## patersongroup

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September 28, 2020 File: PH4089-LET.01

**Fuller-Mariani Building Solutions** 

2700 Queensview Drive Ottawa, ON K2B 8H6 Geotechnical Engineering Environmental Engineering Archaeological Studies Hydrogeology Geological Engineering Materials Testing Building Science

Attention: Mr. Tony Mariani www.patersongroup.ca

Subject: **Hydrogeological Report and Terrain Analysis** 

Somme Street (5123 Hawthorne Road)

Ottawa, Ontario

#### Introduction

Further to your request, Paterson Group (Paterson) has conducted a Hydrogeological Report and Terrain Analysis in support of the proposed construction of a one storey slab-on-grade commercial structure and associated warehouse on the subject site located within Part 3 and Part 4 of Block 2 along Somme Street (5123 Hawthorne Road) in the City of Ottawa, Ontario. The purpose of these works has been to determine the suitability of the water supply aquifer underlying the site to service the proposed development and the suitability of the soils to adequately attenuate sewage effluent through a Class 4 Sewage System.

#### **Description of Proposed Property**

The subject site is currently undeveloped and grass covered. The ground surface across the site is relatively flat and gradually slopes down towards the southeast. An unidentified tributary to the Findlay Creek Municipal Drain has been identified along the southern boundary of the subject site, while a drainage ditch has been observed along Somme Street. The subject site is bordered to the north by Somme Street, to the east and south by undeveloped land and to the west by vacant land followed by a stormwater management pond. The site is currently zoned as Rural Heavy Industrial (RH). The surrounding properties to the north, east and west are also zone RH, while the property to the south is zone as Mineral Extraction (ME).

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#### **Field Program**

As a means to demonstrate the adequacy of the aquifer underlying the subject lands, with respect to water quality and quantity, a new drilled well was constructed and tested. The new drilled well has been identified as A295280 and is referred to as TW1 for the purpose of this assessment. TW1 has a 150 mm diameter steel casing extending to a depth of 12.5 m below ground surface (bgs). The total depth of the well was indicated to be 37.2 m bgs. According to the well record, grey limestone was recorded at a depth of approximately 4.6 m bgs, followed by grey to white sandstone bedrock. Based upon available geological mapping, the drift thickness varies from 0 to 2 m bgs.

The new drilled well is located in the northern portion of the property and west of the proposed structure. Refer to attached Paterson Drawing PH4089 -1 - Site Plan for the well location. The new drilled well is fully accessible with the 150 mm diameter steel casing extending 0.61 m above the existing ground surface. The well stick-up meets the minimum height requirement as per Ontario Regulation 903.

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 8, 2020 under the full-time supervision of Paterson personnel.

A submersible pump was provided by Air Rock Drilling Co. (Air Rock) for the 8 hour pumping test. A licensed water well technician (Air Rock) was retained to complete the necessary plumbing related activities. A discharge hose assembly with a gate valve was connected to the rented pump. The discharge line was placed at a sufficient distance to ensure that the discharge water was being directed away from the well. Upon completion of the test, the pump was removed and the well was disinfected by Air Rock.

The pumping test was carried out at a pumping rate of 90 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 electronic datalogger (VanEssen TD-Diver) was installed in the test well prior to the start of the pumping test. 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 achieved 95% recovery approximately 9 hours and 45 minutes after the completion of the pumping.

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Groundwater samples were collected at 4 hours and 8 hours after the start of pumping. Prior to collection of the groundwater samples, the free chlorine residual was verified to be 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.

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 the 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 6 hour pumping test. The parameters tested at the well head included: pH, total dissolved solids, conductivity, turbidity and temperature.

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#### **Aquifer Analysis**

#### **Water Quantity**

Pumping test data was analyzed using AquiferTest Pro (v. 2016.1) aquifer analysis software package by Schlumberger Water Services. Drawdown data was measured using an electronic water level tape and an electronic datalogger unit.

1:SUMMARY OF WATER SUPPLY AQUIFER CH	IARACTERISTICS OF TW1
AQUIFER PARAMETER	RESULT OF ANALYSIS
Transmissivity (m²/day)	20.23
Pumping Rate (L/min)	90
Pre-test Static Water Level (m)	7.75
Post-test Water level (m)	11.24
Available Drawdown (m)	29.43
% Drawdown During Pumping Test	11.8
pecific Capacity (L/min/m drawdown)	25.79

The drawdown data was analyzed using the Theis (Theis, 1935), Cooper & Jacob (Cooper & Jacob, 1946) and the Theis Recovery methods of analysis. Aquifer transmissivity is estimated to be approximately 20.23 m<sup>2</sup>/day.

The pumping test results show that TW1 has a high yield to support the water demands for the proposed development. Overall maximum drawdown at a constant pumping rate for a period of 8 hrs was approximately 3.49 m (11.24 % of the available drawdown). 95% recovery was achieved approximately 9 hours and 45 minutes after the end of pumping. The total volume of water pumped during the 8 hour pumping test was approximately 43,200 L. This is approximately 35 times the maximum total daily design volume of water required to support the proposed development (maximum 1,250 L/day provided by Novatech Engineering Ltd).

It should be noted that the static water level from an adjacent test well was also recorded using an electronic datalogger during the 8 hour pumping test. A minimal drawdown of approximately 2.1 m (5% of the available drawdown) was recorded in the adjacent well located 120 m west of TW1.

The suitability of the aquifer to supply the proposed commercial development was assessed using the methodology provided in MECP Procedure D-5-5 (MOEE, 1996).

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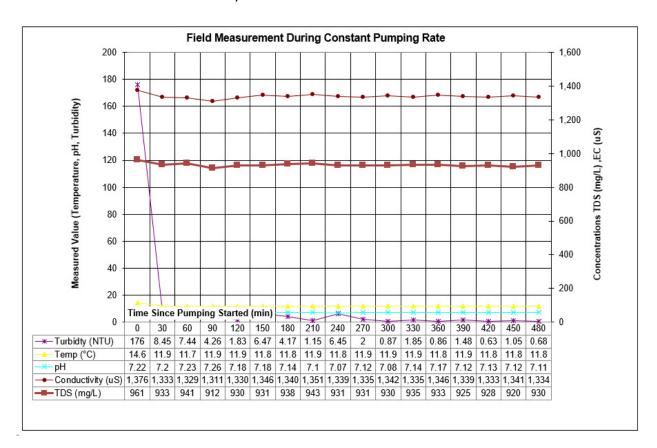
Based on the information summarized in Table 1, it is readily apparent that the new water supply well has intercepted an adequately strong water supply aquifer. It is considered to have sufficient quantity to service the proposed commercial development under typical usage, in addition to the neighboring buildings whose wells may intercept the same water supply aquifer.

The majority of the available water well records for the neighboring properties on the MECP Well Record mapping website consist of test wells, monitoring wells, farm use, public use or erroneously located well records. All surrounding WWR are attached to this report.

#### **Water Quality**

#### Field Data

Turbidity, electrical conductivity, total dissolved solids (TDS), pH 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.



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#### Laboratory Data

The laboratory water quality obtained from the pumping test of TW1 is provided in Table 2 below and the laboratory analyses reports can be found attached.

		OD	WS	т\	W1
PARAMETER	UNITS				
TANAMETER		LIMIT	TYPE	GW1 (4 hr)	GW2 (8 hr)
MICDODIOLOGICAL				2020-09-08	2020-09-08
MICROBIOLOGICAL	-4/4001		MAG		
Escherichia Coli (E.Coli)	ct/100mL	0	MAC	0	0
Total Coliforms	ct/100mL	0	MAC	0	0
GENERAL CHEMICAL - HE					
Fluoride	mg/L	1.5(2.4)	MAC	0.12	0.26
N-NO2 (Nitrite)	mg/L	1	MAC	<0.10	<0.10
N-NO3 (Nitrate)	mg/L	10	MAC	<0.10	<0.10
Turbidity (Laboratory)	NTU	1.0 (5.0)	MAC/AO	21.20	24.10
Turbidity (Field)	NTU	1.0 (5.0)	MAC/AO	6.45	0.68
N-NH3 (Ammonia)	mg/L	-	-	0.20	0.22
Total Kjeldahl Nitrogen	mg/L	-	-	0.30	0.30
GENERAL CHEMICAL - AI	ESTHETIC R	ELATED			
Hardness (as CaCO3)	mg/L	100	OG	613	595
lon Balance	unitless	-	-	1.01	1
Total Dissolved Solids	mg/L	500	AO	910	920
Alkalinity (as CaCO3)	mg/L	500	OG	495	470
Chloride	mg/L	250	AO	58	63
Colour	TCU	5	AO	2	<2
Conductivity	uS/cm	-	-	1,340	1,320
pH	unitless	6.5-8.5	AO	7.74	7.95
Sulphide	mg/L	0.05	AO	<0.01	<0.01
Sulphate	mg/L	500	AO	188	200
Calcium	mg/L	-	-	135	131
Iron	mg/L	0.3	AO	1.68	1.58
Potassium	mg/L	_	-	10	10
Magnesium	mg/L	_	-	67	65
Manganese	mg/L	0.05	AO	0.50	0.48
Sodium	mg/L	200	AO	72	74
Phenols	mg/L			<0.001	<0.001
Tannin & Lignin	mg/L	_	_	0.20	0.20
Dissolved Organic Carbon	mg/L	5	AO	4.50	4.30

<sup>1.</sup> 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

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The bacteriological test results (Certificate of Analysis - Report No. 1938338) indicated that E.coli and Total Coliforms were non detect in the well water (0 ct/100mL). Paterson personnel confirmed that the free chlorine residual was 0 mg/L prior to the collection of the bacteriological sample.

The water quality of the subject water supply well meets all the Ontario Drinking Water Standards (ODWS) 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)
TDS	_
Turbidity	
Iron	
Manganese	

Exceedances of the above parameters are not uncommon of the water supply in the subject aquifer and are similar to the test well results (TW5) used for the hydrogeological study completed by Golder Associates dated December 2008, in support of the approved development. Each of these groundwater parameters are discussed in detail below.

#### Hardness as CaCO<sub>3</sub>

Hardness, expressed as calcium carbonate, an operational guideline, does not appear in the ODWS. Rather, it appears in the Technical Support Documents for Ontario Drinking Water Standards, Objectives and Guidelines as a parameter with an operational guideline of 100 mg/L. At the measured concentration of 613 and 595 mg/L, the water is considered to be hard. The Technical Support Document for ODWS publication states that water with hardness in excess of 500 mg/L may be unacceptable for most domestic purposes, however, there is no maximum treatable value available. It is expected the hardness concentration can be treated using commercial grade water softener technologies, if desired, by the owner.

#### **TDS**

Total dissolved solids (TDS) refers to the concentration of inorganic substances dissolved in water. The main constituents are typically chloride, sulphates, calcium, magnesium and bicarbonates. Water with a TDS concentration above 500 mg/L of TDS may not palatable. Procedure D-5-5 does not provide a 'treatability limit' for TDS, but it does require written rationale that corrosion, encrustation, or taste problems will not occur.

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The Langelier Saturation Index (Langelier, 1936) is used to predict the calcium carbonate stability of water. It indicates whether the water will precipitate, dissolve, or be in equilibrium with calcium carbonate. The results of the Langelier calculation (LSI = 1.2) indicate the water is super saturated and tends to precipitate a scale layer of calcium carbonate (scale forming but non-corrosive). See Langelier Saturation Index Calculation attached for calculation details.

#### **Turbidity**

Turbidity, which is generally an aesthetic parameter, was detected in the laboratory test samples at values of 21.2 and 24.1 NTU in the 4 and 8 hour tests, respectively. Field testing detected the samples at values of 6.4 and 0.7 NTU in the 4 and 8 hour tests, respectively. Continued pumping showed a decrease towards the end of the test. It is expected further development 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 Aesthetic Objective for turbidity in drinking water reaching the consumer is 5 NTU. The field test parameters are below the 5 NTU objective.

#### 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 groundwater at TW1 is considered to be reasonably treatable in accordance with Procedure D-5-5. However, the laboratory observation for turbidity showed increased precipitation (turbidity) attributed to iron precipitate. 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.

#### Manganese

The manganese concentration results from the laboratory test samples yielded a value of 0.50 and 0.48 mg/L and is above the aesthetic objectives in the ODWO of 0.05 mg/L. As per D-5-5, the results are below the level considered to be reasonably treatable (1.0 mg/L). A conventional water softener can be used to reduce the levels of manganese.

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#### **Terrain Analysis**

#### **Surficial Geology**

The field investigation was completed using the relevant test boreholes completed for a Phase II - Environmental Site Assessment by Paterson of the overall site as well as boreholes completed by others. The above noted investigations included 2 boreholes within the subject site and were advanced to a maximum depth of 4.4 m bgs. The location of the boreholes on the property are delineated on the Test Hole Location Plan, Drawing No. PG5306-1, attached.

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

The subsurface profile consisted of fill material extending to depths of 1.2 to 1.5 m bgs and consists of sandy silt with some gravel, organics and construction debris. The fill material is underlain by a loose to compact silt with traces of sand and gravel. Groundwater levels were not encountered at the time of the field investigation. Auger refusal was encountered in borehole B2-1 (by others) at 1.2 m bgs.

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

#### **Hydrogeological Sensitivity of the Site**

The subject site is bordered to the north by Somme Street, to the east and south by undeveloped land and to the west by vacant land followed by a stormwater management pond. The subject development will be serviced by private wells and septic systems.

Based upon the field investigations, the overburden material ranges from approximately 1.2 to >4.4 m depth at the borehole locations. The overburden soils are recorded to consist of fill material overlying a silt with traces of sand and gravel.

As the proposed site is expected to have bedrock within 2 m of the ground surface in areas, the site is considered hydrogeologically sensitive. Horizontal separation distances have been increased between the septic components and the onsite well. The minimum well casing depth for the constructed TW1 has been doubled to 12 m.

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The topography of the site is relatively flat and gradually slopes down towards the southeast. An unidentified tributary to the Findlay Creek Municipal Drain has been identified along the southern boundary of the subject site, while a drainage ditch has been observed along Somme Street. The local flow direction of the surficial aquifer is expected to travel towards the northeast, based on the groundwater depths measured from previous investigations in the area. The regional groundwater flow is considered to be in an easterly to south easterly direction, towards the Findlay Creek Municipal Drain. There are no downgradient private water supply wells within 500 m of the proposed septic bed in this direction.

To corroborate our position in this matter, the water quality of the bedrock aquifer targeted as the preferred water supply aquifer for the development, shows no indications of surface water or surface impacts from sewage system effluent. This is especially telling, considering the operation of nearby sewage systems upgradient from the subject site.

#### **Conceptual Lot Development Plan**

A one storey slab-on-grade commercial structure and associated warehouse is proposed within the north central portion of the property. The location of the proposed structures can be found on the attached Paterson Drawing PH4089 - 1 - Site Plan. It illustrates that the proposed design layout is adequate to accommodate the associated private services and meet all the regulated separation criteria.

#### **Sewage System Design**

In order to minimize the risk of long-term contamination of services, a minimum horizontal separation distance of 30 metres is recommended between the onsite drilled well and the closest distribution pipe of the onsite sewage system. This separation distance shall be increased according to the OBC requirements for beds constructed above the original ground surface. In consideration of the proposed location of the septic area, the existing wells, the proximity of the neighbouring sewage systems and wells with respect to the proposed sewage system, the minimum regulatory separation distances can be easily attained on the subject property. In addition, a minimum of 100 mm of imported soil seal would be required to provide system isolation due to the shallow overburden (<2 m).

#### **Proposed Sewage System**

Details regarding the sewage system have not been provided at the time of report preparation. However, based on the available space, it is expected that a conventional Class 4 Sewage System will easily fit on the subject site. Novatech Engineering has been retained to complete the detailed design of the system and is to be completed at a later date. The reader should be aware that there are numerous other types of class 4 sewage

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systems that could potentially be used at the subject site. The system is expected to have a daily design load capacity of 1,250 L/day and will govern the allowable flows under the current Ontario Building Code (OBC). Also, a minimum of 100 mm of imported soil seal would be required to provide system isolation due to the shallow overburden (<2 m).

#### **Total Daily Design Sewage Flow**

The total daily design flow (TDDSF) of 1,250 L/day for the proposed development was provided by Novatech Engineering. Typical commercial developments will have lower actual loading compared to the conservative design loads as per the OBC.

#### **Nitrate Impact Assessment**

Nitrate is considered to be a critical parameter of concern when assessing impacts to groundwater quality downgradient of an onsite sewage system. MECP Procedure D-5-4 applies for the proposed development. For the purpose of this guideline, the Ontario Drinking Water Objective of 10 mg/L of nitrate is used as an indicator of groundwater impact potential.

Under this guideline, where the lot size is one hectare or larger a detailed impact assessment may not be required. It has been the City of Ottawa's policy that where the lot size is 0.8 ha. or larger a detailed assessment is typically not required since it is considered be a low risk development. The subject site is approximately 2.7 ha. in size and, as such, a detailed impact assessment is not necessary. In addition, there are no noted sensitive shallow receptors in the downgradient direction within 1 km to the subject site.

Based upon the above information, it is expected that the nitrate impact assessment is not required for this proposed development.

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#### **Conclusions**

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

- 1. The results of the water supply assessment have provided satisfactory evidence that the water supply aquifer underlying the subject site can support the proposed commercial development from both a quality and quantity perspective.
- 2. The preferred water supply aquifer intercepted by TW1 contains a water supply that is potable, and contains only elevated concentrations of hardness, TDS, turbidity, iron and manganese. The results are similar to the test well results (TW5) used for the hydrogeological study completed by Golder Associates dated December 2008, in support of the approved development. The above noted parameters can be treated with current readily available water conditioning equipment.
- 3. An iron filter is recommended to prevent iron precipitate from occurring within the treatment system that may cause negative impacts.
- 4. The sodium concentrations were measured to be above the 20 mg/L reporting limit and, as such, the Medical Officer of Health for the City of Ottawa should be informed to assist area physicians in the treatment of local residents on sodium reduced diets.
- 5. The onsite well and septic system components must have a minium of 30 m horizontal separation as the site is considered hydrogeologically sensitive. Any onsite wells must be designed to have double the minimum casing length required by O.Reg 903 for a total of 12 m.
- 6. Due to the lot size of the proposed development (2.7 ha), a detailed nitrate impact assessment is not required as it is considered be a low risk development.
- 7. The subject site is sufficient in size to accommodate a new sewage system and meet all the regulatory separation criteria.
- 8. A Sewage System Permit and Building Permit need to be issued prior to the commencement of construction on the proposed commercial development or the proposed septic system.
- 9. The results of the Potable Water Supply and Terrain Analysis have provided satisfactory evidence that the subject site can support the proposed commercial development with respect to water quality, quantity and sewage system placement.

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10. The construction of an on site sewage system will not affect the performance or water quality associated with a drilled well, contingent upon the on site sewage system is designed in accordance with the Ontario Building Code (i.e. properly sized sewage system and conforming to all separation distances) and a minimum 100 mm soil seal provided beneath the leaching bed/mantle area to ensure system isolation.

We trust that this satisfies your present requirements. Should you have any questions regarding this submission, please do not hesitate to contact the undersigned.

Yours truly,

PATERSON GROUP INC.

Nicholas Zulinski, P.Geo., géo.

09/28/2020
NICHOLAS ZULINSKI PRACTISING MEMBER
2359

Michael S. Killam, P.Eng.

#### Attachments:

- Eurofins Certificate of Analysis
- AquiferTest Pro Pumping Test Analysis Reports
- ☐ Langelier Saturation Index Calculation
- □ PG5306: Soil Profile and Test Data Logs
- Paterson Drawing PG5306-1 Test Hole Location Plan
- ☐ Paterson Drawing PH4089-1 Site Plan

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	ne No. (inc. area		ne of Well Te			eatico.ca First Name)	in	formation	LY M M	18		WHO MAN AND TAXABLE	019	
84383	82170 an's Licence No.	Signature	Hogar of Technician	n, Dan	tractor Dat	e Submitted		Yes Date Wo		Ja				
T305		In	<u> </u>	2	Y	Y 2020 MAN D	A A	No YY	120 M PABO	20	Received			
0506E (2020/06	6) © Queen's P	rinter for Ontari	0, 2020)			Ministry's Co	yac							

Onta	ario 🕅	Ministry Conserv	of the Env		Well	Tag#:A29	534	42 Below)	Regulation	903 (			Record
Measure	ments record	ded in:	Metric 7	mperial	<u> </u>	A295342		4 0			Page	)	of
Well Ox First Nam	wner's Info 1e	ecesso essentia recarista a	Last Nesse/	Oii'				E-mail Address				☐ Well (	Constructed
Mailing A	ddress (Stree	t Number/Na	me)					Province	Postal Code		Tolonhone		ell Owner
IVIC												). (IIIC.	area code)
Well Lo	as consider that and	(Ott N				T. I.			T				
	of Well Location 23 Hawi			)		Township Gloucester			Lot 27		Concessio	n	
County/Di	istrict/Municip	ality	AT-12 T			City/Town/Village			-1	Provi	nce ario	Postal	Code
UTM Coo	ttawa Ca rdinates Zone	ANCION E   Easting	1	lorthing		Ottawa Municipal Plan and St	ıblot Nu	ımber		Other		Ш	
		8 456		<u> </u>		4M-1388 ord (see instructions of		1 60 6 X		P:	arts 2.3	4	
General (	The Property of the Party of th	PARTICIPATION CONTACTOR PROPERTY.	mon Materia	Fernanda Managara Annara A	PARTICIPATION OF THE PARTICIPA	ther Materials	i ine ba	Control of the Contro	ral Description			Dep	th (ntitt)
			S	andy	Till	→ Bould	iers					From '	8 (
Grey	,			estone					····			6′	45′
Grey	/ & White		San	dstone								45 ′	80 ′
Grey	∕& White		San	dstone								60′	96′
Grey	/ & White		San	dstone								96 ′	153 ′
Grey	/ & White		San	dstone								153′	159 ′
-													
			in a second		NAME OF THE PROPERTY OF	AY	See				Valuation National Confession	Control of the Alice	
Depth S	Set at (m/ft)>	-	Annula Type of Se	alant Used		Volume Placed	Af	ter test of well yield, v	tesults of We vater was:	241121124222	d Testing aw Down	Re	covery
40 '	30 '	Nestr	(Material a sement	nd Type)		(m\(402)) 9.36		Clear and sand from Other, specify		Time (min)	Water Leve (m/ft)	Time \	Vater Level (m/ft)
30 ′	0'		nite slum	,	:	15.8	11	oumping discontinued	<b>Not teste</b> I, give reason:	Static Level	27'5'	1: 1	32.8 "
	-	Delito	ince sidiri	•		10.6	$-\parallel$	$\times$		1	29	1	29
<u> </u>		1.					_  Pu	mp intake set at (n	<b>&gt;</b>	2	29.2	2 2	27.5
FILE PARKET AND ADDRESS OF THE PARKET AND AD		Section Assumed	Outro in forth in water man	104 control (104 to 105 to	2004755025000			140 mping rate (I/min Æ	אלולות	3	29.3	3	27.5
Met ☐ Cable To	hod of Con	struction  Diamond	. □ Pu	blic	Well Us	Management and and action for a service of the serv		20		4	29.4	4	27.5
	Conventional)	☐ Jetting ☐ Driving	<b>X</b> 00	mestic estock	☐ Municipal	al Dewaterin	9	ration of pumping hrs + n mi	n	5	29.5		27.5
Boring		☐ Digging	☐ Imi	gation	_	& Air Conditioning	, II	al water level end of		10	30.1	+	27.5
Air percu			_       Ind	lustrial ner, specify _			lf fl	32/8 // owing give rate (I/min.	(CDM)	15	30.5	1 1	27.5
100,000	Con		COLUMN TRANSPORTATION	Comment of the contract of the		Status of Well		X		20	30.8		27.5
Inside Diameter (cm/n)		OR Material , Fibreglass, lastic, Steel)	Wall Thickness	Depth From	ı(m∭ED) Š I To	Water Supply  Replacement Well	Re	commended pump d	epth (m/##)	25	31	25	27.5
/ 11 11	Steel	iastic, Steel)	.188	+2'	401	☐ Test Hole ☐ Recharge Well	Re	100 / commended pump ra	ate	30	31.3	<del></del>	27.5
6/4"	Marshall and	1111	.100	100		Dewatering Well	- 11	nin/ <b>@2M)</b> 20		40	31.9	-	27.5
_6"	Open I	TOTE	<u> </u>	40'	159/	Observation and/or Monitoring Hole	We	ell production (I/min/@ 20	2004)	49.75	<u> Santar da Ala</u>	egotatiba is	9879 - S. 200 (5-7)
						Alteration (Construction)		infected?		50	32.3	-	27.5 27.5
		struction Re	- 4 6			Abandoned, Insufficient Supply		Yes □ No	10	60	32.8	60	27.5
Outside	Cons	T		Depth		Abandoned, Poor Water Quality	Ple	ase provide a map	Map of We below followin	n Loca g instru	ctions on th	ne back.	(N4
Diameter (cm/in)	(Plastic, Galva	anized, Steel)	Slot No.	From	То	Abandoned, other, specify		;				(	
						Other, specify	-	\					1
						Guier, opeony		#5123 HANTHOR ROAD				,	<i>a.</i>
Water found	d at Depth K	Water Deta	MANA MANAGER AND STREET	VI (ptooted		ole Diameter h (mfb) Diameter		来らるろ	NE			Str	A .
	_	☐Other, spec	_	Unitested	From	To (cm(D)		HOR	10			ZX	
Water found		ind of Water:		ntested		01 40,934	<u>-</u>    {	HAW!	<u> </u>	ر ر		5	
Water found		Other, specind of Water:		Intested		40 ' 159 ' 6"	_	ROAD	150	F	5	G	
134 <sub>m</sub>		Other, spec		/ <u>`</u>			╝	1	1.*		_/^		
Business Na	Wel ame of Well C	l Contractor	r and Well	Technician	Andread Street, Street	on I Contractor's Licence No			K	•	6 <del>1</del> 1		
Air Ro	ock Drilling	g Co. Ltd.				7681	_		,				
Business Ad	dress (Street Franktown	Number/Nar	ne)		Mur	rieipality Richmond	Con	ments: 1 HP - 20 GP	M SET Ø	100 F	т		
Province ON		tal Code KDA, 2Z0,	Business	E-mail Addr	ess (@symp	ation ca	╠						
	ne No. (inc. are		ne of Well Te				- infor	mation i	kage Delivered	23	AND PROPERTY OF A PROPERTY OF A	ry Use 0	OF ZANGOT LAND TO WOOD TO THE
61 38 38	32170		Hogar	, Dan		,	deliv	D-4- 10/	k Completed	28	e e	344	069
vveil Technicia	n's Licence No	o. Signature o	ot Technician	and/or Con	tractor Date	A   A   A   W   W   D   D			20 08 YMMD	24	Received		
0506E (2020/06	6) © Queen's I	Printer for Ontari	o, 2020		1,1	Ministry's Copy		1 1 1 1	Tr Initial D		ecelVed.		

UTM /18 2 41516141010 E 9 R 501/16181710 N Elev. 9 R 0121910 The Well Drillers Act Basin | 2 | 5 | | | | GEOLOGICAL BRANCH Department of Mines, Province of Ontario Water Well Record CARLETON Township, Village, Town or City Glovcesle Le1151177 excluding pump)..... (month) Pipe and Casing Record Pumping Test Date..... Casing diameter(s).... Length(s) of casing(s)... Type of screen..... Pumping rate. 8.6P/7..... Duration of test. 3.6. MIN. Distance from top of screen to ground level. 9. 5.72. Distance from cylinder or bowls to ground level..... Is well a gravel-wall type?..... Water Record Depth(s) to Water Horizon(s) Kind (fresh or mineral)..... Quality (hard, soft, contains iron, sulphur, etc.)...hard..... Fresh For what purpose(s) is the water to be used?...Facing. 50 pply..... How far is well from possible source of contamination?... 25 What is the source of contamination?.... Caw. .. 57.9.b./e... Enclose a copy of any mineral analysis that has been made of water...... Well Log Location of Well From То Overburden and Bedrock Record Previous we) 2.7.It. 0 ft. In diagram below show distances of well from road and lot line. In-57' pao dicate north by arrow. 1/4/Miles Surver freed · · Address. 18177MES S.T. Name of Driller. M. REWIZULD. Address. Date.....Licence Number.... Signature of Licensee FORM 5

# The Ontario Water Resources Act WATER WELL RECORD

Ontario  1. PRINT ONLY IN SPACES PROVIDED 2. CHECK © CORRECT BOX WHERE APPLICABLE  TOWNSHIP, BOROUGH CITY TOWN VILLAGE  Ottawa Carleton  OWNER (SURNAME FIRST)  Beaver Road Builders Ltd.  P.O. Box 4208 st. "E" Ottawa, Ontario KIS 5B2  ONTARIO BOX 12 P.O. Box 4208 st. "E" Ottawa, Ontario KIS 5B2  ONTARIO BOX 12 P.O. BOX 13 P.O. BOX 14 P.O. BOX 15 P.O. BO	ETC LOT 25-27  DATE COMPLETED 44-53
Ottawa Carleton  OWNER (SURNAME FIRST)  Beaver Road Builders Ltd.  P.O. Box 4208 st. "E" Ottawa, Ontario Kls 5B2  OWNER (SURNAME FIRST)  P.O. Box 4208 st. "E" Ottawa, Ontario Kls 5B2  OWNER (SURNAME FIRST)  RC BASIN CODE  OWNER (SURNAME FIRST)  P.O. Box 4208 st. "E" Ottawa, Ontario Kls 5B2	26
Beaver Road Builders Ltd.  P.O. Box 4208 st. "E" Ottawa, Ontario Kls 5B2	DATE COMPLETED
ZONE EASTING NORTHING RC ELEVATION RC BASIN CODE  1 T	DAY 19 MO 4 YR 93
1 2 M 10 12 17 18 24 25 26 30 31	111 14
LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)	47
MOST CENSON DESCRIPTION	DEPTH - FEET
COMMON MATERIAL	FROM TO
Brown Sandy Clay Broken Rock Fill	0 9
Gray Hardpan Boulders	9 15
Gray Limestone Soft	15 33
White & Gray Sandstone Hard	33 135
31 [,,,],,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	<u>▗▐▗</u> ▗▗ ▗▕▕▎▗▗▗┆▍╻╽╻╿╻┃
1 2 10 14 15 21 21 32 43 54 Superior of Defining	31-33 DIAMETER 34-38 LENGTH 39-40
WATER FOUND KIND OF WATER INSIDE WALL DEPTH - FEET	INCHES FEET    DEPTH TO TOP
AT - FEEL INCRES INCRES FROM 10 O MATERIAL AND TITE	OF SCREEN
56   GALVANIZED   3   CONCRETE   61   PLUGGIN	G & SEALING RECORD
2 SALTY 6 GAS 5 OPLASTIC ONDINGELAL SEEL I	MATERIAL AND TYPE (CEMENT GROUT)
2   SALTY 6   GAS   C 1 /04   CONCRETE   21   75   10-13   12-17	
25-28 1 FRESH 3 SULPHUR 2 28 27:30 18-21 22:25 2 1 SALTY 6 DESE	routed - Cement (18)
30-33 1 FRESH 4 SULPHUR 34 0 6 4 GOPEN HOLE 75 135	
PUMPING TEST METHOD 16 PUMPING RATE 15-14 DURATION OF PUMPING LOCATION C	F WELL
1 GEPUMP : BAILER 15-20 GPN 1 HOURS 17-13	
STATIC WATER LEVEL  BY A LOT LINE INDICATE NORTH BY A  LEVEL PHINDING  CARREST COVERY  LOT LINE INDICATE NORTH BY A	
26-28 29-31 32-34 35-37	
	<u>Kg</u> .
ST FEET 130	
SHALLOW TO DEEP SETTING 125 FEET PARE 5 GPM	c _
FINAL STATE SUPPLY S ABANDONED, INSUFFICIENT SUPPLY	est well for
FINAL STATUS    Mater Supply   Grandoned, Insufficient Supply   Grandoned Poor Quality   Grandon	est well for opposed Industri
OF WELL 1 TEST HOLE 7 UNFINISHED 4 RECHARGE WELL DEWATERING	0 posed -
55-55   Gromestic 5   COMMERCIAL 2   STOCK 6   MUNICIPAL	rk.
USE   Industrial   Cooling or air conditioning	
, , , , , , , , , , , , , , , , , , ,	
METHOD    CABLE TOOL   6   BORING	
CONSTRUCTION  Output	130025
NAME OF WELL CONTRACTOR WELL CONTRACTOR'S DATA 58 CONTRACTOR 59-62	DATE RECEIVED 63 68 80
LICENCE NUMBER	MAY 0 6 1993
15.1	
P.O. Box 490 Stittsville, Ontario K2S 1A6 NAME OF WELL TECHNICIAN'S LICENCE NUMBER WELL TECHNICIAN'S LICENCE NUMBER WELL TECHNICIAN'S LICENCE NUMBER	
S. Miller  Signature of technician/contractor  Submission date  Submission date	
MINISTRY OF THE ENVIRONMENT COPY	FORM NO. 0506 (11/86) FORM S



The Ontario Water Resources Act

### WATER WELL RECORD

Ontario	1. PRINT ONLY IN :	SPACES PROVIDED  ECT BOX WHERE APPLICABLE	1527	383 NUMICIFO 2 15.C	N. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
COUNTY OR DISTRICT	_	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE		CON , BLOCK, TRACT, SURVEY ETC	LOT 25-27 26
			#E# Obb	tawa, Ontario KlS 5B2	
		Box 4208 stn.		RC BASIN CODE H	
	₩ 16 12 LC	OG OF OVERBURDEN AND BEDRO		SIALS (SEE INSTRUCTIONS)	47
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS		GENERAL DESCRIPTION	DEPTH - FEET FROM TO
Brown	Sand	Stone			0 5
Gray	Hardpan	Boulders			5 28
Gray	Sandstone			Hard	28 100
		·			
31   111	<u>.                                    </u>	<u>                                     </u>	1,,,,		<u> </u>
32			43		
	TER RECORD	51 CASING & OPEN HOLE	RECORD.	SIZE (5) OF OPENING 31-33 DIAM	
WATER FOUND AT - FEET	KIND OF WATER  14  FRESH 3 DSULPHUR	DIAM MATERIAL THICKNESS	RUM TO	MATERIAL AND TYPE	DEPTH TO TOP 41-44 30 OF SCREEN
28	SALTY 4   MINERALS 6   GAS   19   FRESH 3   SULPHUR   19	6 1/4 2 STEEL -188 3 CONCRETE COPEN HOLE	0 39	61 PLUGGING & SEA	LING RECORD
98 7	SALTY 6 GAS	5 □ PLASTIC 19 19 1 □ STEEL	20-		CEMENT CROUT
2 0	SALTY 6 GAS	5 15   2 GALVANIZED 3 GONCRETE 4 POPEN HOLE 5 PLASTIC	39 100	37.5 0 Cement	- Grouted
2 [	SALTY 6 GAS	F625 1 □STEEL 26 2 □ GALVANIZED 3 □ CONCRETE	27-	26-29 30-33 40	
	SALTY 6 GAS	4 OPEN HOLE 5 OPLASTIC		35.53	
71 PUMPING TEST ME		10-14 DURATION OF PUMPING  15-16 17-18 15-16 17-18 15-16 17-18 15-16 17-18		LOCATION OF WEL	
STATIC LEVEL	PUMPING	EVELS DURING PUMPING PECOVERY		DIAGRAM BELOW SHOW DISTANCES OF WELL IT LINE INDICATE NORTH BY ARROW.	FROM ROAD AND
00 1 7 6 8	26-2	· · · · · · · · · · · · · · · · · · ·		Rideau Rd	
IF FLOWING. GIVE RATE  RECOMMENDED PU	38-41 PUMP INTAKE			Rideau Rd 380 meters	
RECOMMENDED PU	PUMP	D 43-45 RECOMMENDED 46-49 PUMPING		<u>}</u>	
IQ-53	W TODEEP SETTING	50 FEET RATE 5 GPM	Red	1,50	) meters
FINAL	WATER SUPPLY Description wei	S ABANDONED, INSUFFICIENT SUPPLY LL G ABANDONED POOR QUALITY	ا م	!	
STATUS OF WELL	3   TEST HOLE 4   RECHARGE WELL	7 UNFINISHED  DEWATERING		<b>t</b>	·
WATER	1 DOMESTIC 2 STOCK 3 IRRIGATION	5 COMMERCIAL 6 MUNICIPAL 7 PUBLIC SUPPLY	cw Progr	×	ell
USE	4   INDUSTRIAL   OTHER	Cooling or air conditioning     Not used	1	× res	*2
METHOD	57 CABLE TOOL	6 ☐ BORING		•	
OF CONSTRUCTI	2   ROTARY (CONVENT) 3   ROTARY (REVERSE				125046
	5 AIR PERCUSSION	☐ DIGGING ☐ OTHER	DRILLERS REM		135946
Capital	CONTRACTOR  Water Supply I	LICENCE NUMBER	SOURCE		2 1 1993 """
151		Ontario K25 1A6 WELL TECHNICIAN'S	SE	NSPECTION INSPECTOR	
S.Mille	er/T. Harrison	T0097/T2251	REMARKS		
hu	MOW (	DAY 28 MO 8 YR 23	OFFICE		
	OF THE ENVIRON		<u> </u>	F	ORM NO. 0506 (11/86) FORM 9



The Ontario Water Resources Act

## WATER WELL RECORD

		SPACES PROVIDED RECT BOX WHERE APPLI		1527	384 <u>[</u>	15002	ÇOY.		166
Ottawa Carlot	ton	TOWNSHIP, BORO	Gloucester		CON BLOC	K. TRACT SURVEY E	TC	L	26
			Box 4208 st		un Ontario	C	DATE COMPLETE	мо 8	1.53 
			NG	RC. ELEVATION		N CODE	"   .	"" . I	IV 1V
1 2 10	12 L(	OG OF OVERBL	JRDEN AND BED	ROCK MATERI	ALS (SEE INSTRI	ICTIONS			47
GENERAL COLOUR COM	MOST MON MATERIAL		HER MATERIALS		GENERAL DE			DEPTH FROM	
Gray & White	Sandstone				Hard			0	100
									100
	<del></del>								
								.	
	<u> </u>								
31	<b>1</b> 1 1	1 1 1 1 1 1	111						
32	<del>┇┋</del> ┇╸	<del>                                     </del>	<u></u>	<u> </u>					
41 WATER RE	CORD	51 CASIN	IG & OPEN HOL	E RECORD	\$12E-51 OF OF	PENING 31-33	65 DIAMETER	34-38 LEI	75 80 NGTH 39-40
10.13	WATER	INSIDE DIAM MATER INCHES	WALL THICKNESS INCHES	DEPTH - FEET FROM TO	C MATERIAL AN	ID TYPE		INCHES	FEET 41-44 30
30 FRESH	3 □SULPHUR 4 □ MINERALS 6 □ GAS	6 1/4 1 STEEL	12 -188	0 22"	S		OF SC		FEET
84 2 SALTY	3 □SULPHUR 4 □ MINERALS 6 □ GAS	3 □ CONCR 4 □ OPEN I 5 □ PLASTI	HOLE	4,.41		PLUGGING &	SEALING	RECOR	ID
Z SALTY	4   MINERALS 6   GAS	1   STEEL   2   GALVA! 6 1/16   GONCR	ETE	20-23	FROM 10-13		RIAL AND TYPE	(CEMENT LEAD PACE	
I	3 □SULPHUR 29 4 □ MINERALS 6 □ GAS	5 1 □ STEEL	C 26	22 100	20 8 8 18-21	11	ited cen	nebb (	3)
	3 □SULPHUR 34 0 4 □MINERALS 6 □GAS	2 □ GALVAN 3 □ CONCR 4 □ OPEN 3 5 □ PLASTN	ETE		26-29	30-33 80			
71 PUMPING TEST METHOD	10 PUMPING RATE	ĺ	ON OF PUMPING  15-16 17-11		LOCA	TION OF	WELL		
STATIC WATER LEVEL LEVEL	VEL 25 WATER LE	20 GPM 1	HOURS MIN	in Di	AGRAM BELOW SHO	OW DISTANCES OF	WELL FROM	ROAD AND	,
PUMPING	G 22-24 15 MINUTES 26-28		RECOVERY MINUTES 60 MINUTES 32-34 35-3	LOT		north by arrow			-
	FEET 23 6 27		4'4" 24'4!	.]	Fige	CO RORD	·	<u> </u>	
IF FLOWING. GIVE RATE  RECOMMENDED PUMP TYPE	GPM RECOMMENDED	40	CLEAR 2 CLOUDY					1	
SHALLOW THE DEEP	PUMP	50 FEET RATE						i	
EINIAI SI 1 G	WATER SUPPLY							1	
STATUS ;	OBSERVATION WELL TEST HOLE							12	50 cs
55-56	DOMESTIC	DEWATERING		£ 5		•		1	v.
WATER 3	STOCK IRRIGATION INDUSTRIAL	<ul> <li>MUNICIPAL</li> <li>PUBLIC SUPPLY</li> <li>COOLING OR AIR</li> </ul>		Hawthorne				i	
	OTHER		NOT USED	Ha Ha				<b>y</b>	
METHOD 12 -	CABLE TOOL ROTARY (CONVENTION		MOND			W.		^	
CONSTRUCTION • 🗖	ROTARY (REVERSE) ROTARY (AIR) AIR PERCUSSION	8 □ JET 9 □ DRI □ □ G			_	\$	•	135	944
NAME OF WELL CONTRACTOR			WELL CONTRACTOR'S	DRILLERS REMARK		R 59-62 DATE R	ECEIVED		63-69 80
Capital Water	Supply Lt	d.	1558	SOURCE OF INSPEC	58 CONTRACTO 15	58 DATE R	SEP 21	1993	
Capital Water ADDRESS  Box 490 Stit NAME OF WELL TECHNICIAN  S. Miller/T. SIGNATURE OF TECHNICIAN	tsville, C	Ontario K2	I WELL IECHNICIANS	M S REMARKS					
S. Miller/T.	Harrison	SUBMISSION E	T0097/T2251	OFFICE					ŀ
Moran	<del></del>	DAY _/ 8	_	9					
MINISTRY OF THE	<b>ENVIRONMI</b>	ENT COPY					FORM NO	0506 (11/8	REVEORM O

- VI Or	ntario	Ministry of	Well Tag Number (P	ace sticker and p	print number below)		Well Record
		the Environment	1018	3916		Regulation 903 Onta	rio Water Resources Act
Instructions For use i	n the <b>Provi</b> n	ce of Ontario only. Th	is document is a per	manent <b>lea</b>	j <b>al</b> document. F		page of erence.
All Section     Question	ons <b>must</b> be is regarding (	completed in full to avo	old delays in process tion can be directed t	ing. Further o the Wate	r instructions an	nd explanations are available ment Coordinator at 416-2	on the back of this form
Please p	rint clearly in	blue or black ink only.				Ministry Use Only	LOT
Well Owner	's Informati	on and Location of \	Vell Intormation	MON		ON S	E Strong LOT   St. St. St.
45	OTTA	WA CAPLETO	N	RI	DUCES	TER D	Contacgolori
RR#/Street Nur	mber/Name	0 . ~		City/Town/\	/illage	Site/Compartment	t/Block/Tract etc.
GPS Reading	NAD 8   3	Zone Easting 298	Northing 5016953	Unit Make/I		e of Operation: Undifferentia	
General Colour		Bedrock Materials (	Other Materials		Genera	al Description	Depth Metres
C0-1	SPAUE	C + EARTH	Ł				0 1.21
	NHITE IMEST	SANDSTON ONE WIG	VE REY SAND	STON	<del></del>	;	35,05
					T PROPERTY NAMED AND ADDRESS OF THE PROPERTY NAMED ADDRESS OF THE PROPERTY NAMED AND ADDRESS OF THE PROPERTY NAMED AND ADDRESS OF THE PROPERTY NAMED AND ADDRESS OF THE PROPERTY NAMED ADDRESS OF THE PROPERTY NAMED AND ADDRESS OF THE PROPERTY NAM	A.	
		<u> </u>			7000 (AR 201A)		
	iameter etres Diamet	er Inside	Construction Rec	ord Depth	Metres	Test of Wo	ell Yield w Down Recovery
From 1	Centimet			From	To	Sublump Time V	Vater Level Time Water Level Metres min Metres
		Steel	Casing Fibreglass			Pump intake set at - (metres) 4 Level Pumping rate - 1	5.26 1 14.62
Water	Record	Plastic Galvanize	Concrete	0	6.70		5.31 2 4.62
Water found	Kind of Water	Steel	Fibreglass			hrs + min Final water level a	5.35 3 4.68
Gas S	alty 5 Miner	Galvanize	d			of puniping, metres  Recommended pump 4	5.39 4 4,62
\$7.79 □F	resh Sulphi	ur   Plastic				type. ☐Shallow Deep	5.42 5 4.51
	resh Sulph		Screen			Recommended pump 10	5.57 10 14.44
Other:	alty Miner	diam Steel	<del>-</del>			If flowing give rate - 20	5.64 15 14.36 5.69 20 4.31
After test of well y		Galvanize				lucu, give issasori.	5.72 25 (4.27) 5.74 30 (4.23)
Chlorinated Y		Open hole	No Casing or Scr	109	42,67	50 5	3.78 40 14.20 5.82 50 14.18
	Plugging and	Sealing Record		pandonment	140,	Location of Well	5.85 60 14.18
Depth set at - Metr	iviaterial and	type (bentonite slurry, neat cel	(cubic	e Placed metres)	In diagram below Indicate north by	show distances of well from road arrow.	, lot line, and building.
0.0	NET	- FINEINI SILI	EN .I.	26.00			2
					3500	RIDEAURAD	
		Method of Construction					Rolf
Cable Tool	∏Rota	ry (air) 🔲 D	iamond	Digging Other	46-11-11-11-11-11-11-11-11-11-11-11-11-11	1	Marketter
Rotary (reverse	1		riving	Cuici		.35n'	
Domestic Stock	☐ Indu	strial P	ublic Supply  ot used —	Other		<b>3</b>	
☐ Irrigation	Muni	Final Status of Well	ooling & air conditioning		Audit No. <b>Z</b>	19099 Date Well C	2004 10 37
Mater Supply ☐ Observation we ☐ Test Hole		ed, insufficient supply	nfinished Abando ewatering eplacement well	ned, (Other)	Was the well ow package delivered		about 10 28
Name of Well Cont	Well C	ontractor/Technician In		icence No.	Data Source	Ministry Use Only Contractor	
Business Address	street name, nu	LING CO. LT	DIMA		Date Received	YYYY MM DD Date of Insp	1119 ection YYYY MM DD
Name of Well Tech	- T-	ACM MOND ON	Well Technician's I	icence No.	NOV Remarks	2 6 2004  Well Record	
Signature of Techr	nician/Contracts		Date Submitted YYYY	11/1/1/6		15	35203
0506E (09/03)		Contractor's Cor	py Ministry's Copy		ner's Copy 🔲		est disponible en français
			·	ļ			

Ministry of the Environment

Measurements recorded in: 💢 Metric 🗌 Imperial

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

A068335 A 068335

Well Record Regulation 903 O

ntario	Water	Resources	Act

TW #5	- Ride		pernvame)		Ci	Glouce			26	Provinc	<sub>se</sub> 6	Postal	Code
Ottowa										Onta	rio		
Ottawa UTM Coordina				thing		Glouce unicipal Plan	and Sublo	t Number		Other			
Overburder	3 1 8 n and Bed			0 1 6 8 ment Sealin		d (see instruc	tions on the	back of this form)				10.7	
General Col	our	Most Commo	on Material		Othe	r Materials		(	General Description		From	th (m/ft) To	
Brown		Soil		Sto	ones			Fill				0	1.21
Gray		Sandy So	i1	Sto	ones			Wet				.21	3.96
Gray		Sandstone	е					Very Ha	ırd			3.96	29.86
100 100	1811-01-01		Annular		0544111	06601111		************	Results of We	-	d Testing		ecovery
Depth Set From	t at ( <i>m/ft)</i> To		Type of Seal (Material and			Volume (m³)		After test of well  Clear and s	sand free	Time	Water Leve	Time	Water Level
12.80	12.80 O Grouted Cement						3	Other, spec	ontinued, give reason:	(min) Static	(m/ft)	(min)	(m/ft)
								In paniping access		Level 1	6.85	1	0.07
								Pump intake se	et at (m/ft)	2	8.03 8.35	2	8.97
								22.8	THE RESERVE OF THE PARTY OF THE	3		3	
Meth	od of Co	nstruction		MULLAN	Well Us			Pumping rate (6		4	8.60	4	8.55
Cable Too		☐ Diamond ☐ Jetting	Pub	4	Commer Municipa		Not used Dewatering	Duration of pun		5	8.76	5	8.46
Rotary (R	everse)Ai	r Driving Digging	Live		Test Hol	e	Monitoring	6_ hrs +_ Final water level	end of pumping (m/ft)	100000	8.88	10	8.40
X Air percus			X Indi	ustrial	Cest W	011		9.9		15	9.20	15	8.23
Other, sp		nstruction Re			lest w		of Well	I If flowing give ra	ate (l/min-/ GPM)	20	0.10	20	0.01
Inside Diameter		e OR Material ed, Fibreglass.	Wall Thickness	Depth (		Water S     Replace			pump depth (m/ft)	25	9.49	25	8.04
(cm/in)		Plastic, Steel)	(cm/in)	From	То	Test Ho	le	22.8 Recommended		30	9.62	20	7.99
15.86	Sto	ee1	.48	+.45	12.80	Recharge Dewate		(Vmin / GPM) 45.5	5	40	9.68	40	7.93
						Observa Monitori		Well production	n (I/min / GPM)	50	9.82	50	7.84
						Alteration (Constru		Disinfected?		60	9.91	00	7.77
						Abando Insuffici	ned, ent Supply	X Yes 1	Map of W		9.99	111111	7.69
Outside		onstruction Relaterial		Depth	(m/ft)	Water 0		Please provide	a map below following		-17/2011 677 2 5 5 7 7 7 7	back.	_1
Diameter (cm/in)		alvanized, Steel)	Slot No.	From	То	Abando specify	ned, other,						7
						Other,	specify		Ride	au 1	RA		
								9				×	
Water foun	nd at Denth	Water Det Kind of Water		Y Untested		th (m/ft)	<b>Diameter</b>	8					
27.12(m	v/ft) ☐ Gas	Other, spe	ecify		From	То	(cm/in)						
		Kind of Water Other, spe		Untested	0	12.80	15.86	1 3	*				
Water foun	nd at Depth	Kind of Water	r: Fresh	Untested	12.80	29.86	15.23	1 3					
(n		Other, spe		Tachnicias	Informa	tion	Elitablish	1 8				×	#5
Business N		Il Contractor	or and well	rechniciar		ell Contractor's	Licence No.	1					
		r Supply eet Number/Na				1 5 unicipality	5 8	Comments:					
Box 49		- C. TGIIIDGIII40			S	tittsvi	11e						
Ontarion Bus. Telepho	o K	Postal Code  2 S 1 A area code) Na	6 off	T	pitalw	Ciant Manage		Well owner's information package	Date Package Deliver		Mini Audit No.		se Only
6 1 3	8 3 6	1 7 6 6	Mi/11	er. Ste	ohen			delivered	Date Work Complete	d			77+0
0 0	gian's Liceno	7 Signature	man		The state of the s	to 0 8		No	2 0 0 8 0 9	2 6	Keceiven	127716	2 2008
0506E (12/20	007)	111		V.		Ministr	у'ѕ Сору				© Queer	's Printer	for Ontario, 200

Ministry of the Environment

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

A068332 A 068332

Well Record 'ation 903 Ontario Water Resources Act

Measureme	nts reco	rded in: 💢 M	etric In	nperial								Page_		of
Well Own	er's Inf	ormation	MAGN	1111111111111		14444	MARIAN.	904044			4114			
First Name		La	ast Name / O	rganization				E-mai	Address					Constructed
Moiling Adds	rano /Stro	et Number/Nam	Orgawo	rld	M	unicipality		Provin	ce	Postal Code	1	elephone N		
_		y Drive	re j			aterloc	`		ario	N 2 V 1		519		1 1 1
Well Loca		by brive	Hillia	BHANA	TOTAL	aterio	MODELLINE.	One	ar io	GEOGRAPH OF	THE STATE OF THE S	HARRIST.	1113	
		tion (Street Nun	nber/Name)		То	wnship				Lot	(	Concession		
		eau Rd.				Glouces				26	Province	6	Posta	Code
County/Dist						ty/Town/Villa					Onta			
Ottawa UTM Coordin		ne Easting	No	rthing		Glouces unicipal Plar		t Number			Other			
	8 3 1													
		edrock Materia		nment Sea			ctions on the	back of this		not Description			Der	oth (m/ft)
General Co	olour	Most Comm	on Material		Othe	r Materials			Gene	ral Description			From	То
Brown		Sandy Cla	y		Boulder	s		Pac	ked				0	3.96
Gray		Sandstone	<u> </u>					Ver	y Hard				3.96	29.86
							)							
														1
					*****	LATER AND THE	*********	BACK PACK	-	Desults of M.	all Vial	d Teeting		
Depth Se	et at (m/ft)	Ber a Branch Ka	Annular Type of Sea			Volume	Placed	After test	of well yield,	Results of We water was:	The Person Name of Street, or other Designation of the Person of the Per	aw Down	F	Recovery
From	То		(Material an			(m <sup>-3</sup> )			r and sand f	ree	Time (min)	Water Leve (m/ft)		Water Leve (m/ft)
13.10	0	Grout	ed Ceme	nt		.42m <sup>3</sup>	3		r, specify	ed, give reason:	Static		(min)	(HVIII)
								ii pumpin	g discoriunide	ou, give reason.	Level	14.15		
											1	15.97	1	16.76
								Pump int	27.43	n/ft)	2	16.98	2	15.74
								Pumping	rate (I/min /	GPM)	3	17.30	3	15.20
Meth	-	Onstruction	I Put	olin	Well Use		Not used		36.4		4	17.43	4	15.
Rotary (C			X Do		Municipa		Dewatering		of pumping		5		5	
X Rotary (F	Revers¶i		Live		Test Hole		Monitoring	6 h		min of pumping (m/ft)		17.50	- 5	14.91
☐ Boring  Air percu	ission	Digging	□ Img	,	☐ Cooling 8	& Air Conditio	oning	Fillal Walk	18.40	or pumping (mm)	10	17.88	10	14.71
Other, sp			Oth	er, specify_	Test	Well_		If flowing	give rate (V	min-/ GPM)	15		15	
		onstruction R			THE PERSON NAMED IN COLUMN TWO IS NOT THE PERSON NAMED IN COLUMN TO THE PERSON NAMED IN COLUMN T		of Well				20	18.16	20	14.54
Inside Diameter	(Galvan	lole OR Material rized, Fibreglass,	Wall Thickness	From	n (m/ft)	☐ Water S		Recommended pump depth (m/ft)  22.85			25		25	]
(cm/in)	Concre	te, Plastic, Steel)	(cm/in)	FIOIII	10	Test Ho		Recommended pump rate			30	18.23	30	14.51
15.86	S	teel	.48	+.45	13.10	Recharg	-	(Vmin / G			18.26		14.47	
						Observa Monitori		Well prod	36.4 duction (I/mi)	n / GPM)	40	18.34	40	14.41
						☐ Alteration	on	Disinfecte	ad?		50	18.39	50	14.38
						(Constri	,		☐ No		60	18.41	60	14.35
	28511118	Construction R	ecord - Scre	en	anustes.	Insuffici	ent Supply	The state of		Map of W	/ell Lo		70.93	
Outside		Material			h (m/ft)	Water C	Quality	Please p	rovide a mag	below following	g instruc	tions on the l	back.	
Diameter (cm/in)	(Plastic,	Galvanized, Steel)	Slot No.	From	То	Abando specify	ned, other,							+
										Rideau	Rd.			
						Other, s	specify	11						
os com n	769 Zanista	Water De	tails		н	ole Diamet	ter	1					×	
Water four	nd at Dep	th Kind of Wate		Untested	Dept	h (m/ft)	Diameter (cm/in)	-						
		as Other, sp			From	To	1 .	Horne R						
		th Kind of Wate		Untested		13.10	15.86							
	n/ft) G	as Other, spents		Untested	13.10	29.86	15.23	ll sod	XHL	4				
		as Other, sp						11 7					×	
	7 1 7 7 7 7 7 7 7 7	Well Contract	or and Well	Technicia			REMARKS IN	1 2						
		Vell Contractor			We	Il Contractor's								
Capita Business A	IL Wat	er Supply Street Number/N	Ltd.		1 Mu	5 inicipality	5 8	Commen	ts:					
Box 49			,			tittsvi	11e							
Province		Postal Code	Busines	s E-mail Ad			110							
Ontario K 2 S 1 A 6 office@ capitalwater.ca  Bus.Telephone No. (inc. area code) Name of Well Technician (Last Name, First Name)								Well own information		Package Deliver	red	Minis Audit No.	,	se Only
							package delivered		0 8 1 0 Work Completes			. 8	4411	
6 1 3 8 3 6 1 7 6 6 Miller, Stephen Well Technician's Licence No. Signature of Technician and Jor Contractor Date Submitted						Yes				DE	cos	2000		
0 0	9	7 /	1, Ma	4	2	0081		X No	2 0	0809	2 6	Receivant		
0506E (12/20	107)		/	Y		Ministr	y's Copy					© Queen	s Printer	for Ontario, 2



Well Tad No. for Master Well (Place Sticker and/or Print Below)

A 074584

#### Master Well Record for **Cluster Well Construction**

Regulation 903 Ontario Water Resources Act

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								riw	9-40		Page	01
		er's and L	and Owner's Info			HARRINA				<b>国际企业部</b> 第		
First Name		110	() Last	Name	١.	Tomb		chuironnen	olE-			
Orgo	4001	ld La	nada Klal	CSJa	te via	Sen	بر عدد					
Mailing Add	dress (Str		/Name, RR)		unicipality			Provin		Postal Code		ne No. (inc. area code)
559	+ Po	river Re	ood	C	Htema	-		01	$\circ$	K163	NH 61 3	1811668
Location	and Co	nstruction	of the Master We	Il in the	Cluster	SHITTING	SELECTION OF THE PERSON OF THE					
			Number/Name, RR)	^	Townsh	hip				Lot ,	Conces	sion
. 1	1.1	. 71		MILL ON	ad					26:2	7	6
County/Dia	Hor	ne ku	ad at Ridu	uu FD	City/To	wn/Villag	10			0 0 1 0	Province	Postal Code
County/Dis	strict/wiun	icipality										1 ostal code
						OHau					Ontario	
UTM Coord	finates 2	Zone Eastir	· .		GPS Unit	Make	Model .		Mode of C	peration:	Undifferentiate	d Averaged
NAD	8 3	8145	6400501	618151	2 GAR	min	Etr.	04	Differen	tiated, specify_		
			Materials (see ins				rm)		N. D. S. C. C.	Hole	Details	THE PROPERTY OF THE PARTY OF TH
General		Common	Other	1	eneral	_	(Metres)	Depth	(Metres)	MINISTER STREET, SAN	Diam	eter
Colour		aterial	Materials		scription	From	То	From	То		(Centin	
							10		- 10	-	1	
Caronti	Monn	VOLUT	ine Sand + Si	1 don	SO MNIS	0	0.8	0	7.6	20		
									1.0		The state of	
Roman	Fill	- Sand	A/Silt/Clay	1grave	1	0.8	47					
Court	1111	2010	11 -11	Jun	.1.		1		-	The Internation		
Grey 113	rown	Jana	with silt	Convinc	OXYTIZA	4. 1	6.0	<b>经验</b>				
0	-	- 1					_	102228			B: 5 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
Brown	11	1-511-	ly sand, gra	wel		(e.0	7.6					
Maria Carlo	100		1 . ).	100		1.4		Maria de la compansión de		181-4		
									ALIENTERS .		er Use	
						I wast		Public			Not used	Other, specify
								Domes			Dewatering Monitoring	
			<b>医性性</b> 次 生 。					Livesto				and Kening
						-		Irrigation	on 📙 i	est Hole	Cooling & Air C	onationing
										Method of	Construction	1
								Cable	Tool	☐ Air Pe	rcussion	Digging
									(Convention	nal) Diamo	and the same of th	Boring
			CONTRACT LONGING			The State of the	154		(Reverse)	Jetting		Other, specify
						1,191		Rotary	(Air)	Driving		HSA
											Arrest - Les - Co	
								200		Statu	s of Well	
						15.46		Test H	ole	Aband	loned, Insufficien	nt Supply
	10.91							Replac	cement Well	Aband	loned, Poor Wate	er Quality
								Dewat	ering Well	Other,	specify	
								Alteral	tion (Constru	iction) Aband	loned, other, spe	ecify
			The state of the s					No Cas	ing and S	creen Used	Static W	Vater Level Test
				The same		ACTUEN .	House	Open Hole		<u> </u>	14171	
30,000 0 00	. ARTHUR	CATHER TO SERVICE	Countrios D.	talla	original contra		) # 1 mm - 1 mm -		Yes -	No		Metres
Incide Die		The second	Construction D	tails	Wall	Donth	(Metres)		TE LEVELY	Sc	creen	
Inside Dia		tool plastic	Material fibreglass, concrete,	(harinavlar	Thickness	From	To	Galvar	nized 🗀	Steel Fibr	eglass Cor	ncrete Plastic
Centime	1100) (0	hieer, prasue,	nuregiass, concrete,	garvarnzouj	Sched	-		Second Control	iameter (Ce		Slot No.	
51		PVC			40	0	3.0	Outside D	E O	murretresj	SIOT NO.	
۷. ۱		110			100	1.	0,1		5.8		10	
									Particular.	Water De	etails	
	1 214					135 6 7		Water for	und at Dep	th Kind o	of Water	
					11-10-11-11-11-11-11-11-11-11-11-11-11-1	distrib.	- 1	lı	Metres	Gas Fre	sh Salty	Sulphur Minerals
								Water for	und at Dep		of Water	
		1 14 11		Traversamental	578957.035645.1			water for				Sulphur Minerals
		Annular	Space/Abandonme	nt Sealing	Record					000		Sulpriui
Depth Set		s)	Type of Sealant				e Used	Water for	und at Dep		of Water	
From	То		(Material and Ty	pe)		(Cubic	Metres)		Metres	Gas Fre	sh Salty	Sulphur Minerals
a of	2.4	I Ba	la ita			1.1	Vac	Disinfecte	d 🗆 Voc [	TIME If no now	rido reason: Da	te Master Well Completed
D. 6	L. L	1260	Jonete			9	e Kqs	Didn'il dolo	, Dies I	grad ii no, proi		yy/mm/dd) j
								1	mila	lina li	10/ 12	m8/17/14
								19			Je I L	and Dilli
												litional Cluster Well cel of land and cluster.)
									Ils in Cluste			te Number of Cluster Well
								Total We	I O	21		og Sheets Submitted
								Total M	1 -	Proports:		
								11 .	lls on this f			
								W	Knor		5185 W 71	,
											of Well Cluster	
												no larger than legal size
7							-4		-	s are not allow		no nos Contino 44 4 (0)
								Larched	DOX TO COL	mini detalled m	ap is provided a	as per Section 11.1 (3)
											ormation conce	erning the cluster to
								the Direc	tor upon r	equest		
								Signature	of Technic	cian/Contractor	Da	te (yyyy/mm/dd)
NITE STATE OF THE PARTY OF THE	+400000	Well Cont	ractor and Well Ted	hnician I	oformation	Stallene	*********	1 13	-/	The.		2008/10/20
Business N	lame of M	Vell Contract		anneigh li	Well Cont	ractor's Lie	ence No		lell Owner	s/Land Owner		use Cluster Form
			1 1 -	1.11.		// LIC	LI /		J. OHITEI		2 3 TOOK TO C	2.2.2.2.1.01111
bear	ge D	own.n	g Sstate L	rillin	9 1	8 4	14					
	_	_	, ^									
410	Rue	Prin	cipale Gr Business E-n	envil	10-SU/-	la-Ri	Duge	JAN 1525516		Ministr	y Use Only	
	1101	Dontal Con	Duringer E p	nail Address				Audit No.	0	2007	Well Contractor	r No.
Province									BAR II'	/xu/		
					NOLO	roat	$(\alpha \alpha)$		III U	2001		
					Name First N	rne7	(0m)	Date Rec	eived /ww/	mm/dd)	Date of Inspect	ion (yyyw/mm/dd)
	one No. (ii	TOVI	BID down	cian (Last )			,(0m	Date Rec	eived (yyyy)	7000 T	Date of Inspect	ion (yyyy/mm/dd)
		10011 nc. sres code) 6469	Blo down Name of Well Techni Downin	cian (Last )	ruce			THE PARTY NAMED IN	eived (1/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2/2	2007 008	Date of Inspect	ion (yyyy/mm/dd)
	one No. (ii	10011 nc. sres code) 6469	BID down	cian (Last )	Date Sub		yy/mm/dd)	THE PARTY NAMED IN	OV 26 2	008	Date of Inspect	iion (yyyy/mm/dd)

Ministry's Copy



Ministry of the Environment

Well	Tan	No	for	Master Well	(Print Well	Tag No.)
A		7	4	584	A074	.5 84

### Cluster Well Information for Cluster Well Construction

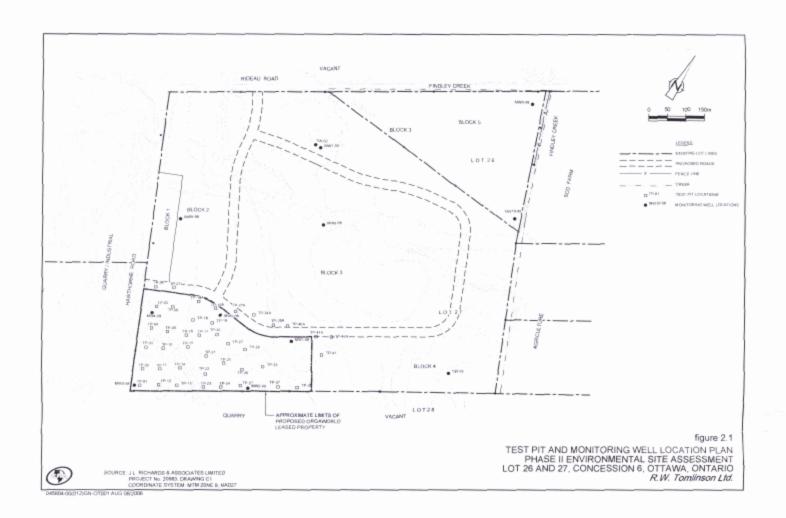
Regulation 903 Ontario Water Resources Act

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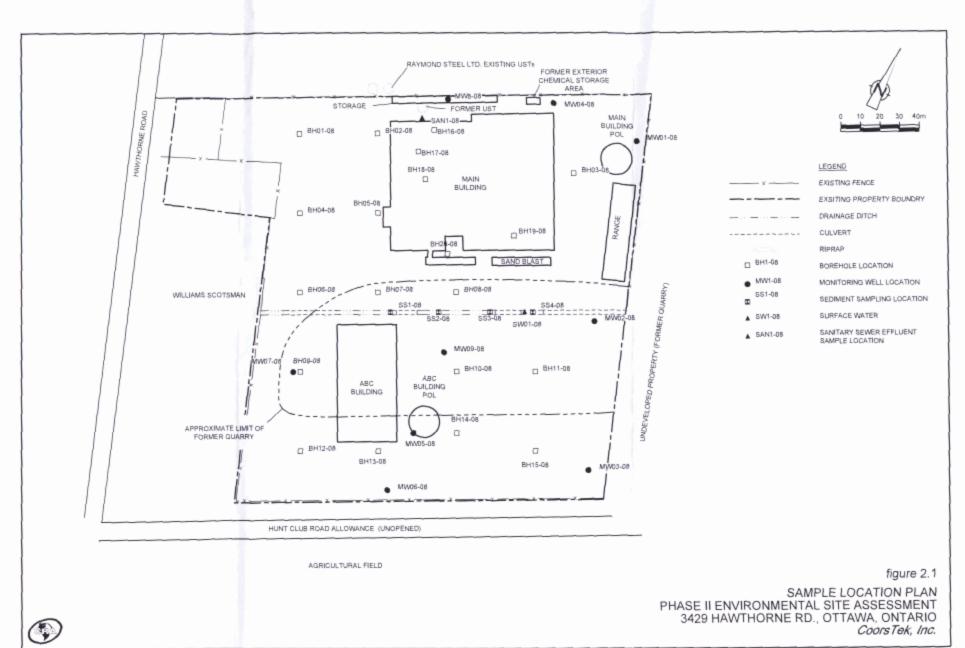
Property Owner's Information														Pro		
Orgaworld Canada F	Last N	state "	Souk	son Envikenn as Tink. Address	Mai 55	ling Addi 97- F	ress (Street No	o./Name, F	RR)		pality OHawa No. (inc. area	code)		Pro Sic		
ON40120	K 1 6	13 N		tomlinso	ne t	omlin	songroup	, com		6 1 3	3 8 2	3 1 8 6	7			
Cluster Well Information														Co upon request		
Address of Well Location (Street Number/)			Lot	127	oncessio	n T	ownship			County	//District/Mun	icipality		Signature of Technician/Contr	actor	Date (yyyy/mm/dd)
Hawthothe Road at 1.	Province		stal Code		PS Unit N	fake N	fodel	Unit Mod	le of Opera	tion Unc	differentiated	☐ Averaged				
Ottawa.	Onta	rio K	163	PM				☐ Differ	entiated, sp	pecify:				Deme Lan		2008/10/20
Well # UTM Coordinates on Sketch Zone Easting Northing		Full Depth of Hole (metres)	Hole Diameter (cm)	Method of Construction	Casing	Material	Casing Length (metres)	Screen Inte	erval (metres) To	Annular Space Sealant Used	Static Water Level (metres)	Abandonment Sealant Used		Comments		Date of Completion (yyyy/mm/dd)
muly 194568315014	0712	7.97	20	HSA	PV	C.	1.5	1.5	2.97	Benjarte	1,3					2008/07/07
2.08 1845 679951016	553	2.77	10	DiA			0.6	6.6	277		1.6		OVE	erburden from O	to 0.18	2008/07/08
13.08 184565335016	2411	17.37	10	DIA			2.13	2.13	17.37		13.2			11 4 0	to 0.30	2008/09
4.08 1845647145016	604	2.84	10/20	HSA/MA			1.22	1.22	2.8		0.7					2008/07/08
5-08 184565985016	a675	2.77	20	HSA			1.5	1.5	2.77		1.0		- 3	50 10 20 20		2008/07/67
901 184566225015	12/19	4.98	20	HSA			3.0	3.0	le.10		3.6		j.			2008/07/14
8-08/84566875015	7036	4.72	20	HSA			3.0	3.0	4.2		3.0					2008/07/15
908 184570865015	7625	3.66	20	HSA			1.5	1.5	3.0		1.7					2008/07/15
MW 184572045017	1303	2.90	20	HSA	4		1.37	1.37	2.90	4	1.6		3			2008/07/15
Well Contractor and Well Techni	ician Info	ormation				1100			STATE OF THE					Date 1st Well in Cluster Constructe	Date Last Well in	n Cluster Constructed
Business Name of Well Contractor	usiness Name of Well Contractor Business Address (Street Number/Name, RR) Municipality Province												4000	011.5		
Deorge Downing Esta Postal Code Business Te	ostal Code Business Telephone No. (Inc. and a code) Well Contractor's Licence No. Business E-mail Address										Ministry Use Only  Date Received (yyyy/mm/dd)  Date Inspected (yyyy/mm/dd)					
JOV11808119			469	1 8	4 1				Xplor	net, Co	$\sim$			Date Received (yyyy/mm/dd) NOV 2 6 2008	Date mapeole	, (3), (1), (1), (1), (1), (1), (1), (1), (1
Name of Well Technician (First Name, Last	t Name)			Well Technician		No. Dat	e Submitted (y	990/mm/dd)	Signature	of Technician	) .			Audit No. 01984	Remarks	207
Bruce Downing				2	1 -	3 2	2   01   800	-0	Du	ere De	en	7		C 01904	mo2	ter for Ontario, 2006

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NOV 26 2008



053403-04(007)GN-OT001 AUG 20/2008

Ministry of the Environment

Measurements recorded in: X Metric Imperial

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

A 082844 ion 903 Ontario Water Resources Act A082844

Well Record

Well Ow First Name	mer's Info		ast Name /	Omonization		HHHH		Email	Addenna					
First Name	3		Orgawo					E-mail /	Address					Constructed II Owner
		t Number/Na	me)			funicipality		Provino		Postal Code		Telephone N		
THE RESERVE OF THE PARTY OF THE	A STATE OF THE PARTY OF THE PAR	Colonnad	e Road			Ottawa		Onta	rio	K2E 7J4		613 727	051	0
Well Loc Address of		on (Street Nu	mber/Name)		T	ownship	BBILLIBB	auman		Lot		Concession		
		rne Road				Glouces	ster			27			6	
The state of the s	strict/Munici					ity/Town/Vil					Provin		Postal	Code
	Carle		. N	orthing		Gloucester Municipal Plan and Sublot Number					Ont	агто		
	8 3 1 8		Bar 15 17 11 19 9	5016752										
		drock Materi				rd (see instr	uctions on the	back of this fo	orm)					
General C	Colour	Most Comr	non Materia		Oth	er Materials			General Description				From	th ( <i>m/ft)</i> To
Brown		Soil St	ones						Packe	ed			0	4.26
Grey &	White	Sandsto	ne						Very	Hard			4.26	29.86
CIANA SECON	A SECURIOR S	434345434443	Annular	Snace	100 100 100		17101111111111111111111111111111111111			Results of We	II Viol	d Taeting		
	et at (m/ft)		Type of Sea	alant Used	0.0000000000000000000000000000000000000		e Placed	After test of			-	aw Down	R	ecovery
From						1	3/ft3)	X Clear a ☐ Other,	and sand fr	ee	Time (min)	Water Level (m/lt)	Time (min)	Water Level (m/ft)
6.40	6.40 0 Grouted Cement					.21m	ادا			d, give reason:	Static			
											Level	4.41	1	
								Pump intak	e set at (m	1/ft)		5.20	1	6.07
									24.38	***	2	5.57	2	5.68
Meti	hod of Co	nstruction			Well Us	e		Pumping ra		GPM)	3	5.78	3	5.46
☐ Cable Tool ☐ Diamond ☐ Public ☐ Comme					Not used	Duration of	27.3		4	5.94	4	5.33		
Rotary (I	Conventional Reveloper	) Jetting  Driving		estock	☐ Municips ☐ Test Hol		Dewatering Monitoring	6 hrs		nin	5	6.05	5	5.25
Boring		Digging	☐ Imi	gation		& Air Condition		Final water I	level end of	pumping (m/ft)	10	6.37	10	5.01
Air percu				dustrial her, specify_					7.01		15	100		
LONG CO.		nstruction R			SSESSES OF THE PARTY OF THE PAR	Status	of Well	If flowing gi	ve rate (Vn	nin / GPM)		6.52	15	4.89
Inside Diameter	Open Hole	e OR Material ed, Fibreglass,	Wall	The second second	n (m/ft)	₩ Water 8	Supply	Recommen	ided pump	depth (m/ft)	20	6.60	20	4.81
(cm/in)		Plastic, Steel)	Thickness (cm/in)	From	То	Replace	ement Well		24.38		25	6.68	25	4.76
15.86	St	eel	.48	+.45	6.40	Rechar	-	Recommen (Vmin / GPM		rate	30	6.72	30	4.72
					0.40	Dewate	ering Well ation and/or	Well produc	27.3	/ CPM)	40	6.81	40	4.65
							ing Hole			/ Gr INI)	50	6.86	50	4.61
						_ (Constr	uction)	Disinfected?  X Yes  No			60		60	
ENGLES FRANCISCO		anaturation D			**************	Abando Insuffici	ient Supply	W 162	INO	No 60 6.89 60 Map of Well Location				4.58
Outside		onstruction R	ecora - Scre	-	(m/ft)	Abando Water (	oned, Poor Quality	Please prov	ide a map l	below following			ack.	,
Diameter (cm/in)		Ivanized, Steel)	Slot No.	From	То		oned, other,			ORGA			7.0	J. #7
						apecity					1		_	- 1
					7	Other,	specify						'	- 1
		Water Det	taila			ala Diaman				HAWT	HOR	NE		
Water four	nd at Depth	Kind of Water		X Untested		ole Diame h (m/ft)	Diameter							
		Other, spe			From	То	(cm/in)	00		(1				
		Kind of Water		**************************************	0	6.40	15.86	A	1	A				
		Other, spe Kind of Water		Untested	6.40	29.86	15.23	18						
		Other, spe						00						
RESIDE		ell Contracto	or and Well	Technicia	n Informat	ion		0						
	lame of Well		T. 1		Wei	Contractor's								
		Supply et Number/Na			Mu	l 5	5 8	Comments:						
Box 49						tittsvi	11e	Januari No.						
Province		ostal Code		E-mail Add	ress									
Ontari		2S 1A6 area code) Na	off	ice ca	pitalwa	ter.ca		Well owner's information Date Package Delivered Ministry Use On Audit No.				Only		
613   83			liller,			irst ivame)		package delivered			2 7	Z	101	.832
Well Technic	ian's Licence	No. Signature	of Technicia	an and/or Co	ntractor Date			☐ Yes	Date W	ork Completed		ALIG	0 4	2010
0 0		7	lylin		2		0 5 2 8	X No	20	1005	2 5	Received		
0506E (12/20)	07)	17		1		Minist	ry's Copy					© Queen's	Printer fo	r Ontario, 2007

Measurements recorded in: X Metric Imperial

Well Tag No. (Place Sticker and/or Drint Bala

A082845 A 082845 Well Record On 903 Ontario Water Resources Act

-	Cinario iraici	1100001100
	Page	of

Well Ow	vner's Inf					RAMMA								
First Name	е	L		Organization				E-mail Address Well Constru						
Mailing Ad	ddress (Stre	et Number/Nar	Orgawo	orld	I.	Municipality		Provinc	0	Postal C	vla	Telephone		ell Owner
		Colonnad			"	Ottawa			ario	K2E 7		613 7		
Well Loc			a Rodd	MARKE	HHHH	occuwa.	anami.	Once	1110	RZE /	04	015 /	41 0.	010
		tion (Street Nur			Т	ownship				Lot		Concessio	n	
		thorne Ro	ad			Glouce.				2			6	
	strict/Munic					ity/Town/Vi					Provi		Posta	I Code
	dinates Zor		N	orthing		Gloucester Ontario  funicipal Plan and Sublot Number Other								
	8 3 1	The state of the s	1000 Dec 1000 Long Long Long Long Long Long Long Long	5016449		iumorpai Fi	an and Subi	ot Manipel			Othe			
		drock Materia				rd (see instr	ructions on the	e back of this fo	om)	11010101010	10000	PER STATE	0.03131	
General C	The same of the same	Most Comm	1111111111111111			er Materials	N. P. S. P. V. A. P. S.	General Description					De	oth (m/ft)
Grey		Limesto	ne					Bro	oken R	ock			0	1.52
	& White	Sandsto							y Har				1.52	29.86
orey (	Q WIIILE	: Danusto	ne					161	y mar	u			1.52	29.00
Donth S	Set at (m/ft)	9453110150	Annular Type of Sea		BHHH	Makes		After test of				Id Testing raw Down		E CHARLES
From	To		(Material ar				e Placed <sup>3</sup> /ft <sup>3</sup> )	Clear a						Recovery Water Level
6.40	0	Grouted	Cement	& Bent	onite	.254	<sub>n</sub> 3	Other,	specify		(min)	(m/ft)	(min)	(m/ft)
						125 11		If pumping o	discontinue	d, give reas	on: Statio			
											1	12.39	1	12.43
								Pump intake set at (m/ft)					2	
								24.38				12.45		12.37
Meti	thod of Co	nstruction			Well Us	е		Pumping ra		GPM)	3	12.49	3	12.33
					Commer	cial	Not used		27.3		4	12.51	4	12.31
Rotary (	(Conventiona	Jetting     Driving	and the second		Municipa Test Hol		Dewatering Monitoring	Duration of hrs		nin	5	12.54	5	12.29
Boring	(I/CVC/PE)I	Digging	-			& Air Condition	-	Final water l			v/īt) 10			
X Air percu			The state of the s	lustrial					12.87		10	12.60	10	12.22
U Otrier, s				ner, specify				If flowing giv	ve rate (I/m	nin / GPM)	15	12.65	15	12.19
Inside		e OR Material	Wall	Depth	(m/ft)	Status Water 5	of Well	Percommended nump death (m		double (m. 6	20	12.67	20	12.17
Diameter (cm/in)	(Galvaniz	ed, Fibreglass, Plastic, Steel)	Thickness (cm/in)	From	То		ement Well	Recommended pump de 24.38  Recommended pump rat (Vimin / GPM) 27.3		depth (mm	25	12.69	25	12.22
						Test Ho					1000	9979		
15.86	S	tee1	.48	+.45	6.40	Rechar	The same of the sa				30	12.71	30	12.18
						∑ Observa	ation and/or	Well produc		/ GPM)	40	12.73	40	12.13
						Monitori Alteration	ing Hole on				50	12.76	50	12.11
						(Constr	Charles of the Land of	Disinfected?  X Yes			60	12.77	60	12.09
NAME OF TAXABLE PARTY.	0	onstruction Re		CUSTOMATO	THE REAL PROPERTY.		ient Supply	LAS 103 L	140	** **			00	12.09
Outside		laterial	coru - ocre	Depth	(m/ft)	Abando Water 0		Please provi	de a map b		Well Lo	tions on the b	ack.	
Diameter (cm/in)		alvanized, Steel)	Slot No.	From	То	Abando	ned, other,	1						
						specify			00	GAWO	OIL			_ ;
						Other, a	specify		or	01700	ICLI			11
						100								
Malanta	1.10.11	Water Deta		V.		ole Diamet	_			1				
	743.16as	Kind of Water		A Untested	From	n ( <i>m/ft</i> )	Diameter (cm/in)	0				1		i
		Kind of Water		Untested	0	6.40	15.86	1				T.U	v. #	8
		Other, spec			6 10			1						1
		Kind of Water:		Untested	6.40	29.86	15.23	8	H	AWTH	ORNE			
(m	n/ft) Gas	Other, spec	ify					100	1					
Duninger N	lame of Wel	ell Contractor	and Well	Technician	4444444	1221211111		K	1					
			Ted			Contractor's			N					
	Capital Water Supply Ltd. 1 5   5   8 Business Address (Street Number/Name) Municipality							Comments:						
Box 490 Stittsville							lle	- Similarito.						
Province		ostal Code		E-mail Addre	ess									
Ontari	.0 ]	2S 1A6	off	ice@cap	pitalwa	ater.ca		Well owner's information	Date Pa	ckage Deliv	ered	Minis	try Use	Only
Bus.Telepho 613 83	one No. (inc.	area code) Nar	ne of Well T	echnician (La	st Name, F	irst Name)		package 2 0 1 0 0 5 2 6 Z 1 0 1 833						
0.000	THE PERSON NAMED IN COLUMN	No. Signature/	Tachpicia	Stepher n and/or Con	tractor Date	Submitted		Yes	Date Wo	ork Complet		-	101	.033
0 0		7 Kell	Shu		Control of the same	0 1 0 0	0 5 0 6	X No	2/0/1	005	100	ReceivaAU	G 0	4 2010
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Or	ntario Minis	try of nvironment		na No. (Place Sti A141807	nd/or Print Below)	Population 903 Ontario Water Resources						
Measureme	nts recorded in:	Metric Imperi		***************************************		7171001			Page		of	
Well Own First Name	er's Information	Last Name / Organi	zation			E-mail Address			T <sub>F</sub>	J Well (	Constructed	
1 hot rame		ORGAWORL		A LTD.						by We	ell Owner	
_	ess (Street Number/Na	~	A Parameter and the second sec	Municipality		Province	Postal Code	1		,	area code) 2056	
例5/23 Well Local	AND THE RESERVE OF THE PROPERTY OF THE PROPERT	E RD.		OTTAWA		007		791	711 3 10	<u> alal</u>	<u> </u>	
Address of V	Vell Location (Street Nu			Township		Lot Conces				sion		
SI2	3 Haw tho ict/Municipality	rne kd	1	City/Town/Village		Province				Postal Code		
County/Disti	100/Marioipanty		or an order of the state of the	OHawo			Onta	rio				
	ates Zone Easting	Northing		Municipal Plan and	d Sublo	t Number		Other				
NAD (	8   3   <b>  8   4   5   6  </b> n and Bedrock Mater		6  & 1  8  nt Sealing Reco	ord (see instructions	s on the	back of this form)						
General Co		mon Material		ner Materials			eral Description			Dep From	th ( <i>m/ft)</i>   To	
Brn	Grave	1	San	7		Hart	dry			0	.61	
Red	Fi'//					Hard,	dry +		· ·	,61	1.22	
Bal BIV	s Fill					50ft, 1	dry			.22	2.44	
Brn/B/	15 F:11	American Control of the Control of t				soft,	Satur	rate	1 6	2.44	3.66	
						•		,,				
							***************************************					
											-	
		Annular Spac					Results of We	A	Testing	Тв	ecovery	
Depth Set From	at ( <i>m/ft</i> ) To	Type of Sealant U (Material and Type		Volume Plac (m³/ft³)	ed	After test of well yield,  Clear and sand		Time	Water Leve		Water Level	
0	.31 Conci	rete/flu	shmoun t			Other, specify		(min) Static	(m/ft)	(min)	(mlft)	
.31	1.83 Ben	cent				If pumping discontinu	ed, give reason:	Level				
		ind					150	1		1		
1.02	7,00		A CANADA			Pump intake set at (	m/π)	2		2		
Methy	od of Construction		Well Us	<u> </u>		Pumping rate (Ilmin /	GPM)	3		3		
Cable Too	l Diamon		☐ Comme	ercial Not u	- 1	Duration of pumping		4		4		
Rotary (Co		☐ Domestic ☐ Livestock	☐ Municip ☐ Xest Ho		~ ;		min	5		5		
Boring	Digging	☐ Irrigation	Cooling	& Air Conditioning		Final water level end	of pumping (m/ft)	10	***************************************	10		
☐ Air percus		☐ Industrial☐ Other, spe	ecify			If flowing give rate (#	min / GPM)	15		15		
	Construction R			Status of W				20		20		
Inside Diameter	Open Hole OR Material (Galvanized, Fibreglass,	Thickness	Depth ( <i>m/ft)</i>	☐ Water Supply ☐ Replacement		Recommended pum	p depth (m/ft)	25		25		
(cm/in)	Concrete, Plastic, Steel)	(Citillity		□Xest Hole □ Recharge We		Recommended pum	p rate	30		30		
5.20	PN	,390 O	2,13	Dewatering W		(Ilmin   GPM)		40		40		
				Observation and Monitoring Hole		Well production (II/mi	n / GPM)	-		-		
				Alteration (Construction	,	Disinfected?		50		50		
			000	Abandoned,		Yes No		60	· · · · · · · · · · · · · · · · · · ·	60		
Outside		Record - Screen	Donth (m/fil	Abandoned, F Water Quality	Poor	Please provide a map	Map of We below following			oack.		
Diameter	Material (Plastic, Galvanized, Steel)	Slot No	Depth ( <i>m/ft)</i> om To	Abandoned, o		SEE M	-		01-13			
•	Pre	10 2.1	3 3.66	specify		320.	,	, , ,	01-13	,		
6.03	.,, • • • • • • • • • • • • • • • • • •	axi	3 3.00	Other, specify	,							
	Water De			lole Diameter		Torrest standards Co						
Water found	at Depth Kind of Water		ested Dep	th ( <i>mlft</i> ) Diar	neter	dance of the second sec	461 201					
	ft)		From	1 '- 1 '	n/in)							
	at Depth Kind of Wate		ested	3.66 10	.92							
	ft) Gas Other, sp. at Depth Kind of Wate		ested									
(m/i	ft)											
Businese Na	Well Contract me of Well Contractor	or and Well Tech		tion ell Contractor's Licenc	ce No.							
Strat	ta Soil Samp	•	•	7 2 4 1								
Business Add	dress (Street Number/N 2 West Beav	ame)	Road Di	unicipality	; 7 7	Comments:						
Province		Business E-ma	il Address									
Onta	rio   148 1	.CG wrec	ords@st.	ratasoil.	con	Well owner's Date F	Package Delivere	112		try Use	Only	
	ne No. (inc. area code) N 7 6 4 - 1 9 3 0 14 1	ame of Well Technic Beath				package delivered			Audit No.	C 11 C	110	
1 1 1	in's Licence No. Signatur		or Contractor Da	te Submitted	A.,	Yes Date V	Vork Completed	$\ \cdot\ $	~ H	M2 E	和\$	
36	16	$\mathcal{A}\mathcal{A}\mathcal{A}$	/ 8	OBOR		DNo 2v	7302	28	Received	- 191		
0506E (2007/12	2) © Queen's Printer for Or	ntario, 2007 🧪 🦯		Ministry's (	Copy							

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⊠ SW-3

9 TW-4 

> SHALLOW MONITORING WELL LOCATION SURFACE WATER DRAIN/DITCH/CREEK

ORGAWORLD SITE BOUNDARY

LEGEND

TOMLINSON HAWTHORNE INDUSTRIAL PARK SUBDIVISION BOUNDARY

SO-SWIN \*

ACCESSIBLE (SEE NOTE BELOW)

MONITORING WELL LOCATIONS NO LONGER SURFACE WATER MONITORING LOCATION DEEP BEDROCK MONITORING WELL LOCATION

GROUNDWATER AND SURFACE WATER MONITORING LOCATIONS GROUNDWATER/SURFACE WATER MONITORING PROGRAM 5123 HAWTHORNE ROAD, OTTAWA, ONTARIO Orgaworld Canada Lid.

figure 3.1

C-J2411 2164310

SHALLOW AND DEEP MONITORING WELLS LOCATED ON TOMLINSON PROPERTY ARE NO LONGER ACCESSIBLE TO OCL OR GRA AS OF JANUARY 2010.
 MW5-08 WAS DESTROYED DURING ASPHALT

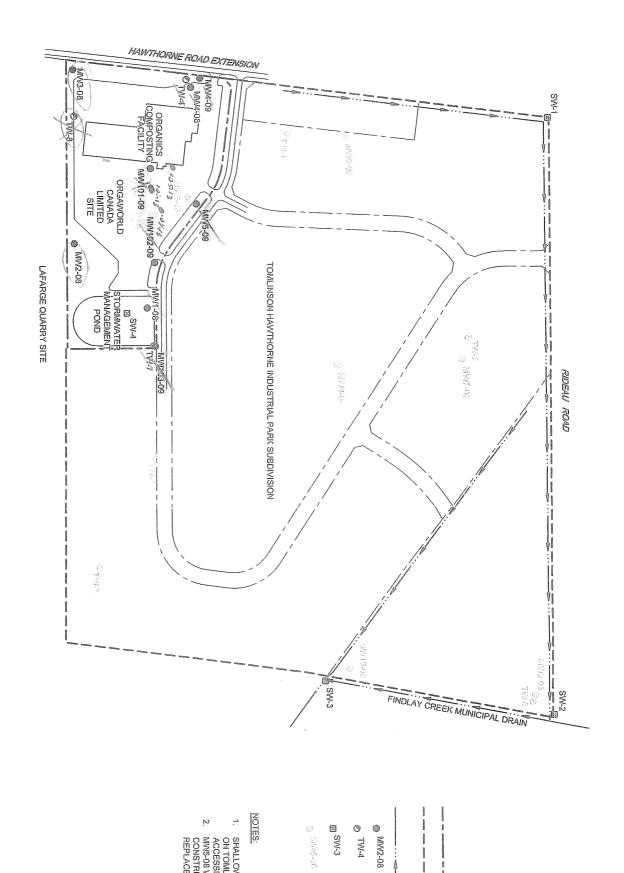
CONSTRUCTION; MW5-09 WAS INSTALLED TO

ノスナイロ

MAR 2 0 2013

Ontario Ministry of the Environment	Well Tag No. (Place Sticker at	A .	S-13726 Well Record Regulation 903 Ontario Water Resources Act				
Measurements recorded in: Metric Imperial	<u> </u>	·	Page				
Well Owner's Information  First Name  Organization  Mailing Address (Street Number/Name)  S123 Haw Horne Rd.  Well Location  Address of Well Location (Street Number/Name)	Municipality  OHAWA  Township	Province Postal Code  OW MIGS	e Telephone I	Well Constructed by Well Owner  No. (inc. area code)			
County/District/Municipality  UTM Coordinates   Zone   Easting   Northing   NAD   8   3   18   4   5   6   6   6   5   5   0   1   6    Overburden and Bedrock Materials/Abandonment Se			Province Ontario Other	Postal Code			
General Colour Most Common Material	Other Materials	General Description	n	Depth (m/ft) From To			
Depth Set at (m/ft) From To To Grant Seal  O 1.5 Ben Seal  In S 3.66 Grant Slurry	Volume Placed (m³/ft³)	Results of W  After test of well yield, water was:  Clear and sand free Other, specify  If pumping discontinued, give reason:  Pump intake set at (m/ft)	Draw Down Time Water Leve (min) (m/ft) Static Level 1	(min) (m/ft)			
		Tump make set at (mm)	2	2			
Method of Construction         □ Cable Tool       □ Diamond       □ Public         □ Rotary (Conventional)       □ Jetting       □ Domestic         □ Rotary (Reverse)       □ Driving       □ Livestock         □ Boring       □ Digging       □ Irrigation         □ Air percussion       □ Industrial         □ Other, specify       □ Other, specify	Well Use  ☐ Commercial ☐ Not used ☐ Municipal ☐ Dewatering ☐ Test Hole ☐ Monitoring ☐ Cooling & Air Conditioning	Pumping rate (I/min / GPM)  Duration of pumping hrs + min  Final water level end of pumping (m/ft)  If flowing give rate (I/min / GPM)	3 4 5 10 15	3 4 5 10 15			
Construction Record - Casing  Inside Diameter (Galvanized, Fibreglass, Concrete, Plastic, Steel)  S. J.D  Construction Record - Casing Wall Dept Thickness (cm/in) From	Status of Well  h (m/ft)	Recommended pump depth (m/ft)  Recommended pump rate (l/min / GPM)  Well production (l/min / GPM)  Disinfected?	20 25 30 40 50	20 25 30 40 50			
Diameter (cm/in) (Plastic, Galvanized, Steel) Slot No. From	h (m/ft)  To  Abandoned, Insufficient Supply Abandoned, Poor Water Quality Abandoned, other, specify	Please provide a map below following		,			
Water Details	Other, specify  Hole Diameter	M	v 101-0	oq			
Water found at Depth (m/ft) Gas Other, specify Water found at Depth (m/ft) Gas Other, specify Water found at Depth (m/ft) Gas Other, specify Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify Well Contractor and Well Technicia Business Name of Well Contractor Garage Postal Code Business E-mail Add Garage Postal Code Garage Postal Code Garage Garag	In Information  Well Contractor's Licence No.  7   2   4   1  Municipality  Richmondhill  dress  Last Name, First Name)	Comments:    Well owner's information package delivered delivered   Yes   Date Package Delivered   Y   Y   Y   M   M   M   Date Work Completed   2 0 1 3 0 2 3	Audit No.	154412 R 2 0 2013			

045804-58(046)GN-OT001 JAN 23/2013



GROUNDWATER AND SURFACE WATER MONITORING LOCATIONS
GROUNDWATER/SURFACE WATER MONITORING PROGRAM
5123 HAWTHORNE ROAD, OTTAWA, ONTARIO
Orgaworld Canada Ltd. figure 3.1

C-7241 2154412

SHALLOW AND DEEP MONITORING WELLS LOCATED ON TOMLINSON PROPERTY ARE NO LONGER ON TOMLINSON PROPERTY ARE NO LONGER AS COE JANUARY 2010.
 MW5-08 WAS DESTROYED DURING ASPHALT CONSTRUCTION; MW5-09 WAS INSTALLED TO

REPLACE IT.

100 150m MAR 2 0 2013

TOMLINSON HAWTHORNE INDUSTRIAL PARK SUBDIVISION BOUNDARY

SHALLOW MONITORING WELL LOCATION

SURFACE WATER DRAIN/DITCH/CREEK

ACCESSIBLE (SEE NOTE BELOW)

MONITORING WELL LOCATIONS NO LONGER

SURFACE WATER MONITORING LOCATION DEEP BEDROCK MONITORING WELL LOCATION ORGAWORLD SITE BOUNDARY

LEGEND

Ontario Ministry of the Environment	Та	g#: A141808	and the second s	S-13 Regulation	•	VV.		Record
Measurements recorded in: Metric Imp	perial		A141808			Page_		of
Well Owner's Information First Name   Last Name   Ord	nanization		E-mail Address					_
deawore		7 LTD.	L-mail Address			_	,	Constructed ell Owner
Mailing Address (Street Number/Name)		Municipality	Province	Postal Code				area code)
BI 23 HAWTHERNE RD Well Location		OTTAWA	007	K 1 G 3	7 3 6	1/00	0	2006
Address of Well Location (Street Number/Name)		Township		Lot	С	oncession		
5123 HAWIHOENE RD County/District/Municipality		City/Town/Village			Dravina		Dostol	Codo
County/District/Municipality		OTTAWA		Ontai		Postal	Code	
UTM Coordinates Zone Easting North		Municipal Plan and Subl	ot Number		Other		1	
NAD 8 3 1 8 4 96 6 1 4 5 0			Land Cable E					
Overburden and Bedrock Materials/Abandonn General Colour Most Common Material		<b>ora</b> (see instructions on the ner Materials		ral Description			Dep	th ( <i>m/ft</i> )
BRN GRAVEL	Spn	. ^	HARD, DRY				From	.61
	9, ,,,	~	1				- •	1.5
_			HARD, DRY				61 .5	3.66
GREY SHOT ROCK			HA41-15, 5H	TUCFIEL				3.00
	TO THE PARTY OF TH							
	7777							
	10 A			**************************************				-
÷								
	200			70-00-00 (EPV)	Variable annual en el e		200000000000000000000000000000000000000	
Annular Sp  Depth Set at (m/ft) Type of Sealan		Volume Placed	After test of well yield, v	Results of We water was:	_	Testing / Down	Re	ecovery
From To (Material and T		(m³/ft³)	Clear and sand fr		Time v	Vater Level	Time	Water Level
O 31 CONCRETE /FLUS	MOUNT		Other, specify  If pumping discontinue	d alvo roogon:	(min) Static	(m/ft)	(min)	(m/ft)
31 1.83 BENSEAL		10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	I pumping discontinue	u, give reason.	Level			
1.83 3.66 SALO				100	1		1	
1.05 5.00 5,100			Pump intake set at (m	νπ)	2		2	
Method of Construction	Well Us	-	Pumping rate (Ilmin / 0	GPM)	3		3	
Cable Tool Diamond Public	360,000,000,000,000,000,000,000,000,000,	rcial Not used	Duration of numerica		4		4	
		-	Duration of pumping hrs + m	nin	5		5	
☐ Boring ☐ Digging ☐ Irrigation	on Cooling	& Air Conditioning	Final water level end of	pumping (m/ft)	10		10	
☐ Air percussion ☐ Industr☐ ☐ Undustr☐ ☐ Other,			If flowing give rate (IIm	nin / CDM)	15	***************************************	15	
Construction Record - Casing	9	Status of Well	In nowing give rate (iiii.	IIII I GEWIJ	20		20	
Inside Open Hole OR Material Wall Diameter (Galvanized, Fibreglass, Thickness	Depth (m/ft)	☐ Water Supply	Recommended pump	depth (m/ft)				
(cm/in) Concrete, Plastic, Steel) (cm/in)	From To	☐ Replacement Well☐  ☐  ☐  ☐  ☐  ☐  ☐  ☐  ☐  ☐  ☐  ☐  ☐	Recommended pump	rate	25		25	
5.20 pvc 390	0 2.13	Recharge Well Dewatering Well	(I/min / GPM)	rate	30	Value of the second sec	30	
		Observation and/or	Well production (//min	I GPM)	40		40	
		─ Monitoring Hole  ☐ Alteration	Disinfected?		50		50	
		<ul><li>(Construction)</li><li>☐ Abandoned,</li></ul>	Yes No		60		60	
Construction Record - Screen	<u> </u>	Insufficient Supply Abandoned, Poor		Map of We				
Outside Material Stock Slot No.	Depth (m/ft)	Water Quality Abandoned, other,	Please provide a map t				ack.	
(cmlin) (Plastic, Galvarized, Steel)	From To	specify	SEE MAI	0 10	25 -	13		
6.03 PVC 10 2	13 3.66	Other, specify						
		Other, specify						
Water Details		ole Diameter						
to and	Intested Dept From	h ( <i>mlft</i> ) Diameter To ( <i>cmlin</i> )						
(m/ft) ☐ Gas ☐ Other, specify	Untested O	3.66 10.92						
(m/ft) Gas Other, specify								
Water found at Depth Kind of Water: Fresh U	Intested							
(mlft) Gas Other, specify Well Contractor and Well Te	chnician Informat	ion	The state of the s					
Business Name of Well Contractor	We	Il Contractor's Licence No.						
Strata Soil Sampling Ind		7 2 4 1	Commercial					
Business Address (Street Number/Name) 147-2 West Beaver Creek	1	nicipality Chmond Hill	Comments:					
Province Postal Code Business E-i	mail Address	1881. js.			aanovainessint			
Ontario   14B 1C6 wre	ecords@str	atasoil.com	Well owner's Date Pa	ickage Delivered	1 100000	Ministr	y Use	Only
Bus. Telephone No. (inc. area code) Name of Well Tech	1 V1	Vol.	package delivered	YYMMI		udit No.	· // ^	4.8
Well Technician's Licence No. Signature of Technician a	nd/or Contractor Dat	e Submitted	Yes Date Wo	ork Completed		Z 1	际货	144
3616	2	0130228	XN0 201	13022	8 R	iceived /	" O T,	
0506E (2007/12) © Queen's Printer for Ontario, 2007		Ministry's Copy						

TW-4

SURFACE WATER MONITORING LOCATION DEEP BEDROCK MONITORING WELL LOCATION SHALLOW MONITORING WELL LOCATION SURFACE WATER DRAIN/DITCH/CREEK TOMLINSON HAWTHORNE INDUSTRIAL PARK SUBDIVISION BOUNDARY

ACCESSIBLE (SEE NOTE BELOW) MONITORING WELL LOCATIONS NO LONGER ORGAWORLD SITE BOUNDARY

LEGEND

TOMLINSON HAWTHORNE INDUSTRIAL PARK SUBDIVISION

GROUNDWATER AND SURFACE WATER MONITORING LOCATIONS GROUNDWATER/SURFACE WATER MONITORING PROGRAM 5123 HAWTHORNE ROAD, OTTAWA, ONTARIO Orgaworld Canada Ltd.

045804-58(046)GN-OT001 JAN 23/2013

figure 3.1

 SHALLOW AND DEEP MONITORING WELLS LOCATED ON TOMLINSON PROPERTY ARE NO LONGER ACCESSIBLE TO OCL OR CRA AS OF JANUARY 2010.
 MW5-08 WAS DESTROYED DURING ASPHALT CONSTRUCTION; MW5-09 WAS INSTALLED TO

HAWTHORNE ROAD EXTENSION

- MV/(01-09 10/13/0.07/3

MW192-09

ORGAWORLD CANADA LIMITED SITE

STORMWATER MANAGEMENT ⊠SW-4

MW2-08

LAFARGE QUARRY SITE

MAR 2 0 2013

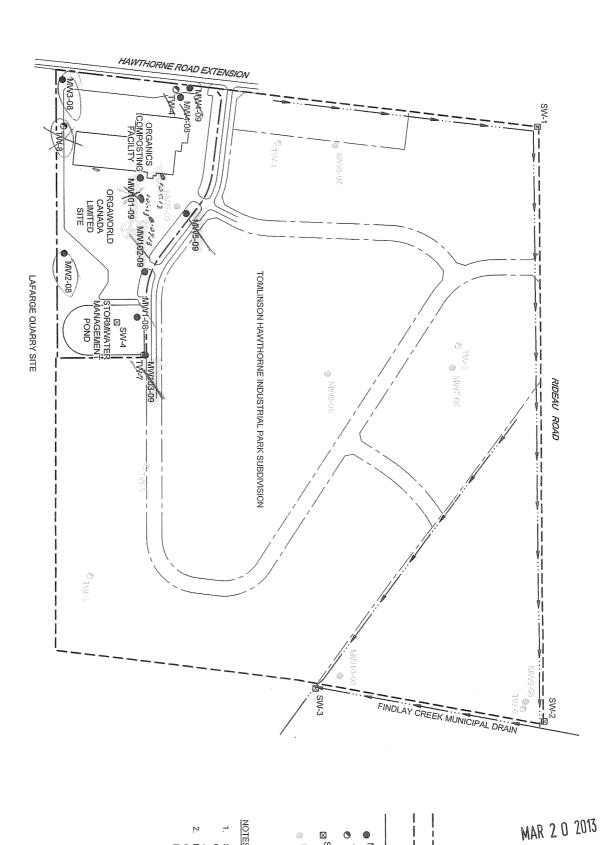
MAD 2 1 2013

SW-1

RIDEAU ROAD

1/5 440

Onta	Irio Minist	ry of evironment	Well Ta	Tag#: A		1900 TPG	# * Regulation	, 4 . 1 903 0	-		Record
Measurements re	ecorded in: 💢 🛚	Metric Imperi	ial			1800 A141	Tree		Pag	e	_ of
Well Owner's First Name	L	ast Name / Organ	ization			E-mail Addr	ess			□ Well	Constructed
Organ	0-16	Canad	α							by W	ell Owner
	Street Number/Nar Havthor		-	Municipality OHaw	a	Province $ON$	Postal Code	43	l elephone	No. (inc.	area code)
Well Location			10	0.170000		C - DOTALD TO	111.1012	() —		allow delice	
	ocation (Street Nur		7	Township			Lot		Concessi	on	
County/District/M			(	City/Town/Village				Provir		Posta	I Code
UTM Coordinates	Zone . Fasting	, Northing		OTAWA Municipal Plan an	d Sublo	ot Number		Ont	ario		
NAD 8 3		. ! . ~									
	d Bedrock Materi		T		s on the	T.	Caparal Depariation			Der	oth ( <i>m/ft</i> )
General Colour		non Material		ner Materials			General Description			From	To O
BRN	GRAVEL		SAND			HARD, DRY				061	1.22
RED	FILL					SOFTIDE				1.22	
BRN/BLK BRN/BLK	FILL						ATURATED			7.44	3.66
BRIVIBLE	726					JOH , J	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			4.11	1
					:		700.07 ATT 7,000 HT 001 HT 07 10 17 17 17 17 17 17 17 17 17 17 17 17 17				
- description			1 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					- 10			
		Annular Spac				After test of well	Results of We				lecovery
Depth Set at (ma		Type of Sealant U (Material and Type		Volume Plac (m³/ft³)	ed	☐ Clear and s	and free	Time	Water Lev	el Time	Water Level
0 .3	1 CONORE	E /FLUSHAR	דענטטד			Other, spec	ntinued, give reason:	(min) Static	(m/ft)	(min)	(m/ft)
-31 1.8	83 BGUSGA	L				II partiping discor	initiaca, give reason.	Level		1	
1.83 3.6	6 SAND					Pump intake set	at (m/ft)	2			
			2.25							2	
300 F 10 C	f Construction		Well Us			Pumping rate (#/	min / GPM)	3		3	
☐ Cable Tool  Rotary (Convent	☐ Diamond tional) ☐ Jetting	I ☐ Public ☐ Domestic	Comme Municipa	Count .	1	Duration of pum		4	~=~***********************************	4	
☐ Rotary (Reverse		☐ Livestock ☐ Irrigation		le	toring	hrs + Final water level	min end of pumping <i>(m/ft)</i>	5		5	
☐ Air percussion	Direct Pus	☐ Industrial		a / iii Gorialioning				10		10	
	Construction Re		9GIIY	Status of W	/ell	If flowing give ra	te (Ilmin I GPM)	15		15	
Inside Oper	n Hole OR Material	Wall	Depth (m/ft)	☐ Water Supply	,	Recommended	pump depth (m/ft)	20		20	
Diameter (Galv (cm/in) Cond	vanized, Fibreglass, crete, Plastic, Steel)	Thickness (cm/in) Fro	om To	Replacement	Well	Recommended	numn rafe	25		25	
5.20 PV	· C	0,390 C	2.13	Recharge We		(Ilmin   GPM)	pamp rate	30		30	
				Observation a	nd/or	Well production	(Ilmin   GPM)	40		40	
				Alteration		Disinfected?		50		50	
#1.14				(Construction Abandoned,		Yes No	)	60		60	
Outside	Construction Re		D 11 ( 15)	Insufficient Su  Abandoned, F	Poor	Please provide a	Map of We map below following			hack	
Outside Diameter (cmlin) (Plastic	Material c, Galvanized, Steel)	Slot No.	Depth ( <i>m/ft)</i> om To	Water Quality Abandoned, of	- 1	I icase provide a	See Ma	<i>D</i>	ons on the	Daon.	
6.03 PV	in	10 2.	13 3.66	specify		•	See Ma	ا			
0,03,10		70 2	0.0.0	Other, specify	'	CALLED TO A CALLED	104	1	5		
	Water Det	ails	H	lole Diameter							
	epth Kind of Water		ested Dept From		neter						
	Gas Other, speepth Kind of Water				92						
(m/ft) 🔲	Gas Other, spe	cify			, ic						
	epth Kind of Water Gas Other, spe		ested			14.					
(111114)		r and Well Tech	nician Informat	tion							
Business Name of	Well Contractor Soil Samp	ling Inc		Il Contractor's Licenc	ce No.						
Business Address	(Street Number/Nar	me)	Mu	7 2 4 1 nicipality		Comments:					
	lest Beave			chmond Hi	111						
Province Ontario	Postal Code	Business E-ma C6 Wrec	· · · · · · · · · · · · · · · · · · ·	atasoil.	COM	Well owner's D	ate Package Delivered	d	Mini	stry Use	Only
Bus.Telephone No.	(inc. area code) Na	me of Well Technic	cian (Last Name,		- Juli	information package delivered	TYTYTMIMI	- 11	Audit No.		
Well Technician's Licence No. Signature of Technician and/or Contractor Date Submitted						delivered D	ate Work Completed			643	
3 6 1	6 1			01302		□ No &	1013012	28	Received	AR 20	2013
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⊠ SW-3 9 TW-4 MW2-08

SURFACE WATER MONITORING LOCATION

ACCESSIBLE (SEE NOTE BELOW) MONITORING WELL LOCATIONS NO LONGER ORGAWORLD SITE BOUNDARY

LEGEND

100

TOMLINSON HAWTHORNE INDUSTRIAL PARK SUBDIVISION BOUNDARY

SHALLOW MONITORING WELL LOCATION

DEEP BEDROCK MONITORING WELL LOCATION

SURFACE WATER DRAIN/DITCH/CREEK

- SHALLOW AND DEEP MONITORING WELLS LOCATED ON TOMLINSON PROPERTY ARE NO LONGER ACCESSIBLE TO OCL OR CRA AS OF JANUARY 2010.
- MW5-08 WAS DESTROYED DURING ASPHALT CONSTRUCTION; MW5-09 WAS INSTALLED TO REPLACE IT.

figure 3.1

GROUNDWATER AND SURFACE WATER MONITORING LOCATIONS GROUNDWATER/SURFACE WATER MONITORING PROGRAM 5123 HAWTHORNE ROAD, OTTAWA, ONTARIO

Orgaworld Canada Ltd.

ノノンナイロ

Ministry of the Environment

Well Tag No.

A 089801

Well Record

Regulation	903	Ontario	Water	Resour	rces	A
				٠,		

Diameter (Gabhanized, Fibreglass, Trickness (com/in)   To   Replacement Well   Test Hole	Measurements recorded in:		כטט ה		Page		of <u>/</u>
APEX DEVELOPMENTS NO. 1-12-00 Normal processor Developments No. 1-12-00 Normal processor Developments Normal Developments Normal Processor Developments Normal Develop		ation		E-mail Address		Well C	onstructed
Well Control Control Service Neglechieres  Asserted Well Location Street Registrations of Well Location Street Registration Street Registrat	APEX 3	DEVELOPME	NTS INC		evco. com	by We	ll Owner
Aparticles of Well   Contraction   Contrac	206 - 900 Morrison D	rive OHa	wa	ON KaH	8K7613	422	6757
Security plasmated and properly and properly and subject Number Office (Security) and and subject Number (Security) and subjec	Well Location						
DTM Chardeduses   Same   Sanstary   Northing   Northing	35 Sappers Ridge	7					
Und Concludes Zone _ Statis 9	County/District/Municipality		-			Postal	Code
Control   Cont				umber	Other	:	
Secretarial County   Secretaria County   Secretar		Sealing Record (see in:	structions on the bac	sk of this form)			
Annular Space  Despit Set of (will)  Type of Sealand Used  Microbial and Type)  Type of Sealand Used  Microbial and Type)  Type of Sealand Used  Microbial and Type)  The Type of Sealand Used  The Type of Type of Type of Type  The Type of Type of Type  The Type of Type of Type  The Type	General Colour Most Common Material	Other Materia	als	General Descrip	tion		To
Annular Space    Comparison   C	Fill	· · · · · · · · · · · · · · · · · · ·		(00SC:		0	8.
Depth Sol at (7/7/8)   Typo of Sealant Used   Moltane   Pieced (Moltane)   Pieced (Mo	grey Clay	gravel		packed		8	
Depth Sol at (7/7/8)   Typo of Sealant Used   Moltane   Pieced (Moltane)   Pieced (Mo	o i mustone.					47	LIGIT.
Depth Sol at (7/7/8)   Typo of Sealant Used   Moltane   Pieced (Moltane)   Pieced (Mo							
Depth Sol at (7/7/8)   Typo of Sealant Used   Moltane   Pieced (Moltane)   Pieced (Mo							
Depth Sol at (7/7/8)   Typo of Sealant Used   Moltane   Pieced (Moltane)   Pieced (Mo							
Depth Sol at (7/7/8)   Typo of Sealant Used   Moltane   Pieced (Moltane)   Pieced (Mo						:	
Depth Sol at (7/7/8)   Typo of Sealant Used   Moltane   Pieced (Moltane)   Pieced (Mo	Annular Space			Results of	Well Yield Testing		
Construction   Cons	Depth Set at (m/ft) Type of Sealant Use			test of well yield, water was:	Draw Down	<del></del>	
Pumping discontinual, give reason:   Level   35   1   31,8   27   1   31,8   32,9   5   30,	110 6 11.1010	47	3 95	Other, specify	(min) (m/ft)	1 : 1	
Pump intake set at (m/ti)   2 28    2 30, 5			l lf p	oumping discontinued, give reasc	Level 39		
Method of Construction   Diamond   Debto   Commercial   Not used   Not used   Rotary (Conventional)   Jetting   Domestic   Municipal   Devaleting   Not used   Not used   Domestic   Test Hole   Municipal   Devaleting   Not used			Pu	imp intake set at (m/ft)			**************************************
Opable Tool   Diamond   Public   Commercial   Not used   Rotary (Conventional)   Jetting   Domestic   Municipal   Dewastering   Rotary (Kenverse)   Driving   Demostic   Municipal   Dewastering   Instantion   Ins			successive of	130		/	***************************************
Rotary (Conventional)   Jetting   Domestic   Municipal   Notary (Conventional)   Jetting   Domestic   Municipal   Notary (Conventional)   Jetting   Domestic   Test Hole   Monitoring   Instead   Notary   Notary (Construction Record - Casing   Industrial   Notary (Construction Record - Casing   Industrial   Notary (Construction Record - Casing   Industrial   Notary (Construction Record - Casing   Inside   Open Hole QR Material (Galvanized, Firengias)   Notary (Construction Record - Casing   Notary (Construction Record - Casing N						-	
Boring Olgging Order, specify Olher,	Rotary (Conventional)	Municipal	Dewatering Du				
Other, specify	☐ Boring ☐ Digging ☐ Irrigation	house to			491		
Construction Record - Casing Status of Well Inside Diameter (cm/in) Construction Record - Screen Constr	Other, specify Other, specification Other, specific	fy	lf flo	owing give rate (I/min / GPM)		,	
Diameter (Galvanized, Fibreglass, Concrete, Plastic, Steel) (Concrete, Plastic, Steel) (Confirm) (Concrete, Plastic, Steel) (Construction) (C	Inside Open Hole OR Material Wall De			commended pump depth (m/ft)	20 32'7'	20	27.5
Recharge Well   Dewatering Well   Dewatering Well   Dewatering Well   Observation and/or Monitoring Hole   Alteration (Construction)   Abandoned, Insufficient Supply   Abandoned, Other, Specify   Depth (m/ft)   Abandoned, other, Specify   Depth (m/ft)   Gas   Other, Specify   Water found at Depth   Kind of Water:   Fresh   Untested (m/ft)   Gas   Other, Specify   Well Contractor and Well Technician Information   Well Contractor's Licence No.   Well Contractor   Well Contractor   Well Contractor   Well Contractor's Licence No.   Well Contractor   Well C	(cm/in) Concrete, Plastic, Steel) (cm/in) From	1 10 1	cement Well			25	27.0
Observation and/or Monitoring Hole Atteration (Construction)   Abandoned, Insufficient Supply   Abandoned, other, specify   Other, specify   Other, specify   Water found at Depth Kind of Water: Fresh Untested (m/ft)   Gas Other, specify   Other, specify   Water found at Depth Kind of Water: Fresh Untested (m/ft)   Gas Other, specify   Well Contractor	5% Steel 1.88 40	+3. ☐ Recha	irge Well   (I/m			30	26.0
Construction Record - Screen  Outside Diameter (cm/in)  Comparing (Plastic, Galvanized, Steel)  Water Details  Water Details  Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Well Contractor and Well Technician Information  Well Contractor  Well Contractor  Uconstruction  Abandoned, new file in Supply Abandoned, Poor Water Quality  Abandoned, Poor Water Quality  Depth (m/ft)  Depth (m/ft)  Disinfected?  No  849 0 25.0  Water Quality  Depth (m/ft)  Diameter From To (cm/in)  To (cm/in)  Diameter From To (cm/in)  Valent found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Well Contractor and Well Technician Information  Susiness Name of Well Contractor  Well Contractor Well Contractor  Well Contractor's Licence No.		☐ Obser	vation and/or We	Il production (I/min / GPM)	40 34		25.0
Construction Record - Screen Outside Diameter (cm/in) Outside Diameter Depth (m/it) Outside Diameter	,		truction) Disi	. /	376	ļ	25.0
Outside Diameter (cm/in)  Water Details  Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Well Contractor and Well Technician Information  Well Contractor	Construction Record - Screen	Insuffic	cient Supply			60	<u> 25.0</u>
Water Details  Water found at Depth Kind of Water: Fresh Untested  (m/ft) Gas Other, specify  Water found at Depth Kind of Water: Fresh Untested  (m/ft) Gas Other, specify  Water found at Depth Kind of Water: Fresh Untested  (m/ft) Gas Other, specify  Well Contractor and Well Technician Information  Susiness Name of Well Contractor  Well Contractor  Well Contractor  Well Contractor	Outside Diameter (Plastic Calvanized Stoet) Slot No.	pth (m/ft) Water	Quality Plea			ack.	
Water found at Depth   Kind of Water:   Fresh   Untested   Depth (m/ft)   Diameter   From   To   (cm/in)	(cm/in) (r radio, Garvanizeo, Gleer) From	10 1-		TH C	0.0		
Water found at Depth Kind of Water: Fresh Untested Depth (m/ft) Diameter (cm/in)    35 (m/ft)   Gas Other, specify   Other, s		Other,	specify	T SOFFEN	Midge-1	and the state of t	<del>editionementale autoriganeme</del> na
Water found at Depth   Kind of Water:   Fresh   Untested   Depth (m/ft)   Diameter   From   To   (cm/in)    Water found at Depth   Kind of Water:   Fresh   Untested   Untested	Water Details	Hole Diame	ter	1 1250			
Water found at Depth Kind of Water: Fresh Untested 0 40 105/s  (m/ft) Gas Other, specify  Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Well Contractor and Well Technician Information  Susiness Name of Well Contractor  Well Contractor  Well Contractor  Well Contractor	13/	ed Depth (m/ft)	Diameter	30			
Water found at Depth Kind of Water: Fresh Untested (m/ft) Gas Other, specify  Well Contractor and Well Technician Information  Business Name of Well Contractor  Well Contractor  Well Contractor  Well Contractor	Water found at Depth Kind of Water: Fresh Unteste	ed 0 40	105/8	(000)			
Well Contractor and Well Technician Information  Business Name of Well Contractor  Well Contractor's Licence No.		40 153	6/8	D'A			
Business Name of Well Contractor Well Contractor's Licence No.							
	Business Name of Well Contractor	Well Contractor's	Licence No.	\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\			
T.R. Drilling Co. Ltd. 3 7 4 9 Comments:	Business Address (Street Number/Name)			ments:			PW-0-004
23 Mitchem Rd., R.R.#5 Shawville	223 Mitchem Rd., R.R.+	5 Shawr					
QC JOX2 YO info@irwaterwelldrilling. Com Well owner's Date Package Delivered Ministry Use Only	QC JOX2 YO info@irwa	terwelldrillin	1. Com Well	owner's Date Package Deliver	ed Ministi	y Use O	nly
us.Telephone No. (inc. area code) Name of Well Tempician (Last Name First Name)	us.Telephone No. (inc. area code) Name of Well Telephoician	(Last Name First Name)	packa	age 201308	0 6 Audit No. 2 1		
/ell Technician's Licence No. Signature of Technician and/or Contractor Date Submitted	/ell Technician's Licence No. Signature of Feohnician and/or C	ontractor Date Submitted		Yes Date Work Completed			
3 6 4 1 No 2013 0 8 0	0671/18/17			NO 2010	1 8 ReceivAUG	12:	

# **Certificate of Analysis**



# **Environment Testing**

Client: Paterson Group

154 Colonnade Rd. South

Nepean, ON K2E 7T7

Attention: Mr. Erik Ardley

PO#: 30000

Invoice to: Paterson Group Report Number: 1938338 Date Submitted: 2020-09-09 Date Reported: 2020-09-10 Project: PH4089 COC #: 862795

Group	Analyte	MRL	Units	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.  Guideline	1515499 GW 2020-09-08 TW1-GW1	1515500 GW 2020-09-08 TW1-GW2
Microbiology	Escherichia Coli	0	ct/100mL	MAC 0	0	0
	Total Coliforms	0	ct/100mL	MAC 0	0	0

Guideline = ODWSOG

\* = Guideline Exceedence

Results relate only to the parameters tested on the samples submitted. Analytical Method: AMBCOLM1

additional QA/QC information available on request.

# **Certificate of Analysis**



# **Environment Testing**

Client: Paterson Group

154 Colonnade Rd. South

Nepean, ON K2E 7T7

Attention: Mr. Erik Ardley

PO#:

30000

Invoice to: Paterson Group

Report Number: 1938340 Date Submitted: 2020-09-09 Date Reported: 2020-09-16 Project: PH4089 COC #: 862795

Group	Analyte	MRL	Units	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.  Guideline	1515501 GW 2020-09-08 TW1-GW1	1515502 GW 2020-09-08 TW1-GW2
Anions	Cl	1 1	mg/L	AO 250	58	63
Allions	F	0.10	mg/L	MAC 1.5	0.12	0.26
	N-NO2	0.10	mg/L	MAC 1.0	<0.10	<0.10
	N-NO3	0.10	mg/L	MAC 10.0	<0.10	<0.10
	SO4	1	mg/L	AO 500	188	200
General Chemistry	Alkalinity as CaCO3	5	mg/L	OG 500	495	470
General Chemistry	Colour	2	TCU	00 300	2	<2
	Conductivity	5	uS/cm		1340	1320
	DOC	0.5	mg/L	AO 5	4.5	4.3
	pH	1.00	IIIg/L	6.5-8.5	7.74	7.95
	\$2-	0.01	mg/L	AO 0.05	<0.01	<0.01
	TDS	10	mg/L	AO 500	910*	920*
	Turbidity	0.1	NTU	AO 5.0	21.2*	24.1*
Hardness	Hardness as CaCO3	1	mg/L	OG 100	613*	595*
Indices/Calc	Ion Balance	0.01	mg/L	00 100	1.01	1.00
Metals	Ca	1	mg/L		135	131
Wictais	Fe	0.03	mg/L	AO 0.3	1.68*	1.58*
	K	1	mg/L	710 0.0	10	10
	Mg	1	mg/L		67	65
	Mn	0.01	mg/L	AO 0.05	0.50*	0.48*
	Na Na	2	mg/L	AO 200	72	74
Subcontract-Inorg	N-NH3	0.01	mg/L	710 200	0.20	0.22
	Phenols	0.001	mg/L		<0.001	<0.001
	Tannin & Lignin	0.1	mg/L		0.2	0.2
	Total Kjeldahl Nitrogen	0.1	mg/L		0.3	0.3

### Guideline = ODWSOG

Results relate only to the parameters tested on the samples submitted. Methods references and/or additional QA/QC information available on request.

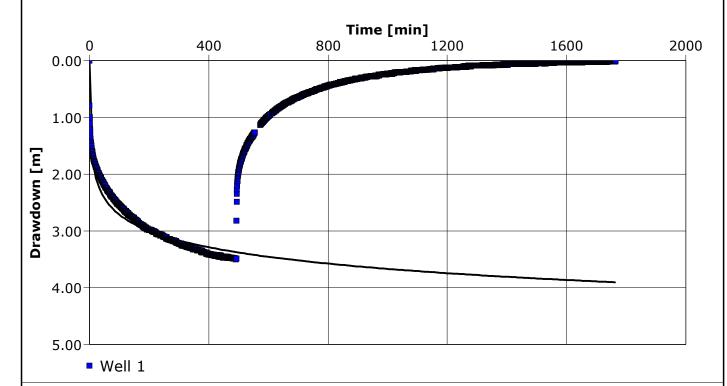
MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

<sup>\* =</sup> Guideline Exceedence

# Pumping Test Analysis Report Project: TW1 - Pumping Test Number: PH4089 Client: Techo Bloc Location: 5123 Hawthorne Road Pumping Test: Pumping Test - TW1 Pumping Well: Well 1 Test Conducted by: EA Analysis Performed by: EA Theis Analysis Date: 23/09/2020

Discharge: variable, average rate 1.5 [l/s]

Aquifer Thickness:

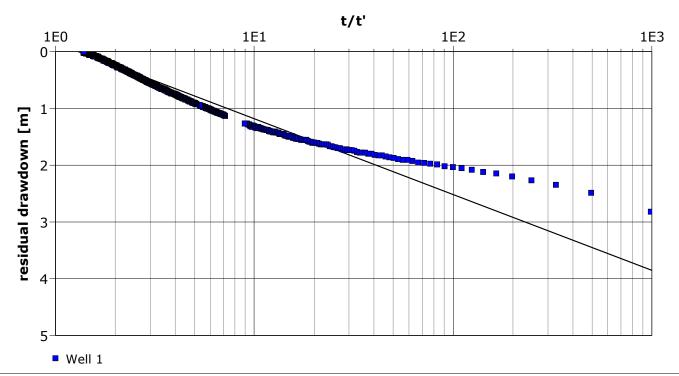


Calculation using Theis				
Observation Well Transmissivity		Storage coefficient Radial Distance to PW		
	[m²/d]		[m]	
Well 1	2.48 × 10 <sup>1</sup>		0.08	

# Pumping Test Analysis Report Project: TW1 - Pumping Test Number: PH4089 Client: Techo Bloc

Location: 5123 Hawthorne Road	Pumping Test: Pumping Test - TW1	Pumping Well: Well 1	
Test Conducted by: EA		Test Date: 23/09/2020	
Analysis Performed by: EA	Theis Recovery	Analysis Date: 23/09/2020	
Aguifer Thickness:	Discharge: variable, average rate 1.5 [l/s]		

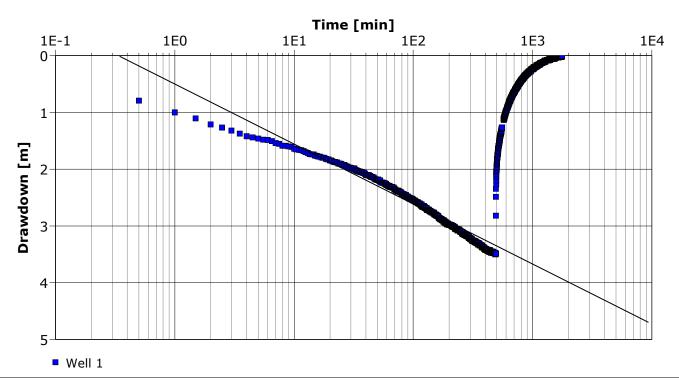
Aquiter Thickness: Discharge: variable, average rate 1.5 [l/s



# Calculation using THEIS & JACOB

Observation Well	Transmissivity	Radial Distance to PW	
	[m²/d]	[m]	
Well 1	1.78 × 10 <sup>1</sup>	0.08	

		Pumping Test Analysis Report		
		Project: TW1 - Pumping Test		
		Number: PH4089		
		Client: Techo Bloo		
Location: 5123 Hawthorne Road	Pumping Test: Pump	ping Test - TW1	Pumping Well: Well 1	
Test Conducted by: EA			Test Date: 23/09/2020	
Analysis Performed by: EA Cooper Jacob 1			Analysis Date: 23/09/2020	
Aquifer Thickness: Discharge: variable, a		average rate 1.5 [l/s]		



# Calculation using COOPER & JACOB

Observation Well	Transmissivity	Storage coefficient	Radial Distance to PW	
	[m²/d]		[m]	
Well 1	1.81 × 10 <sup>1</sup>		0.08	

					Pumping Tes	st An	alysis Report		
					Project: TW1	- Pum	ping Test		
					Number: PH40	)89			
				•	Client: Tech	o Bloc			
Lo	cation: 5123 Hawthorn	ne Road	Pumping T	est: Pump	oing Test - TW1		Pumping Well: W	ell 1	
Те	st Conducted by: EA	-					Test Date: 23/09/2	2020	
Aq	uifer Thickness: NAN	m	Discharge:	variable,	average rate 1.5	5 [l/s]			
	Analysis Name	Analysis Perfor	med by	Method na	ame	Well		T [m²/d]	s
1	Theis	EA		Theis		Well 1		2.48 × 10 <sup>1</sup>	
2	Theis Recovery	EA		Theis Rec	covery	Well 1		1.78 × 10 <sup>1</sup>	
3	Cooper Jacob 1	EA		Cooper &	Jacob I	Well 1		1.81 × 10 <sup>1</sup>	

# patersongroup

# Somme Street PH4089

TW1	inputs			
рН	7.95	A	0.20	
TDS	920	В	2.35	
Hardness	595	С	2.37	
Alkalinity	470	D	2.67	
Temp.	11.8			
		pHs =	6.796199356	

Lange	lier Saturation Index (LSI)	Calculation	(La	angelier, 1936)				
LSI = pH - pHs A = (Log10 [TDS] - 1) / 10								
pHs = (9.3 + A + B) - (C + D) B = -13.12 x Log10 (oC + 273) + 34.55								
	Where:	C = Log10 [Ca2+ a	as CaCO	3] - 0.4				
		D = Log10 [alkalir	nity as C	aCO3]				
			LSI =	1.2				
LSI	Effect							
0.5 to 2	Water is super saturated and tends to precipitate	a scale layer of calcium carbonat	e (scale for	ming but non-corrosive)				
0 to 0.5	Water is super saturated and tends to precipitate a	a scale layer of calcium carbonate	(slightly sc	ale forming and corrosive	2).			
0	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 soli	id calcium carbonate (slightly corr	osivebut n	on-scale forming).				
-0.5 to -2	Water is under saturated and tends to dissolve soli	id calcium carbonate (seriously co	rrosive).					

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SOIL PROFILE AND TEST DATA

40

▲ Undisturbed

Shear Strength (kPa)

60

80

△ Remoulded

100

5123 Hawthorne Road

154 Colonnade Road South, Ottawa, Ontario K2E 7J5

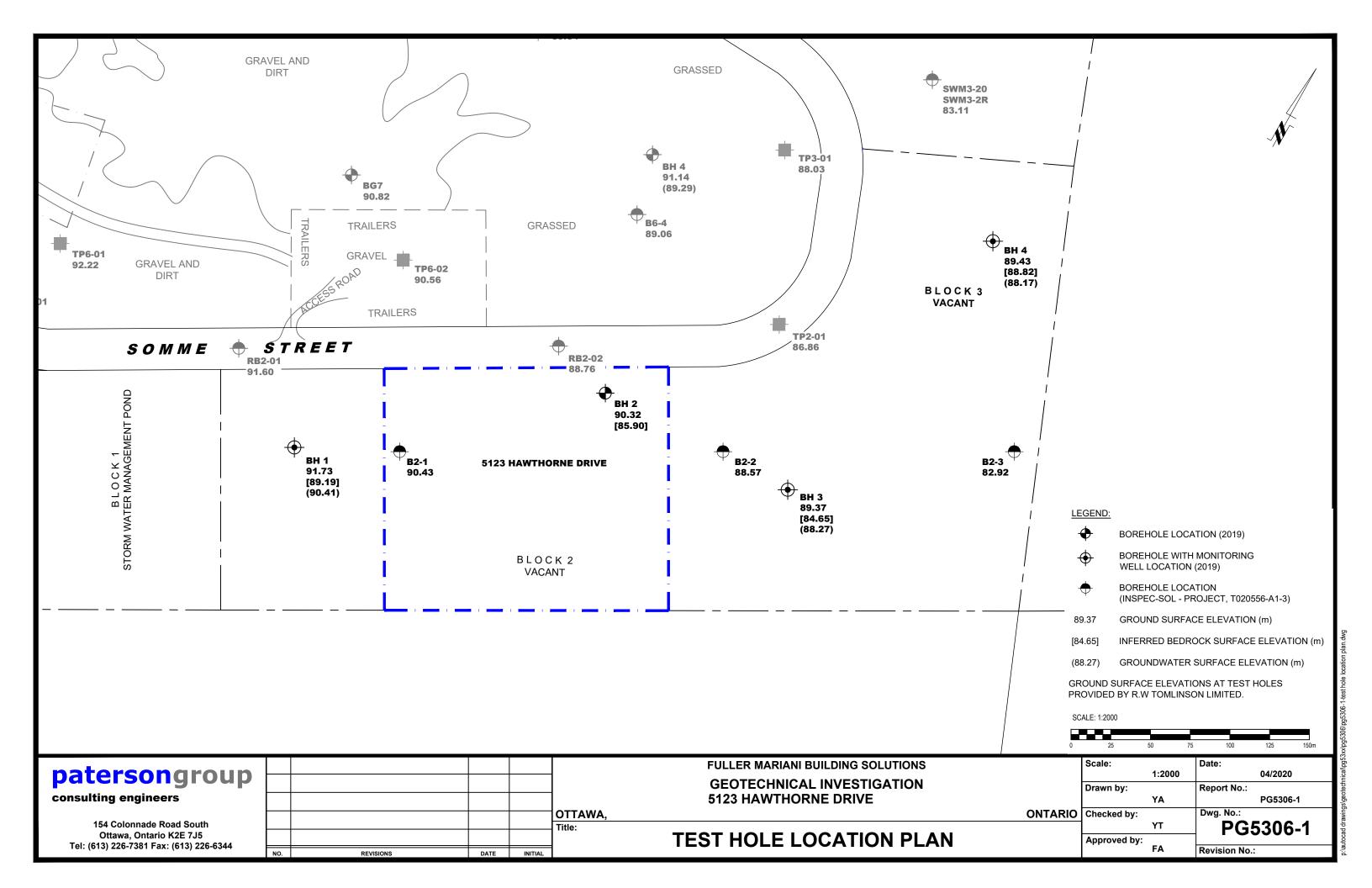
**Geotechnical Investigation** Ottawa, Ontario

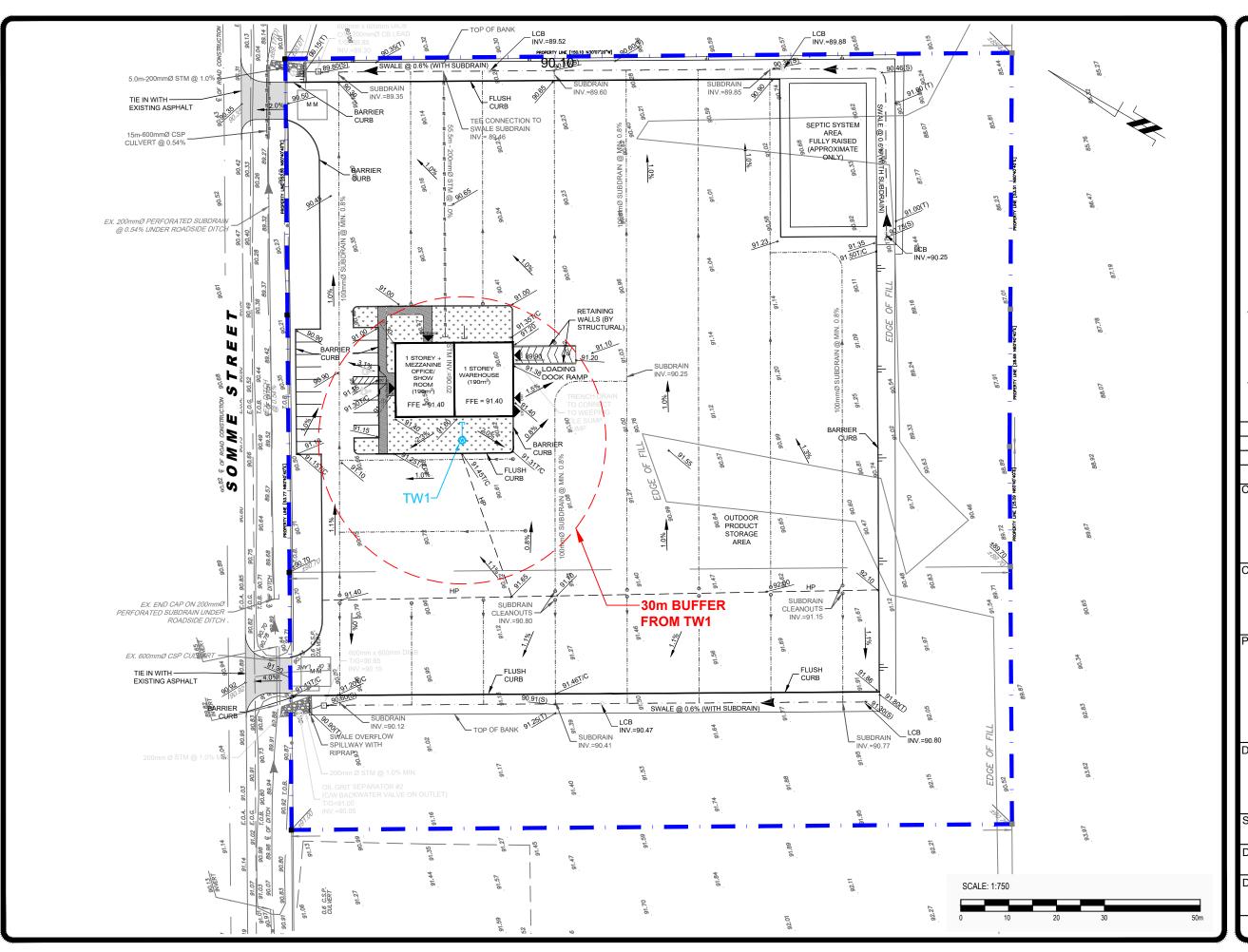
**DATUM** Ground surface elevations provided by the client. FILE NO. **PG5306 REMARKS** HOLE NO. **BH 2** BORINGS BY CME 55 Power Auger DATE December 10, 2019 **SAMPLE** Pen. Resist. Blows/0.3m Monitoring Well Construction STRATA PLOT DEPTH ELEV. **SOIL DESCRIPTION**  50 mm Dia. Cone (m) (m) N VALUE or RQD RECOVERY NUMBER **Water Content % GROUND SURFACE** 80 20 0+90.32FILL: Brown sandy silt, trace gravel and organics 1 0.60 FILL: Grey-brown silty sand, some 1 + 89.32gravel, piece of asphalt SS 2 100 24 <u>1.5</u>0 SS 3 67 17 2 + 88.32SS 4 7 71 Loose to compact, brown SILT, occasional sand and gravel 3+87.32 SS 5 67 2 4+86.32 SS 6 79 21 4.42 End of Borehole

SOLGDT 5/12/09

T020556-A1-BH(OCT-31-08),GPJ

BOREHOLELOG





### BENCHMARK INFORMATION:

Cut cross on northeast corner of concrete headwall Geodetic Elevation: 92.79 m.

All ground surface elevations reference a geodetic datum (NAD83 Zone 18T)

### REFERENCE:

Base Plan provided by Novatech, Drawing No. 120096-GS Grading, Servicing and Erosion sediment control Plan, Rev.3

DE	)/MM/YY	DESCRIPTION	REV.

## Consultant:

# patersongroup

consulting engineers

Client:

# FULLER MARIANI BUILDING SOLUTIONS

Projec

# PROPOSED COMMERCIAL DEVELOPMENT

SOMME STREET OTTAWA, ONTARIO

Drawing:

# **SITE PLAN**

Scale:	Drawn by:	
1:750	RCG	
Date:	Checked by:	
09/2020	MK	

# Drawing No.:

PH4089-1

p:\autocad drawings\hydrogeology\ph40xx\ph4089\ph4089-1.dwg