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Ottawa Sivan Temple
2104 Roger Stevens Drive
Ottawa, Ontario
K0A 2T0

Attention: **Kula Sellathurai**

Subject: **Hydrogeological Assessment and Terrain Analysis**
Proposed Temple Redevelopment
2104 Roger Stevens Drive Ottawa, Ontario

INTRODUCTION

Further to your request, Paterson Group (Paterson) has conducted a Hydrogeological Assessment and Terrain Analysis in support of a Site Plan Control Application for the proposed redevelopment of the temple located at 2104 Roger Stevens Drive in Ottawa, Ontario. Please refer to the Key Plan (attached) for the approximate site location. The subject site refers to the parcel at 2104 Roger Steven Drive.

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 the proposed redevelopment.

The proposed Site Plan Application is for the construction of a new temple and priest residence that is replacing the currently existing temple. Details of the proposed temple redevelopment can be found in the attached P^2 Concepts drawing SP01 - Site Plan – dated May 13, 2025.

The Subject Site consists of a 2.04 hectares (ha) lot and is currently occupied by the existing temple with associated private infrastructure. The ground surface is generally flat at the location of the temple and is sloped to the south behind the temple and towards the rear of the property. The surficial groundwater flow is anticipated to be towards the southeast, while general groundwater flow is anticipated to be to the east towards an unnamed tributary which eventually drains into Stevens Creek.

The Subject Site is situated in a rural area which is serviced by private water supplies and private on-site septic fields. The site is bordered to the north by Roger Stevens Drive, followed by a residential dwelling and agricultural land, to the west by residential dwellings, and to the south and east by agricultural land.

Description of Subject Site

The subject site is approximately 2.04 ha in size and is currently occupied by a one-storey commercial building; Ottawa Sivan Temple. The Site Plan application is for a proposed redevelopment. The proposed redevelopment includes the construction of a new temple and a priest residence. Please refer to Figure-1 Key Plan and P^2 Concepts Site Plan Drawing SP01 dated May 13, 2025, attached, for the proposed site location and site layout.

The subject site is currently serviced by an onsite sewage system and a private drilled well. A new drilled well was installed onsite to support the redevelopment. A new sewage system is proposed to be located on the western side, behind the priest residence. D.B Gray Engineering Inc. (hereby referred to as DBG Engineering) has designed a new sewage system due to the nitrate reduction required as part of the Nitrate Impact Assessment (NIA). A septic flow calculation was completed by DBG Engineering and resulted in a total daily water demand calculation of 7,250 L/day. Please refer to DBG Engineering Sewage System design, attached, for full details.

The existing well is currently servicing the existing building, however, a new drilled well, hereafter referred to as Test Well 1 (TW1) was installed on September 9, 2024 and is intended to service the proposed temple and priest residence following the completion of the proposed redevelopment. The existing well will be decommissioned in accordance with O.Reg.903 once it is no longer required.

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).

Karst Mapping

Available Karst mapping (OGS GRS005) was reviewed as part of this assessment. The available mapping does not indicate the presence of any inferred or potential karstic features. Furthermore, no indication of karstic features were observed during the site visits completed by Paterson personnel.

Mississippi-Rideau Source Protection Plan

The Mississippi-Rideau Source Protection Plan (MRSPP) 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 has not been designated as any of the four groundwater related vulnerable areas identified within the Clean Water Act

(2006). The four vulnerable areas consist of Significant Groundwater Recharge Area (SGRA), Highly Vulnerable Aquifer (HVA), Intake Protection Zone (IPZ) and Wellhead Protection Area (WHPA).

As the subject site has not been designated as aby of the four groundwater related vulnerable areas, there is no prohibition of land uses on the subject site based upon its existing or proposed usage.

HYDROGEGOLOICAL ASSESSMENT

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 the proposed temple redevelopment for potable supply usage. Specifically, the intent of this report is to review the availability of a safe and reliable water supply having sufficient quantity and quality to provide potable water for the proposed redevelopment.

Fieldwork Program

Geotechnical Program

A geotechnical investigation was carried out on September 19, 2023, and consisted of a total of 3 boreholes excavated to a maximum depth of 6.7 m below ground surface (bgs). Practical refusal to DCPT was encountered at a depth of 10.8 m bgs in BH3-23. The boreholes were distributed in a manner to provide general coverage of the proposed redevelopment, taking into account underground utilities and site features. The locations of the boreholes are shown on Drawing PG6832-1 – Test Hole Location Plan (attached). The geotechnical analysis is completed under report no. PG6832-1.Revision 2, dated October 15, 2024.

Well Testing

As a means to demonstrate the adequacy of the aquifer underlying the subject lands, with respect to water quality and quantity, the newly drilled well (TW1) on the subject site was tested. TW1 has a Water Well Record (WWR) Well ID of A395525. TW1 has a 158.7 mm diameter steel casing that extends to 17.67 m below ground surface (bgs) with a 0.62 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 15 to 25 m. According to the Water Well Record (WWR) for the newly drilled well, the overburden generally consists of sand and gravel, boulders, clay and hardpan to a depth of 15.84 m, where limestone bedrock was encountered. Refer to P^{2}Concepts - Site Plan Drawing-SP01 attached, for the approximate location of TW1.

As a means to evaluate the water supply aquifer intercepted by the well, the well was subjected to an 8-hour constant rate pumping test. The pumping test was conducted on September 24, 2024 under the full-time supervision of Paterson personnel. Prior to the

pumping test the well was disinfected as per the MECP Disinfection Instruction Sheet (attached), and a data-logger was installed to monitor the background groundwater levels.

The submersible pump was rented from and installed by a licensed well technician (Air Rock Drilling Inc.) and used for the 8-hour pumping test. A licensed water well technician (Air Rock) 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 system was returned to its normal configuration.

The pumping test was carried out at a pumping rate of 58 L/min for a duration of 8 hours. 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 electric datalogger (VanEssen TD-Diver) was installed in the test well prior to the start of the pumping test. The selected rate of 58 L/min provides approximately 3.8 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 proposed redevelopment would require.

The data logger 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 fully recovered within 2 minutes after the end of pumping.

Groundwater samples were collected 4 hours and 8 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, and volatile organic compounds (VOCs).

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, apparent colour, and temperature.

Well Inspection

A visual inspection of TW1 was performed by Paterson personnel and confirmed that the well casing and well cap are in good condition. The grading around the well was noted to be sufficiently graded to direct surface water away from the wellhead, as required by O.Reg 903. The stickup was measured to be 0.62 m above ground surface. Based on a visual inspection by Paterson personnel, the well was deemed to be in good condition.

Aquifer Analysis

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)	1971
Pumping Rate (L/min)	58
Pre-test Static Water Level (m)	4.62
Post-test Static Water Level (m)	4.88 (4.98 max)
Available Drawdown (m)	50.28
% Drawdown During Pump Test (%)	0.7
Specific Capacity (L/min/m drawdown)	161

The drawdown data was analyzed using the Cooper Jacob method of analysis. Aquifer transmissivity is estimated to be 1971 m^2/day. Refer to the Cooper Jacob method of analysis data sheet attached to this report. Note that there was very little draw down during the pumping test at the associated pumping rate.

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 0.36 m (0.7% of the available drawdown). It should be noted that full recovery was achieved within 2 minutes after the end of pumping.

The total volume of water pumped during the 8-hour pumping event was approximately 27,840 L. This is approximately 3.8 times the maximum total daily design volume of water required (7,250 L/day) to support the proposed redevelopment.

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

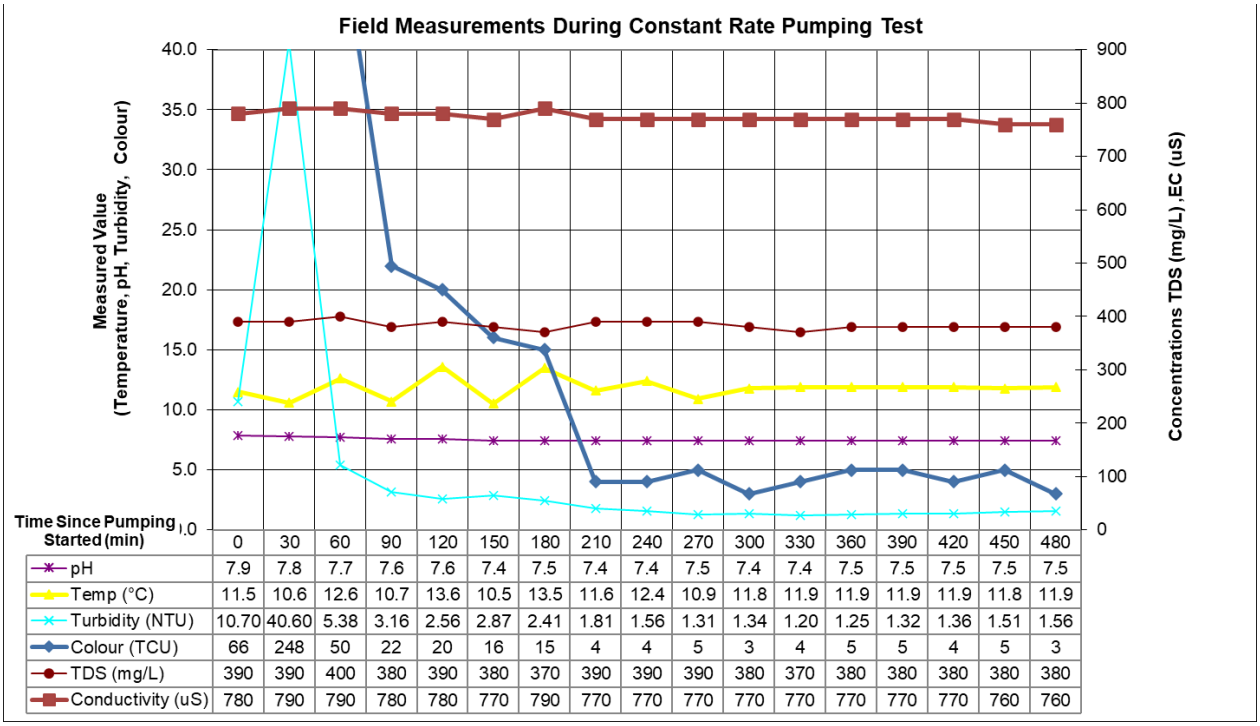
Based on the information summarized in Table 1, it is readily apparent that the water supply well has intercepted an adequately strong water supply aquifer which has sufficient quantity to service the proposed Site Plan Control Application.

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

Water Quality

Field Data

Turbidity, electrical conductivity, total dissolved solids (TDS), pH, apparent color 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 discharge water prior to the collection of the water samples.



Time Since Pumping Started (min)	0	30	60	90	120	150	180	210	240	270	300	330	360	390	420	450	480
pH	7.9	7.8	7.7	7.6	7.6	7.4	7.5	7.4	7.4	7.5	7.4	7.4	7.5	7.5	7.5	7.5	7.5
Temp (°C)	11.5	10.6	12.6	10.7	13.6	10.5	13.5	11.6	12.4	10.9	11.8	11.9	11.9	11.9	11.9	11.8	11.9
Turbidity (NTU)	10.70	40.60	5.38	3.16	2.56	2.87	2.41	1.81	1.56	1.31	1.34	1.20	1.25	1.32	1.36	1.51	1.56
Colour (TCU)	66	248	50	22	20	16	15	4	4	5	3	4	5	5	4	5	3
TDS (mg/L)	390	390	400	380	390	380	370	390	390	390	380	370	380	380	380	380	380
Conductivity (uS)	780	790	790	780	780	770	790	770	770	770	770	770	770	770	770	760	760

Figure 1: Field Measurements

Laboratory Data

The Subdivision Package suite of parameters and trace metals laboratory water quality obtained from the pumping test of TW1 is provided in Table 2a, 2b, and 2c below and the laboratory analyses reports can be found attached. VOC 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	
		LIMIT	TYPE	TW1 GW1 (4 hr) 9/24/2024	TW1 GW2 (8 hr) 9/24/2024
MICROBIOLOGICAL					
Escherichia Coli (E.Coli)	ct/100mL	0	MAC	0	0
Total Coliforms	ct/100mL	0	MAC	0	0
GENERAL CHEMICAL - HEALTH RELATED					
Fluoride (F)	mg/L	1.5	MAC	0.64	0.63
Ammonia (N-NH_3)	mg/L	-	-	0.154	0.153
Nitrite (N-NO_2)	mg/L	1	MAC	<0.1	<0.1
Nitrate (N-NO_3)	mg/L	10	MAC	<0.1	<0.1
Total Kjeldahl Nitrogen	mg/L	-	-	0.231	0.236
Turbidity (Field)	NTU	1.0 (5.0)	MAC/AO	1.56	1.56
Turbidity (Laboratory)	NTU	1.0 (5.0)	MAC/AO	1.6	2.3
GENERAL CHEMICAL - AESTHETIC RELATED					
Alkalinity (as CaCO3)	mg/L	30-500	OG	229	236
Chloride (Cl)	mg/L	250	AO	90	85
Colour (Apparent - Lab)	TCU	5	AO	6	7
Colour (Apparent - Field)	TCU	5	AO	4	3
Conductivity	uS/cm	-	-	781	766
Dissolved Organic Carbon	mg/L	5	AO	0.7	1.1
Hardness (as CaCO3)	mg/L	100	OG	226	226
Ion Balance	unitless	-	-	1.01	1.00
pH@25°c	unitless	6.5-8.5	AO	7.99	7.95
Phenols	mg/L	-	-	<0.001	<0.001
Sulphate (SO_4)	mg/L	500	AO	47	47
Sulphide (S_2^-)	mg/L	0.05	AO	<0.01	<0.01
Tannin & Lignin	mg/L	-	-	0.10	<0.01
Total Dissolved Solids	mg/L	500	AO	508	498

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

TABLE 2b: GROUNDWATER GEOCHEMISTRY - METALS					
PARAMETER	UNITS	ODWS		TW1	
		LIMIT	TYPE	TW1 GW1 (4 hr) 9/24/2024	TW1 GW2 (8 hr) 9/24/2024
METALS					
Aluminum (Al)	mg/L	0.1	OG	0.03	0.01
Antimony (Sb)	mg/L	0.006	IMAC	<0.0005	<0.0005
Arsenic (As)	mg/L	0.01	IMAC	<0.001	<0.001
Barium (Ba)	mg/L	1.0	MAC	0.07	0.06
Beryllium (Be)	mg/L	-	-	<0.0005	<0.0005
Boron (B)	mg/L	5.0	IMAC	0.20	0.20
Cadmium (Cd)	mg/L	0.005	MAC	<0.0001	<0.0001
Calcium (Ca)	mg/L	-	-	42	42
Chromium (Cr)	mg/L	0.05	MAC	<0.001	<0.001
Cobalt (Co)	mg/L	-	-	<0.0002	<0.0002
Copper (Cu)	mg/L	1.0	AO	<0.001	<0.001
Iron (Fe)	mg/L	0.3	AO	0.19	0.33
Lead (Pb)	mg/L	0.01	MAC	<0.001	<0.001
Magnesium (Mg)	mg/L	-	-	30	29
Manganese (Mn)	mg/L	0.05	AO	<0.01	<0.01
Molybdenum (Mo)	mg/L	-	-	<0.005	<0.005
Nickel (Ni)	mg/L	-	-	<0.005	<0.005
Potassium (K)	mg/L	-	-	8	8
Selenium (Se)	mg/L	0.05	MAC	<0.001	<0.001
Silver (Ag)	mg/L	-	-	<0.0001	<0.0001
Sodium (Na)	mg/L	200	AO	81	78
Strontium (Sr)	mg/L	-	-	1.75	1.77
Thallium (Tl)	mg/L	-	-	<0.0001	<0.0001
Uranium (U)	mg/L	0.02	MAC	<0.001	<0.001
Vanadium (V)	mg/L	-	-	<0.001	<0.001
Zinc (Zn)	mg/L	5.0	AO	<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

TABLE 2c: GROUNDWATER GEOCHEMISTRY - VOLATILES					
PARAMETER	UNITS	ODWS		TW1	
		LIMIT	TYPE	TW1 GW1 (4 hr) 9/24/2024	TW1 GW2 (8 hr) 9/24/2024
VOCs Surrogates					
1,2-dichloroethane-d4	%	-	-	-	113
4-bromofluorobenzene	%	-	-	-	81
Toluene-d8	%	-	-	-	99
Volatiles					
1,1,1,2-tetrachloroethane	µg/L	-	-	-	<0.5
1,1,1-trichloroethane	µg/L	-	-	-	<0.4
1,1,2,2-tetrachloroethane	µg/L	-	-	-	<0.5
1,1,2-trichloroethane	µg/L	-	-	-	<0.4
1,1-dichloroethane	µg/L	-	-	-	<0.4
1,1-dichloroethylene	µg/L	14.0	MAC	-	<0.5
1,2-dichlorobenzene	µg/L	200.0	MAC	-	<0.4
1,2-dichloroethane	µg/L	5.0	IMAC	-	<0.2
1,2-dichloropropane	µg/L	-	-	-	<0.5
1,3,5-trimethylbenzene	µg/L	-	-	-	<0.3
1,3-dichlorobenzene	µg/L	-	-	-	<0.4
1,3-Dichloropropylene (cis+trans)	µg/L	-	-	-	<0.3
1,4-dichlorobenzene	µg/L	5.0	MAC	-	<0.4
Acetone	µg/L	-	-	-	<30
Benzene	µg/L	1.0	MAC	-	<0.5
Bromodichloromethane	µg/L	-	-	-	<0.3
Bromoform	µg/L	-	-	-	<0.4
Bromomethane	µg/L	-	-	-	<0.5
c-1,2-Dichloroethylene	µg/L	-	-	-	<0.4
c-1,3-Dichloropropylene	µg/L	-	-	-	<0.2
Carbon Tetrachloride	µg/L	2.0	MAC	-	<0.2
Chloroethane	µg/L	-	-	-	<0.2
Chloroform	µg/L	-	-	-	<0.5
Dibromochloromethane	µg/L	-	-	-	<0.3
Dichlorodifluoromethane	µg/L	-	-	-	<0.5
Dichloromethane	µg/L	50	MAC	-	<4.0
Ethylbenzene	µg/L	140	MAC	-	<0.5
Ethylene Dibromide	µg/L	-	-	-	<0.2
Hexane	µg/L	-	-	-	<5
m/p-xylene	µg/L	-	-	-	<0.4
Methyl Ethyl Ketone (MEK)	µg/L	-	-	-	<10
Methyl Isobutyl Ketone (MIBK)	µg/L	-	-	-	<10
Methyl Tert Butyl Ether (MTBE)	µg/L	15	AO	-	<2
Monochlorobenzene	µg/L	80	MAC	-	<0.5
o-xylene	µg/L	-	-	-	<0.4
Styrene	µg/L	-	-	-	<0.5
t-1,2-Dichloroethylene	µg/L	-	-	-	<0.4
t-1,3-Dichloropropylene	µg/L	-	-	-	<0.2
Tetrachloroethylene	µg/L	10	MAC	-	<0.3
Toluene	µg/L	60	MAC	-	<0.4
Trichloroethylene	µg/L	5	MAC	-	<0.3
Trichlorofluoromethane	µg/L	-	-	-	<0.5
Vinyl Chloride	µg/L	1	MAC	-	<0.2
Xylene; total	µg/L	90	MAC	-	<0.5

The bacteriological test results (Certificate of Analysis – Report No. 4102006) indicated that the test samples at the 4 and 8 hour interval 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 $CaCO_3$)
- ❑ Turbidity
- ❑ Iron (Fe)

Exceedances of the above parameters are not uncommon of the water supply in the subject aquifer. Each of these groundwater parameters are discussed in detail below.

Hardness as $CaCO_3$

Hardness, expressed as calcium carbonate, is an operation guideline and does not appear in the ODWS. Rather, it appears in the Technical Support Documents for Ontario Drinking Water Standards, Objectives and Guidelines (ODWS) as a parameter with an operational guideline at 100 mg/L. At the measured concentration of 226 mg/L, the water is considered to be 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 softening technologies, if desired by the owner.

Turbidity

Turbidity, which is generally an aesthetic parameter, was detected in the laboratory test samples at values of 1.6 and 2.3 NTU in the 4- and 8-hours tests, respectively. Field testing of the samples detected values of 1.56 NTU in the 4- and 8-hour field tests, respectively. It is expected that continued use of the well would further reduce turbidity values. The elevated turbidity in the laboratory analyzed samples is attributed to the precipitation of iron.

The ODWS maximum acceptable concentration for turbidity in drinking water entering the distribution system is 1 NTU. The health-related Ontario Drinking Water Objective (ODWO) is 1 NTU. The Aesthetic Objective for turbidity in drinking water reaching the consumer is 5 NTU. The City's HTAG has a Maximum Concentration Considered Reasonably Treatable (MCCRT) of 5 NTU.

The field test parameters are below the 5 NTU objective. Furthermore, total coliforms and E.Coli were non-detect (0 ct/100 mL) in both the 4 and 8-hour samples, which meets the health requirements of the City's HTAG when the sample results are above the health-related ODWO of 1 NTU. Therefore, treatment for turbidity is not required

Iron

Concentrations of iron above 0.3 mg/L can contribute to staining of fixtures and a metallic taste at higher concentrations. Precipitation of iron can promote the growth of iron bacteria in pipes. The concentration of iron in the groundwater in TW1 was measured to be 0.33 mg/L at the 8-hour mark. The concentration of iron in the groundwater in the test well is considered to be reasonably treatable in accordance with Procedure D-5-5. It is recommended that an iron filter be used to reduce the levels of iron and reduce the potential for excessive precipitate occurring in the water supply system, if desired by the owner.

Colour

Colour may occur in drinking water for several reasons. It may be due to organic substances from the decay of vegetation, or the presence of metals such as iron, manganese, and copper, which are abundant in nature. The provincial aesthetic objective for colour in drinking water is 5 True Colour Units (TCU). The federal (Health Canada) guideline aesthetic objective limit for colour is 15 TCU (Guidelines for Canadian Drinking Water Quality, Health Canada June 2019). Procedure D-5-5 gives a maximum concentration considered reasonably treatable for colour as 7 TCU. As colour is a strictly aesthetic parameter, it can be reduced from the water supply, if desired, through the use of a manganese greensand treatment.

During the field pumping test, a DR900 colorimeter was used to measure apparent colour in the groundwater at regular intervals. Apparent colour in the groundwater was measured as 4 and 3 TCU at the 4- and 8- hour marks, which are below the aesthetic guideline of 5 TCU, whereas apparent colour from laboratory measurements was 6 and 7 TCU which is above the guideline but within treatable limits. The elevated colour levels detected in the lab samples is attributed to the precipitation of iron out of the groundwater.

Total Dissolved Solids (TDS)

TDS refers to the concentration of inorganic substances dissolved in water. The main constituents are typically chloride, sulphates, calcium, magnesium, and bicarbonates. The TDS concentration of 508 mg/L at the 4-hour mark exceeds the Aesthetic Objective of 500 mg/L. At concentrations above 500 mg/L, some consumers may find the taste objectionable, however, as the objective is an aesthetic objective, no treatment is required. At the 8-hour mark, the TDS concentration was 498 mg/L which is below the Aesthetic Objective. As the TDS concentration was decreasing with time and was below the Aesthetic Objective no taste problems are anticipated to occur and treatment is not likely to be required. If desired by the owner, a point of use reverse osmosis unit can be installed to reduce TDS levels for drinking purposes.

The Langelier calculation provided an LSI of 0.0. Based on the evaluation of the result, the water is saturated and does not precipitate a scale layer of calcium carbonate or dissolve calcium carbonate (neither scale forming nor corrosive). Based on the stable

value, there are no mitigative measures needed. See Langelier Saturation Index Calculation attached for calculation details.

Sodium

Sodium (Na), an aesthetic parameter, was detected in the laboratory test sample at concentrations of 81 and 78 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.

O.Reg 903

All wells must be maintained in accordance with O.Reg 903. If a well is no longer in use, it must be decommissioned in accordance with O.Reg 903.

TERRAIN ANALYSIS

The purpose of this study is to determine the site's suitability for private on-site wastewater systems. Specifically, the intent of this report is to provide design details for private septic servicing and lot development potential.

Surficial Geology

Paterson carried out a Geotechnical Investigation on September 19, 2023 where 3 boreholes were installed in a manner to provide general coverage of the subject site, with specific consideration to the redevelopment. The general overburden was observed to be a thin layer of topsoil followed by fill and/or glacial till. Fill, consisting of brown silty sand with gravel, was encountered in BH2-23 and BH3-23, to a maximum depth of 2.1 m bgs. Glacial till, consisting of silty sand to sandy silt with varying amounts of gravel and, cobbles and boulders, was found in each borehole to the maximum depth of the boreholes. Practical refusal to augering was observed at a depth of 5 m in BH1-23 and DCPT refusal was observed in BH3-23 at a depth of 10.8 m bgs. The results of the geotechnical program are generally consistent with available geological mapping provided by the Ontario Geological Survey (OGS MRD128) and with the available historical surrounding Water Well Records (WWR). Further details can be found in geotechnical report PG6832-1.Revision 2, dated October 15, 2024.

Available bedrock geological mapping provided by the Ontario Geological Survey (MRD 219) indicates that the bedrock underlying the subject site consists of dolostone, minor shale and sandstone of the Oxford Formation in the Beekmantown Group. Available overburden thickness mapping shows a drift thickness of 10 to 15 m across the subject site.

Hydrogeological Sensitivity of the Site

The subject site currently consists of a temple with associated infrastructure and private servicing. The subject site is serviced by a private potable well and septic system. The subject site is currently occupied by a one-story commercial building, specifically the Ottawa Sivan Temple. The site is bordered to the north by Roger Stevens Drive, followed by a residential dwelling and agricultural land, to the west by residential dwellings, and to the south and east by agricultural land. All surrounding properties are on private services. The adjacent properties are serviced by private wells and septic systems.

The overburden at the subject site and surrounding WWRs is recorded as a sand based glacial till.

According to the Ontario Building Code (OBC) Section 8.7.2.1 (1) (b)(i), highly permeable soils as it relates to sewage system design is defined by soils having a percolation rate of less than 1 minute per cm. According to the Ministry of Municipal Affairs and Housing (MMAH) Supplementary Standard SB-6 – Percolation time and soil descriptions dated January 1, 2024 only “Well graded gravels, gravel-sand mixtures, little or no fines” or “Poorly graded gravels, gravel-sand mixtures, little or no fines” have a percolation time of less than 1 minute per cm. The onsite soils were noted to be a glacial till consisting of silty sand to sandy silt with varying amounts of gravel and, cobbles and boulders. Due to the presence of silty sand to sandy silt (a high composition of fines), the percolation time is anticipated to be greater than 1 min/cm and therefore is not considered a highly permeable soil. As such, septic impacts due to observed soils are not anticipated onsite.

According to the Geotechnical Investigation, the overburden thickness was observed to be greater than 2 m.

As the proposed site does not have bedrock within 2 m of the ground surface and the site does not contain any highly permeable soils, the site is not considered hydrogeologically sensitive. Separation distances are not required to be increased between the septic components and the onsite well.

To corroborate our position in this matter, the water quality of the bedrock aquifer targeted by the onsite drilled potable supply well shows no indication of surface water or surface impacts.

Lot Development Plan

The Site Plan for the proposed redevelopment was produced by P^2 Concepts and is attached (Drawing-SP01). The location of the temple, priest residence, proposed sewage system, and related infrastructure are shown. Please note that although a “permeable parking area” was designated in the site plan drawing, the material was considered impermeable as a conservative approach for this Nitrate Impact Assessment.

Sewage System Volumes

The sewage system has been designed by D.B. Gray Engineering and can be found attached to this report. The maximum total daily design sanitary sewage flow volume (TDDSSF) was determined to be 7,250 L/day. An approved Ottawa Septic System Office (OSSO) permit will be submitted with the Site Plan Application.

Predictive Nitrate Impact Assessment

In order to demonstrate that private services would adequately support the proposed Site Plan application, a Predictive Nitrate Impact Assessment (NIA) for the subject site was completed. The values shown in the Predictive NIA attached to this report are summarized below.

- ❑ Site area — 2.04 ha
- ❑ Impervious area (%) — 27 %
- ❑ Daily sewage flow — 7.25 m^3/d
- ❑ Concentration of nitrate in effluent — 40 mg/L
  (Value based on typical effluent concentration)
- ❑ Concentration of nitrate in effluent with treatment — 20 mg/L
  (Value based on BNQ/NSF 245 certified nitrate reduction system with 50% nitrate reduction)
- ❑ Surplus Water — 378 mm/yr
  (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.)
- ❑ 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 between 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.

The calculation for a conventional septic system results in a predicted nitrate concentration of 16.05 mg/L nitrate for the subject site, using a value of 40 mg/L nitrate concentration within the effluent. This value was based upon a daily sewage flow of 7,250 L/day. It is expected that the actual usage should be lower. The inclusion of nitrate reduction technology (50 % nitrogen reduction of the effluent nitrate, with a BNQ or NSF

245 certified technology) would result in a nitrate concentration of 8.03 mg/L at the property boundary using a value of 20 mg/L nitrate within the effluent, which is below the maximum property value of 10 mg/L nitrate by the property boundary.

Based on the results of the predictive NIA, it is our opinion that the property can adequately support the proposed Site Plan application without having an adverse impact on the underlying bedrock aquifer, provided that an BNQ/NSF 245 certified nitrate reduction system with a minimum of 50% nitrate reduction is used in the sewage system.

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 the existing well is considered to be adequate to support the water quantity demands for the proposed redevelopment.

2. Based on a visual inspection performed by Paterson personnel, the well casing, stickup, well cap, and surrounding grading around the well are of sufficient standard to meet O.Reg 903. It is a requirement that the well continue to adhere to and be maintained in accordance with O.Reg 903.

3. The preferred water supply intercepted by TW1 contains a water supply that is potable, and contains only elevated concentrations of hardness, turbidity, iron, and apparent colour. The noted parameters can be treated with current readily available water conditioning equipment if desired by the owner.

4. A residential grade water softener is recommended to facilitate the reduction of the hardness concentration. If a water softener is used for the proposed redevelopment, the owner should be made aware that additional sodium will be added to the water to reduce hardness. If desired, a point-of-use reverse osmosis system can be also used to provide a drinking tap source.

5. If desired, the owner can use an iron filter to treat the potential iron values.

6. 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.

7. The site is not considered hydrogeologically sensitive.

8. The predicted nitrate concentrations at the property boundary is calculated to be below the required 10 mg/L threshold when a standard denitrification system (50% nitrate reduction) using BNQ/NSF 245 certified nitrate reduction technology is used.

9. A Sewage System Permit and Building Permit need to be issued prior to the commencement of construction on the proposed redevelopment or the proposed septic system.

10. The existing well will be decommissioned in accordance with O.Reg.903 once it is no longer needed.

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

We trust that the current submission satisfies your immediate requirements.

Best Regards,

Paterson Group Inc.

Alexander Schopf, PhD, EIT

Erik Ardley, P.Geo

Attachments:

- ❑ Key Plan
- ❑ P²Concepts - Drawing SP.01 dated May 13, 2025
- ❑ MECP Water Well Records
- ❑ Eurofins Certificate of Analysis
- ❑ AQTESOLV - Pumping Test Analysis Reports
- ❑ Langelier Saturation Calculation
- ❑ Testhole Soil Profile and Data Sheets
- ❑ Nitrate Impact Assessment Calculations
- ❑ PG6832-1 – Test Hole Location Plan
- ❑ DBG Engineering Septic System Design

FIGURE 1

KEY PLAN

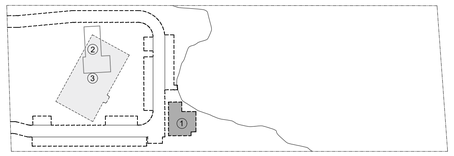
PATERSON GROUP

2104 Roger Stevens	RI3 [608r]	S. 1A - Area D (Rural)	S. 58 - Floodplain overlay	Official Plan - S. B9	Rural Transect - Village	Temple GFA 2,013 m2 Priest Residence GFA 551 m2
						Temple Assembly Area GFA 1,067.74 m2

General Provisions	**Section**	**Required**	**Proposed**
Permitted uses*	S. 240 [608r]	School, Place of Worship, or Dwelling unit accessory to these uses	Place of Worship, Dwelling unit
Min. lot area (sq. m)	Table 224A, (a)	10,000 m2	20,395 m2
Min. lot width (m)	Table 224A, (b)	75 m	82.95 m
Max. building height (m)	Table 224A, (g)	12 m	8.44 m (Temple), 9.53m (Priest Residence)
Min. front yard setback (m)	Table 224A, (c)	9 m	26.20 m
Min. rear yard setback (m)	Table 224A, (d)	10 m	140.88 m
Min. int. side yard setback (m)	Table 224A, (e)	9 m	16.69 m (east), 9 m (west)
Max. lot coverage (%)	Table 224A, (h)	30% lot area = 6,118.50 m2	6% lot area = 1,309.56 m2
Min. landscaped area (%)	Table 224A, (i)	20% lot area = 4,079 m2	94% lot area = 19,085.44 m2
* 608r exception			

Parking Provisions	**Section**	**Required**	**Proposed**	
Place of Worship	Table 101, N66	10 spaces / 100 m2 of assembly area GFA = 107 Spaces	60 spaces	**MV REQUIRED**
Dwelling unit	Table 101, R4	1 space	1 space	
Parking space size	S. 106, (1)	2.6 m x 5.2 m	2.6 m x 5.2 m	
B/F parking (included in total)	AODA, S. 80.36	4% of the total provided spaces = 2 spaces	3 spaces (2 type A, 1 type B)	
Type A parking space dimensions	AODA, S. 80.34 (1)	3.4 m x 5.2 m (plus 1.5 m aisle)	3.4 m x 5.2 m with 1.5 m shared aisle	
Type B parking space dimensions	AODA, S. 80.34 (2)	2.4 m x 5.2 m (plus 1.5 m aisle)	2.4 m x 5.2 m with 1.5 m shared aisle	
Min. drive aisle width (m)	S. 107, (1) (c)	6.7 m	6.7 m	
Min. driveway width (m)	S. 107, (1) (a)	3 m - single lane; 6 m - double lane	6.7 m	
Min. landscaped area for parking lots (%)	S. 110, (1)	15% (322.32 m2)	24% (757.31 m2)	
Min. landscaped buffer for parking lot (m)	Table 110, (1)	3 m abutting street; 1.5 m not abutting street	11.94 abutting a street; 3.02 not abutting street	
Min. setback for outdoor refuse (in-ground container)	S. 110, (3)	9 m from a lot line abutting a public street 3 m from any other lot line Screened by soft landscaping 2 m in height	77.71 m from a lot line abutting a public street 4.57 m from any other lot line Screened by soft landscaping 2 m in height	
Permitted parking lot material	S. 100, (3) (b)	gravel; B/F spaces must be hard and stable	Asphalt, interlock pavers	
Min. number of bike parking spaces	Table 111A, (i)	1 space / 1,500 m2 GFA = 1 Space	3 spaces	
Min. number of loading spaces	Table 113A, (a)	1 space if 2,000 - 4,999 m2 of GFA = 1 Space	0 spaces	**MV REQUIRED**

PHASING DIAGRAM:



① PHASE 1 : CONSTRUCTION OF A TWO STOREY BUILDING (TEMPORARY TEMPLE / PRIEST RESIDENCE/ DRIVEWAY / PARKING)

② PHASE 2 : DEMOLITION OF THE OF EXISTING BUILDING

③ PHASE 3 : CONSTRUCTION OF A ONE STOREY BUILDING - TEMPLE

LEGEND:

INTERNAL ROAD / FIRE ROUTE

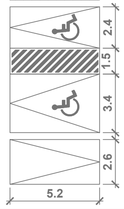
S.O.D.

SNOW STORAGE AREA

PERMEABLE PARKING AREA

TERRACES

BARRIER FREE CAR PARKING SPACES
TYPE A (3.4 x 5.2 m)
TYPE B (2.4 x 5.2 m)
ACCESS AISLE (1.5 x 5.2 m)



CAR PARKING SPACES

PROPOSED BUILDING

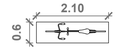
PROPOSED WALKWAY

SHRUB / BUSHES

EXISTING VEGETATION

PROPOSED TREES

BIKES PARKING SPACE



MOLOK BIN

SANITARY MANHOLE

STORM / CATCH BASIN MANHOLE

CATCH BASIN

LIMIT OF SITE DEVELOPMENT

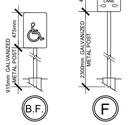
EXISTING STATUE

ACCESSIBLE BENCH WITH CONCRETE PAD

PROPOSED PICNIC TABLE

EXISTING TREE TO REMAIN

SITE SIGNAGE



1 SP01 **SITE PLAN** SCALE: 1/400

OWNER NAME & ADDRESS

Vallavambiga Sri Taiyainayaki Sametha
Vaithiyanathan Swamy Koil Inc.
Kugendran Sabaratnam

2104 Roger Stevens Rd North Gower, ON, K0A 2T0

ARCHITECT

OM P. MADAN ARCHITECT
B. Arch.; OAA.; MRAIC;
7 SPLINTER CRES. OTTAWA, ONTARIO K2B 1B3 T: (613) 203-1805

APPLICANT AND DESIGNER

P-SQUARED CONCEPTS INC.

PROJECT TEAM (ENGINEERS)

P² concepts

PATERSON GROUP

CIMA+

D.B. Gray Engineering Inc.

James B. Lennox & Associates Inc.
LANDSCAPE ARCHITECTS

J.D. BARNES LIMITED

PLAN OF SURVEY
INFORMATION SHOWN HAS BEEN TAKEN FROM
J.D. BARNES LIMITED
62 STEACIE DRIVE, SUITE 103,
KANATA, ON K2K 2A9
(613) 731-7244

TOPOGRAPHIC PLAN OF
PART OF LOT 21
CONCESSION 3
GEOGRAPHIC TOWNSHIP OF NORTH GOWER
NOW IN THE
CITY OF OTTAWA

BENCHMARK NOTE

1. IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE SITE BENCHMARK HAVE NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREES WITH THE INFORMATION SHOWN ON THIS DRAWING.
2. ELEVATIONS ARE GEODETIC AND REFERRED TO PUBLISHED CONTROL POINT 01019791716 HAVING A PUBLISHED ELEVATION OF 91.214 METRES (CGVD28-78 DATUM)

No.	REVISIONS	DATE
09	ISSUED FOR COORDINATION	2025-05-13
08	ISSUED FOR REVIEW	2025-04-09
07	ISSUED FOR REVIEW	2025-04-03
06	ISSUED FOR COORDINATION	2025-03-06
05	ISSUED FOR COORDINATION	2024-10-04
04	ISSUED FOR COORDINATION	2024-09-26
04	ISSUED FOR COORDINATION	2024-08-08
03	ISSUED FOR CIVIL COORDINATION	2024-05-21
02	ISSUED FOR CLIENT REVIEW	2024-04-09
01	ISSUED FOR PHASE I PRE-CONSULT	2024-03-01

NOT AUTHENTIC UNLESS SIGNED AND DATED

P² concepts
2200 THURSTON DR., UNIT 203
OTTAWA, ONTARIO, K1G 4E1

DESIGNED BY:	DRAWN BY:	APPROVED BY:
S.A.	P.S.	P.R.

PROJECT

NEW OTTAWA SIVAN TEMPLE

DRAWING TITLE

SITE PLAN

PROJECT NO.
0399

DATE
MAY, 13, 2025

SP01

PLAN NO. #13282

D07-12-25-0049

TW1

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☐ Metric ☒ Imperial

We Tag#:A395525 (Print Below)

A395525

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Ottawa Sivan Temple		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
2104 Roger Stevens Drive	North Gower	ON	K0A 2T0	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
2104 Roger Stevens Drive	Rideau	P/L 21	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	445192	4998614	5R-6158	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Sand	Clay		0	25
	Gravel	Boulders + Hard Pan		25	52
Grey & Black	Limestone			52	154
Grey & Black	Limestone			154	160
Grey	Sandstone			160	170
Grey	Sandstone			170	174
Grey	Sandstone			174	180

Owner-Vallavambiqa Sri Taiyalnayaki Samethe Vaithiyanatha Swamy Koil Inc (AS) Ottawa Sivan Temple

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
58	48	Neat cement	10.92
48	0	Bentonite slurry	21.00

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
6 1/4"	Steel	.188"	+2	58
6"	Open Hole		58	180

Status of Well

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

Construction Record - Screen

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

Results of Well Yield Testing

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

If pumping discontinued, give reason: X

Pump intake set at (m/ft): 170

Pumping rate (l/min / GPM): 20

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 16.5

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

Recommended pump depth (m/ft): 100

Recommended pump rate (l/min/GPM): 20

Well production (l/min/GPM): 20

Disinfected? ☒ Yes ☐ No

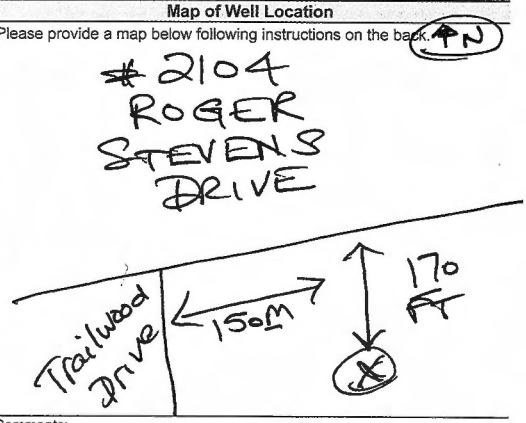
Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	14'3"		16.5"
1	16.1	1	14.8
2	16.2	2	14.5
3	16.2	3	14.4
4	16.2	4	14.3
5	16.2	5	14.3
10	16.3	10	14.3
15	16.3	15	14.3
20	16.4	20	14.3
25	16.4	25	14.3
30	16.4	30	14.3
40	16.5	40	14.3
50	16.5	50	14.3
60	16.5"	60	14.3"

Water Details

Water found at Depth	Kind of Water	Hole Diameter Depth From	Depth To	Diameter (cm/in)
154 (m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			
170 (m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify	0	58	9 3/4"
174 (m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify	58	180	6"

Map of Well Location

Please provide a map below following instructions on the back. N



Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Air Rock Drilling Co. Ltd.	7681

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
6038 Franktown Road	Richmond	ON	K0A 2Z0	air-rock@sympatico.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted (Y Y Y Y M M D D)
6138382170	Hanna, Jeremy	T3632		2024 09 30

Comments: 1 HP-20 GPM Set @ 100 FT

Well owner's information package delivered	Date Package Delivered (Y Y Y Y M M D D)	Ministry Use Only
☒ Yes ☐ No	2024 09 10	Audit No. Z427310
	2024 09 09	Received

31649

Ministry of the Environment
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

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

(11) 1519044 MUNICIP 15004 CON. CON 03

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
[redacted]	Rideau - NORTH GOWER	3 020	020

[redacted] ORTH GOWER

DATE COMPLETED DAY 05 MO 06 YR 84

99849 9 RC 4 ELEVATION 0300 RC 4 BASIN CODE 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
Gray	Clay			0'	3'
Gray	Hardpan	Stones		3'	53'
Gray	Limestone			53'	105'

(31) 0003205 | 0053214112 | 0105215

32

(41) WATER RECORD	
WATER FOUND AT - FEET	KIND OF WATER
0100	1 ☑ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

(51) CASING & OPEN HOLE RECORD				
INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	TO
6 1/4 (06)	1 ☑ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0'	0055
~~5 7/8~~			~~55~~	~~105~~
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0105
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

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

(61) PLUGGING & SEALING RECORD		
DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

(71) PUMPING TEST

PUMPING TEST METHOD: 1 ☑ PUMP 2 ☐ BAILER — PUMPING RATE 0010 GPM — DURATION OF PUMPING 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
015 FEET	055 FEET	055 FEET	055 FEET	055 FEET	055 FEET

WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY

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

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☑ DEEP — RECOMMENDED PUMP SETTING 055 FEET — RECOMMENDED PUMPING RATE 0008 GPM

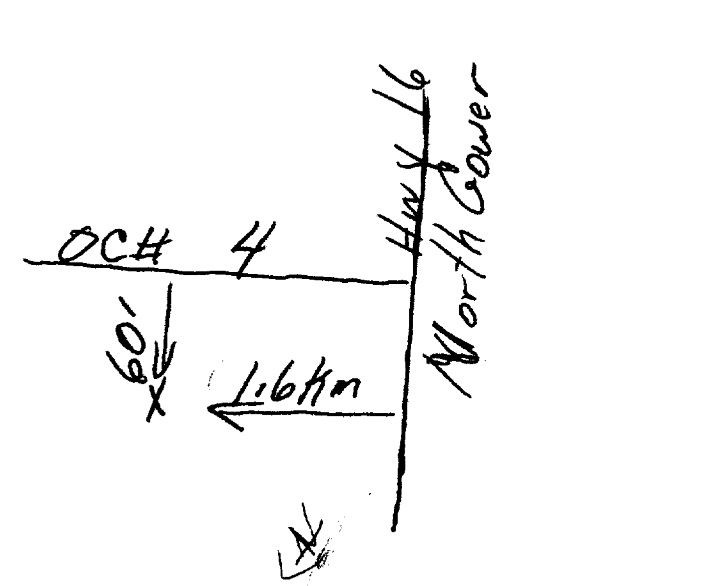
FINAL STATUS OF WELL 1: 1 ☑ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED

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

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

1723 **LOCATION OF WELL**

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



DRILLERS REMARKS

CONTRACTOR

NAME OF WELL CONTRACTOR: M. Kavanagh & Son Well Drilling — LICENCE NUMBER 3142
ADDRESS: RR #2 Carleton Place Ont.
NAME OF DRILLER OR BORER: M. Kavanagh — LICENCE NUMBER 3142
SIGNATURE OF CONTRACTOR: Michael Kavanagh — SUBMISSION DATE DAY 20 MO. 6 YR. 84

OFFICE USE ONLY

DATA SOURCE 1 — CONTRACTOR 3142 — DATE RECEIVED 10 07 84
DATE OF INSPECTION — INSPECTOR
REMARKS
CSS.ES

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506-4-77 FORM 7

Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

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

11 (1 2) **1531768** Municipality 15004 (10 14) Con. CON (15 22 23 24) 03

County or District: CARLETON
Township/Borough/City/Town/Village: RIDEAU
Con block tract survey, etc.: 3
Lot (25-27): Part of 20 & 21
Address: 6626 3RD Line RD Kars
Date completed (48-53): 16 day 01 month 2001 year
Northing | RC | Elevation | RC | Basin Code (i ii iii iv)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
Brown	clay		Thick	0	10
Grey	Clay		Runny	10	20
Grey	Clay Sandy	with Boulders,	Hard Pan	20	36
Grey	Limestone	Broken Layers, Sand	MED HARD	36	48
Grey	Limestone		MED HARD	48	65
		43' of 6 1/4" casing			
		20' of 5" casing			
		1 Heavy Duty Drive Shoe			
		1 well cap			
		10 Bags of Cement			

31
32

41 WATER RECORD

Water found at - feet	Kind of water
53 (13)	1 ☐ Fresh 3 ☐ Sulphur 14; 2 ☐ Salty 4 ☒ Minerals; 6 ☐ Gas
(15-18)	1 ☐ Fresh 3 ☐ Sulphur 19; 2 ☐ Salty 4 ☐ Minerals; 6 ☐ Gas
(20-23)	1 ☐ Fresh 3 ☐ Sulphur 24; 2 ☐ Salty 4 ☐ Minerals; 6 ☐ Gas
(25-28)	1 ☐ Fresh 3 ☐ Sulphur 29; 2 ☐ Salty 4 ☐ Minerals; 6 ☐ Gas
(30-33)	1 ☐ Fresh 3 ☐ Sulphur 34; 2 ☐ Salty 4 ☐ Minerals; 6 ☐ Gas (60)

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6 1/4 (10-11)	1 ☒ Steel (12); 2 ☐ Galvanized; 3 ☐ Concrete; 4 ☐ Open hole; 5 ☐ Plastic	.188	0	38 (16)
5 (17-18)	1 ☒ Steel (19); 2 ☐ Galvanized; 3 ☐ Concrete; 4 ☒ Open hole; 5 ☐ Plastic	.188	30	50 (23)
4 7/8			50	65
(24-25)	1 ☐ Steel (26); 2 ☐ Galvanized; 3 ☐ Concrete; 4 ☐ Open hole; 5 ☐ Plastic			(27-30)

SCREEN

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

61 PLUGGING & SEALING RECORD

☒ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
0 (3)	38	Cement Grout
(18-21)	(22-25)	
(26-29)	(30-33) (80)	

71 PUMPING TEST

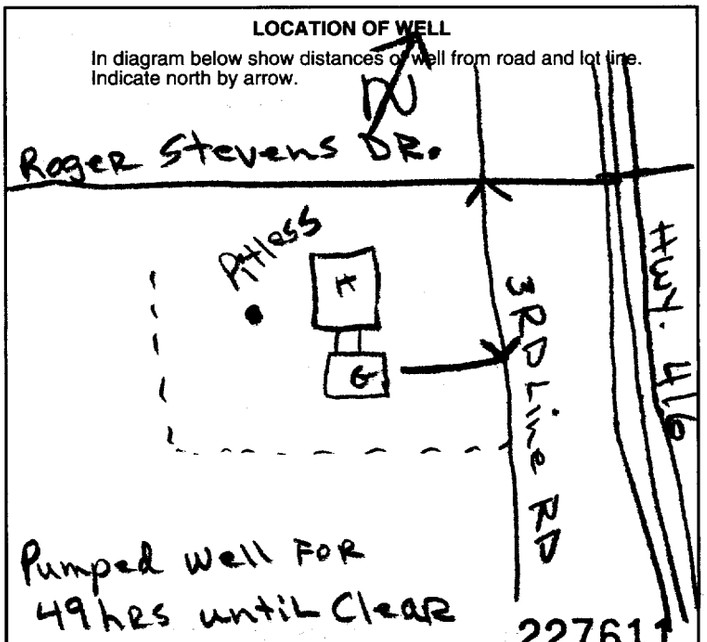
Pumping test method (10): 1 ☐ Pump 2 ☒ Bailer
Pumping rate (11-14): 10 GPM
Duration of pumping (15-16) Hours (17-18) Mins: 1 hour

Static level	Water level end of pumping	Water levels during (25): 1 ☒ Pumping 2 ☐ Recovery			
(19-21)	(22-24)	15 minutes (26-28)	30 minutes (29-31)	45 minutes (32-34)	60 minutes (35-37)
3 feet	40 feet	40 feet	40 feet	40 feet	40 feet

If flowing give rate (38-41): GPM
Pump intake set at: feet
Water at end of test (42): ☒ Clear ☐ Cloudy
Recommended pump type: ☐ Shallow ☒ Deep
Recommended pump setting (43-45): 50 feet
Recommended pump rate (46-49): 7 GPM
(50-53)

LOCATION OF WELL

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



Pumped well for 49 hrs until Clear

227611

FINAL STATUS OF WELL (54)

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

WATER USE (55-56)

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

METHOD OF CONSTRUCTION (57)

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

Name of Well Contractor: B. Moore Well Drilling
Well Contractor's Licence No.: 6455
Address: Box 436 Osgoode ONT K0A2W0
Name of Well Technician: Bob Moore
Well Technician's Licence No.: T-0319
Signature of Technician/Contractor: Bob Moore
Submission date: day 17 mo 01 yr 2001

MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68) (80)
	6455	MAR 0 1 2001
Date of inspection	Inspector	
Remarks		CSS.ES1

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Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

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

11 1532449

Municipality 15004 Con. CON 03

Plan #4 11773

County or District	Township/Borough/City/Town/Village	Con	block	tract	survey, etc.	Lot
Ottawa Carleton	North Gower	3	block 21			5

Owner's surname	First Name	Address	Date completed (day / month / year)
Hans and JO Construction		North Gower 2166	24 / 10 / 01

21 Zone | Easting | Northing | RC | Elevation | RC | Basin Code | ii | iii | iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
BROWN	TILL	Boulder	Dense	0	9
GRAY	"	"	"	9	48
GREY	limestone Rock		FRACTURED	48	85

31

32

41 WATER RECORD

Water found at - feet	Kind of water
70	1 ☑ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
8 3/4	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		0	48
6+/11	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic		+2	48
6 11	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic		48	85

SCREEN

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

Material and type | Depth at top of screen feet

61 PLUGGING & SEALING RECORD

☑ Annular space ☐ Abandonment

Depth set at - feet From	To	Material and type (Cement grout, bentonite, etc.)
0	48	Cement grout

71 PUMPING TEST

Pumping test method 1 ☐ Pump 2 ☑ Bailer | Pumping rate 12 GPM | Duration of pumping 1 Hours 0 Mins

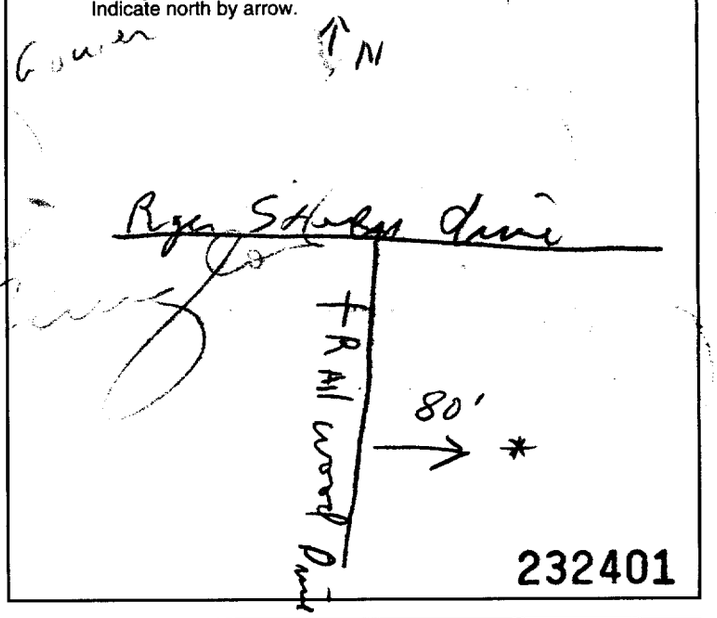
Static level	Water level end of pumping	Water levels during 1 ☐ Pumping 2 ☑ Recovery			
25 feet	85 feet	15 minutes 25 feet	30 minutes 25 feet	45 minutes 25 feet	60 minutes 25 feet

If flowing give rate GPM | Pump intake set at 85 feet | Water at end of test ☐ Clear ☑ Cloudy

Recommended pump type ☐ Shallow ☑ Deep | Recommended pump setting 75 feet | Recommended pump rate 10 GPM

LOCATION OF WELL

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



232401

FINAL STATUS OF WELL 54

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

WATER USE 55-56

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

METHOD OF CONSTRUCTION 57

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

Name of Well Contractor	Well Contractor's Licence No.
Gilles Bourgeois well drill	1414
Address: St-ALBERT ont	
Name of Well Technician: Jacques Raymond	Well Technician's Licence No. 0264
Signature of Technician/Contractor: Gilles Bourgeois	Submission date: 24 (day) 10 (mo) 01 (yr)

MINISTRY USE ONLY

Data source 58	Contractor 59-62	Date received 63-68
	1414	NOV 02 2001
Date of inspection	Inspector	
Remarks		

OBS.TEST

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Ontario **Ministry of the Environment**

The Ontario Water Resources Act
WATER WELL RECORD

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

11 (1 2) **1532710**

Municipality 15004 (10 14) Con. CON (15 22 23 24) 03

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot (25-27)
Ottawa Carleton	Rideau	3	1

[redacted]

Address: North Gower, Ont

Date completed (48-53): 04 (day) 04 (month) 02 (year)

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

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
	Sand	boulders		0	38
grey	limestone			38	150

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

41 WATER RECORD

Water found at - feet (10-13)	Kind of water			
142	1 ☑ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas	14	
15-18	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas	19	
20-23	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas	24	
25-28	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas	29	
30-33	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas	34	60

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
10-11: 6 1/4	12: 1 ☑ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	188	0	13-16: 46
17-18: 8 3/4	19: 1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		0	20-23: 44
24-25: 6	26: 1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		44	27-30: 150

SCREEN

Sizes of opening (Slot No.) (31-33)	Diameter (34-38) inches	Length (39-40) feet

Material and type	Depth at top of screen (41-44) feet	30

61 PLUGGING & SEALING RECORD

☑ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
2 (10-13)	46 (14-17)	bentonite
18-21	22-25	
26-29	30-33 (80)	

71 PUMPING TEST

Pumping test method (10): 1 ☑ Pump 2 ☐ Bailer

Pumping rate (11-14): 20 GPM

Duration of pumping (15-16): 1 Hours (17-18) Mins

25 Water levels during: 1 ☐ Pumping 2 ☑ Recovery

Static level (19-21)	Water level end of pumping (22-24)	15 minutes (26-28)	30 minutes (29-31)	45 minutes (32-34)	60 minutes (35-37)
8 feet	70 feet	8 feet	8 feet	8 feet	8 feet

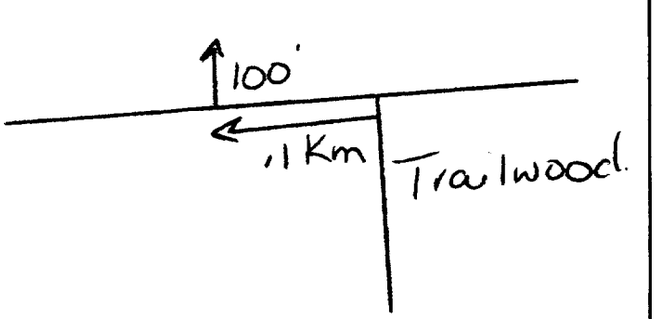
If flowing give rate (38-41)	Pump intake set at	Water at end of test (42)
GPM	feet	☐ Clear ☑ Cloudy

Recommended pump type	Recommended pump setting (43-45)	Recommended pump rate (46-49)
☐ Shallow ☑ Deep	70 feet	20 GPM

50-53

LOCATION OF WELL

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



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FINAL STATUS OF WELL (54)

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

WATER USE (55-56)

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

METHOD OF CONSTRUCTION (57)

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

Name of Well Contractor	Well Contractor's Licence No.
A1 Rock Dr. Wtr Ltd	1119
Address: RR#1 Richmond, Ont	
Name of Well Technician: Shannon Purcell	Well Technician's Licence No.: T2122
Signature of Technician/Contractor	Submission date: 10 (day) 04 (mo) 02 (yr)

MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68)	80
	1119	APR 15 2002	

Date of inspection	Inspector

Remarks: CSS.ES2

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Ontario **Ministry of the Environment**

The Ontario Water Resources Act
WATER WELL RECORD

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

11 **1533234** Municipality 15009 Con.

County or District: Ottawa Carleton
Township/Borough/City/Town/Village: Osgood
Con block tract survey, etc.: Plan 4M-773
Lot: 8
Address: [redacted] 2180 Trailwood Drive North Gower Ont.
Date completed: 07 / 10 / 02 (day / month / year)
Northing RC Elevation RC Basin Code

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
Brown	Till	Boulders	Dense	0	10
Grey	Till	"	"	10	38
Grey	Limestone Rock		Fractured	38	45
Grey	"	"	Layered	45	90

41 WATER RECORD

Water found at - feet	Kind of water
80	1 ☑ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
8 3/4"	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		0	45
6 1/4"	1 ☑ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	1.88	+2	45
6"	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		45	90

SCREEN

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

61 PLUGGING & SEALING RECORD

☑ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
0	45	Cement grout

71 PUMPING TEST

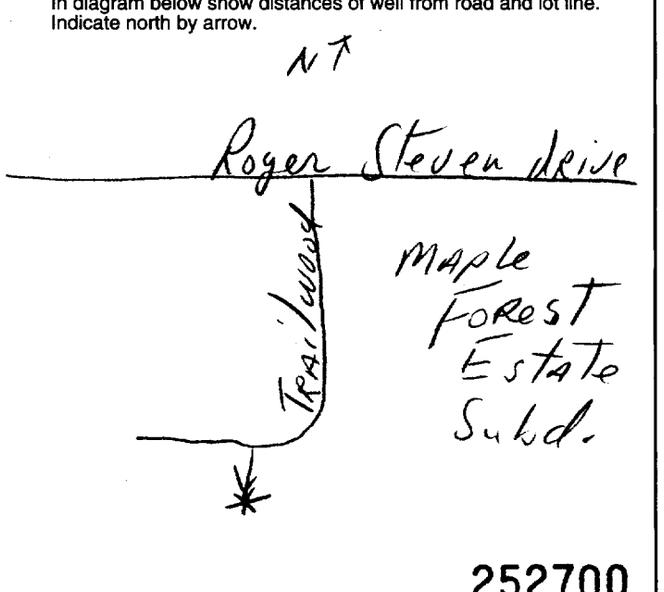
Pumping test method: 1 ☐ Pump ~~2 ☑ Bailer~~ 4 ☑ Air
Pumping rate: 7 GPM
Duration of pumping: 1 Hours 0 Mins
Water levels during: 1 ☐ Pumping 2 ☑ Recovery

Static level feet	Water level end of pumping feet	15 minutes feet	30 minutes feet	45 minutes feet	60 minutes feet
18	90	24	22	20	18

If flowing give rate: GPM
Pump intake set at: 90 feet
Water at end of test: ☐ Clear ☑ Cloudy
Recommended pump type: ☐ Shallow ☑ Deep
Recommended pump setting: 80 feet
Recommended pump rate: 6 GPM

LOCATION OF WELL

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



252700

FINAL STATUS OF WELL

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

WATER USE

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

METHOD OF CONSTRUCTION

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

Name of Well Contractor	Well Contractor's Licence No.
Gilles Bourgeois Waterwell	1414
Address	
St-Albert Ont.	
Name of Well Technician	**Well Technician's Licence No.**
Jacques Raymond	T-0264
Signature of Technician/Contractor	**Submission date** day mo yr

MINISTRY USE ONLY

Data source: Contractor 1414 Date received: OCT 21 2002
Date of inspection: Inspector
Remarks: CSS.ES2

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Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

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

11 (1 2) **1533324** Municipality 15004 (10 14) Con. (15 22 23 24)

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot (25-27)
Ottawa Carleton	North Gower	Plan 4M-773	6

Owner's surname (26-47)	First Name	Address	Date completed (48-53)
Ontario Ltd	724471	2120 Trailwood Dr, North Gower Ont.	28/10/02 (day month year)

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

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
Brown	Till	Boulder	Dense	0	14
Brown	Gravel	Sand Boulder	Loose	14	41
Grey	limestone Rock		Layered	41	90

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

41 WATER RECORD

Water found at - feet (10-13)	Kind of water (1 Fresh, 2 Salty, 3 Sulphur, 4 Minerals, 5 Gas) (14)
80	1 ☑ Fresh
(15-18)	(19)
(20-23)	(24)
(25-28)	(29)
(30-33)	(34) (60)

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
(10-11) 8 3/4	1 ☐ Steel (12) 2 ☐ Galvanized 3 ☐ Concrete 4 ☑ Open hole 5 ☐ Plastic		0	(13-16) 45
(17-18) 6 1/4	1 ☑ Steel (19) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	188	+2	(20-23) 45
(24-25) 6	1 ☐ Steel (26) 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic		45	(27-30) 90

SCREEN

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

61 PLUGGING & SEALING RECORD

☑ Annular space ☐ Abandonment

Depth set at - feet From (9-13)	To (14-17)	Material and type (Cement grout, bentonite, etc.)
0	45	Cement grout
(18-21)	(22-25)	
(26-29)	(30-33)	(80)

PUMPING TEST

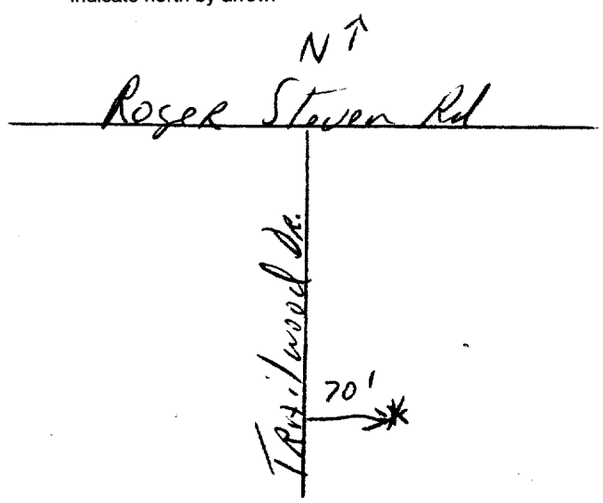
71 Pumping test method (10) 1 ☐ Pump 2 ☑ Bailer | Pumping rate (11-14) 15 GPM | Duration of pumping (15-16) 1 Hours (17-18) 0 Mins

Static level (19-21)	Water level end of pumping (22-24)	25 Water levels during 1 ☐ Pumping 2 ☑ Recovery			
16 feet	90 feet	15 minutes (26-28) 22 feet	30 minutes (29-31) 20 feet	45 minutes (32-34) 18 feet	60 minutes (35-37) 16 feet

If flowing give rate (38-41)	Pump intake set at	Water at end of test (42)	
GPM	90 feet	☐ Clear	☑ Cloudy
Recommended pump type ☐ Shallow ☑ Deep	Recommended pump setting (43-45) 75 feet	Recommended pump rate (46-49) 10 GPM	(50-53)

LOCATION OF WELL

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



252742

FINAL STATUS OF WELL (54)

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

WATER USE (55-56)

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

METHOD OF CONSTRUCTION (57)

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

Name of Well Contractor	Well Contractor's Licence No.
Gilles Bourgeois Well Drill	1414
Address: 5t-Albert Ont.	
Name of Well Technician: Jacques Raymond	Well Technician's Licence No. T-0264
Signature of Technician/Contractor: Gilles Bourgeois	Submission date: 28 (day) 10 (mo) 02 (yr)

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MINISTRY USE ONLY

Data source (58)	Contractor (59-62) 1414	Date received (63-68) NOV 08 2002 (80)
Date of inspection	Inspector	
Remarks: CCS.ES2		

0506 (07/00) Front Form 9

Ontario — Ministry of the Environment

Well Tag Number (Place sticker and print number below): A012063 / AU1dU63

Well Record

Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

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- Please print clearly in blue or black ink only.

Ministry Use Only

MUN 15009 CON CON 041 LOT 38

Well Owner's Information and Location of Well Information

First Name	Last Name	Mailing Address (Street Number/Name, RR, Lot, Concession)
Hansand JO	Construction	2108 Regional Rd 8

County/District/Municipality	Township/City/Town/Village	Province	Postal Code	Telephone Number (include area code)
City of Ottawa	North Gower	Ontario	K0A 2T0	613-838-2463

Address of Well Location (County/District/Municipality)	Township	Lot	Concession
City of Ottawa	Osgoode	38	4

RR#/Street Number/Name	City/Town/Village	Site/Compartment/Block/Tract etc.
6647 Stillwood DRive	North Gower	Plan 4M-1209

GPS Reading	NAD	Zone	Easting	Northing	Unit Make/Model	Mode of Operation
	83	18	445173 E	4998194	Magellan	☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify: utm

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
brown	till		Hard	0	3.0
grey	till	boulders	Hard	3.0	11.88
grey	limestone		layered	11.88	27.43

Hole Diameter

Depth From	Metres To	Diameter Centimetres
0	11.88	22.23
11.88	27.43	15.55

Water Record

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

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

Chlorinated ☑ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.55	☑ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	0.48	0	11.88
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
	☑ Open hole		11.88	27.43

Test of Well Yield

Pumping test method: 3/4 H.P. Sub 6

Pump intake set at - (metres): 25

Pumping rate - (litres/min): 60

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping: 5.90 metres

Recommended pump type: ☐ Shallow ☑ Deep

Recommended pump depth: 25 metres

Recommended pump rate: 44 (litres/min)

If flowing give rate - (litres/min):

If pumping discontinued, give reason.

	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Static Level		5.10		5.90
	1	5.58	1	5.50
	2	5.70	2	5.42
	3	5.73	3	5.40
	4	5.80	4	5.38
	5	5.80	5	5.35
	10	5.81	10	5.30
	15	5.86	15	5.25
	20	5.89	20	5.20
	25	5.90	25	5.20
	30	5.90	30	5.20
	40	5.90	40	5.20
	50	5.90	50	5.20
	60	5.90	60	5.20

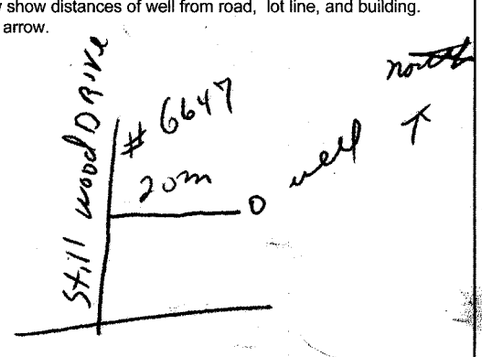
Plugging and Sealing Record

☑ Annular space ☐ Abandonment

Depth set at - From	Metres To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
0	11.88	cement grout	96 bag

Location of Well

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



Method of Construction

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

Water Use

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

Final Status of Well

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

Audit No. Z 12199

Date Well Completed: YYYY 04 MM 08 DD 16

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

Date Delivered: YYYY 04 MM 08 DD 16

Well Contractor/Technician Information

Name of Well Contractor	Well Contractor's Licence No.
Gilles Boyer Inc	1414

Business Address (street name, number, city etc.): 5th Line Osgoode

Name of Well Technician (last name, first name): Smith Mel

Well Technician's Licence No.: 0193

Signature of Technician/Contractor: x [signature]

Date Submitted: YYYY 04 MM 08 DD 16

Ministry Use Only

Data Source	Contractor
	1414
Date Received: YYYY MM DD AUG 30 2004	Date of Inspection: YYYY MM DD
Remarks	Well Record Number: 1534867

0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☐ Well Owner's Copy ☐

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Ontario Ministry of the Environment

Well Tag A 012062 (number below)

A012062

Well Record

Regulation 903 Ontario Water Resources Act

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Ministry Use Only

MUN	CON	LOT
15007	CON 04	37

Well Owner's Information and Location of Well Information

First Name	Last Name	Mailing Address (Street Number/Name, RR, Lot, Concession)
Hans and Jo	Construction 1244710 ont Ltd	2108 Regional Rd 8

County/District/Municipality	Township/City/Town/Village	Province	Postal Code	Telephone Number (include area code)
City of Ottawa	Osgoode	Ontario		613-838-2463

Address of Well Location (County/District/Municipality)	Township	Lot	Concession
City of Ottawa	Osgoode	37	4

RR#/Street Number/Name	City/Town/Village	Site/Compartment/Block/Tract etc.
N.A. Stillwood DRIVE	NORTH Gower	Plan 4M-1209

GPS Reading	NAD	Zone	Easting	Northing	Unit Make/Model	Mode of Operation
	83	18	445170E	4998147	Magellan	utm; ☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Metres To
brown	fill		Hard	0	2.90
Grey	fill	boulders	Hard	2.90	10.36
Grey	limestone		layered	10.36	24.38

Hole Diameter

Depth From	Metres To	Diameter Centimetres
0	10.36	22.23
10.36	24.38	15.55

Water Record

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

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

Chlorinated ☑ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Metres To
Casing				
15.55	☑ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	0.48	0	10.36
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen (Outside diam)	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen	☑ Open hole		10.36	24.38

Test of Well Yield

Pumping test method: 3/4 HP sub
Pump intake set at - (metres): 18
Pumping rate - (litres/min): 60
Duration of pumping: 1 hrs + 0 min
Final water level end of pumping: 4.52 metres
Recommended pump type: ☐ Shallow ☑ Deep
Recommended pump depth: 18 metres
Recommended pump rate (litres/min): 44
If flowing give rate - (litres/min):
If pumping discontinued, give reason:

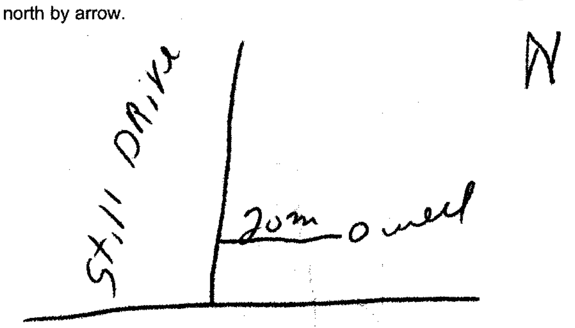
Draw Down Time min	Water Level Metres	Recovery Time min	Water Level Metres
Static Level	3.90		4.52
1	4.28	1	4.24
2	4.33	2	4.16
3	4.34	3	4.14
4	4.37	4	4.10
5	4.37	5	4.08
10	4.46	10	4.05
15	4.46	15	4.01
20	4.51	20	4.00
25	4.54	25	4.00
30	4.54	30	4.00
40	4.54	40	3.99
50	4.52	50	3.99
60	4.52	60	3.99

Plugging and Sealing Record ☐ Annular space ☐ Abandonment

Depth set at - From	Metres To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
0	10.00	cement Grout	8 bag

Location of Well

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



Method of Construction

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

Water Use

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

Final Status of Well

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

Audit No. Z 12198

Date Well Completed YYYY 04 MM 08 DD 16

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

Date Delivered YYYY 04 MM 08 DD 16

Well Contractor/Technician Information

Name of Well Contractor	Well Contractor's Licence No.
Gilles Bourgeois	1414

Business Address (street name, number, city etc.): St Albert Ont

Name of Well Technician (last name, first name)	Well Technician's Licence No.
Same	0-193

Signature of Technician/Contractor: x Gilles Bourgeois

Date Submitted YYYY 04 MM 08 DD 16

Ministry Use Only

Data Source	Contractor 1414
Date Received AUG 30 2004	Date of Inspection YYYY MM DD
Remarks	Well Record Number 1534868

0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☐ Well Owner's Copy ☐

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Ontario Ministry of the Environment

Well Tag Number (Place sticker and print number below) A022934 A022934

Well Record

Regulation 903 Ontario Water Resources Act

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Well Owner's Information and Location of Well Information

[redacted]

OTTAWA-CARLETON | RIDEAU | TEDDINGTON 3

Street Number/Name: #2134 TRAILWOOD DRIVE | City/Town/Village: NORTH GOWER | Site/Compartment/Block/Tract etc.: PLAN 4M-773, S/L 9

GPS Reading | NAD: 83 | Zone: 18 | Easting: 445119 | Northing: 4998321 | Unit Make/Model: MASELLAN | Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
	CLAY, SAND, BOULDERS			0	13.71
GREY	LIMESTONE			13.71	36.57

Hole Diameter

Depth From	Depth To (Metres)	Diameter (Centimetres)
0	36.57	15.23

Water Record

Water found at Metres: 33.53 — Kind of Water: ☒ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other NOT TESTED

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

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

After test of well yield, water was ☒ Clear and sediment free NOT TESTED ☐ Other, specify

Chlorinated ☒ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.88	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	.48	0	17.37
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
	☒ Open hole		16.76	36.57

Test of Well Yield

Pumping test method: Sub Pump

Pump intake set at - (metres): 30.47

Pumping rate - (litres/min): 91

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping: 25 metres

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 30.47 metres

Recommended pump rate: 91 (litres/min)

If flowing give rate - (litres/min)

If pumping discontinued, give reason:

	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Static Level	6.88			7.85
1	7.77	1		7.06
2	7.23	2		7.95
3	7.23	3		7.90
4	7.23	4		7.88
5	7.23	5		
10	7.23	10		
15	7.23	15		
20	7.23	20		
25	7.23	25		
30	7.23	30		
40	7.24	40		
50	7.24	50		
60	7.25	60		

Plugging and Sealing Record ☒ Annular space ☐ Abandonment

Depth set at - Metres From	Depth set at - Metres To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
16.76	13.71	NEAT CEMENT SLURRY	.454
13.71	0	BENTONITE SLURRY	.123

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: AIR ROCK DRILLING CO LTD — Well Contractor's Licence No.: 1119

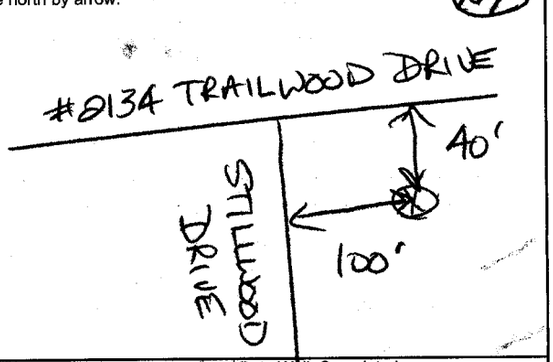
Business Address (street name, number, city etc.): RR#1 RICHMOND ONT K0A2Z0

Name of Well Technician (last name, first name): HOGAN DAN — Well Technician's Licence No.: 13058

Signature of Technician/Contractor: X [signature] — Date Submitted: 2005 06 06

Location of Well

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



Audit No. Z 23248 — Date Well Completed: 2005 04 27

Was the well owner's information package delivered? ☒ Yes ☐ No — Date Delivered: 2005 04 27

Ministry Use Only

Data Source — Contractor: 1119

Date Received: JUN 06 2005 — Date of Inspection

Remarks — Well Record Number

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Ontario Ministry of the Environment

Well Tag (ber below) A 036264

A036264

Well Record

Regulation 903 Ontario Water Resources Act

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MUN | CON | LOT

Well Owner's Information and Location of Well Information

[redacted]

City of Orillia — North Cowichan — 39

RR#/Street Number/Name: 6643 Sixth Line Woodland Dr. | City/Town/Village: North Cowichan | Site/Compartment/Block/Tract etc.: Plan 4M-1209

GPS Reading: NAD 83 | Zone 18 | Easting 445174 E | Northing 4998222 | Unit Make/Model: Magellan | Mode of Operation: ☐ Undifferentiated ☑ Averaged ☐ Differentiated, specify: utm

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
Brown	till	boulders	Hard	0	4.26
grey	till	boulders	Hard	4.26	9.14
grey	limestone		Fractured	9.14	11.27
Grey	limestone		layered	11.27	27.43

Hole Diameter

Depth From	Metres To	Diameter Centimetres
0	11.27	21.23
11.27	27.43	15.55

Water Record

Water found at ___ Metres / Kind of Water

- 24 m ☑ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
- ___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

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

Chlorinated ☑ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Metres To
Casing				
15.55	☑ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	0.48	+0.60	11.27
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
	☐ Open hole		11.27	27.43

Test of Well Yield

Pumping test method: 3/4 H.P Sub

Pump intake set at - (metres): 15

Pumping rate - (litres/min): 40

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping: 3.93 metres

Recommended pump type: ☐ Shallow ☑ Deep

Recommended pump depth: 15 metres

Recommended pump rate: 40 (litres/min)

If flowing give rate - (litres/min)

If pumping discontinued, give reason.

	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Static Level		3.36		3.93
	1		1	
	2		2	
	3	3.70	3	3.36
	4	3.78	4	
	5	3.83	5	
	10	3.93	10	
	15	3.93	15	
	20	3.93	20	
	25	3.93	25	
	30	3.93	30	
	40	3.93	40	
	50	3.93	50	
	60	3.93	60	

Plugging and Sealing Record ☑ Annular space ☐ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
0	11.27	cement Grout	6 Bags

Method of Construction

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

Water Use

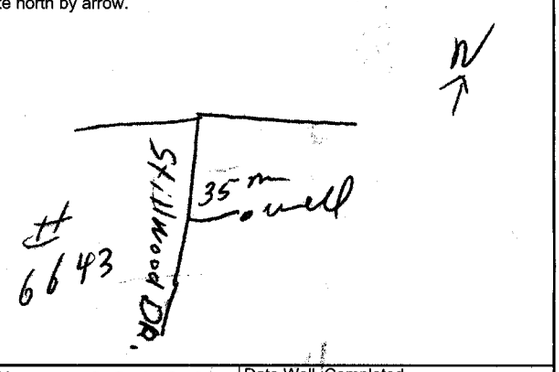
☑ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

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

Location of Well

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



Audit No. Z 40061

Date Well Completed: YYYY 05 MM 11 DD 18

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

Date Delivered: YYYY MM DD

Well Contractor/Technician Information

Name of Well Contractor: Gilles Bourgeois | Well Contractor's Licence No.: 1414

Business Address (street name, number, city etc.): 50A Ivy Lane

Name of Well Technician (last name, first name): Claude Boucher | Well Technician's Licence No.: 3310

Signature of Technician/Contractor: x [signature] | Date Submitted: YYYY 05 MM 11 DD 18

Ministry Use Only

Data Source | Contractor: 1414

Date Received: DEC 20 2005 | Date of Inspection: YYYY MM DD

Remarks | Well Record Number

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

Ontario Ministry of the Environment

Well Tag Number (Place sticker and print number below)
A 035451
A035451

Well Record
Regulation 903 Ontario Water Resources Act

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- Please print clearly in blue or black ink only.

Ministry Use Only
MUN | CON | LOT

Well Owner's Information and Location of Well Information

[redacted]

Ottawa Carleton
RR#/Street Number/Name

Rideau - North Gower
City/Town/Village

19/20 4
Site/Compartment/Block/Tract etc.

Stillwood Drive, Maple Forest

GPS Reading | NAD 8 3 | Zone 18 | Easting 44 51 45 | Northing 499 82 79

Unit Make/Model: GArmin

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

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To
Brown	Hardpan	Boulders	Packed	0	9.14
Gray	Sand & Gravel			9.14	12.19
Gray	Hardpan			12.19	13.71
Gray	Limestone	Sandstone Layers	Hard	13.71	52.72

Hole Diameter

Depth From	Depth To	Diameter Centimetres
0	17.98	22.75
17.98	52.72	15.23

Water Record

Water found at ___ Metres / Kind of Water

51.50 ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: not tested

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

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

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

Chlorinated ☒ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To
Casing				
15.86	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	.48	+ .45	17.98
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
15.23	☒ Open hole		17.98	52.72

Test of Well Yield

Pumping test method: submersible

Pump intake set at - (metres) 45.71
Pumping rate - (litres/min) 54.6
Duration of pumping 1 hrs + ___ min
Final water level end of pumping 6.34 metres
Recommended pump type. ☐ Shallow ☒ Deep
Recommended pump depth 24.38 metres
Recommended pump rate. 45.5 (litres/min)
If flowing give rate - (litres/min)
If pumping discontinued, give reason.

	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Static Level		5.61		
1	1	6.17	1	5.57
2	2	6.23	2	5.57
3	3	6.23	3	5.57
4	4	6.26	4	5.64
5	5	6.26	5	5.64
10	10	6.28	10	5.64
15	15	6.29	15	5.63
20	20	6.30	20	5.63
25	25	6.30	25	5.63
30	30	6.30	30	5.62
40	40	6.32	40	5.62
50	50	6.33	50	5.61
60	60	6.34	60	5.61

Plugging and Sealing Record ☒ Annular space ☐ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
17.98	0	Grouted - Cement	.63m3

Method of Construction

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

Water Use

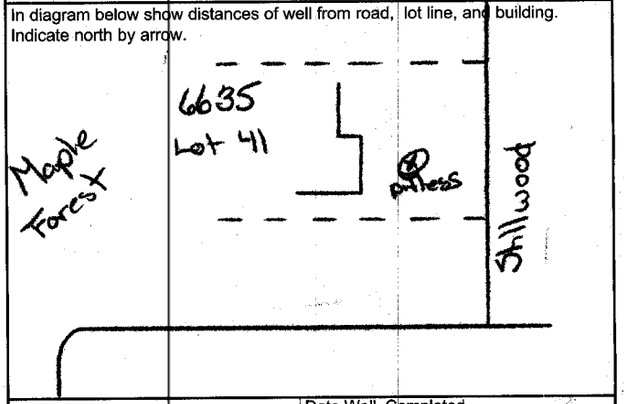
☒ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

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

Location of Well

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



Well Contractor/Technician Information

Name of Well Contractor: Capital Water Supply Ltd.
Well Contractor's Licence No.: 1558
Business Address (street name, number, city etc.): Box 490 Stittsville, Ontario K2S 1A6
Name of Well Technician (last name, first name): Miller; Stephen
Well Technician's Licence No.: T0097
Signature of Technician/Contractor
Date Submitted YYYY MM DD: 2006 6 20

Audit No. z 46988
Was the well owner's information package delivered? ☒ Yes ☐ No
Date Well Completed YYYY MM DD: 2006 6 16
Date Delivered YYYY MM DD: 2006 6 16

Ministry Use Only

Data Source
Contractor: 1558
Date Received YYYY MM DD: JUL 11 2006
Date of Inspection YYYY MM DD
Remarks
Well Record Number

0506E (09/03)

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

Cette formule est disponible en français

Ontario Ministry of the Environment

Well Tag Number (Place sticker and print number below)
A 042030
A042030

Well Record
Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well Help Desk (Toll Free) at 1-888-396-9355.
- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only
MUN | CON | LOT

Well Owner's Information and Location of Well Information

[redacted]

Ottawa Carleton
RR#/Street Number/Name

Rideau
City/Town/Village

21 | 3
Site/Compartment/Block/Tract etc.

lOt 36, Maple Forest

GPS Reading: NAD 83 | Zone 18 | Easting 44 51 85 | Northing 49 98 112

Unit Make/Model: Garmin

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

North Gower

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
Brown	Soil	Stones	Packed	0	3.65
Gray	Sandy Soil		Packed	3.65	7.01
Gray	Hardpan		Packed	7.01	10.05
Gray	Limestone		Medium	10.05	29.86
Gray & White	Sandstone		Hard	29.86	48.76

Hole Diameter

Depth From	Depth To (Metres)	Diameter (Centimetres)
0	11.88	22.75
11.88	48.76	15.07

Water Record

Water found at ___ Metres / Kind of Water

46.63 m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: . . . not tested . . .

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

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

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

Chlorinated ☒ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.86	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	.48	+ .45	11.88
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
15.07	☒ Open hole		11.88	48.76

Test of Well Yield

Pumping test method: submersible

Pump intake set at - (metres) 42.66

Pumping rate - (litres/min) 72.80

Duration of pumping 2 hrs + ___ min

Final water level end of pumping 13.66 metres

Recommended pump type. ☐ Shallow ☒ Deep

Recommended pump depth. 22.85 metres

Recommended pump rate. 45.5 (litres/min)

If flowing give rate - (litres/min)

If pumping discontinued, give reason.

	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Static Level		3.78		
1	1	5.87	1	8.91
2	2	6.22	2	6.10
3	3	7.01	3	4.87
4	4	7.95	4	4.25
5	5	8.64	5	3.96
10	10	9.57	10	3.78
15	15	11.46	15	3.77
20	20	12.29	20	3.78
25	25	12.53	25	3.78
30	30	12.65	30	3.78
40	40	13.47	40	3.78
50	50	13.54	50	3.78
60	60	13.58	60	3.78

Plugging and Sealing Record

☒ Annular space ☐ Abandonment

Depth set at - Metres From	Depth set at - Metres To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
11.88	0	Grouted - Cement Slurry	.42m3

Method of Construction

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

Water Use

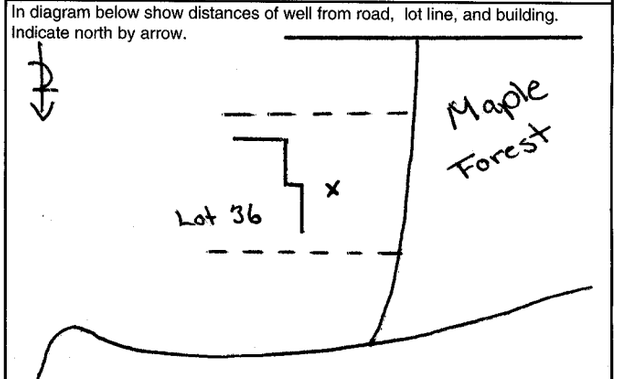
☒ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

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

Location of Well

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



Audit No. Z 58707

Date Well Completed: YYYY 2006 | MM 11 | DD 02

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

Date Delivered: YYYY 2006 | MM 11 | DD 02

Well Contractor/Technician Information

Name of Well Contractor: Capital Water Supply Ltd.

Well Contractor's Licence No.: 1558

Business Address (street name, number, city etc.): Box 490 Stittsville, Ontario K2S 1A6

Name of Well Technician (last name, first name): Miller, Stephen

Well Technician's Licence No.: T0097

Signature of Technician/Contractor: x [signature]

Date Submitted: YYYY 2006 | MM 11 | DD 03

Ministry Use Only

Data Source | Contractor: 1558

Date Received: JAN 25 2007 | Date of Inspection: YYYY MM DD

Remarks | Well Record Number

0506E (08/2006)

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Ontario Ministry of the Environment

Well Tag A 055097 (enter below) A055097

Well Record

Regulation 903 Ontario Water Resources Act

page ___ of ___

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

Ministry Use Only

[redacted]

Address of Well Location (County/District/Municipality): Ottawa-Carleton | Township: Rideau | Lot: 20 | Concession: 3

RR#/Street Number/Name: #2121 Roger Stevens | City/Town/Village: North Gower | Site/Compartment/Block/Tract etc.:

GPS Reading: NAD 83 | Zone 18 | Easting 444967 | Northing 4998642 | Unit Make/Model: Magellan | Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
	Sand, Boulders			0	12.19
	Grey Limestone			12.19	36.57

Hole Diameter

Depth From	Depth To (Metres)	Diameter (Centimetres)
0	36.57	14.59

Water Record

Water found at Metres: 36 Kind of Water

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

After test of well yield, water was ☐ Clear and sediment free ☐ Cloudy ☐ Not Other, specify TESTED

Chlorinated ☒ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.88	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	.48	0	16.46
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
	☒ Open hole		15.85	36.57

Test of Well Yield

Pumping test method: SubPump

Pump intake set at (metres): 30.48

Pumping rate (litres/min): 91

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping: 10.50 metres

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 30.48 metres

Recommended pump rate: 91 (litres/min)

If flowing give rate - (litres/min):

If pumping discontinued, give reason:

Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Static Level	2.75		10.50
1	5.24	1	5.73
2	6.20	2	3.69
3	7.06	3	2.75
4	7.67	4	
5	8.22	5	
10	9.48	10	
15	9.89	15	
20	10.36	20	
25	10.40	25	
30	10.48	30	
40	10.48	40	
50	10.50	50	
60	10.50	60	

Plugging and Sealing Record

☒ Annular space ☐ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
15.85	12.80	Neat Cement Slurry	.227
12.80	0	Bentonite Slurry	.613

Method of Construction

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

Water Use

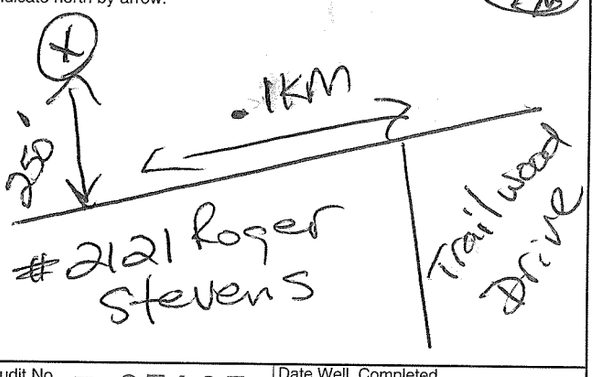
☒ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

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

Location of Well

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



Audit No. Z 65105

Date Well Completed: 2007 06 26 (YYYY MM DD)

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

Date Delivered: 2007 06 28

Well Contractor/Technician Information

Name of Well Contractor: AIR ROCK DRILLING CO LTD | Well Contractor's Licence No.: 1119

Business Address (street name, number, city etc.): RR#1 RICHMOND ONT K0A2Z0

Name of Well Technician (last name, first name): Desaulniers Ken | Well Technician's Licence No.: T4

Signature of Technician/Contractor: [signature] | Date Submitted: 2007 07 27 (YYYY MM DD)

Ministry Use Only

Data Source | Contractor: 1119

Date Received: AUG 07 2007 (YYYY MM DD) | Date of Inspection (YYYY MM DD)

Remarks | Well Record Number

506E (08/2006)

Ministry's Copy

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Stillwood.

Ontario — Ministry of the Environment

Measurements recorded in: ☑ Metric ☐ Imperial

Well Tag No. (Place Sticker or Print Below): A 071316

A071316

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
Hans and	Jo Construction	NA	

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
6639 Stillwood Drive	North Gower	Ontario	K0A 2T0	6138382463

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
6639 Stillwood Drive	Osgood (Rideau)	21	3

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa	North Gower	Ontario	K0A 2T0

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	445166	4998242	4M 1209 - LOT 40	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Silt, Boulder	Hard	0	4.6
Grey	Clay	Silt, Boulder	Hard	4.6	10.2
Grey	gravel		packed	10.2	10.9
Grey	limestone		layered	10.9	30.48

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
0	12.8	ciment grout	10 Bag

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
15.55	steel	0.48	+.6	12.8
15.55	open Hole		12.8	30.48

Construction Record - Screen

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

Status of Well

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

Water Details

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

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	12.8	21.23
12.8	30.48	15.55

Results of Well Yield Testing

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

If pumping discontinued, give reason:

Pump intake set at (m/ft): 24

Pumping rate (l/min / GPM): 60

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 7.69

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

Recommended pump depth (m/ft): 24

Recommended pump rate (l/min / GPM): 60

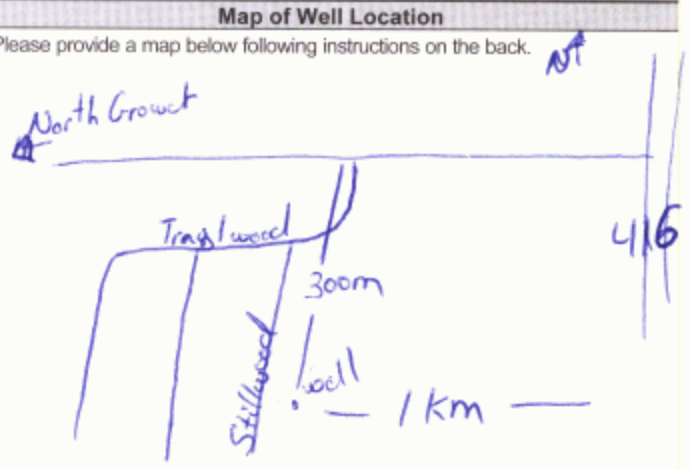
Well production (l/min / GPM): 85

Disinfected? ☑ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.84		7.69
1	6.05	1	5.56
2	6.58	2	4.95
3	6.90	3	4.84
4	7.00	4	4.84
5	7.14	5	
10	7.40	10	
15	7.54	15	
20	7.56	20	
25	7.54	25	
30	7.60	30	
40	7.60	40	
50	7.61	50	
60	7.69	60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Bourgeois well Drilling	1414

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
1182 900 East	Nation	Ontario	K0A3C0	NA

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
6139875291	Michael Genier	3493		2008/11/28

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

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

Date Work Completed: 2008/11/28

Ministry Use Only

Audit No. Z 90529

Received

0506E (12/2007)

Ministry's Copy

A113230

Ontario — Ministry of the Environment

W... (Print Below) A113230

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: ☐ Metric ☒ Imperial

Page ____ of ____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☐ Well Constructed by Well Owner
	Grizzly Homes		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
PO Box 422.RR#4	Ashton	On	K0A 1B0	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
2134 Maple Forest Drive	Rideau	21	3

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa-Carleton	North Gower	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3	18	445224	4998033	4M-1209	S/L 32

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Sand & Gravel	& Boulders		0'	30'
Grey	& Brown Limestone			30'	88'
Grey	& Brown Limestone			88'	157'
Grey	& Brown Limestone			157'	162'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/cu ft)
40'	0'	Neat cement slurry	26.5

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
6"	Steel	.188"	+2'	40'
5 5/16"	Open Hole		40'	162'

Construction Record - Screen

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

Status of Well

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

Water Details

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

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0'	40'	6"
40'	162'	5 5/16"

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, specify — Not tested

If pumping discontinued, give reason: ☒

Pump intake set at (m/ft): 140'

Pumping rate (l/min / GPM): 12

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 28.9'

If flowing give rate (l/min / GPM): ☒

Recommended pump depth (m/ft): 100'

Recommended pump rate (l/min / GPM): 12

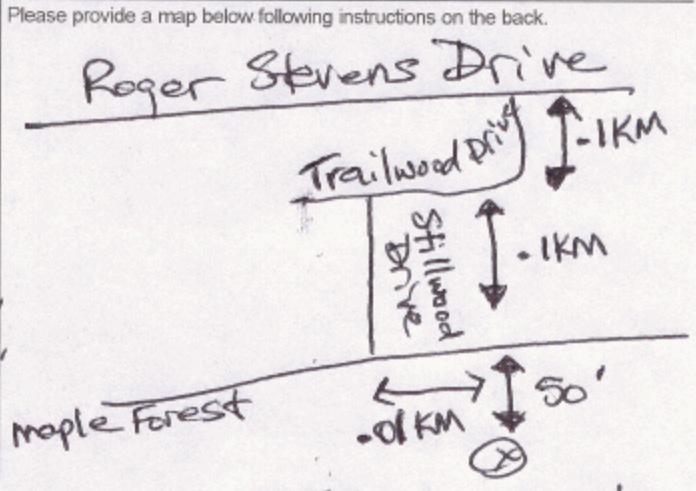
Well production (l/min / GPM): 12

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	9.2'		28.9'
1	15.5	1	17.3
2	18.5	2	9.2
3	21.5	3	9.2
4	24.6	4	9.2
5	27.7	5	9.2
10	27.9	10	9.2
15	28	15	9.2
20	28.1	20	9.2
25	28.2	25	9.2
30	28.2	30	9.2
40	28.4	40	9.2
50	28.7	50	9.2
60	28.9'	60	9.2'

Map of Well Location

Please provide a map below following instructions on the back.



Comments: #2134 Maple Forest Drive

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Air Rock Drilling Co. Ltd.	1119

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
6659 Franktown Road, RR#1	Richmond	ON	K0A 2Z0	air-rock@sympatico.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted (Y Y Y Y M M D D)
6138382170	Hogan, Dan	T3058		2011 03 31

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☒ Yes ☐ No	20110325	20110328

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Audit No. z119813

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A113221

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: ☐ Metric ☒ Imperial

Page ____ of ____

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
2130 Maple Forest Drive	Rideau	21	3

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa-Carleton	North Gower	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3	18	445253	4998049	4M-1209	S/L 33

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Sand & Gravel	Clay		0′	26′
Grey	Limestone			26′	68′
Grey	Limestone			68′	156′
Grey	Limestone			156′	162′

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/Imp gal)
36′	0′	Neat cement slurry	20.3

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
6″	Steel	.188	+2′	36′
5 15/16″	Open Hole		36′	162′

Construction Record - Screen

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

Status of Well

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

Water Details

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

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0′	36′	6″
36′	162′	5 15/16″

Results of Well Yield Testing

After test of well yield, water was:
☐ Clear and sand free
☐ Other, specify — Not tested

If pumping discontinued, give reason: ☒

Pump intake set at (m/ft): 140′

Pumping rate (l/min / GPM): 20

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 10.7′

If flowing give rate (l/min / GPM): ☒

Recommended pump depth (m/ft): 100′

Recommended pump rate (l/min / GPM): 20

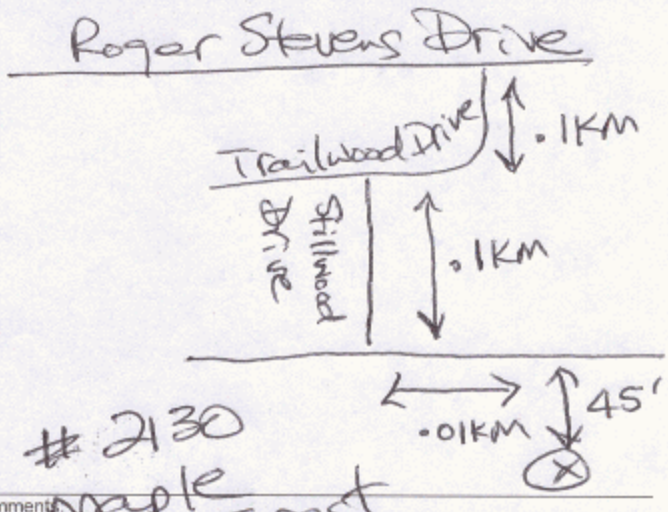
Well production (l/min / GPM): 20+

Disinfected? ☒ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level		6.8′		10.7′
1	1	9.3	1	6.8
2	2	10.7	2	6.8
3	3	10.7	3	6.8
4	4	10.7	4	6.8
5	5	10.7	5	6.8
10	10	10.7	10	6.8
15	15	10.7	15	6.8
20	20	10.7	20	6.8
25	25	10.7	25	6.8
30	30	10.7	30	6.8
40	40	10.7	40	6.8
50	50	10.7	50	6.8
60	60	10.7′	60	6.8′

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
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)
6138382170	Hogan, Dan

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted (Y Y Y Y M M D D)
T3058	[signature]	2011 03 31

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

Date Package Delivered: 20110325

Date Work Completed: 20110323

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Measurements recorded in: ☐ Metric ☒ Imperial

Well Tag No. (Place Sticker and/or Print Below) **A117425**

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	☑ Well Constructed by Well Owner
1504107 Ontario Inc	c/o Lockwood Brothers Construction		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
2010 Totem Ranch Road	Oxford Station	ON	K0G 1T0	6132584225

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
2127 Rodger Stevens Drive	Rideau	20	3

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa	North Gower	Ontario	K0A 2T0

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	445495	4998590	Plan 4R 16097	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Fill	Cement	Packed	0	3'
Brown	Clay	Stone's	Packed	3'	24'
Grey	Clay	Stone's	Packed	24'	47'
Grey	Limestone		Hard	47'	115'
Grey	Limestone	Sandstone	Hard	115'	141'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
52'	40'	Cement Pressure Grouted	11.5
40'	0	Bentonite Pressure Grouted	23

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
9 7/8"	Open Hole		0	52'
6 1/4"	Steel	.188	0	52'
6 1/8"	Open Hole		52'	141'

Construction Record - Screen

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

Status of Well

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

Water Details

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

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	52'	9 7/8"
52'	141'	6 1/8"

Results of Well Yield Testing

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

If pumping discontinued, give reason: ____

Pump intake set at (m/ft): 120'

Pumping rate (l/min / GPM): 21 gpm

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 18.4

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

Recommended pump depth (m/ft): 120'

Recommended pump rate (l/min / GPM): 10 gpm

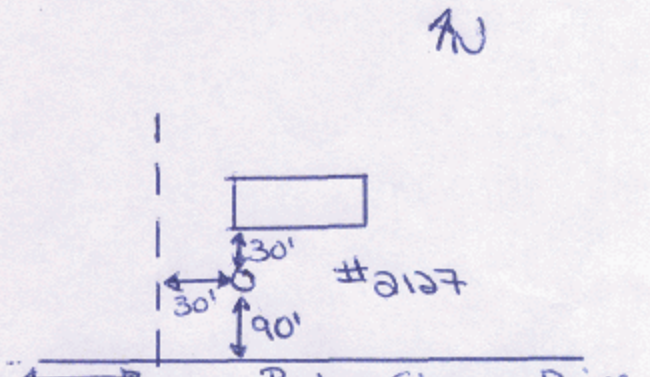
Well production (l/min / GPM): ____

Disinfected? ☒ Yes ☐ No 150

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	17.9		18.4
1	18.1	1	18.2
2	18.2	2	17.9
3	18.3	3	
4	18.3	4	
5	18.3	5	
10	18.4	10	
15	18.4	15	
20	18.4	20	
25	18.4	25	
30	18.4	30	
40	18.4	40	
50	18.4	50	
60	18.4	60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments: 150 Chlorine after Drilling
0 Chlorine after Yield Test

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
1425486 Ontario Ltd o/a Splash Well Drilling	4877

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
PO Box 1083	Prescott	ON	K0E 1T0	

Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3925488 5	Ferguson, Todd	4878	Todd Ferguson	2011/11/10

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☒ Yes ☐ No	2011/11/04	2011/10/26

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Ministry of the Environment

Measurements recorded in: ☐ Metric ☒ Imperial

We **Tag#: A128135** *int Below)*

A128135

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
2126 Maple Forest Drive	Rideau	21	3

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa-Carleton	North Gower	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	445286	4998074	4M-1209	SU 34

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	Sandy	Clay		0	15
	Gravel	+ Boulders		15	37
Grey	Limestone			37	162
Grey	Limestone			162	168

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
47	0	Neat cement	32.8

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
6 1/4"	Steel	.188"	+2'	47'
5 15/16"	Open Hole		47'	168'

Construction Record - Screen

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

Status of Well

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

Results of Well Yield Testing

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

If pumping discontinued, give reason: X

Pump intake set at (m/ft): 150

Pumping rate (l/min / GPM): 20

Duration of pumping: 1 hrs + 0 min

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

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

Recommended pump depth (m/ft): 100' (3/4HP - 15GPM)

Recommended pump rate (l/min / GPM): 20

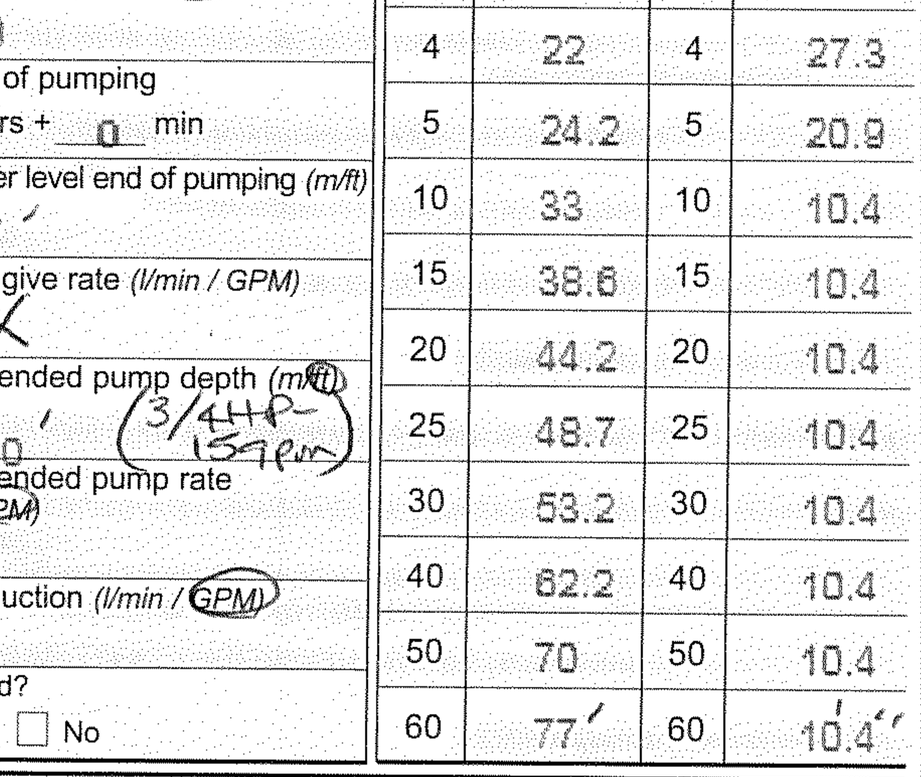
Well production (l/min / GPM): 20

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	10.4'		77'
1	14.8	1	56.3
2	17.3	2	43.2
3	19.7	3	34.6
4	22	4	27.3
5	24.2	5	20.9
10	33	10	10.4
15	38.6	15	10.4
20	44.2	20	10.4
25	48.7	25	10.4
30	53.2	30	10.4
40	62.2	40	10.4
50	70	50	10.4
60	77'	60	10.4''

Map of Well Location

Please provide a map below following instructions on the back.



Water Details

Water found at Depth (m/ft)	Gas	Kind of Water	Hole Diameter Depth From (m/ft)	Hole Diameter Depth To (m/ft)	Diameter (cm/in)
162	☐	☐ Fresh ☐ Untested ☒ Other, *specify* _____	0'	47'	9 3/4"
	☐	☐ Fresh ☐ Untested ☐ Other, *specify* _____	47'	168'	5 15/16"
	☐	☐ Fresh ☐ Untested ☐ Other, *specify* _____			

Comments: 3/4 HP - 15 GPM - SET @ 100 FT

Well Contractor and Well Technician Information

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)
6138382170	Hanna, Jeremy

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3632		2013 07 31

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☒ Yes ☐ No	2013 07 30	2013 07 29

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eurofins | Environment Testing
146 Colonnade Rd, Unit 8, Ottawa, ON K2E 7Y1 (613) 727-5692

OFFICIAL CERTIFICATE OF ANALYSIS : 4102006

WORK REQUEST : 100315477

Report Date : 2024-10-01

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

Reception Date : 2024-09-25
Project : PH4905
Sampler : NA
PO Number : 61375
Temperature : 15 °C

Analysis	Quantity	External Method
Alkalinity (Water, Automated)	2	Modified from SM 2320 B
Ammonia, Total (Water, Colorimetry)	2	Modified from EPA 350.1
Chloride (Water, IC)	2	Modified from SM 4110 B and C
Colour, Apparent (Water, Spectrophotometry)	2	Modified from SM 2120 C
Conductivity (Water, Automated)	2	Modified from SM 2510 B
DOC (Water, IR)	2	Modified from SM 5310 B
Escherichia coli (DC Plate)	2	Modified from MECP E3407
Fluoride (Water, Auto/ISE)	2	Modified from SM 4500-F A and 4500-F C
Hardness (Water, Calculation Only)	2	SM 2340 B
Ion Balance (Water, Calculation)	2	Modified from SM1030 E
Metals Scan (Water, ICP/MS)	2	Modified from EPA 200.8
Metals Scan (Water, ICP/OES)	2	Modified from SM 3120 B
Nitrate (Water, IC)	2	Modified from SM 4110 B and C
Nitrite (Water, IC)	2	Modified from SM 4110 B and C
pH (25°C) (Water, Automated)	2	Modified from SM 4500-H+ B
Phenols (Water, Colorimetry)	2	Modified from EPA 420.2
Sulphate (Water, IC)	2	Modified from SM 4110 B and C
Sulphide (Water, Colorimetry)	2	Modified from SM 4500-S2 D
Tannin and Lignin (Water, Spec)	2	Modified from SM 5550 B
TDS (Estimated)	2	Modified from SM 2510 A
Total Coliforms (DC Plate)	2	Modified from MECP E3407
Total Kjeldahl Nitrogen (Water, Colorimetry)	2	Modified from EPA 351.2
Turbidity (Water, Turbidimeter)	2	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 :
8059996 8059998
Compliant

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
QC : Reference material (QC)
N/A : Not applicable
1 : Results in annex
* : Analysis conducted by external subcontracting
^ : Analysis not accredited

eurofins | Environment Testing
146 Colonnade Rd, Unit 8, Ottawa, ON K2E 7Y1 (613) 727-5692

OFFICIAL CERTIFICATE OF ANALYSIS - EXCEEDENCE SUMMARY

Client : Paterson Group
Project : PH4905

Reception Date : 2024-09-25

Eurofins Sample No	Client Sample Identification	Analyte	Result	Units	Exceeded Criteria		
					A	B	C
Colour, Apparent (Water, Spectrophotometry)							
8059996	TW1 - GW1	Colour (Apparent)	6	TCU	5		
8059998	TW1 - GW2	Colour (Apparent)	7	TCU	5		
Hardness (Water, Calculation Only)							
8059996	TW1 - GW1	Hardness as CaCO3 (Calculation)	226	mg/L	80-100		
8059998	TW1 - GW2	Hardness as CaCO3 (Calculation)	226	mg/L	80-100		
Metals Scan (Water, ICP/MS)							
8059998	TW1 - GW2	Iron	0.33	mg/L	0.3		
TDS (Estimated)							
8059996	TW1 - GW1	TDS (Estimated)^	508	mg/L	500		

eurofins | Environment Testing
146 Colonnade Rd, Unit 8, Ottawa, ON K2E 7Y1 (613) 727-5692

OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH4905

Reception Date: 2024-09-25

					Eurofins Sample No :	8059996	8059998			
					Matrix :	Groundwater	Groundwater			
					Sampling Date :	2024-09-24	2024-09-24			
					Client Sample Identification :	TW1 - GW1	TW1 - GW2			
Anions			**Criteria**							
	RL	**Unit**	**A**	**B**	**C**					
Chloride	0.5	mg/L	250			90.2	85.2			
Nitrate (as Nitrogen)	0.1	mg/L	10.0			<0.1	<0.1			
Nitrite (as Nitrogen)	0.1	mg/L	1.0			<0.1	<0.1			
Sulphate	1	mg/L	500			47	47			

			Eurofins Sample No :	8059996	8059998				
			Matrix :	Groundwater	Groundwater				
			Sampling Date :	2024-09-24	2024-09-24				
			Client Sample Identification :	TW1 - GW1	TW1 - GW2				
Calculations	**RL**	**Unit**							
Ion Balance (Calculation)^	0.1		1.01	1.00					

					Eurofins Sample No :	8059996	8059998			
					Matrix :	Groundwater	Groundwater			
					Sampling Date :	2024-09-24	2024-09-24			
					Client Sample Identification :	TW1 - GW1	TW1 - GW2			
General Chemistry			**Criteria**							
	RL	**Unit**	**A**	**B**	**C**					
Alkalinity (as CaCO3)	5	mg/L	500			229	236			
Colour (Apparent)	2	TCU	5			6	7			
Conductivity @ 25°C	5	µS/cm				781	766			
Dissolved Organic Carbon	0.5	mg/L	5			0.7	1.1			
Fluoride	0.1	mg/L	1.5			0.64	0.63			
Hardness as CaCO3 (Calculation)	1	mg/L	80-100			226	226			
pH @ 25°C	1		6.5-8.5			7.99	7.95			
Phenols-4AAP	0.001	mg/L				<0.001	<0.001			
Sulphide (S2-)	0.01	mg/L	0.05			<0.01	<0.01			
Tannin and Lignin	0.1	mg/L				0.1	<0.1			
TDS (Estimated)^	5	mg/L	500			508	498			
Turbidity	0.1	NTU	5			1.6	2.3			

eurofins | Environment Testing
146 Colonnade Rd, Unit 8, Ottawa, ON K2E 7Y1 (613) 727-5692

OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH4905

Reception Date: 2024-09-25

					Eurofins Sample No :	**8059996**	**8059998**			
					Matrix :	Groundwater	Groundwater			
					Sampling Date :	2024-09-24	2024-09-24			
					Client Sample Identification :	TW1 - GW1	TW1 - GW2			
Metals	**RL**	**Unit**	**Criteria A**	**B**	**C**					
Metals Scan (Water, ICP/MS)										
Aluminum	0.01	mg/L	0.1			0.03	0.01			
Antimony	0.0005	mg/L	0.006			<0.0005	<0.0005			
Arsenic	0.001	mg/L	0.01			<0.001	<0.001			
Barium	0.001	mg/L	1			0.066	0.062			
Beryllium	0.0005	mg/L				<0.0005	<0.0005			
Boron	0.01	mg/L	5			0.20	0.20			
Cadmium	0.0001	mg/L	0.005			<0.0001	<0.0001			
Chromium	0.001	mg/L	0.05			<0.001	<0.001			
Cobalt	0.0002	mg/L				<0.0002	<0.0002			
Copper	0.001	mg/L	1			<0.001	<0.001			
Iron	0.03	mg/L	0.3			0.19	0.33			
Lead	0.001	mg/L	0.01			<0.001	<0.001			
Manganese	0.01	mg/L	0.05			<0.01	<0.01			
Mercury	0.0001	mg/L	0.001			<0.0001	<0.0001			
Molybdenum	0.005	mg/L				<0.005	<0.005			
Nickel	0.005	mg/L				<0.005	<0.005			
Selenium	0.001	mg/L	0.05			<0.001	<0.001			
Silver	0.0001	mg/L				<0.0001	<0.0001			
Strontium	0.001	mg/L				1.75	1.77			
Thallium	0.0001	mg/L				<0.0001	<0.0001			
Uranium	0.001	mg/L	0.02			<0.001	<0.001			
Vanadium	0.001	mg/L				<0.001	<0.001			
Zinc	0.01	mg/L	5			<0.01	<0.01			
Metals Scan (Water, ICP/OES)										
Calcium	1	mg/L				42	42			
Magnesium	1	mg/L				30	29			
Potassium	1	mg/L				8	8			
Sodium	1	mg/L	200			81	78			

					Eurofins Sample No :	**8059996**	**8059998**			
					Matrix :	Groundwater	Groundwater			
					Sampling Date :	2024-09-24	2024-09-24			
					Client Sample Identification :	TW1 - GW1	TW1 - GW2			
Microbiology	**RL**	**Unit**	**Criteria A**	**B**	**C**					
Escherichia coli (DC)	0	CFU/100mL	0			0	0			
Total Coliforms (DC)	0	CFU/100mL	0			0	0			

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OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH4905

Reception Date: 2024-09-25

Eurofins Sample No :			**8059996**	**8059998**					
Matrix :			Groundwater	Groundwater					
Sampling Date :			2024-09-24	2024-09-24					
Client Sample Identification :			TW1 - GW1	TW1 - GW2					
Nutrients	**RL**	**Unit**							
Ammonia (Total, as Nitrogen)	0.02	mg/L	0.154	0.153					
Total Kjeldahl Nitrogen	0.1	mg/L	0.231	0.236					

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OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH4905

Reception Date: 2024-09-25

					Eurofins Sample No :	**8059998**				
					Matrix :	Groundwater				
					Sampling Date :	2024-09-24				
					Client Sample Identification :	TW1 - GW2				
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	0.4	ug/L	14			<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-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				
1,4-Dichlorobenzene	0.4	ug/L	5			<0.4				
Acetone	5	ug/L				<5.0				
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	0.2	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				
Dichloromethane	4	ug/L	50			<4.0				
Diethyl ether	5	ug/L				<5.0				
Ethylbenzene	0.5	ug/L	140			<0.5				
m/p-Xylene	0.4	ug/L				<0.4				
Methyl ethyl ketone (MEK)	2	ug/L				<2.0				
Methyl isobutyl ketone (MIBK)	5	ug/L				<5.0				
Methyl tert-butyl ether (MTBE)	2	ug/L				<2.0				
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				
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	%				113				
4-bromofluorobenzene (surrogate)	0	%				81				

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OFFICIAL CERTIFICATE OF ANALYSIS - RESULTS

Client : Paterson Group
Project : PH4905

Reception Date: 2024-09-25

						Eurofins Sample No :	**8059998**			
						Matrix :	Groundwater			
						Sampling Date :	2024-09-24			
						Client Sample Identification :	TW1 - GW2			
Volatile Organic Compounds	**RL**	**Unit**	**Criteria**							
			A	**B**	**C**					
Toluene-d8 (surrogate)	0	%				99				

Approved by : Emma-Dawn Ferguson, M.Sc.
Environmental Chemist

Approved by : Jason Kennedy,
Project Manager

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OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group
Project : PH4905

Reception Date: 2024-09-25

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	99	95-105			1	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-30	
Ammonia, Total (Water, Colorimetry)									
Method : Ammonia (Water, Colorimetry). Internal method: OTT-I-NUT-WI46201.									
Ammonia (Total, as Nitrogen)	mg/L	0.02	<0.020	112	80-120	112	80-120	0	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-29 Analysis Date: 2024-10-01	
Chloride (Water, IC)									
Method : Anions (Water, Ion Chromatography). Internal method: OTT-I-IC-WI45985.									
Chloride	mg/L	0.5	<0.5	102	80-120	105	80-120	2	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-27	
Colour, Apparent (Water, Spectrophotometry)									
Method : Colour (Water, Spectrophotometric). Internal method: OTT-I-SPEC-WI45980.									
Colour (Apparent)	TCU	2	<2	99	39-159			9	0-40
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-30 Analysis Date: 2024-09-30	
Conductivity (Water, Automated)									
Method : Conductivity (Water, Autotitrator). Internal Method: OTT-I-AT-WI45398.									
Conductivity @ 25°C	uS/cm	5	<5	101	98-102			1	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-30	
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	84-116	85	80-120	-	0-15
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-30 Analysis Date: 2024-10-01	
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 : 8059996, 8059998								Prep Date: 2024-09-25 Analysis Date: 2024-09-26	
Fluoride (Water, Auto/ISE)									
Method : Fluoride by autotitrator, ion selective electrode. Internal method: OTT-I-AT-WI45398.									
Fluoride	mg/L	0.1	<0.10	98	90-110			-	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-30	

OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group
Project : PH4905

Reception Date: 2024-09-25

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	114	70-130	-	0-20
Antimony	mg/L	0.0005	<0.0005	87	80-120	93	70-130	-	0-20
Arsenic	mg/L	0.001	<0.001	99	80-120	106	70-130	-	0-20
Barium	mg/L	0.001	<0.001	100	80-120	91	70-130	0	0-20
Beryllium	mg/L	0.0005	<0.0005	108	80-120	108	70-130	-	0-20
Boron	mg/L	0.01	<0.01	100	80-120	102	70-130	-	0-20
Cadmium	mg/L	0.0001	<0.0001	106	80-120	100	70-130	-	0-20
Chromium	mg/L	0.001	<0.001	100	80-120	105	70-130	-	0-20
Cobalt	mg/L	0.0002	<0.0002	102	80-120	94	70-130	-	0-20
Copper	mg/L	0.001	<0.001	110	80-120	93	70-130	-	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	86	70-130	-	0-20
Manganese	mg/L	0.01	<0.01	100	80-120	99	70-130	-	0-20
Mercury	mg/L	0.0001	<0.0001	106	80-120	78	70-130	-	0-20
Molybdenum	mg/L	0.005	<0.005	90	80-120	100	70-130	-	0-20
Nickel	mg/L	0.005	<0.005	100	80-120	96	70-130	-	0-20
Selenium	mg/L	0.001	<0.001	102	80-120	101	70-130	-	0-20
Silver	mg/L	0.0001	<0.0001	117	80-120	93	70-130	-	0-20
Strontium	mg/L	0.001	<0.001	100	80-120	88	70-130	0	0-20
Thallium	mg/L	0.0001	<0.0001	104	80-120	87	70-130	-	0-20
Uranium	mg/L	0.001	<0.001	90	80-120	92	70-130	-	0-20
Vanadium	mg/L	0.001	<0.001	100	80-120	108	70-130	-	0-20
Zinc	mg/L	0.01	<0.01	110	80-120	88	70-130	-	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-27	
Metals Scan (Water, ICP/OES)									
Method : Metals (Water, ICP/OES). Internal method: OTT-I-MET-WI48491.									
Calcium	mg/L	1	<1	104	86-115	101	70-130	1	0-20
Magnesium	mg/L	1	<1	100	91-109	100	70-130	-	0-20
Potassium	mg/L	1	<1	107	87-113	114	70-130	-	0-20
Sodium	mg/L	1	<1	106	85-115	107	70-130	-	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-30 Analysis Date: 2024-09-25	
Nitrate (Water, IC)									
Method : Anions (Water, Ion Chromatography). Internal method: OTT-I-IC-WI45985.									
Nitrate (as Nitrogen)	mg/L	0.1	<0.1	106	80-120				
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-27	
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				
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-27	
pH (25°C) (Water, Automated)									
Method : pH (Water, Automated Meter). Internal method: OTT-I-AT-WI45398.									
pH @ 25°C		1	5.71	100	97-103			1	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-30	

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OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group
Project : PH4905

Reception Date: 2024-09-25

Parameter	Unit	RL	Blank	QC		Matrix Spike		Duplicate	
				Recovery %	Range %	Recovery %	Range %	RPD %	Range %
Phenols (Water, Colorimetry)									
Method : Phenols (Water, Colorimetry). Internal method: OTT-I-4AAP-WI46150.									
Phenols-4AAP	mg/L	0.001	<0.001	114	75-125	118	70-130	-	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-27 Analysis Date: 2024-09-27	
Sulphate (Water, IC)									
Method : Anions (Water, Ion Chromatography). Internal method: OTT-I-IC-WI45985.									
Sulphate	mg/L	1	<1	105	90-110	110	80-120	1	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-27	
Sulphide (Water, Colorimetry)									
Method : Sulphide, S2- (Water, Colorimetry). Internal method: OTT-I-SPEC-WI45931.									
Sulphide (S2-)	mg/L	0.01	<0.01	100	80-120			-	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-26	
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	92	80-120			-	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-30 Analysis Date: 2024-09-30	
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 : 8059996, 8059998								Prep Date: 2024-09-25 Analysis Date: 2024-09-26	
Total Kjeldahl Nitrogen (Water, Colorimetry)									
Method : TKN (Water, colorimetry). Internal method: OTT-I-NUT-WI46201.									
Total Kjeldahl Nitrogen	mg/L	0.1	<0.100	98	70-130	111	70-130	3	0-20
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-27 Analysis Date: 2024-09-29	
Turbidity (Water, Turbidimeter)									
Method : Turbidity (Water, Turbidimeter). Internal method: OTT-I-TUR-WI46288.									
Turbidity	NTU	0.1	<0.1	103	80-120			-	0-30
Associated Samples : 8059996, 8059998								Prep Date: 2024-09-26 Analysis Date: 2024-09-26	

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OFFICIAL CERTIFICATE OF ANALYSIS - QUALITY CONTROL

Client : Paterson Group
Project : PH4905

Reception Date: 2024-09-25

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	121	70-130	126	70-130	-	0-30
1,1,1-Trichloroethane	ug/L	0.4	<0.4	116	70-130	122	70-130	-	0-30
1,1,2,2-Tetrachloroethane	ug/L	0.5	<0.5	117	70-130	116	70-130	-	0-30
1,1,2-Trichloroethane	ug/L	0.4	<0.4	109	70-130	115	70-130	-	0-30
1,1-Dichloroethane	ug/L	0.4	<0.4	102	70-130	125	70-130	-	0-30
1,1-Dichloroethene	ug/L	0.4	<0.5	122	70-130	125	70-130	-	0-30
1,2-Dibromoethane	ug/L	0.2	<0.2	100	70-130	105	70-130	-	0-30
1,2-Dichlorobenzene	ug/L	0.4	<0.4	100	70-130	102	70-130	-	0-30
1,2-Dichloroethane	ug/L	0.2	<0.2	87	70-130	120	70-130	-	0-30
1,2-Dichloropropane	ug/L	0.5	<0.5	107	70-130	117	70-130	-	0-30
1,3,5-Trimethylbenzene	ug/L	0.3	<0.3	112	70-130	115	70-130	-	0-30
1,3-Dichlorobenzene	ug/L	0.4	<0.4	98	70-130	100	70-130	-	0-30
1,4-Dichlorobenzene	ug/L	0.4	<0.4	101	70-130	104	70-130	-	0-30
Acetone	ug/L	5	<5.0	117	70-130	89	70-130	-	0-30
Benzene	ug/L	0.5	<0.5	121	70-130	126	70-130	-	0-30
Bromodichloromethane	ug/L	0.3	<0.3	119	70-130	128	70-130	-	0-30
Bromoform	ug/L	0.4	<0.4	90	70-130	95	70-130	-	0-30
Bromomethane	ug/L	0.5	<0.5	87	70-130	87	70-130	-	0-30
Carbon tetrachloride	ug/L	0.2	<0.2	111	70-130	118	70-130	-	0-30
Chloroethane	ug/L	0.2	<0.5	101	70-130	112	70-130	-	0-30
Chloroform	ug/L	0.5	<0.5	121	70-130	127	70-130	-	0-30
Chloromethane	ug/L	0.2	<0.2	86	70-130	89	70-130	-	0-30
cis-1,2-Dichloroethene	ug/L	0.4	<0.4	118	70-130	125	70-130	-	0-30
cis-1,3-Dichloropropene	ug/L	0.5	<0.5	75	70-130	85	70-130	-	0-30
Dibromochloromethane	ug/L	0.3	<0.3	103	70-130	108	70-130	-	0-30
Dichloromethane	ug/L	4	<4.0	77	70-130	110	70-130	-	0-30
Diethyl ether	ug/L	5	<5.0	100	70-130	95	70-130	-	0-30
Ethylbenzene	ug/L	0.5	<0.5	129	70-130	110	70-130	-	0-30
m/p-Xylene	ug/L	0.4	<0.4	124	70-130	106	70-130	-	0-30
Methyl ethyl ketone (MEK)	ug/L	2	<2.0	124	70-130	124	70-130	-	0-30
Methyl isobutyl ketone (MIBK)	ug/L	5	<5.0	107	70-130	114	70-130	-	0-30
Methyl tert-butyl ether (MTBE)	ug/L	2	<2.0	110	70-130	113	70-130	-	0-30
Monochlorobenzene	ug/L	0.5	<0.5	110	70-130	114	70-130	-	0-30
o-Xylene	ug/L	0.4	<0.4	123	70-130	112	70-130	-	0-30
Styrene	ug/L	0.5	<0.5	123	70-130	106	70-130	-	0-30
Tetrachloroethylene (PCE)	ug/L	0.3	<0.3	82	70-130	86	70-130	-	0-30
Toluene	ug/L	0.4	<0.4	122	70-130	128	70-130	-	0-30
trans-1,2-dichloroethene	ug/L	0.4	<0.4	126	70-130	111	70-130	-	0-30
trans-1,3-dichloropropene	ug/L	0.5	<0.5	90	70-130	101	70-130	-	0-30
Trichloroethylene (TCE)	ug/L	0.3	<0.3	97	70-130	101	70-130	-	0-30
Trichlorofluoromethane	ug/L	0.5	<0.5	116	70-130	118	70-130	-	0-30
Vinyl chloride	ug/L	0.2	<0.2	95	70-130	108	70-130	-	0-30
Xylene (Total)	ug/L	0.5	<0.5				-		-

Associated Samples : 8059998

Prep Date: 2024-09-26
Analysis Date: 2024-10-01

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

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order #: ______

100315477

N: YES ☑ NO ☐)

Printed On : 2024-09-25 16:08:48

CLIENT INFORMATION

Company: Paterson Group
Contact: Alex Schopf
Address: 9 Auriga Drive
Telephone: 613-218-3444 Cell:
Email: #1: eardley@patersongroup.ca, mlaflamme@patersongroup.ca
Email: #2: aschopf@patersongroup.ca;
Project: PH4905 Quote #:

INVOICE INFORMATIO

Company:
Contact:
Address:
Telephone:
PO #: 61375

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☑ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability.
*For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%.

**For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City: Ottawa
☐ Storm Sewer, City: Ottawa
☑ ODWSOG
☐ PWQO
☐ O. Reg 347/558
☐ Other: ______
☐ None

☐ O. Reg 153
Table # ____, Course / Fine, Surface / subsurface.
Type: Com-Ind / Res-Park / Agri / GW / All Other / Sediment
☐ Excess Soil, Table: ______ Type: ______

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04
☐ Yes ☐ No

The optimal temperature conditions during transport should be less than 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. Note that this COC is not to be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a $25 surcharge if required information is missing (required fields are shaded in grey).

		Sample Details		Sample Analysis Required																
		Field Filtered -->																		RN# (Lab Use Only)
				O.Reg.153 parameters																
Sample ID	Date/Time Collected	Sample Matrix	# of Containers	PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganics	Metals only	See attached paper	Subdivision Supply Bacti 2 (Ec/TC only)	TSS	pH	Total Metals	Hg				
TW1 - GW1	September 24, 2024	GW	7	☐	☐	☐	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☐	☐	☐	8059996
TW1 - GW2	September 24, 2024	GW	9	☐	☐	☑	☐	☐	☐	☐	☐	☑	☐	☐	☑	☐	☐	☐	☐	98
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	
				☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	☐	

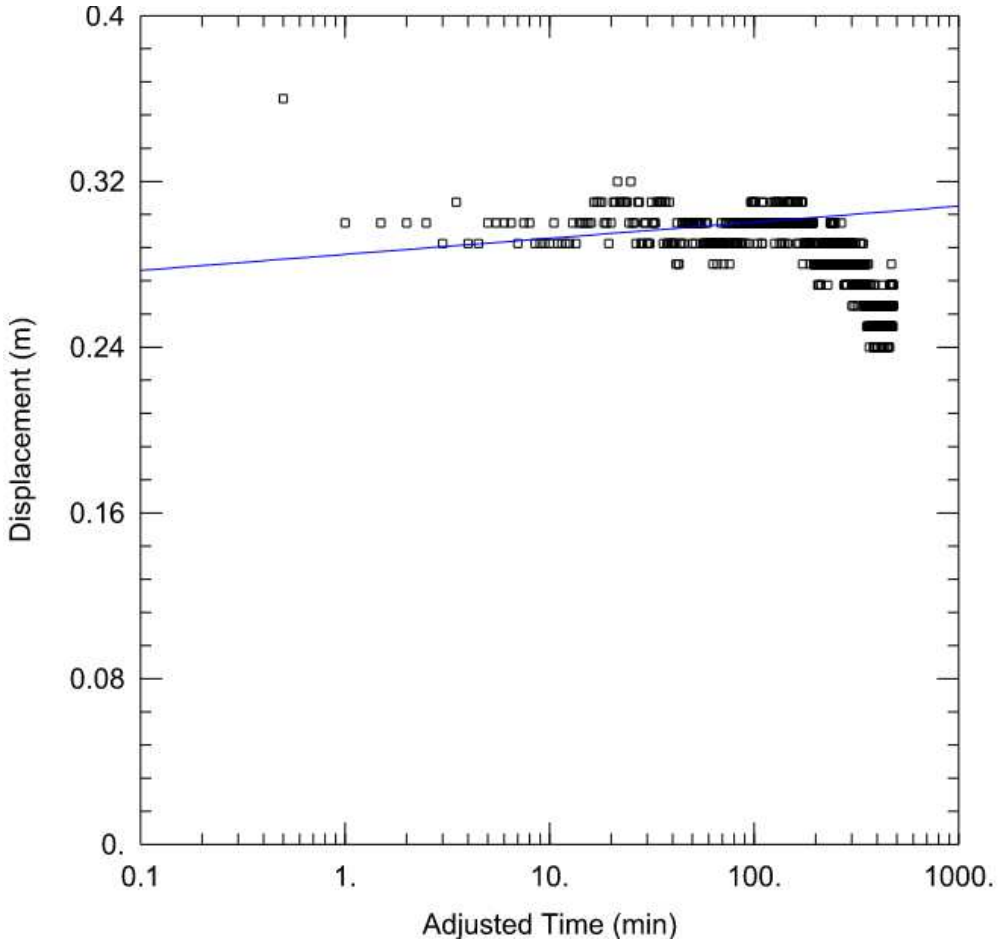
	PRINT	SIGN	DATE/TIME	TEMP (°C)
Sampled By:	Alex Schopf		September 24, 2024	
Relinquished By:	Alex Schopf		September 25, 2024	15C
Received By:	S.Situ		9/25/24 @ 115	

COMMENTS:
Total and Trace Metals

CUSTODY SEAL: ☐ YES ☐ NO Ice packs submitted: ☐ Yes ☐ No

Pumping Test Analysis Report

File No.	PH4905	Well ID:	TW1
Date:	Tuesday, September 24, 2024	Solution Method:	**Cooper-Jacob**
Client:	Ottawa Sivan Temple	Transmissitivity (m2/day):	1970.7
Site Address:	2104 Roger Stevens Road	Discharge Rate (L/min)	58
Project:	Proposed Redevleopment	Analysis performed by:	AS



Pumping Test Analysis Report

File No.	PH4905
Date:	Tuesday, September 24, 2024
Client:	Ottawa Sivan Temple
Site Address:	2104 Roger Stevens Road
Project:	Proposed Redevleopment

Summary Table:		
Solution Method:	Well ID:	Transmissitivity (m2/day):
Cooper-Jacob	TW1	1970.7
Average:		**1970.70**

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133 Blackberry Way
PH4905

MW1 inputs

pH	7.95	A	0.17
TDS	498	B	2.09
Calcium	42	C	1.22
Alkalinity	236	D	2.37
Temp.	25		
		pHs =	7.961844256

Langelier Saturation Index (LSI) Calculation

(Langelier, 1936)

LSI = pH - pHs

pHs = (9.3 + A + B) - (C + D)

Where:

A = (Log10 [TDS] - 1) / 10

B = -13.12 x Log10 (oC + 273) + 34.55

C = Log10 [Ca2+ as CaCO3] - 0.4

D = Log10 [alkalinity as CaCO3]

LSI = 0.0

LSI	Effect
0.5 to 2	Water is super saturated and tends to precipitate a scale layer of calcium carbonate (scale forming but non-corrosive)
0 to 0.5	**Water is super saturated and tends to precipitate a scale layer of calcium carbonate (slightly scale forming and corrosive).**
0	Water is saturated (in equilibrium) with calcium carbonate. A scale layer of calcium carbonate is neither precipitated nor dissolved.
0 to -0.5	Water is under saturated and tends to dissolve solid calcium carbonate (slightly corrosivebut non-scale forming).
-0.5 to -2	Water is under saturated and tends to dissolve solid calcium carbonate (seriously corrosive).

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

2104 Roger Stevens Drive, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 367934.449 **NORTHING:** 5000149.976 **ELEVATION:** 91.00

PROJECT: Proposed Hindu Temple

BORINGS BY: CME 55 Low Clearance Drill

REMARKS:

DATE: September 19, 2023

FILE NO. PG6832

HOLE NO. BH 1-23

SAMPLE DESCRIPTION	STRATA PLOT	SAMPLE No.	SAMPLE Type	SAMPLE % RECOVERY	N VALUE or RQD	WATER CONTENT %	DEPTH (m)	Remoulded Shear Strength (kPa) 0 25 50 75 100	Peak Shear Strength (kPa) 0 25 50 75 100	Pen. Resist. Blows/0.3m (50 mm Dia. Cone) 0 25 50 75 100	Piezometer Construction
Ground Surface EL 91 m											
TOPSOIL 0.05 m EL 90.95 m		AU 1					0				
		SS 2		75	46		1				
		SS 3		60	50+		2				
GLACIAL TILL: Dense to very dense, brown silty sand to sandy silt with gravel, cobbles and boulders, trace clay		SS 4		50	50+		3				
		SS 5		58	50+		4				
		SS 6		67	24		5				
4.95 m EL 86.05 m		SS 7		25	50+		6				
End of Borehole							7				
Practical refusal to augering at 4.98m depth.							8				
(GWL @ 2.20m - Sep. 21, 2023)							9				
							10				
							11				
							12				
							13				
							14				

SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

2104 Roger Stevens Drive, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 367950.643 **NORTHING:** 5000130.909 **ELEVATION:** 90.49

PROJECT: Proposed Hindu Temple

BORINGS BY: CME 55 Low Clearance Drill

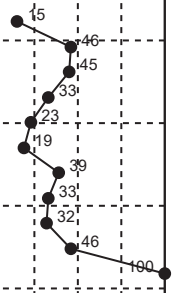
REMARKS:

DATE: September 19, 2023

FILE NO. PG6832

HOLE NO. BH 2-23

SAMPLE DESCRIPTION	STRATA PLOT	SAMPLE No.	SAMPLE Type	SAMPLE % RECOVERY	N VALUE or RQD	WATER CONTENT %	DEPTH (m)	Remoulded Shear Strength (kPa) 0 25 50 75 100	Peak Shear Strength (kPa) 0 25 50 75 100	Pen. Resist. Blows/0.3m (50 mm Dia. Cone) 0 25 50 75 100	Piezometer Construction
Ground Surface EL 90.49 m											
TOPSOIL 0.1 m EL 90.39 m		AU 1					0				
FILL: Brown silty sand, trace gravel		SS 2		67	9		1				
		SS 3		50	24		2				
2.13 m EL 88.36 m		SS 4		50	46		3				
GLACIAL TILL: Dense, brown silty sand to sandy silt with gravel, cobbles, and boulders		SS 5		46	24		4				
		SS 6		50	25		5				
		SS 7		79	38		6				
		SS 8		9	40		7				
6.71 m EL 83.78 m		SS 9		88	40		8				
Dynamic Cone Penetration Test commenced at 6.71m depth.							9				
							10				
10.82 m EL 79.67 m							11				
End of Borehole							12				
Practical DCPT refusal at 10.82m depth.							13				
(GWL @ 2.47m - Sep. 21, 2023)							14				



SOIL PROFILE AND TEST DATA

GEOTECHNICAL INVESTIGATION

2104 Roger Stevens Drive, Ottawa, Ontario

DATUM: Geodetic **EASTING:** 367971.19 **NORTHING:** 5000144.833 **ELEVATION:** 90.23

PROJECT: Proposed Hindu Temple

BORINGS BY: CME 55 Low Clearance Drill

REMARKS:

DATE: September 19, 2023

FILE NO. PG6832

HOLE NO. BH 3-23

SAMPLE DESCRIPTION	STRATA PLOT	SAMPLE No.	SAMPLE Type	SAMPLE % RECOVERY	N VALUE or RQD	WATER CONTENT %	DEPTH (m)	Remoulded Shear Strength (kPa) 0 25 50 75 100	Peak Shear Strength (kPa) 0 25 50 75 100	Pen. Resist. Blows/0.3m (50 mm Dia. Cone) 0 25 50 75 100	Piezometer Construction
Ground Surface EL 90.23 m											
TOPSOIL 0.1 m EL 90.13 m		AU 1					0				
FILL: Brown silty sand, trace gravel 1.35 m EL 88.88 m		SS 2		50	6		1				
		SS 3		0	11		2				
		SS 4		67	15		3				
GLACIAL TILL: Compact to very dense, brown silty sand to sandy silt with gravel, cobbles and boulders		SS 5		33	33		4				
		SS 6		79	16		5				
		SS 7		67	30		6				
		SS 8		67	18		7				
6.71 m EL 83.52 m		SS 9		71	50+		8				
End of Borehole							9				
(GWL @ 2.57m - Sep. 21, 2023)							10				
							11				
							12				
							13				
							14				

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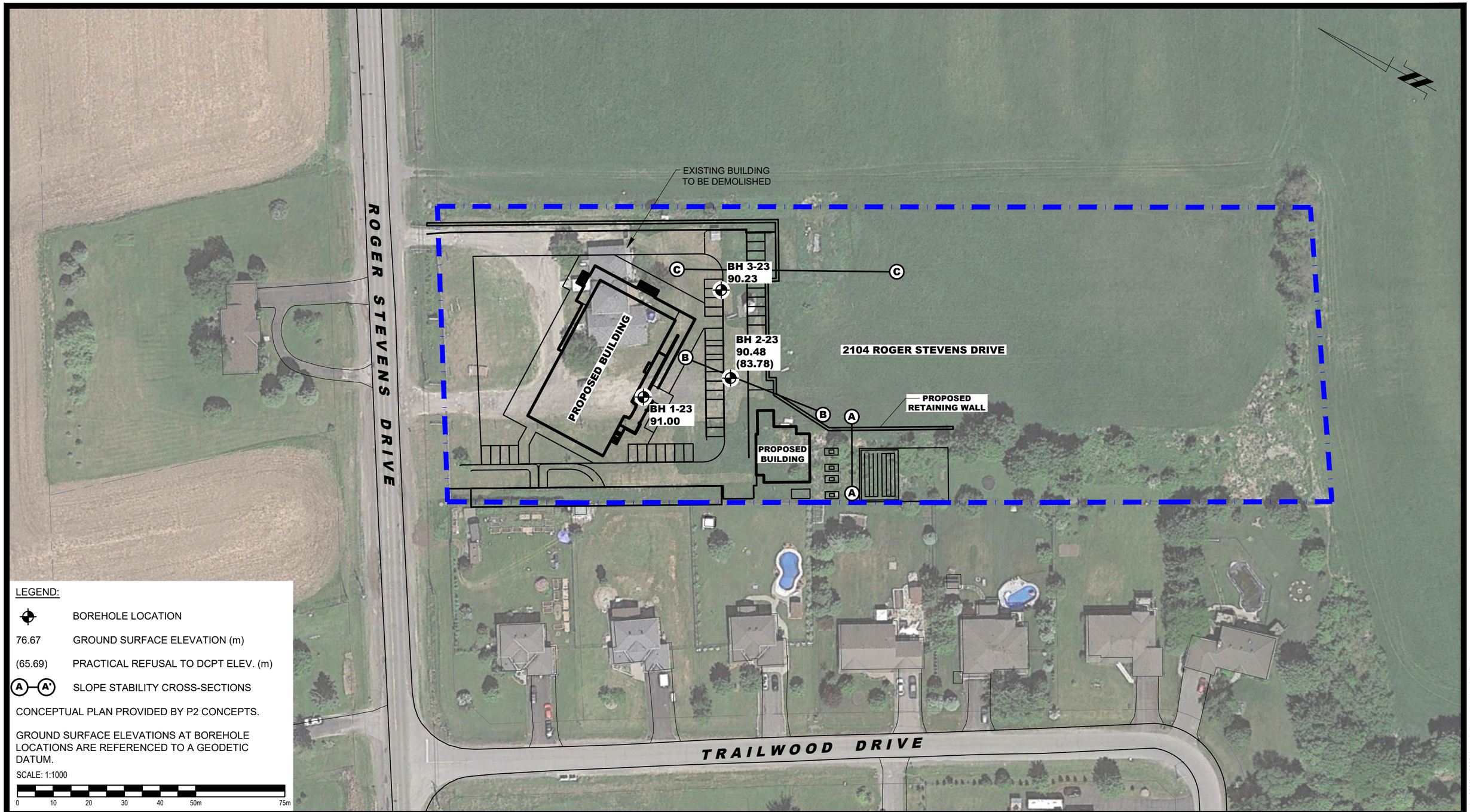
2104 Roger Stevens Drive, Ottawa

PREDICTIVE NITRATE IMPACT ASSESSEMENT

Infiltration Factors		
Topography	0.20	
Soil	0.40	
Cover	0.10	
Total	**0.70**	
Site Characteristics		
Area of Site :	20405	m^2
Total of roof areas:	1040	m^2
Total area of paved driveway areas:	4448	m^2
Roof + paved driveway areas	5488	m^2
Impervious Area	5488	m^2
Percent Impervious Area =	27	%
Infiltration Area =	14917	m^2
Septic Effluent		
Concentration of Effluent (Cs) =	20	mg/L
Infiltration Calculation		
Nitrate concentration in precipitation (C_i) =	0	mg/L
Surplus Water (Environment Canada)	378	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) =	11	m^3/day
Mass Balance Model (MOEE, 1995)		
$C_T = (Q_bC_b+Q_eC_e+Q_iC_i)/(Q_b+Q_e+Q_i)$ = 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	7.25	m^3/day
C_e = concentration of nitrates in the septic effluent	20	mg/L
Q_i = flow entering the system from infiltration	11	m^3/day
C_i = Concentration of nitrates in the infiltrate	0	mg/L
C_T =	**8.03**	**mg/L**
Sewage Flow Volume		
Daily Sewage Flow (Qs)=	**7.25**	**m^3**

Notes: Site characteristic values were measured as approximate values from the available site plans and GeoOttawa.



LEGEND:

- BOREHOLE LOCATION
- 76.67 GROUND SURFACE ELEVATION (m)
- (65.69) PRACTICAL REFUSAL TO DCPT ELEV. (m)
- A—A' SLOPE STABILITY CROSS-SECTIONS

CONCEPTUAL PLAN PROVIDED BY P2 CONCEPTS.

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

SCALE: 1:1000

0 10 20 30 40 50m 75m

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

NO.	REVISIONS	DATE	INITIAL
2	ADDED SLOPE STABILITY CROSS SECTION C-C TO PLAN	27/01/2025	DR
1	AS PER REVISED CONCEPTUAL PLAN	24/06/2024	OM

OTTAWA SIVAN TEMPLE
GEOTECHNICAL INVESTIGATION
PROPOSED HINDU TEMPLE
2104 ROGER STEVENS DRIVE
OTTAWA, ONTARIO

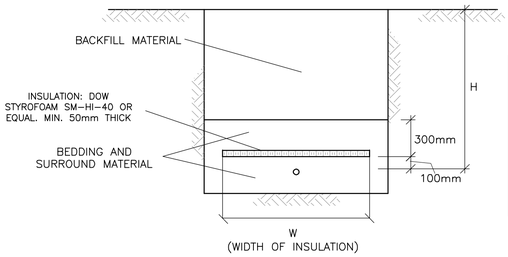
Title:

TEST HOLE LOCATION PLAN

Scale: 1:1000	Date: 09/2023
Drawn by: NFRV	Report No.: PG6832-1
Checked by: OM	Dwg. No.: PG6832-1
Approved by: SD	Revision No.: 2

11x17

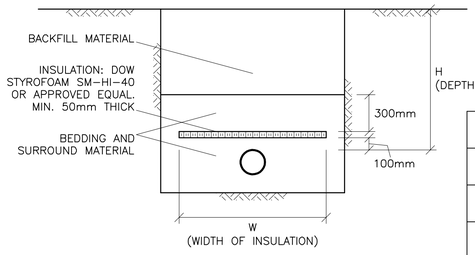
p:\autocad drawings\geotechnical\pg68xx\pg6832\pg6832-1 test hole location plan (rev.2).dwg



H (DEPTH OF COVER)	INSULATION THICKNESS	W (WIDTH OF INSULATION)
1800 TO 2400mm	50mm	1200mm
1500 TO 1800mm	75mm	1800mm
1200 TO 1500mm	100mm	2400mm

INSULATE SEWER AS INDICATED AND WHERE DEPTH OF COVER COVER IS LESS THAN 2400mm.
PROVIDE A MINIMUM 1200mm COVER.
CENTER INSULATION OVER PIPE.
JOINTS BETWEEN SHEETS OF INSULATION SHALL BE STAGGERED.

INSULATION OF WELL WATER LINE SHALLOW TRENCHES N.T.S.



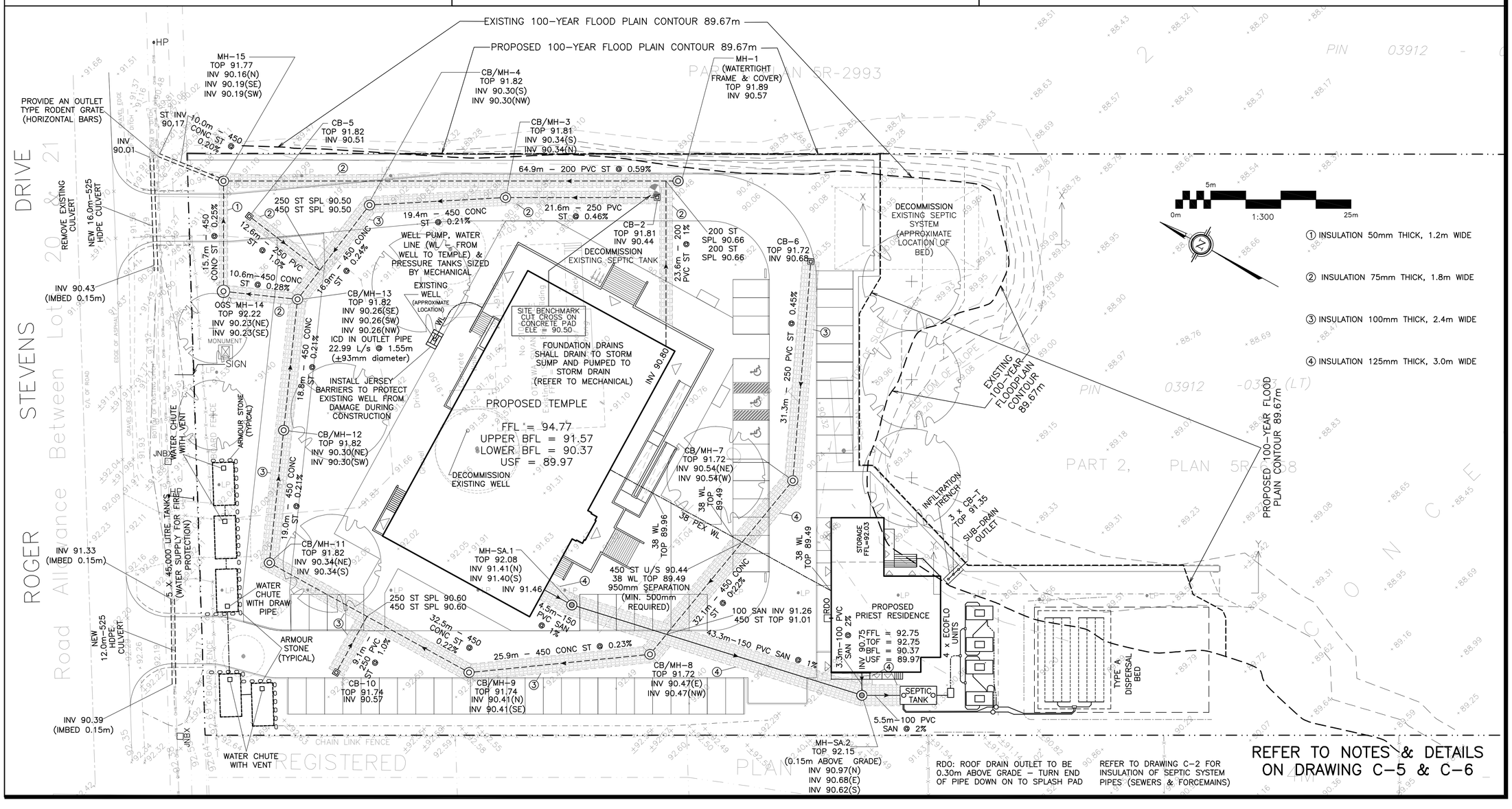
H (DEPTH OF COVER)	INSULATION THICKNESS	W (WIDTH OF INSULATION)
1400 TO 2000mm	50mm	1200mm + DIAMETER OF PIPE
1100 TO 1400mm	75mm	1800mm + DIAMETER OF PIPE
800 TO 1100mm	100mm	2400mm + DIAMETER OF PIPE
500 TO 800mm	125mm	3000mm + DIAMETER OF PIPE

INSULATE SEWER AS INDICATED AND AS PER CITY DRAWING S35 AND WHERE DEPTH OF COVER IS LESS THAN 2000mm.
CENTER INSULATION OVER PIPE.
JOINTS BETWEEN SHEETS OF INSULATION SHALL BE STAGGERED.

INSULATION OF SEWERS IN SHALLOW TRENCHES
AS PER CITY OF OTTAWA DRAWING No. S35
N.T.S

LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
SAN	SANITARY SEWER
ST	STORM SEWER
WL	WELL WATER LINE
INV	INVERT OF PIPE
RDO	ROOF DRAIN OUTLET
x99.99	EXISTING GRADE ELEVATION



RDO: ROOF DRAIN OUTLET TO BE 0.30m ABOVE GRADE - TURN END OF PIPE DOWN ON TO SPLASH PAD

REFER TO DRAWING C-2 FOR INSULATION OF SEPTIC SYSTEM PIPES (SEWERS & FORCEMAINS)

REFER TO NOTES & DETAILS ON DRAWING C-5 & C-6

KEY PLAN

No.	DATE	REVISION
8	JUN 12-25	RE-ISSUED FOR APPROVAL & BUILDING PERMIT FOR PRIEST RESIDENCE
7	APR 10-25	RE-ISSUED FOR APPROVAL
6	OCT 25-24	ISSUED FOR APPROVAL
5	OCT 18-24	ISSUED FOR COORDINATION
4	OCT 15-24	ISSUED FOR COORDINATION
3	SEP 20-24	ISSUED FOR COORDINATION
2	AUG 6-24	ISSUED FOR COORDINATION
1	OCT 23-24	ISSUED FOR APPROVAL

D. B. GRAY ENGINEERING INC.
Stormwater Management - Grading & Drainage - Storm & Sanitary Sewers - Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

Project
PROPOSED HINDU TEMPLE
2104 ROGER STEVENS DR
NORTH GOWER, ONTARIO

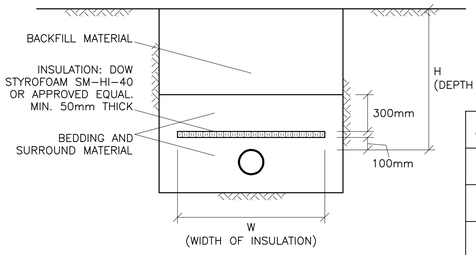
Drawing Title
SITE SERVICING PLAN

Engineer's Seal
LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
JUN 12-24
PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:300
V. Scale	
Date	JUN 11-24
Job No.	20029

Drawing No.
C-1
of 7

Plan #19282 File No. D07-12-25-0049



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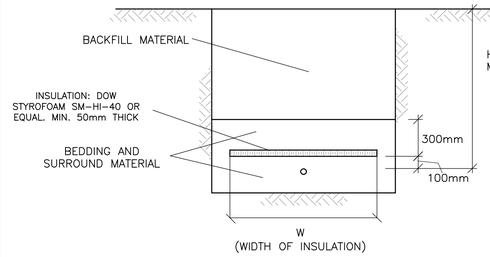
1400 TO 2000mm	50mm	1200mm + DIAMETER OF PIPE
1100 TO 1400mm	75mm	1800mm + DIAMETER OF PIPE
800 TO 1100mm	100mm	2400mm + DIAMETER OF PIPE
500 TO 800mm	125mm	3000mm + DIAMETER OF PIPE

INSULATE SEWER AS INDICATED AND AS PER CITY DRAWING S35 AND WHERE DEPTH OF COVER IS LESS THAN 2000mm.
CENTER INSULATION OVER PIPE.
JOINTS BETWEEN SHEETS OF INSULATION SHALL BE STAGGERED.

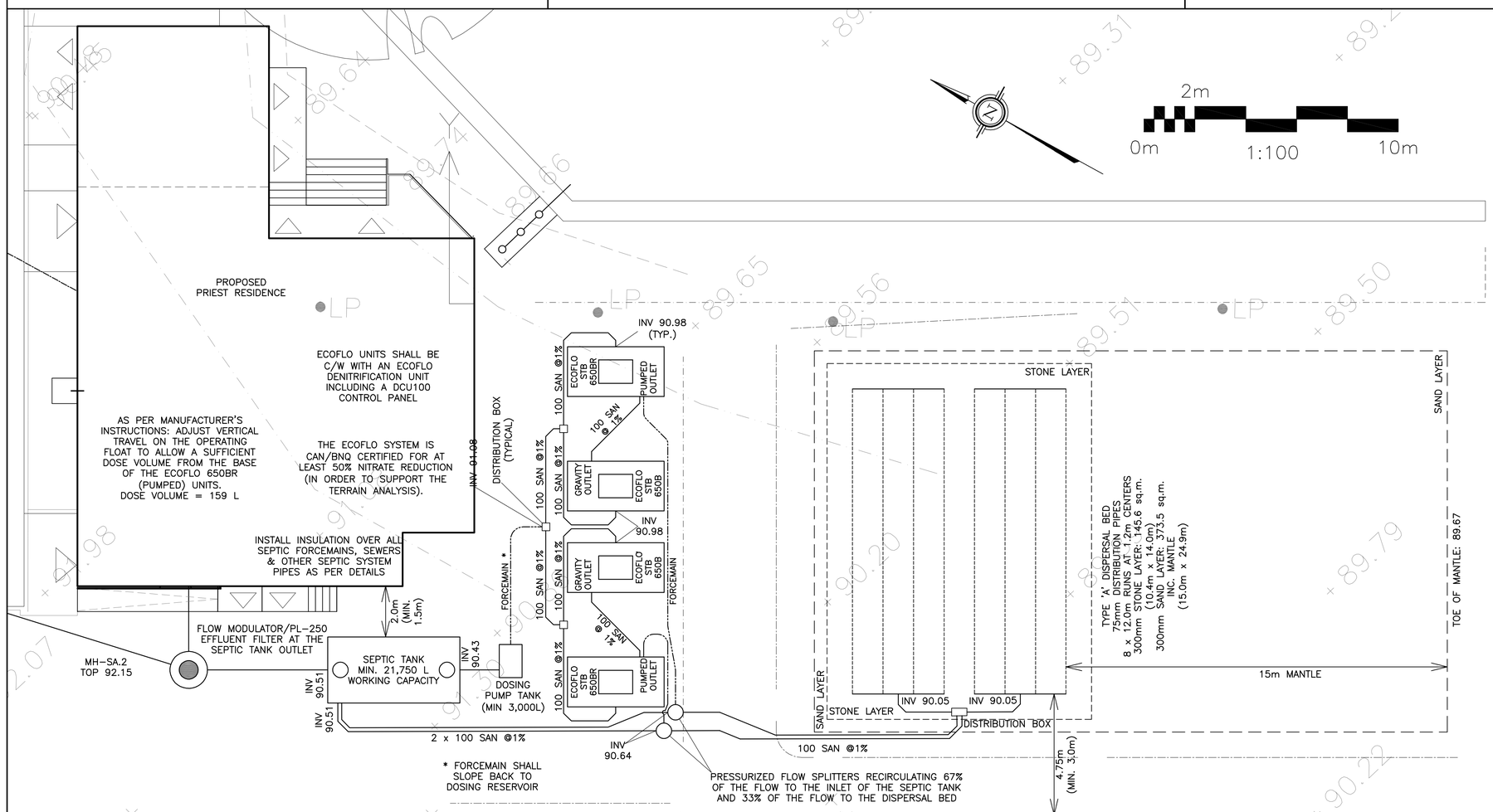
INSULATION OF SEWERS IN SHALLOW TRENCHES
AS PER CITY OF OTTAWA DRAWING No. S35
N.T.S



H (DEPTH OF COVER)	INSULATION THICKNESS	W (WIDTH OF INSULATION)
1800 TO 2400mm	50mm	1200mm
1500 TO 1800mm	75mm	1800mm
1200 TO 1500mm	100mm	2400mm
900 TO 1200mm	125mm	3000mm
600 TO 900mm	150mm	3600mm

INSULATE FORCEMAIN AS INDICATED AND WHERE DEPTH OF COVER COVER IS LESS THAN 2400mm
CENTER INSULATION OVER PIPE.
JOINTS BETWEEN SHEETS OF INSULATION SHALL BE STAGGERED.

INSULATION OF SANITARY FORCEMAIN IN SHALLOW TRENCHES
N.T.S.



REFER TO NOTES & DETAILS ON DRAWING C-5 & C-6

LEGEND

FFL	FIRST FLOOR ELEVATION
TOF	TOP OF FOUNDATION
BFL	BASEMENT FLOOR ELEVATION
USF	UNDERSIDE OF FOOTING
— · · —	PROPERTY LINE
CB	CATCH BASIN
MH	STORM MANHOLE
CB/MH	CATCH BASIN/MANHOLE
MH	SANITARY MANHOLE
SAN	SANITARY SEWER
ST	STORM SEWER
WL	WELL WATER LINE
INV	INVERT OF PIPE
RDO	ROOF DRAIN OUTLET
x99.99	EXISTING GRADE ELEVATION

KEY PLAN

No.	DATE	REVISION
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4	OCT 15-24	ISSUED FOR COORDINATION
3	SEP 20-24	ISSUED FOR COORDINATION
2	AUG 6-24	ISSUED FOR COORDINATION
1	JUL 11-24	PRELIMINARY

D. B. GRAY ENGINEERING INC.
Stormwater Management · Grading & Drainage · Storm & Sanitary Sewers · Watermains
700 Long Point Circle 613-425-8044
Ottawa, Ontario d.gray@dbgrayengineering.com

Project
PROPOSED HINDU TEMPLE
2104 ROGER STEVENS DR
NORTH GOWER, ONTARIO

Drawing Title
SEPTIC SYSTEM

Engineer's Seal
LICENSED PROFESSIONAL ENGINEER
D.B. GRAY
17016502
JUN 12-24
PROVINCE OF ONTARIO
NOT VALID UNLESS SIGNED & DATED

Drawn	D.B.G
H. Scale	1:300
V. Scale	
Date	JUN 11-24
Job No.	20029

Drawing No.
C-2
of 7

Plan #19282 File No. D07-12-25-0049