
2025-04-09	ISSUED FOR CLIENT REVIEW	1
2025-04-11	ISSUED FOR STRUCT., MEP, LANDSCAPE & CIVIL	2
2025-05-01	ISSUED FOR CLIENTS, LANDSCAPE & CIVIL	3
2025-06-12	ISSUED FOR CLIENTS & COORDINATION	4
2025-06-24	ISSUED FOR CLIENTS & COORDINATION	5
2025-07-28	ISSUED FOR CLIENTS FOR BPC	6
2025-08-07	ISSUED FOR CLIENTS (Update SITE PLAN)	7
2025-08-08	ISSUED FOR CLIENTS (Update SITE PLAN)	8
2025-12-03	ISSUED FOR CITY FOR SITE PLAN APPROVAL	9
2026-07-27	ISSUED FOR COORDINATION	10

This drawing has been prepared solely for the use of J.I.L. CANADA-EAST and there are no representations of any kind made by

GENERAL NOTES:
1. THE CONTRACTOR SHALL CHECK AND VERIFY ALL DIMENSIONS AND REPORT ALL ERRORS AND OMISSIONS TO THE ARCHITECT FOR HIS WRITTEN PERMISSION BEFORE PROCEEDING WITH THE WORK.
2. NOT FOR CONSTRUCTION UNLESS SIGNED BY THE ARCHITECT
3. NOT TO BE SCALED OR REPRODUCED WITHOUT WRITTEN PERMISSION

Consultants	TOPOGRAPHICAL PLAN OF
Surveyor:	PART OF LOT 12 CONCESSION 3 GEOGRAPHIC TOWNSHIP OF HUNTELEY CITY OF OTTAWA Prepared by: Fritz Gerald St Fleur Ltd. On-Site Work Completed on: June 8, 2022
Planner:	P-Squared Concepts 2200 Thurston Dr #203, Ottawa, ON K1G 6E1 planning@p2concepts.ca 613-495-0192
Civil:	Fritz Gerald St Fleur fritzgerald.stfleur@gmail.com 613-327-9862

Landscape:	CIVITAS Civitas Architecture Inc 14 Chantrelle Ave, Ottawa, ON K1S1V9 (613) 743-7482
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Seal(s)	
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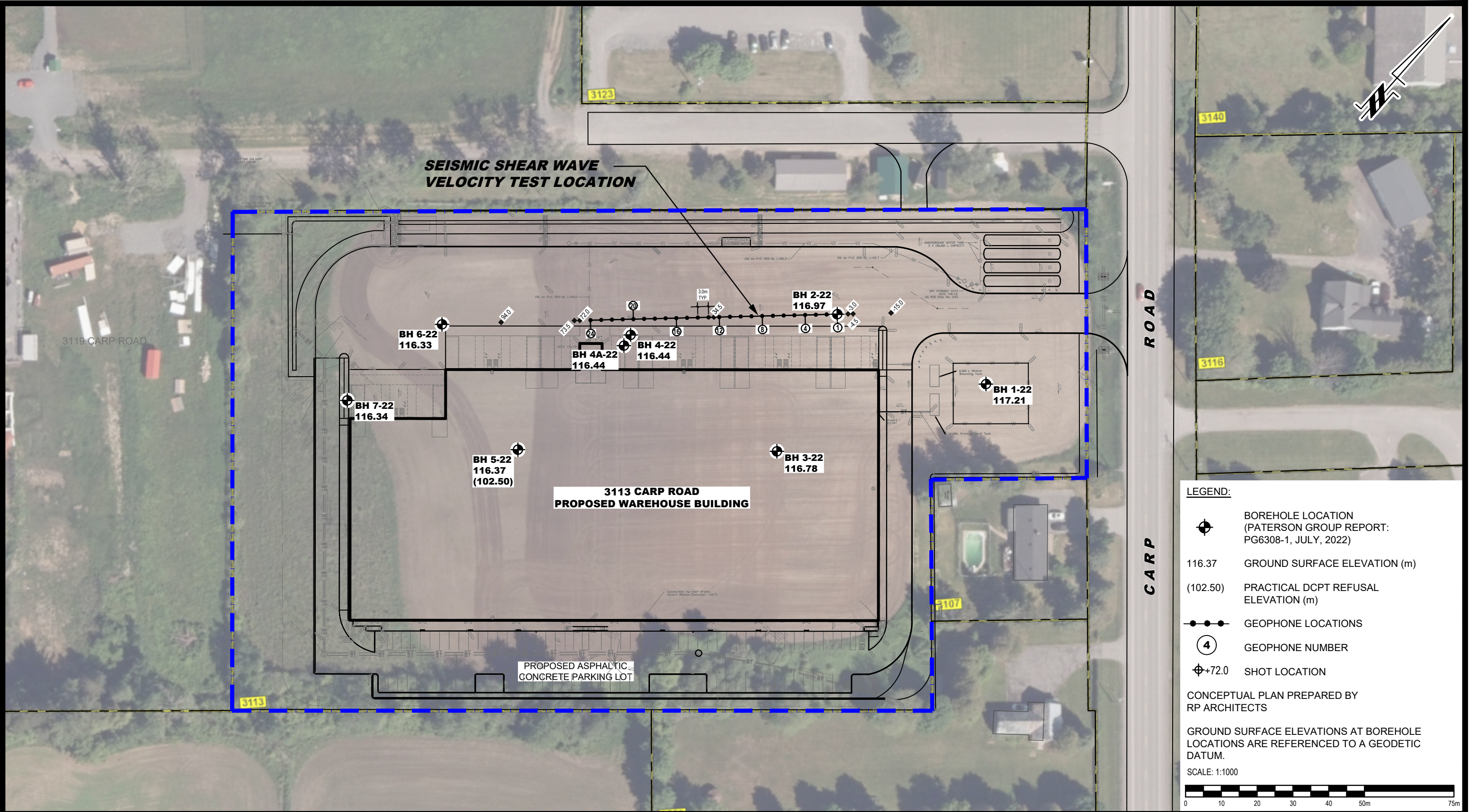
Project Manager	Drawn JV
Project Leader	Checked GF

Client	MEGHA HOLDINGS 401 COVENTRY ROAD, OTTAWA K1K 2C5
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Project	PROPOSED 1 STOREY WAREHOUSE 3113 CARP ROAD, OTTAWA K0A 1L0
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Drawing Title	SITE PLAN LOCATION PLAN
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Scale	
Project No.	PC2025-0105
Drawing No.	A-012



LEGEND:

- BOREHOLE LOCATION
(PATERSON GROUP REPORT: PG6308-1, JULY, 2022)
- 116.37 GROUND SURFACE ELEVATION (m)
- (102.50) PRACTICAL DCPT REFUSAL ELEVATION (m)
- GEOPHONE LOCATIONS
- GEOPHONE NUMBER
- SHOT LOCATION

CONCEPTUAL PLAN PREPARED BY
RP ARCHITECTS

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

SCALE: 1:1000

 9 AURIGA DRIVE OTTAWA, ON K2E 7T9 TEL: (613) 226-7381				MEGHA HOLDINGS INC. GEOTECHNICAL INVESTIGATION PROPOSED INDUSTRIAL BUILDING 3113 CARP ROAD ONTARIO				Scale: 1:1000	Date: 08/2026
				OTTAWA, Title:				Drawn by: YA	Report No.: PG7598-1
				TEST HOLE LOCATION PLAN				Checked by: YZ	Dwg. No.: PG7598-1
								Approved by: FA	Revision No.:
NO.	REVISIONS	DATE	INITIAL						



LEGEND:

— SITE BOUNDARY

URBAN LAWN (OPEN SANDY LOAM)

SCALE: 1:1500

0 25 50 75 100m


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

NO.	REVISIONS	DATE	INITIAL

MEGHA HOLDINGS INC.
HYDROGEOLOGICAL ASSESSMENT AND TERRAIN ANALYSIS
PROPOSED COMMERCIAL DEVELOPMENT
3113 CARP ROAD
OTTAWA, ONTARIO

Title:
PRE-DEVELOPMENT TERRAIN COMPOSITION PLAN

Scale:	1:1500	Date:	09/2025
Drawn by:	GK	Report No.:	PH5068-LET.01
Checked by:	AS	Dwg. No.:	PH5068-3
Approved by:	EA	Revision No.:	



LEGEND:

- SITE BOUNDARY
- URBAN LAWN (OPEN SANDY LOAM)
- IMPERVIOUS SURFACE

SCALE: 1:1500

0 25 50 75 100m



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

1	UPDATED CONCEPTUAL PLAN	31/07/2026	AS
NO.	REVISIONS	DD/MM/YYYY	INITIAL

MEGHA HOLDINGS INC.
HYDROGEOLOGICAL ASSESSMENT AND TERRAIN ANALYSIS
PROPOSED COMMERCIAL DEVELOPMENT
3113 CARP ROAD

OTTAWA,
Title:
POST-DEVELOPMENT TERRAIN COMPOSITION PLAN

ONTARIO

Scale:	1:1500	Date:	09/2025
Drawn by:	GK	Report No.:	PH5068-LET.01
Checked by:	AS	Dwg. No.:	PH5068-4
Approved by:	EA	Revision No.:	1