

October 27, 2023



**PATERSON
GROUP**

PH4334-LET.01

Myers Automotive Group
1200 Baseline Road, Unit 2
Ottawa, Ontario
K2C 0A6

Attention: **Geoff Publow**

Subject: **Sewage System Impact Assessment (Terrain Analysis)
Proposed Commercial Development
1468 Bankfield Road, Ottawa, Ontario**

Consulting Engineers

9 Auriga Drive
Ottawa, Ontario
K2E 7T9

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Geotechnical Engineering
Environmental Engineering
Hydrogeology
Materials Testing
Building Science
Rural Development Design
Retaining Wall Design
Noise and Vibration Studies

patersongroup.ca

Dear Geoff Publow,

Further to your request, Paterson Group (Paterson) has prepared a Sewage System Impact Assessment (Terrain Analysis) in support of the rezoning and site plan application for the proposed commercial development at the aforementioned site.

Introduction

Paterson was retained by Myers Automotive Group to conduct a Sewage System Impact Assessment in support of a rezoning and site plan application for the proposed commercial development to be located at the Subject Site. The Subject Site consists of the following municipal addresses:

- ☐ 1450 Bankfield Road
- ☐ 1454 Bankfield Road
- ☐ 1458 Bankfield Road
- ☐ 1464 Bankfield Road
- ☐ 1468 Bankfield Road
- ☐ 5479 Elijah Court
- ☐ 5485 Elijah Court

Please refer to the Key Plan attached for the approximate Site location. The subject site has historically been used for a number of activities, including but not limited to:

- ☐ Automotive repair garage
- ☐ Service garages for heavy equipment non-road vehicles
- ☐ 7 sewage systems (one per dwelling)





The proposed rezoning application is to rezone the above noted properties to allow for the use of a new automotive dealership.

City of Ottawa Rezoning and Site Plan applications

A Terrain Analysis completed as part of a rezoning application is generally completed using a conventional sewage system design. The City accepts the use of tertiary treatment technology, including the use of nitrate reduction (provided that the system is NSF certified) as part of a Terrain Analysis completed in support of a site plan application.

Tertiary treatment systems are designed to treat effluent to higher levels than conventional sewage systems. Tertiary treatment systems require annual maintenance inspections to be submitted to the Ottawa Septic System Office (OSSO), which is run through the Rideau Valley Conservation Authority (RVCA). The annual maintenance inspections / regulatory review are designed to ensure qualified persons inspect and repair (when needed) systems. The qualified person submits a confirmation to the OSSO or compliance enforcement actions will be implemented.

This Terrain Analysis has been completed using tertiary treatment technology with nitrate reduction (NSF 245 certified) as an additional method of further reducing potential impacts on the Kars Esker.

Kars Esker

The subject Site is mapped to be located on top of the Kars Esker. The Kars Esker plays an important role in local groundwater supply. The primary concern regarding the Kars Esker is the protection of the esker as it relates to groundwater quality and quantity.

The Mud Creek Subwatershed Study (MCSS) completed by the City of Ottawa states that the significant groundwater recharge area (including the feature known as the Kars Esker) should be appropriately protected during the development review process. Additionally the subject site is in an area mapped to be a Highly Vulnerable Aquifer (HVA).

The MCSS states *“Development and site alteration should be limited within and adjacent to the significant groundwater features already identified through this study and previous analyses undertaken to support existing development. When development cannot be avoided in areas of groundwater sensitivity, it is recommended that pre-development recharge areas should be maintained through the completion of a water balance.”*

Furthermore: *Additional measures to protect groundwater resources are recommended within the Significant Groundwater Recharge Area such as:*

- ☐ *Avoid infiltrating poor quality runoff from paved surfaces such as parking lots and roads without pre-treatment. Promote infiltration from clean water sources, such as rooftops and downspouts.*



- ❑ *Use Low Impact Development and Best Management Practices for stormwater management quality and quantity control, by stormwater retrofit opportunities and upgrades.*
- ❑ *Reduce the impact of winter salt application; consider updates to salt management plans, and education and outreach.*

Due to the infiltration potential of the Kars Esker, it is anticipated that all of the onsite stormwater will be re-infiltrated onsite. Stormwater design and requirements are not addressed as part of this report, however will be treated appropriately as per the MCSS recommendations.

The proposed development will use modern equipment and technology to reduce the potential impacts on the Kars Esker as well as significantly reduce the sewage load which is currently being applied to the Site. The client is proposing to rezone the combined property which currently has an automotive repair garage, a service garage for non-road vehicles and seven (7) individual sewage systems to allow for a modern automotive dealership.

It is proposed that the sewage load will be reduced from 7 residential / commercial sewage systems to 1 commercial sewage system. A typical sewage system under the Ottawa Building Code (OBC) for a 4-bedroom residence with a footprint of 250 m² or less with a fixture count of 30 would have an approximate total daily design sanitary sewage flow (TDDSSF) of 2,500 L/d. Assuming this is the case for the existing dwellings, this means the site currently has approximately 17,500 L/day of sewage effluent being applied to it. The proposed development is anticipated to have a TDDSSF of 3,224 L/day.

The proponent is proposing to use regulated monitoring tools such as an Environmental Compliance Approval (ECA) for the greywater treatment system and the Ottawa Septic System Office (OSSO) annual monitoring program for tertiary treatment systems. These tools will enforce safe practices on the subject site, rather than leave the potentially contaminating current uses in place.

Although a development is being proposed, it is a development which will decrease potential impacts on the groundwater that is entering the Kars Esker.

Hydrogeological Pre-consultation

A Hydrogeological Pre-consultation was completed with a City of Ottawa Hydrogeologist on November 24, 2021. Additional discussions and consultations have been ongoing since the first pre-consultation.



Site Conditions

Property Description

The subject site is situated to the southeast of the intersection of Prince of Wales Drive and Bankfield Road in Ottawa. It is proposed that a commercial development consisting of one automobile dealership with associated infrastructure be constructed on the subject site. The proposed property is to consist of the combination of 1450 Bankfield Road, 1454 Bankfield Road, 1458 Bankfield Road, 1464 Bankfield Road, 1468 Bankfield Road, 5479 Elijah Court and 5485 Elijah Court. The total site area is approximately 1.91 hectares (ha) in area. Currently, the property is occupied by a mix of commercial and residential properties and treed areas.

Surface Conditions

Based on Paterson's review of the available topographic survey information, ground surface at the subject site slopes downward from west to east. Onsite overburden flows are anticipated to be to the southeastern direction. General groundwater flow direction is anticipated to be east towards the Mud Creek Drain which then flows into the Rideau River.

Surrounding Land Uses

The subject site is situated in a rural area which is serviced by private water supplies and private on-site sewage systems. The Site is bordered to the north by Bankfield Road followed by residential properties and agricultural land, to the west by Elijah Court followed by Prince of Wales Drive and then agricultural land, and to the south and east by undeveloped and forested lands.

Geology

Surficial and Bedrock Geology

Paterson reviewed the available geological mapping provided by the Ontario Geological Survey (OGS MRD128) and found it to be generally consistent with the available historical surrounding Water Well Records (WWR). The mapping indicates that a glaciofluvial deposit consisting of river deposits and delta topset facies occupies the entirety of the subject site. The surrounding areas are mapped to show fine-textured glaciomarine deposits consisting of silt and clay to the east and west, and coarse-textured glaciomarine deposits consisting of sand and gravel to the north.

Paterson drilled five (5) boreholes to a maximum depth of 10.5 m below ground surface (bgs) at the subject site between August 13 and 16, 2021 as part of a Geotechnical field program. A dynamic cone penetration test (DCPT) was completed in one of the boreholes (BH5-21) as part of the study and extended to 24.8 m bgs before it encountered refusal. A supplemental Geotechnical field investigation was carried out at



the subject site on July 11, 2022 where four (4) boreholes were advanced to a maximum depth of 9 m bgs.

The subsurface profile was consistent across all of the boreholes and consisted of topsoil and/or fill underlain by a silty sand deposit and/or glacial till. The thickness of the fill is generally only 0.3 to 0.8 m at the northwest portion of the site but increases significantly to a thickness ranging from approximately 4.0 to 6.3 m at boreholes BH 4-21, BH 5-21 and BH 1-22 within the central and southwest portions of the site. A compact, brown silty sand deposit was encountered underlying the topsoil and/or fill materials at all boreholes, with the exception of BH 4-21, BH 5-21 and BH 1-22 where deep fill material was encountered. The silty sand deposit was observed to extend to approximate depths of 2.1 to 4.0 m. The glacial till deposit was encountered underlying the fill material and/or silty sand at depths ranging from about 2.2 to 6.3 m and was generally observed to consist of a compact to very dense, brown silty sand with gravel, cobbles, and boulders.

The results from the boreholes are consistent with the information available from surrounding WWR's and geological mapping. Please refer to the attached Paterson borehole logs for additional details and Paterson's Drawing PH4334-1(rev.04) for the test hole locations.

Available bedrock geological mapping provided by the Ontario Geological Survey (MRD 219) indicates that the bedrock underlying the subject site consists of dolostone within minor quantities of shale and sandstone of the Oxford Formation from the Beekmantown Group. Available overburden thickness mapping shows a drift thickness of 15 to 25 m across the subject site.

Hydrogeology

Based on the topographic relief of the area and available groundwater flow direction mapping, the onsite overburden groundwater flow direction is expected to trend towards the southeast. General groundwater flow direction is anticipated to be east towards the Mud Creek Drain which then flows into the Rideau River.

Hydrogeological Sensitivity

As the site does not have bedrock within 2 m of the ground surface, the site is not considered hydrogeologically sensitive. Any new sewage systems shall be designed in accordance with Part 8 of the Ontario Building Code.

Surrounding Water Well Records

A search of the Ministry of the Environment, Conservation and Parks water well records (WWR) resulted in 23 WWR's within a 500 m radius of the subject site although some of the WWRs are erroneously located or not potable supply wells. The most recent WWR for a potable supply well was completed in 2016. The historical well depths for the domestic wells ranged from 12 m to 48.8 m bgs. All WWR's can be found attached to this report.



Karst Features

The term “karst” refers to a geologic formation characterized by the dissolution of carbonate bedrock, such as limestone or dolostone. In order for karstification to occur, precipitation must be allowed to infiltrate the top of the bedrock to dissolutionally enlarge previously existing joints and bedding planes. Based on available mapping by the Ontario Geological Survey, there is no inferred, potential or known karstification in the subject area.

Theoretical Sewage System and Grey Water Volumes

The theoretical sewage system volumes for the proposed commercial building are calculated using the Ontario Building Code (OBC) section 8.2.1.3; Sewage System Design Flows. The proposed automotive dealership is anticipated to have 40 8-hour employee shifts (or equivalent) and 28 customer visits per day. Based on the aforementioned OBC, the total daily sewage system volumes are as follows:

- ❑ 40 8-hour employee shifts/day x 75 L per each 8-hour employee shift = 3,000 L/day
- ❑ 28 customer visits/day x 8 L per customer visit = 224 L/day
- ❑ Total daily volumes = 3,000 + 224 L/day = 3,224 L/day = 3.2 m³/d

Please note that the OBC sewage system volumes are conservative flows and the actual daily flows are likely to be lower.

In addition to the sewage system volumes, grey water will be produced through car washing (manual wash/spray wash only). Approximately 20 such car washes are anticipated per day at a rate of 182 L/wash. Furthermore, the equivalent of 375 L/day can be assumed from snow melt. The expected daily grey water volumes are calculated as follows:

- ❑ 20 car washes/day x 182 L/car wash = 3,640 L/day
- ❑ Snow melt = 375 L/day
- ❑ Grey water produced = 3,640 + 375 L/day = 4,015 L/day = 4.01 m³/d

Therefore, approximately 4,015 L/day of grey water will be produced. It should be noted that the grey water will be treated prior to discharge and the grey water discharge will be subject to an Environmental Compliance Approval (ECA).

Nitrate Impact Assessment

The proponent is proposing a use for the site that will reduce the current total daily design sanitary sewage flow (TDDSSF) of approximately 17,500 L/day to a TDDSSF of 3,224 L/day. Additionally, they are proposing to remove the existing automotive repair garage and the service garage for non-road vehicles to replace them with a modern automotive dealership. As part of the rezoning process, the City of Ottawa does not



typically allow the use of tertiary treatment systems to support the application. As a tertiary treatment system requires annual monitoring by the OSSO, and allows for advanced treatment of sewage effluent, a tertiary treatment system is being proposed for the Subject Site. The mandatory monitoring required on tertiary treatment systems by the OSSO ensures that the system is properly maintained and replaced when required, whereas there is no mandatory monitoring on a conventional sewage system.

The primary concern regarding the Kars Esker is the protection of the esker as it relates to groundwater quality and quantity. A tertiary treatment system would require annual monitoring which would be an additional level of protection from a groundwater quality perspective. A tertiary treatment system combined with the proposed lower flow volumes, would further reduce the potential risk of contamination to the Kars Esker. Due to the infiltration potential of the Kars Esker, it is anticipated that all of the onsite stormwater will be re-infiltrated onsite, which will protect the esker as it relates to groundwater quantity.

Grey water from the hand car washes will be treated to appropriate levels and re-infiltrated into the Kars Esker. The grey water discharge will be subject to an Environmental Compliance Approval (ECA) to ensure it meets the target quality goals.

In order to demonstrate the viability and sustainability aspects of private servicing on the subject site, a Nitrate Impact Assessment was completed using the above noted parameters. As tertiary treatment technology is being proposed to lower the potential risk to the Kars Esker, the use of nitrate reduction technology was included.

Predictive Nitrate Impact Assessment

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

<input type="checkbox"/> Site area	1.9 ha
<input type="checkbox"/> Impervious area (%)	75 %
<input type="checkbox"/> Daily sewage flow	3.2 m ³ /d
<input type="checkbox"/> Concentration of nitrate in effluent with treatment (Value based on nitrate reduction system (NSF 245 certified system) with 50% nitrate reduction)	20 mg/L
<input type="checkbox"/> Surplus Water (The surplus water value was estimated based on Environment Canada Climate Office values with a soil type comprised of a sandy loam (Urban lawns / Shallow Rooted Crops) and anthropogenic sources.)	361 mm/yr
<input type="checkbox"/> Combined infiltration factor based on:	0.70
• Topography infiltration factor	0.20



- Soil texture infiltration factor 0.40
- Cover infiltration factor 0.10

☐ Flow entering the system from across the upgradient area: 4.01 m³/day
(From the treated wash water (greywater) to be covered under a ECA)

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

The calculation for a conventional sewage system (system without nitrate reduction) results in a predicted nitrate concentration of 19.67 mg/L nitrate for the subject site, using a value of 40 mg/L nitrate concentration within the effluent. This value was based upon a daily sewage flow of 3,200 L/day. It is expected that the actual usage should be lower. The inclusion of nitrate reduction technology (50 % nitrogen reduction in the of the effluent nitrate) would result in a nitrate concentration of 9.83 mg/L at the property boundary. Additional re-infiltration of the treated grey water (wash water) reduces the nitrate concentration to 6.09 mg/L, which is below the limit of 10 mg/L.

Based on the results of the predictive NIA, it is our opinion that the property can adequately support the proposed site plan application without having an adverse impact on the underlying bedrock aquifer, provided that an NSF 245 certified nitrate reduction system or similar technology is used in the sewage system. Re-infiltration of the treated greywater and stormwater will further reduce the potential impacts related to the onsite sewage system.

Development Considerations

The onsite sewage disposal needs can be accommodated by a conventional Class 4 Sewage System utilizing tertiary treatment technologies, as per OBC criteria. Standard Class 4 systems with tertiary treatment typically include a treatment unit between the septic tank and the leaching bed. Tertiary sewage treatment technologies are accepted in the OBC. It should be noted that tertiary treatment systems require a maintenance contract to perform annual inspections by a qualified person.



Conclusions

The following statements and conclusions are based upon a review of the available information and analysis contained within this letter report:

- ☐ The subject site is generally suitable for the proposed development based upon its location, topography, and surrounding land uses.
- ☐ The predictive nitrate concentration at the property boundary was calculated to be 6.09 mg/L when 50% nitrate reduction and re-infiltration of the wash water (greywater) is considered, which is below the threshold of 10 mg/L at the property boundary.
- ☐ Onsite sewage disposal needs can be accommodated with a Class 4 Sewage System utilizing tertiary treatment technologies.
- ☐ The construction of an onsite sewage system is not anticipated to affect the performance or water quality associated with any nearby drilled wells, contingent upon the onsite sewage system being designed in accordance with Part 8 of the Ontario Building Code (i.e properly sized sewage system and conforming to all separation distances).
- ☐ The subject site is sufficient in size to accommodate a new sewage system and meet all the regulatory separation criteria.
- ☐ A Sewage System permit and Building Permit need to be issued prior to the commencement of construction on any future building(s) or any new sewage system(s).



Based on the results of the review, it is our opinion that the site plan application for the proposed commercial development can be supported as per the results of the nitrate impact assessment should an approved 50% nitrate reduction technology be used.

We trust that the current submission satisfies your immediate requirements.

Best Regards,

Paterson Group Inc.

Alexander Schopf, PhD, EIT

Erik Ardley, P.Geo

Michael S. Killam, P.Eng



Attachments:

- ☐ Paterson Key Plan
- ☐ Paterson Test Hole Logs
- ☐ Predictive Nitrate Impact Assessment Calculation
- ☐ MECP Water Well Records (Surrounding 500 m radius)
- ☐ PH4334-1- Preliminary Site Servicing Plan



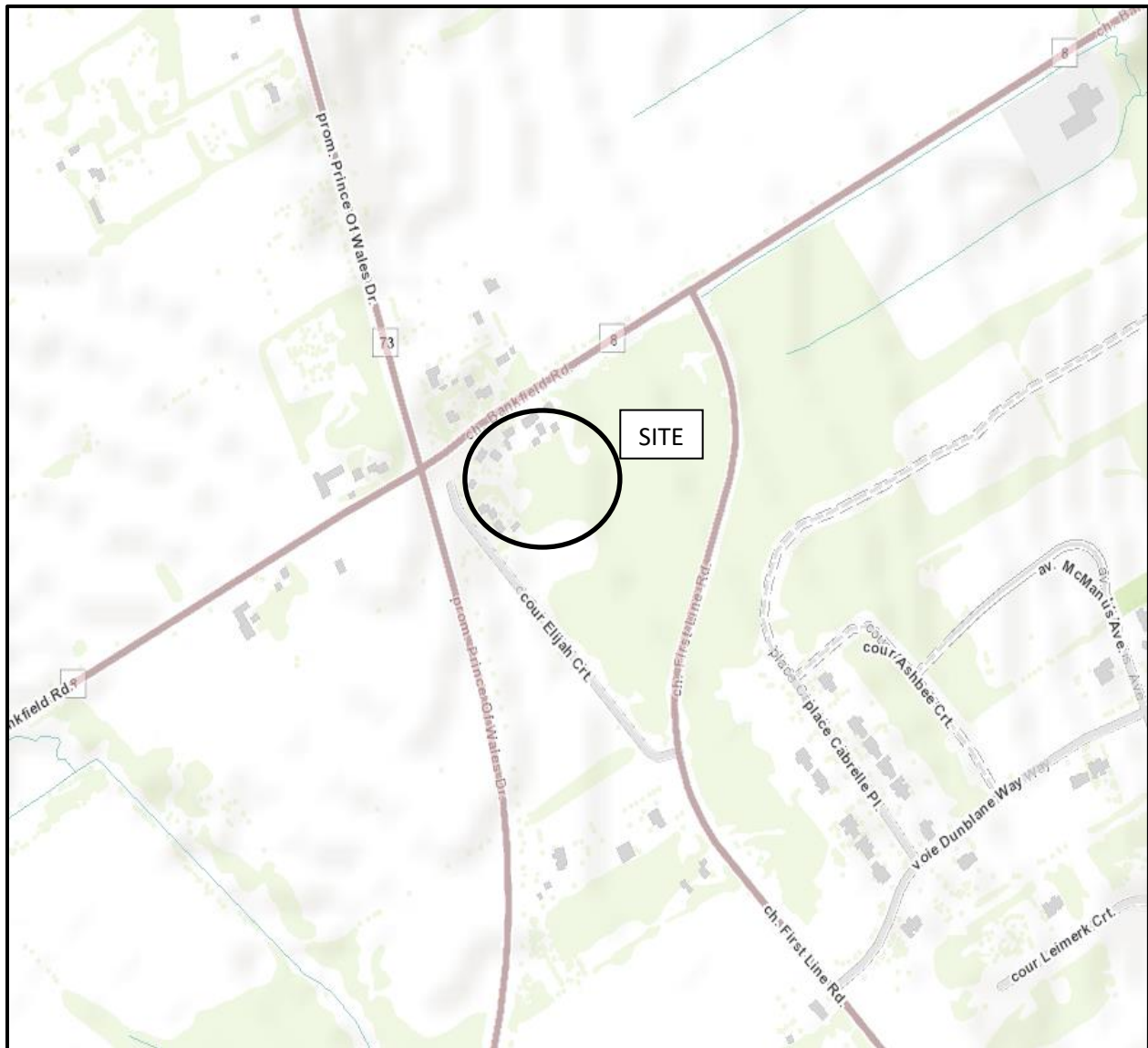


FIGURE 1

KEY PLAN

DATUM Elevations are referenced to a geodetic datum.

FILE NO. PG5937

REMARKS

HOLE NO. **BH 1-21**

BORINGS BY CME-55 Low Clearance Drill

DATE August 13, 2021

[illegible]

DATUM Elevations are referenced to a geodetic datum.

REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE August 13, 2021

FILE NO.

PG5937

HOLE NO.

BH 2-21

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Monitoring Well Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %				
								20	40	60	80	
GROUND SURFACE												
FILL: Crushed stone with gravel and brown silty sand.	0.31	AU	1			0	99.36					
		AU	2									
Loose to compact, brown SILTY SAND. - very dense, with gravel by 2.3m depth		SS	2	42	6	1	98.36					
		SS	3	58	15	2	97.36					
		SS	4	58	50+							
	2.97	SS	5	50	50+	3	96.36					
GLACIAL TILL: Dense, brown silty sand with gravel, cobbles and boulders - running sand encountered at 7.6m depth		SS	6	75	19	4	95.36					
		SS	7	75	50+	5	94.36					
		SS	8	33	50+	6	93.36					
		SS	9	0	50+	7	92.36					
		SS	10	75	50+	8	91.36					
		SS	11	67	24	9	90.36					
		SS	12	58	50+							
	9.14											
End of Borehole.												
(GWL @ 7.23m - August 25, 2021)												
								Shear Strength (kPa)				
								20	40	60	80	100
								▲ Undisturbed △ Remoulded				

SOIL PROFILE AND TEST DATA

**Geotechnical Investigation
Proposed Commercial Development
1464 & 1468 Bankfield Rd., Ottawa, Ontario**

FILE NO. PG5937

HOLE NO. **BH 3-21**

DATE August 13, 2021

[illegible]

SOIL PROFILE AND TEST DATA

DATUM Elevations are referenced to a geodetic datum.

REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE August 13, 2021

FILE NO.

PG5937

HOLE NO.

BH 4-21

[illegible]

DATUM Elevations are referenced to a geodetic datum.

REMARKS

BORINGS BY CME-55 Low Clearance Drill

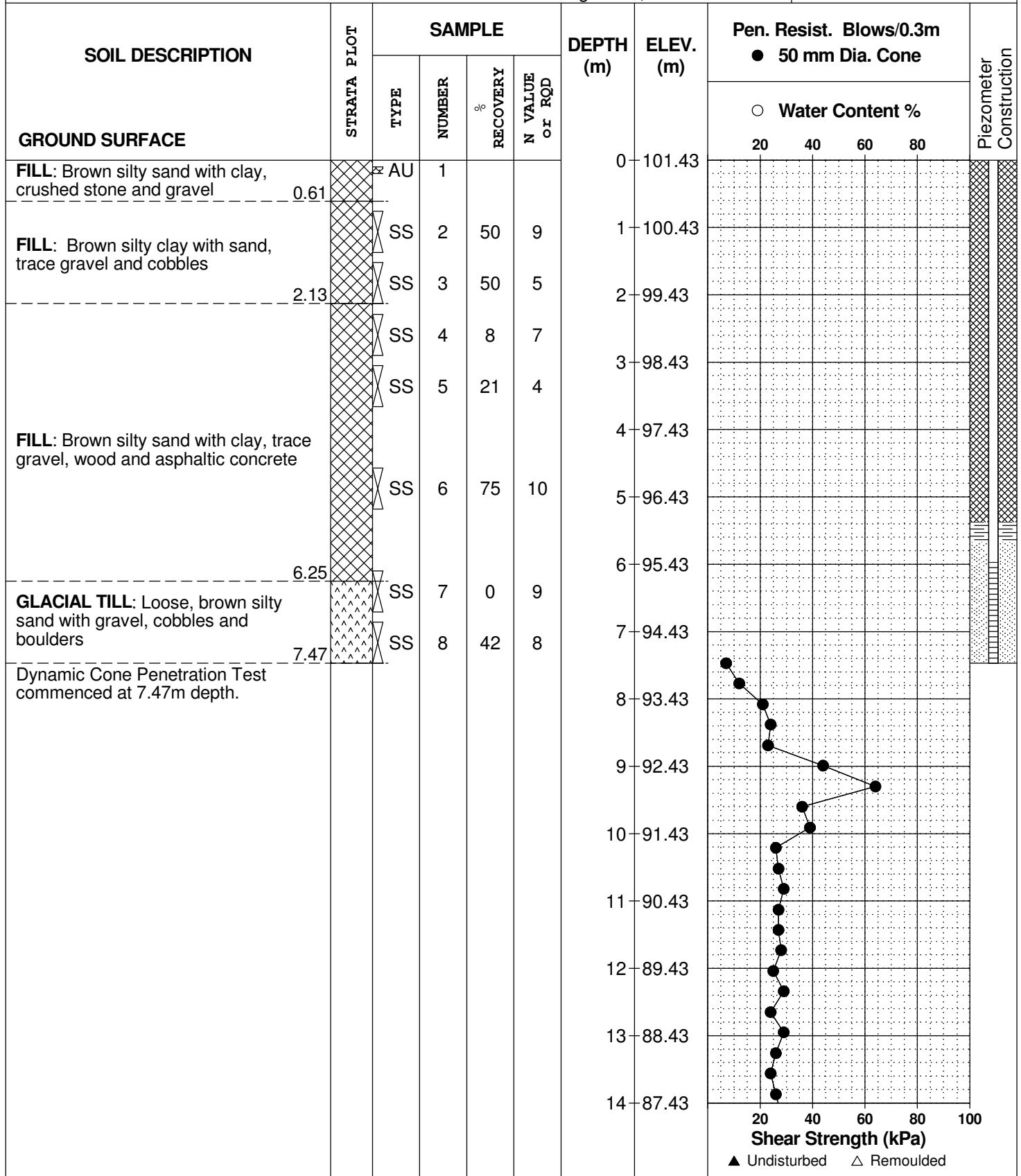
DATE August 13, 2021

FILE NO.

PG5937

HOLE NO.

BH 5-21



DATUM Elevations are referenced to a geodetic datum.

REMARKS

BORINGS BY CME-55 Low Clearance Drill

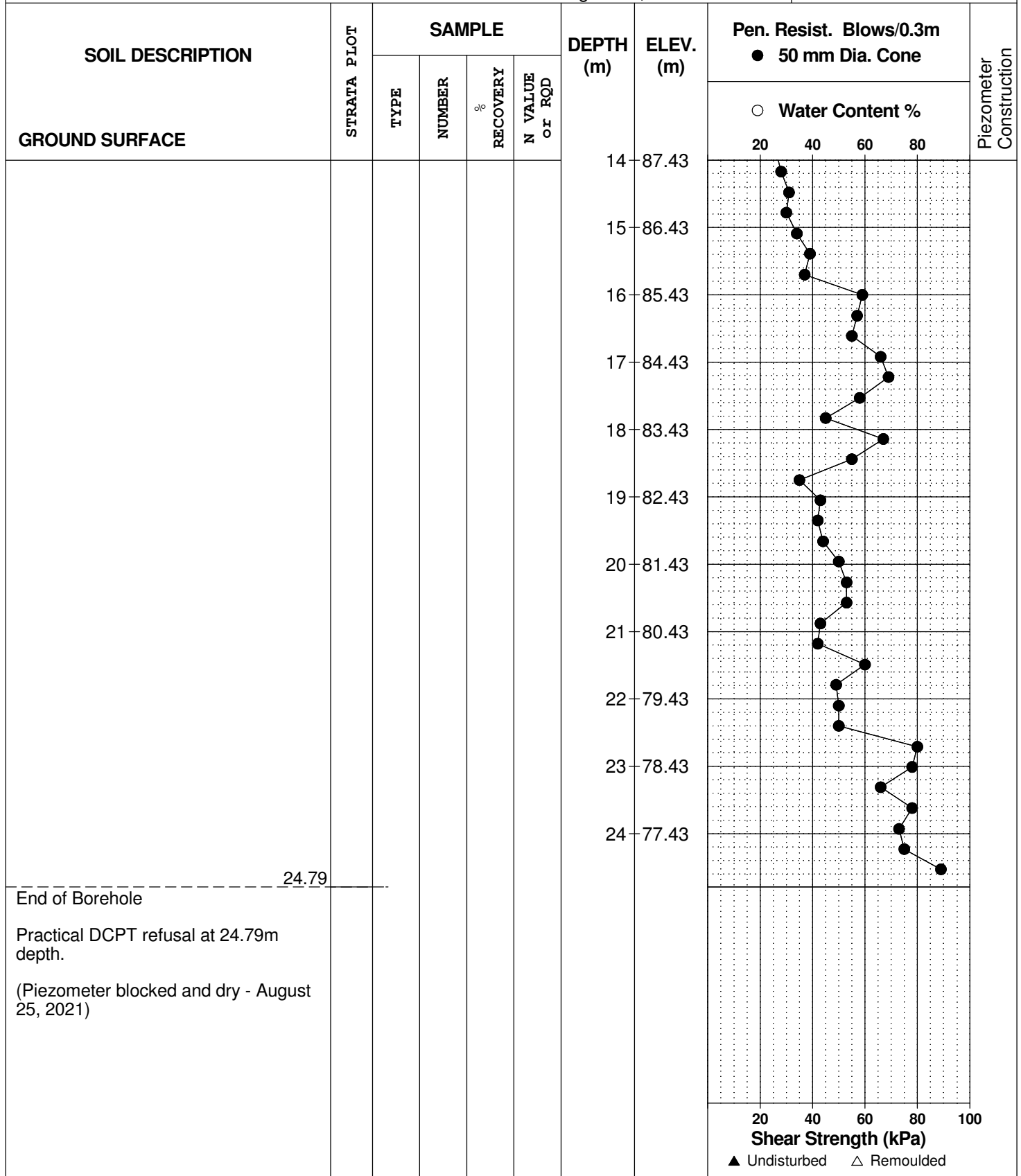
DATE August 13, 2021

FILE NO.

PG5937

HOLE NO.

BH 5-21



DATUM Geodetic

REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE July 11, 2022

FILE NO.
PG5937

HOLE NO.
BH 1-22

SOIL DESCRIPTION	STRATA PLOT	SAMPLE				DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone				Monitoring Well Construction
		TYPE	NUMBER	RECOVERY %	N VALUE or RQD			○ Water Content %				
								20	40	60	80	
GROUND SURFACE												
TOPSOIL	0.15					0	96.89					
FILL: Brownsilty sand, some clay, gravel, occasional cobbles, trace asphalt, glass and crushed stone		AU	1									
		SS	2	75	22	1	95.89					
		SS	3	67	16	2	94.89					
		SS	4	58	12							
		SS	5	568	28	3	93.89					
GLACIAL TILL: Compact to very dense, brown silty sand to sand with gravel, occasional cobbles - some running sand by 5.8m depth.	3.96	SS	6	75	19	4	92.89					
		SS	7	83	13	5	91.89					
		SS	8	75	44							
		SS	9	75	32	6	90.89					
		SS	10	83	34	7	89.89					
		SS	11	92	65	8	88.89					
Loose, grey SILTY SAND	8.30											
		SS	12	58	6							
End of Borehole	8.99											
(GWL @ 4.23m - July 15, 2022)												

DATUM	Geodetic
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REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE July 11, 2022

FILE NO.
PG5937

HOLE NO.
BH 2-22

[illegible]

DATUM	Geodetic
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REMARKS

BORINGS BY CME-55 Low Clearance Drill

DATE July 11, 2022

FILE NO.
PG5937

HOLE NO.
BH 3-22

[illegible]

[illegible]

PREDICTIVE NITRATE IMPACT ASSESSEMENT		
Infiltration Factors		
Topography	0.20	
Soil	0.40	
Cover	0.10	
Total	0.70	
Site Characteristics		
Area of Site :	19077	m ²
Total of roof areas:	2130	m ²
Total area of paved driveway areas:	12170	m ²
Roof + paved driveway areas	14300	m ²
Impervious Area	14300	m ²
Percent Impervious Area =	75	%
Infiltration Area =	4777	m ²
Septic Effluent		
Concentration of Effluent (Cs) =	20	mg/L
Daily Sewage Flow (Qs)=	3.2	m ³
See Notes below.		
Infiltration Calculation		
Nitrate concentration in precipitation (C _i) =	0	mg/L
Surplus Water (Environment Canada)	361	mm/yr
Factored Water Surplus =	253	mm/yr
Infiltration % due to stormwater management measures	-	%
Infiltration rate from stormwater management measures =	0	mm/yr
Infiltration Flow Entering the System (Q _i) =	3	m ³ /day
Mass Balance Model (MOEE, 1995)		
$C_T = (Q_b C_b + Q_e C_e + Q_i C_i) / (Q_b + Q_e + Q_i) = \text{Cumulative Nitrate Concentration}$		
Q _b = flow entering the system across the upgradient area	4.01	m ³ /day
C _b = background nitrate concentration	0	mg/L
Q _e = flow entering the system from the septic drainfield	3.2	m ³ /day
C _e = concentration of nitrates in the septic effluent	20	mg/L
Q _i = flow entering the system from infiltration	3	m ³ /day
C _i = Concentration of nitrates in the infiltrate	0	mg/L
C_T =	6.09	mg/L
Estimate Number of Lots	1	lots
Notes: Site characteristic values were measured as approximate values from the available site plan. Daily Sewage Flow volume was calculated by Paterson Group as a preliminary design flow.		

UTM 18 1443181010 E

9 R 51010712110 N

Elev. 9 R 0330

Basin 25

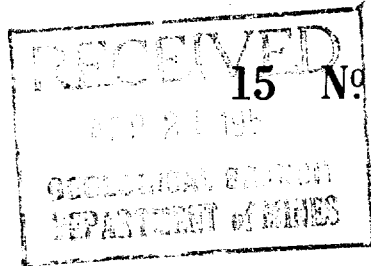
31649



ONTARIO

The Water-well Drillers Act, 1954

Department of Mines



6574

Water-Well Record

County or Territorial District Essex Township, Village, Town or City North Gosport

Village, Town or City

Address Manotick

(day)

(month)

(year)

Pipe and Casing Record

Pumping Test

Casing diameter(s) 5" Static level 15'
Length(s) Pumping rate 200 G.P.H.
Type of screen Pumping level 200 G.P.H. 22'
Length of screen Duration of test 1 hr.

Well Log

Water Record

Overburden and Bedrock Record

From
ft.

To
ft.

Depth (s)
at which
water (s)
found

No. of feet
water rises

Kind of water
(fresh, salty,
or sulphur)

Clay

1'

22'

Sand

22'

40'

gravel

50'

60'

60'

45'

Fresh

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

Residential

Is water clear or cloudy? clear

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

Drilling firm M. M. Meagher

Address 639 Beaverwood Ave

Name of Driller M. M. Meagher

Address

Licence Number 171

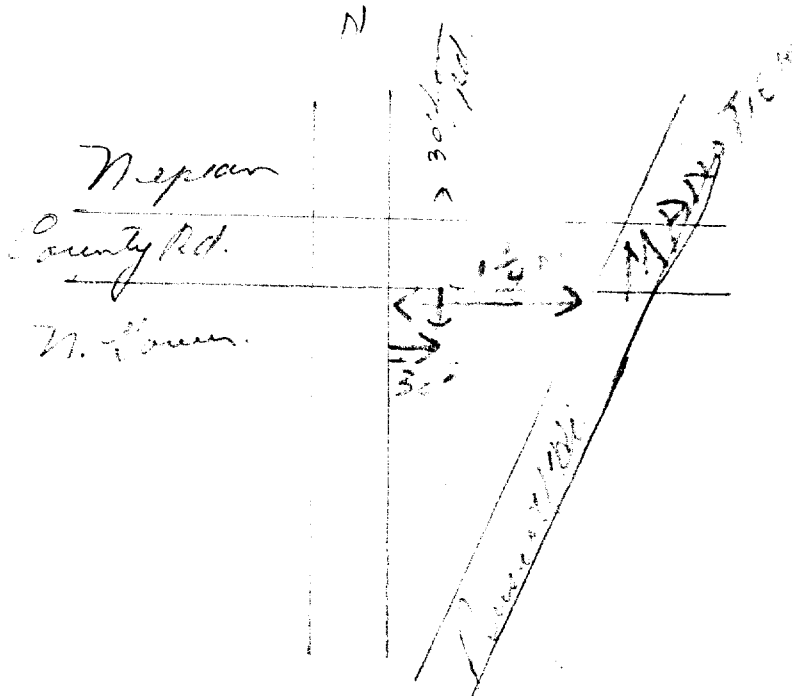
I certify that the foregoing
statements of fact are true.

Date Feb 4 M. M. Meagher

Signature of Licensee

Location of Well

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

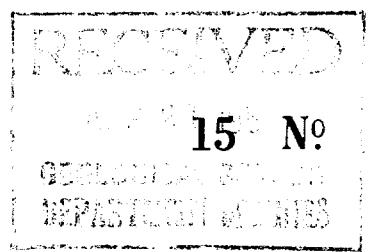


UTM 10 18 2 4 4 3 8 3 0 E 31649

19 R 5 0 0 7 2 2 0 N

Elev. 9 R 0 3 3 0

Basin 2 5



575

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Pulse Township North Village, Town or City Lawrence
Address W. Anotick
(day) (month) (year)

Pipe and Casing Record

Pumping Test

Casing diameter(s) <u>3"</u>	Static level <u>10'</u>
Length(s) <u> </u>	Pumping rate <u>225-4 PPH</u>
Type of screen <u> </u>	Pumping level <u>15'</u>
Length of screen <u> </u>	Duration of test <u>1 hr</u>

Well Log

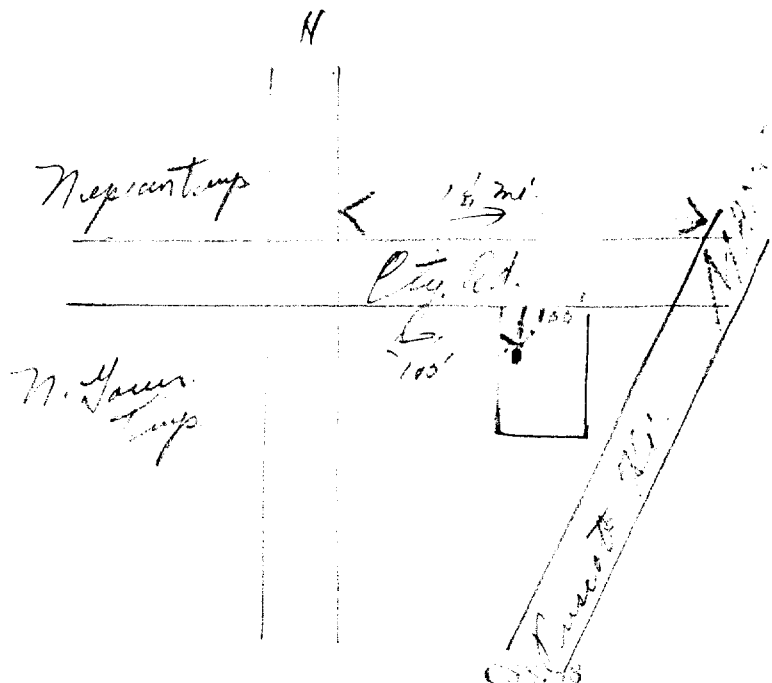
Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
<u>Clay</u>	<u>1'</u>	<u>20'</u>			
<u>Sand</u>	<u>20'</u>	<u>45'</u>			
<u>Gravel</u>	<u>45'</u>	<u>48'</u>	<u>3-5'</u>	<u>45'</u>	<u>fresh</u>

For what purpose(s) is the water to be used? Residential
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? hillside
Drilling firm M. W. Meagher
Address 639 Howard Woodley
Name of Driller M. W. Meagher
Address
Licence Number 171
I certify that the foregoing statements of fact are true.
Date Feb 17 M. W. Meagher
Signature of Licensee

Location of Well

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



GROUND WATER DRAINAGE
15 No 6580
REV 3 1958
ONTARIO WATER
RESOURCES COMMISSION

Elev. 19' 10.33 0

Basin 25 A

LOT 1

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District.....*Carlisle*.....Township, Village, Town or City.....*N. Tower*.....

in Village, Town or City).....

Address Karo Out

(day) (month) (year)

Pipe and Casing Record

Pumping Test

Casing diameter (s) 3"

Length(s) 77 17

Type of screen

Length of screen 10m

Static level 23

Pumping rate 500 μ -PH

Pumping level 30 ft

Duration of test 4 hrs

Well Log

Water Record

[illegible]

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

Haare

Is water ~~clear~~ or cloudy?.....

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

Drilling firm H. R. Cassette

Address 1652 BASELINE RD

OTTAWA 5 ONT.

Name of Driller

Address SAME

Licence Number 395

I certify that the foregoing
statements of fact are true.

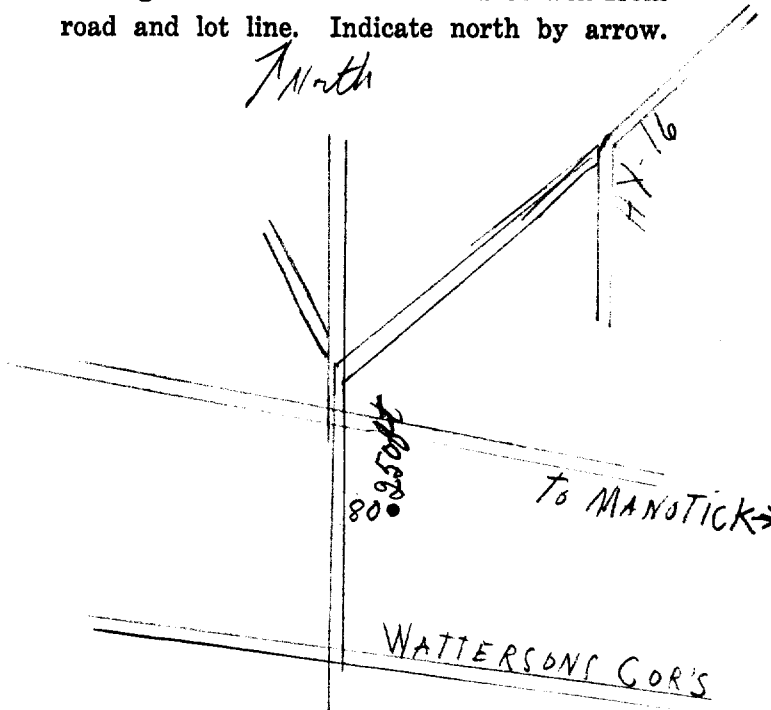
Date. Oct 23/58 J R Conette

Signature of Licensee

Location of Well

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

North



000000



Water management in Ontario

1. PRINT ONLY IN SPACES PROVIDED

2. CHECK ☒ CORRECT BOX WHERE APPLICABLE

11

MUNICIP

CON

15004

CON

A

COUNTY OR DISTRICT

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE

CON. BLOCK, TRACT, SURVEY, ETC.

LOT	25-27
-----	-------

CARLETON

NORTH GOWER

A 001

DATE COMPLETED 48-53
DAY 05 MO. 05 YR. 74

6 TILBURY AVE OTTAWA

NG	RC	ELEVATION	RC	BASIN CODE	I	II	III	IV
007360	4	6320	5	25				
24	25	26	30	31				

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)[illegible]

31

0076	1109	0087215
------	------	---------

32

41

WATER RECORD

WATER FOUND AT - FEET		KIND OF WATER	
10-13	1 <input checked="" type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	14
15-18	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	19
20-23	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	24
25-28	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	29
30-33	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	34

CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES		MATERIAL		WALL THICKNESS INCHES		DEPTH - FEET	
						FROM	TO
10-11	1 <input checked="" type="checkbox"/> STEEL	12					13-1
06	2 <input type="checkbox"/> GALVANIZED						0076
BK	3 <input type="checkbox"/> CONCRETE			.188		0	76
	4 <input type="checkbox"/> OPEN HOLE						
13-18	1 <input type="checkbox"/> STEEL	19					20-2
06	2 <input type="checkbox"/> GALVANIZED						0087
BK	3 <input type="checkbox"/> CONCRETE					76	87
	4 <input checked="" type="checkbox"/> OPEN HOLE						
24-25	1 <input type="checkbox"/> STEEL	26					27-3
	2 <input type="checkbox"/> GALVANIZED						
	3 <input type="checkbox"/> CONCRETE						
	4 <input type="checkbox"/> OPEN HOLE						

SCREEN

SIZE(S) OF OPENING (SLOT NO.)	31-33	DIAMETER	34-38	LENGTH	39-4
INCHES		FEET			
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN		41-44	80
				FEET	

61 PLUGGING & SEALING RECORD

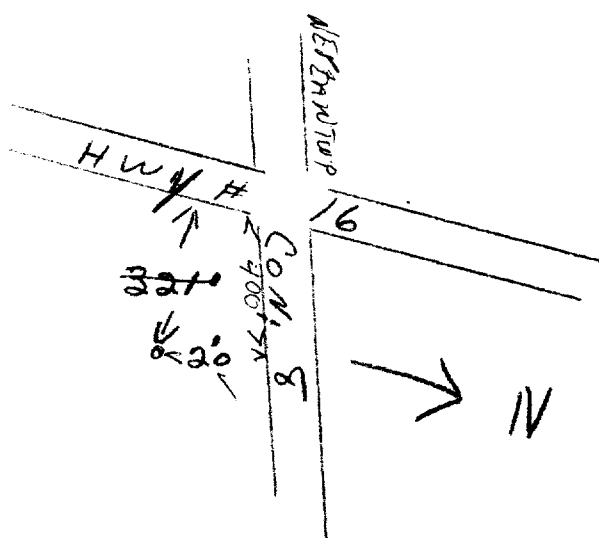
DEPTH SET AT - FEET		MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
FROM	TO	
10-13	14-17	CEMENT GROUT
18-21	22-25	
26-29	30-33	
	80	

PUMPING TEST

PUMPING TEST	PUMPING TEST METHOD		10	PUMPING RATE		11-14	DURATION OF PUMPING	
	1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER			0005		GPM.	01 15-16 HOURS 00 17-18 MINS.	
	STATIC LEVEL		25	WATER LEVELS DURING		1 <input type="checkbox"/> PUMPING 2 <input checked="" type="checkbox"/> RECOVERY		
	19-21	22-24	15 MINUTES 26-28	30 MINUTES 29-31	45 MINUTES 32-34	60 MINUTES 35-37		
	020 FEET	045 FEET	230 FEET	026 FEET	014 FEET	023 FEET		
	IF FLOWING, GIVE RATE		PUMP INTAKE SET AT		WATER AT END OF TEST			
	GPM.		FEET		1 <input type="checkbox"/> CLEAR 2 <input checked="" type="checkbox"/> CLOUDY			
	RECOMMENDED PUMP TYPE		RECOMMENDED PUMP SETTING		43-45	RECOMMENDED PUMPING RATE		
	<input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP		050 FEET		0005 GPM.			
	50-53		000.2		GPM./FT. SPECIFIC CAPACITY			


LOCATION OF WELL

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



DRILLERS REMARKS:

CONTRACTOR

NAME OF WELL CONTRACTOR		LICENCE NUMBER	
MCLEAN WATER SUPPLY LTD. 3504			
ADDRESS			
1532 RAVEN AVE. OTTAWA 3.			
NAME OF DRILLER OR BORER		LICENCE NUMBER	
L. GIBBONS			
SIGNATURE OF CONTRACTOR		SUBMISSION DATE	
		DAY 7 MO 5 YR 70	

OFFICE USE ONLY

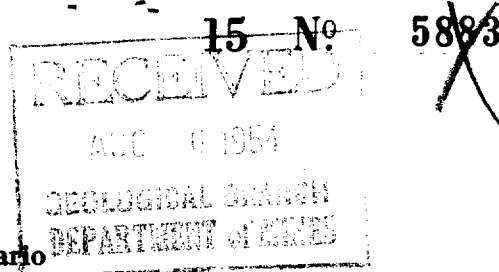
DATA SOURCE	58	CONTRACTOR	59-62	DATE RECEIVED	63-68
1		3504		280570	
DATE OF INSPECTION		INSPECTOR			
		S P/K			
REMARKS:					

OWRC COPY

Lot - 1.



The Well Drillers Act
Department of Mines, Province of Ontario



Water Well Record

Date Completed June 11, 1954 Cost of Well (excluding pump)
 (day) (month) (year)

Pipe and Casing Record

Pumping Test

Casing diameter(s) .. 5"	Date .. June 11
Length(s) of casing(s) .. 70'	Static level .. 30'
Type of screen ..	Pumping level .. 30'
Length of screen ..	Pumping rate .. 300 GPH
Distance from top of screen to ground level ..	Duration of test .. 1 hr
Is well a gravel-wall type?	Distance from cylinder or bowls to ground level ..

Water Record

Kind (fresh or mineral) . . . *fresh*

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

Appearance (clear, cloudy, coloured) *clear*

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

How far is well from possible source of contamination? . . . *40'*

What is the source of contamination? . . . *septic*

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

[illegible]

Well Log

Overburden and Bedrock Record

From	To
0 ft.ft.

1'	60'
60'	70'

Location of Well

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

Situation: Is well on upland, in valley, or on hillside? *hillside*
 Drilling Firm. *M. M. Meagher*
 Address. *B. Elamhahts*
 Name of Driller. *M. M. Meagher* Address. _____
 Date. *June 10, 1900* Licence Number. *171*

UTM 118(40) 4413171510!E
5R 510107131010!N
Elev. 4R 031310
Basin 1251
can II
10+1

31G-49



GROUND WATER BRANCH
MAY 30 1957
ONTARIO WATER
RESOURCES COMMISSION

15 No 5884
X

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Barleton Township, Village, Town or City Myran
In Village, Town or City).....
Address 9 Balsam St Ottawa
Date completed
(day) (month) (year)

Pipe and Casing Record

Pumping Test

Casing diameter(s) <u>4" well</u>	Static level <u>22'</u>
Length(s) <u>65' of 4" with 9' of 5" at rock</u>	Pumping rate <u>360 GPH.</u>
Type of screen <u>inlet</u>	Pumping level <u>25'</u>
Length of screen	Duration of test <u>1/2 hour</u>

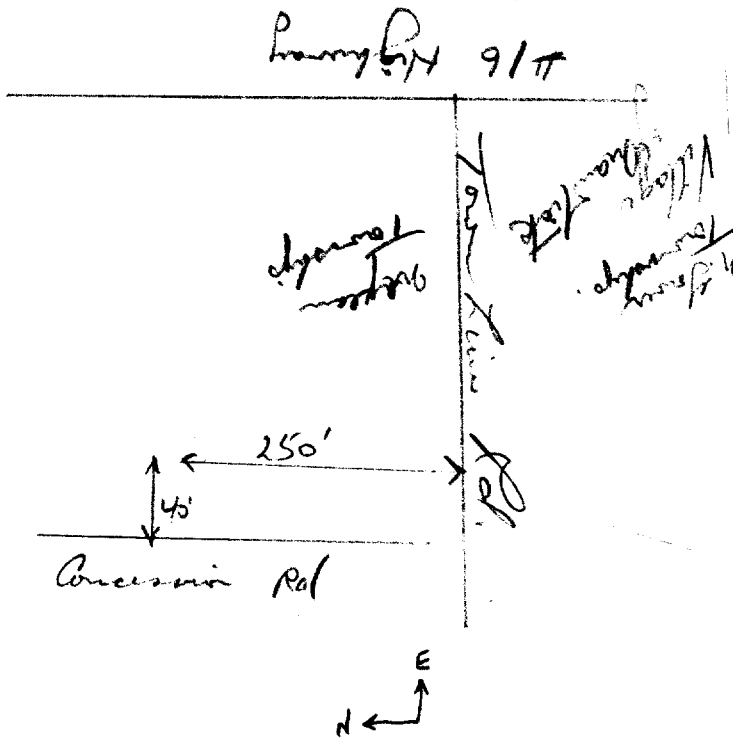
Well Log

Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
<u>Clay</u>	<u>0'</u>	<u>38'</u>			
<u>Boulder</u>	<u>38'</u>	<u>60'</u>			
<u>Gravel</u>	<u>60'</u>	<u>80'</u>	<u>80'</u>	<u>58'</u>	<u>fresh</u>

For what purpose(s) is the water to be used? Domestic
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside?.....
Upland
Drilling firm Blair & Phillips
Address 1119 Falaise Rd
Ottawa 5 Ont
Name of Driller Leo Vachon
Address Montreal Rd
Ottawa 5 Ont
Licence Number 1209
I certify that the foregoing statements of fact are true.
Date 15 March 1957 L Vachon
Signature of Licensee

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



UTM 1187 444101810 E

31649

GROUND WATER BRANCH
15 N^o 6387
OCT 2 1961ONTARIO WATER
RESOURCES COMMISSIONElev 4 03105

WATER WELL RECORD

Basin 25 Calton

County or District

Con ALot Wx L1Township, Village, Town or City North BayDate completed 28th August 1961

(day)

month

year

Address Kars Ont.

Casing and Screen Record

Inside diameter of casing 6 1/4"
 Total length of casing 32'
 Type of screen red brass
 Length of screen 4'
 Depth to top of screen 48'
 Diameter of finished hole 6 1/4"

Pumping Test

Static level 18'
 Test-pumping rate 15 G.P.M.
 Pumping level 26'
 Duration of test pumping 20 min.
 Water clear or cloudy at end of test clear
 Recommended pumping rate 5 G.P.M.
 with pump setting of 45' feet below ground surface

Well Log

Water Record

Overburden and Bedrock Record

From
ft.To
ft.Depth(s) at
which water(s)
foundKind of water
(fresh, salty,
sulphur)clay loam
gravel0
15'15'
5845'fresh

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

house

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

upland

Drilling or Boring Firm

Mel M. Laughlin

Address

Arden Ont.

Licence Number

223

Name of Driller or Borer

Melville M. Laughlin

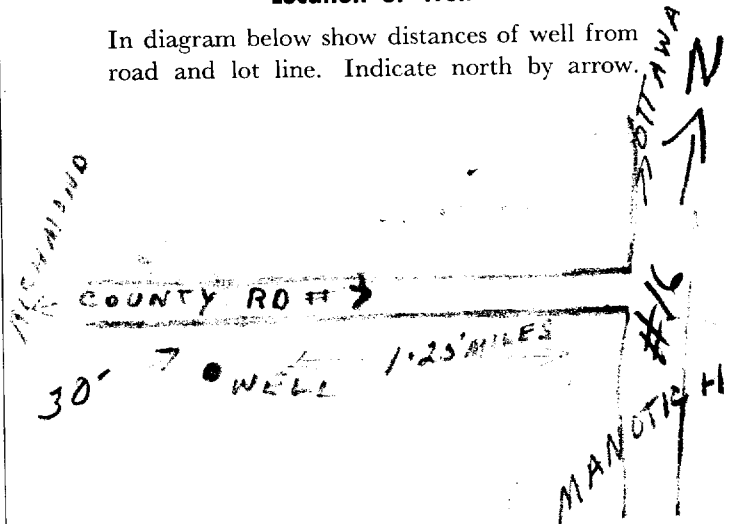
Address

Arden Ont.

Date


Aug. 25/61Melville M. Laughlin
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

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

UTM 118 2 443 1718 5 E
19 R 5007000 10 N
Elev. 91 R 9320
Basin 25
lot 1

31649



ONTARIO

RECEIVED

APR - 3 1956

GEOLOGICAL BRANCH

DEPARTMENT OF MINES

The Water-well Drillers Act, 1954

Department of Mines

15 No 6699

Water-Well Record

County or Territorial District Parry Sound Township, Village, Town or City N. Yarmouth
Address [redacted]
(day) (month) (year)

Pipe and Casing Record			Pumping Test		
Casing diameter(s) <u>4"</u>			Static level <u>10'</u>		
Length(s) <u>24'</u>			Pumping rate <u>250 gpm</u>		
Type of screen			Pumping level <u>14'</u>		
Length of screen			Duration of test <u>1 hr</u>		

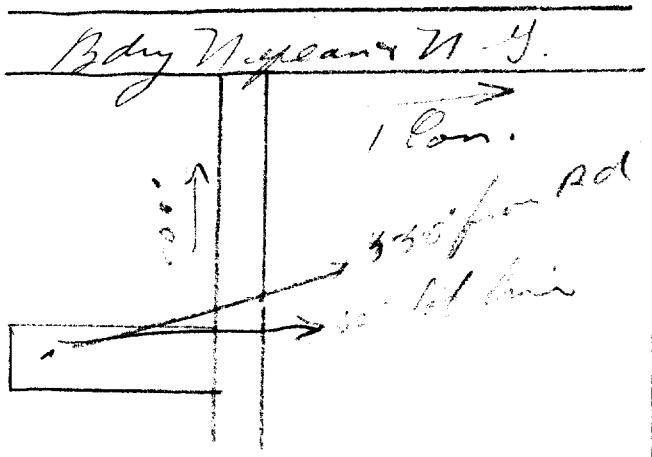
Well Log			Water Record		
Overburden and Bedrock Record	From ft.	To ft.	Depth (s) at which water (s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
<u>Loam</u>	<u>1</u>	<u>20</u>	<u>42'</u>	<u>32'</u>	<u>fresh</u>
<u>Gravel</u>	<u>20</u>	<u>24'</u>			
<u>Limestone</u>	<u>24</u>	<u>42'</u>			

For what purpose(s) is the water to be used? Domestic
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? hillside
Drilling firm M. McEachern
Address 639 Baskinwood Ave
Ottawa
Name of Driller M. McEachern
Address [redacted]
Licence Number 171
I certify that the foregoing statements of fact are true.
te. Frederick M. McEachern
Signature of Licensee

Location of Well

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

N



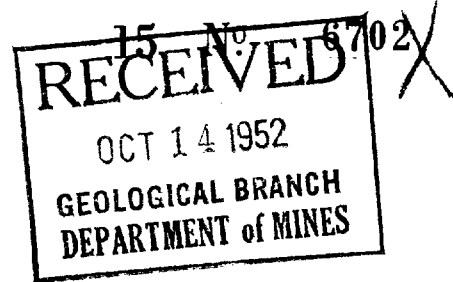
10' from Rd
33' from lot line

Present Well

UTM 11812 44401610 E
5 R 5101016181415 N
Elev. 41 0320
Basin 25



The Well Drillers Act
Department of Mines, Province of Ontario



Water Well Record

Township, Village, Town or City North Sower
own or City) Watson's Corner
Date Completed Sept 3/52 (day) (month) (year) Cost of well (excluding pump)

Pipe and Casing Record

MACE GOLDEN

Pumping Test

Casing diameter(s) <u>3"</u>	Date <u>Sept 3/52</u>
Length(s) of casing(s) <u>63</u>	Static level <u>21 ft</u>
Type of screen <u> </u>	Pumping level <u>28 ft</u>
Length of screen <u> </u>	Pumping rate <u>500 gals</u>
Distance from top of screen to ground level <u> </u>	Duration of test <u>2 hrs</u>
Is well a gravel-wall type? <u>Rock</u>	Distance from cylinder or bowls to ground level <u> </u>

Water Record

Kind (fresh or mineral) <u>fresh</u>	Depth(s) to Water Horizon(s) <u>65</u>	Kind of Water <u>fresh</u>	No. of Feet Water Rises <u>34</u>
Quality (hard, soft, contains iron, sulphur, etc.) <u>soft</u>			
Appearance (clear, cloudy, coloured) <u>clear</u>			
For what purpose(s) is the water to be used? <u>Household</u>			
How far is well from possible source of contamination? <u> </u>			
What is the source of contamination? <u> </u>			
Enclose a copy of any mineral analysis that has been made of water <u> </u>			

Well Log

Overburden and Bedrock Record

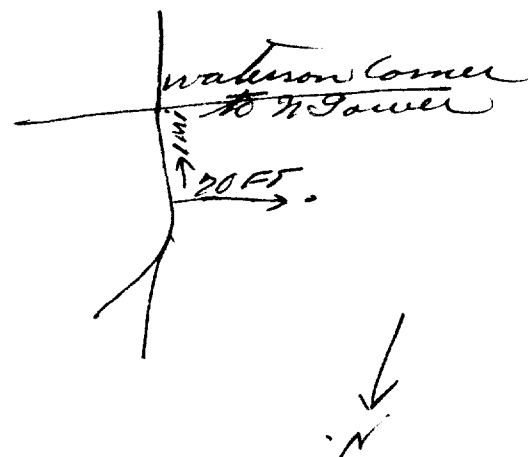
From	To
0 ft.	...ft.

<u>Gravel</u>	<u>0</u>	<u>63</u>
---------------	----------	-----------

<u>Limestone</u>	<u>63</u>	<u>70</u>
------------------	-----------	-----------

Location of Well

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



Situation: Is well on upland, in valley, or on hillside? Hillside
Drilling Firm J.B. Suter
Address 1870 Canyon
Name of Driller F. Corsetti Address
Date Sept 3/52 Licence Number

J.B. Suter
Signature of Licensee



151

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

OFFICE USE ONLY	DATA SOURCE	58	CONTRACTOR	59-62	DATE RECEIVED	63-68
	1		3644		110274	
	DATE OF INSPECTION		INSPECTOR			
			K			
	REMARKS:					
	CSE-58					



Ministry
of the
Environment
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

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

11

1517482

MUNICIPALITY 15004 CON. A

COUNTY OR DISTRICT

Ottawa Carleton

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE

16 Gower

CON. BLOCK, TRACT, SURVEY, ETC.

A

LOT

25-27

DATE COMPLETED

DAY 15 MO 10 YR 80

006999

4

0320

4

26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
gray	clay & boulders			0	62
	limestone			62	110
	sandstone			110	160

31 0062 0513 0110215 0160218

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
10-13	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	14	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
15-18	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	19	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
20-23	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	24	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
25-28	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	29	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		
30-33	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	34-80	
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL		

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
06	1 <input checked="" type="checkbox"/> STEEL			13-16
64	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input type="checkbox"/> OPEN HOLE	188	0	0065
	1 <input type="checkbox"/> STEEL			20-23
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input type="checkbox"/> OPEN HOLE			
24-25	1 <input type="checkbox"/> STEEL			27-30
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input type="checkbox"/> OPEN HOLE			

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

61 PLUGGING & SEALING RECORD

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

PUMPING TEST METHOD

PUMPING RATE

DURATION OF PUMPING

1 ☒ PUMP 2 ☐ BAILER

0012 GPM

00 15-16 HOURS 30 17-18 MINS

STATIC LEVEL

WATER LEVEL END OF PUMPING

25 WATER LEVELS DURING

1 ☒ PUMPING
2 ☐ RECOVERY

19-21 22-24

15 MINUTES 30 MINUTES 45 MINUTES 60 MINUTES

055 FEET 070 FEET 070 FEET 070 FEET 32-34 FEET 35-37 FEET

IF FLOWING, GIVE RATE

PUMP INTAKE SET AT

WATER AT END OF TEST

38-41 GPM FEET 42

1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE

RECOMMENDED PUMP SETTING

RECOMMENDED PUMPING RATE

☐ SHALLOW ☒ DEEP

080 FEET

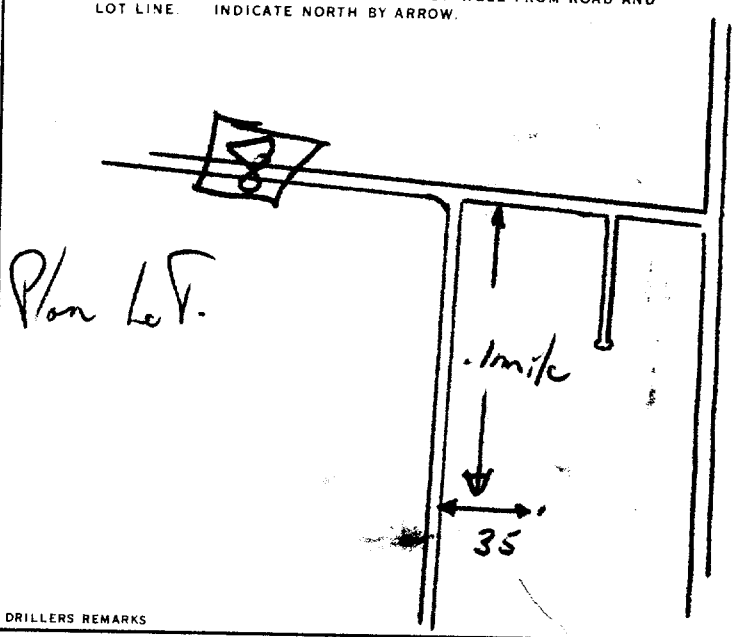
0012 GPM

50-53

PUMPING TEST

LOCATION OF WELL

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



DRILLERS REMARKS

FINAL STATUS OF WELL	1 <input checked="" type="checkbox"/> WATER SUPPLY				5 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY			
	2 <input type="checkbox"/> OBSERVATION WELL	3 <input type="checkbox"/> TEST HOLE	4 <input type="checkbox"/> RECHARGE WELL		6 <input type="checkbox"/> ABANDONED, POOR QUALITY	7 <input type="checkbox"/> UNFINISHED		
WATER USE	1 <input checked="" type="checkbox"/> DOMESTIC	2 <input type="checkbox"/> STOCK	3 <input type="checkbox"/> IRRIGATION	4 <input type="checkbox"/> INDUSTRIAL	5 <input type="checkbox"/> COMMERCIAL	6 <input type="checkbox"/> MUNICIPAL	7 <input type="checkbox"/> PUBLIC SUPPLY	8 <input type="checkbox"/> COOLING OR AIR CONDITIONING
								9 <input type="checkbox"/> NOT USED
METHOD OF DRILLING	1 <input type="checkbox"/> CABLE TOOL	2 <input checked="" type="checkbox"/> ROTARY (CONVENTIONAL)	3 <input type="checkbox"/> ROTARY (REVERSE)	4 <input type="checkbox"/> ROTARY (AIR)	5 <input type="checkbox"/> AIR PERCUSSION	6 <input type="checkbox"/> BORING	7 <input type="checkbox"/> DIAMOND	8 <input type="checkbox"/> JETTING
						9 <input type="checkbox"/> DRIVING		

CONTRACTOR	NAME OF WELL CONTRACTOR		LICENCE NUMBER	
	Air-Rock Drilling Ltd.		1119	
	ADDRESS			
	P.R. # 2 Jasper Ont			
	NAME OF DRILLER OR BORER		LICENCE NUMBER	
	Wallace Desautels		1119	
	SIGNATURE OF CONTRACTOR		SUBMISSION DATE	
	Wallace Desautels		30 MO 1 YR. 81	

DRILLERS REMARKS				
OFFICE USE ONLY	DATA SOURCE	58	CONTRACTOR	59-62
	1		1119	DATE RECEIVED
				020281
	DATE OF INSPECTION	INSPECTOR		
	REMARKS			

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506-4-77

Instructions for Completing Form

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

Ministry Use Only

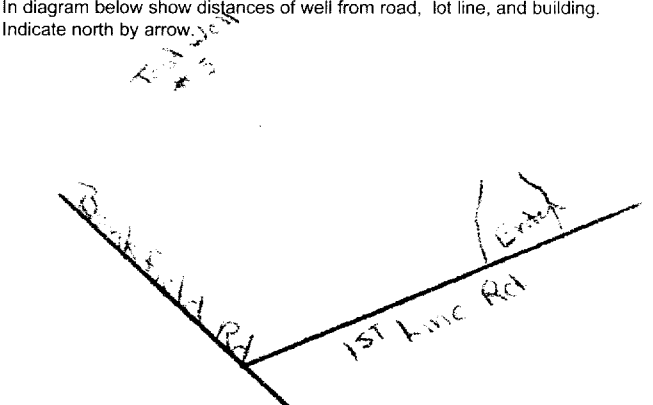
Address of Well Location (County/District/Municipality)				Township		Lot	Concession
Ottawa Carleton				Rideau North Gower		1/2	A
RR#/Street Number/Name				City/Town/Village		Site/Compartment/Block/Tract etc.	
Test Well #5, First Line Road				Manotick			
GPS Reading	NAD	Zone	Easting	Northing	Unit Make/Model	Mode of Operation:	<input type="checkbox"/> Undifferentiated <input checked="" type="checkbox"/> Averaged <input type="checkbox"/> Differentiated, specify
	8 3	18	44 44 29	50 07 44 6	Garmann		

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Metres To
Brown	Clay		Packed	0	3.65
Gray	Clay		Stickey	3.65	12.19
Gray	Sandy Soil	Stones		12.19	18.28
Gray	Limestone			18.28	25.90

Hole Diameter			Construction Record				Test of Well Yield			
Depth From	Metres To	Diameter Centimetres	Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Metres To	Pumping test method	Draw Down	Recovery
0	19.20	22.53						submersible	Time min	Water Level Metres
19.20	25.90	15.23	15.81	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	0.48	+ 0.45	19.20	Pump intake set at - (metres)	Static Level	
			Casing			Pumping rate - (litres/min)			1	.58
						Duration of pumping			2	.60
						1 hrs + min				
						Final water level end of pumping			3	.69
						Recommended pump type			4	.60
						Recommended pump depth			5	.61
						Recommended pump rate			10	.63
						If flowing give rate - (litres/min)			15	.64
									20	.64
									25	.65
						If pumping discontinued, give reason.			30	.66
									40	.66
									50	.68
									60	.69

Plugging and Sealing Record			<input checked="" type="checkbox"/> Annular space	<input type="checkbox"/> Abandonment
Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)	
19.20	0	Grouted - Bentonite Slurry	0.986m3	
Method of Construction				
<input type="checkbox"/> Cable Tool <input checked="" type="checkbox"/> Rotary <input type="checkbox"/> Diamond <input type="checkbox"/> Digging <input type="checkbox"/> Rotary (conventional) <input checked="" type="checkbox"/> Air percussion <input type="checkbox"/> Jetting <input type="checkbox"/> Other <input type="checkbox"/> Rotary (reverse) <input type="checkbox"/> Boring <input type="checkbox"/> Driving				
Water Use				
<input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Industrial <input type="checkbox"/> Public Supply <input type="checkbox"/> Other <input type="checkbox"/> Stock <input type="checkbox"/> Commercial <input type="checkbox"/> Not used <input type="checkbox"/> Irrigation <input type="checkbox"/> Municipal <input type="checkbox"/> Cooling & air conditioning				
Final Status of Well				
<input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Recharge well <input type="checkbox"/> Unfinished <input type="checkbox"/> Abandoned, (Other) <input type="checkbox"/> Observation well <input type="checkbox"/> Abandoned, insufficient supply <input type="checkbox"/> Dewatering <input type="checkbox"/> Test Hole <input type="checkbox"/> Abandoned, poor quality <input type="checkbox"/> Replacement well				
Well Contractor/Technician Information				
Name of Well Contractor			Well Contractor's Licence No.	
Capital Water Supply Ltd.			1558	
Business Address (street name, number, city etc.)				
P.O. Box 490 Stittsville, Ontario K2S 1A6				
Name of Well Technician (last name, first name)			Well Technician's Licence No.	
Miller, Stephen			T0097	
Signature of Technician/Contractor			Date Submitted	
<i>[Signature]</i>			2004 3 26	

Location of Well			
In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.			
			
Audit No.	Z 07077	Date Well Completed	2004 3 18
Was the well owner's information package delivered?	<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Delivered	2004 3 25
Ministry Use Only			
Data Source	Contractor		
	1558		
Date Received	JUN 24 2004	Date of Inspection	
Remarks	Well Record Number		
CSS	1534670		

Instructions for Completing Form

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

Ministry Use Only

Address of Well Location (County/District/Municipality) Ottawa - Carleton Township Rideau Lot 2 Concession 1
RR#/Street Number/Name #5548 First Line Road Manotick City/Town/Village Site/Compartment/Block/Tract etc.
GPS Reading NAD 83 Zone 18 Easting 444121 Northing 5906934 Unit Make/Model Mogeln Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth	
				From	To
	Sand, Gravel, Boulders			0	20.42
	Sand & Gravel			20.42	24.38
	Limestone			24.38	30.48

Hole Diameter			Construction Record				Test of Well Yield			
Depth	Metres	Diameter	Inside diam centimetres	Material	Wall thickness centimetres	Depth		Pumping test method	Draw Down	
From	To	Centimetres				From	To		Time min	Water Level Metres
0	30.48	14.91						Subpump		
			Casing					Pump intake set (metres)	Static Level	
								Pumping rate (litres/min)	1	8.27
								Duration of pumping	2	8.29
								Final water level end of pumping	3	8.32
								Recommended pump type	4	8.34
								Recommended pump depth	5	
								Recommended pump rate	10	
								If flowing give rate	15	
								If pumping discontinued, give reason.	20	
									25	
									30	
									40	
									50	
									60	

Plugging and Sealing Record			Annular space		Volume Placed (cubic metres)
Depth set at - Metres	From	To	Material and type (bentonite slurry, neat cement slurry) etc.		
25.60	22.55		Neat Cement Slurry		0.2724
22.55	0		Bentonite Slurry		0.981

Method of Construction			
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Rotary (air)	<input type="checkbox"/> Diamond	<input type="checkbox"/> Digging
<input type="checkbox"/> Rotary (conventional)	<input checked="" type="checkbox"/> Air percussion	<input type="checkbox"/> Jetting	<input type="checkbox"/> Other
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Boring	<input type="checkbox"/> Driving	
Water Use			
<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Industrial	<input type="checkbox"/> Public Supply	<input type="checkbox"/> Other
<input type="checkbox"/> Stock	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used	
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Municipal	<input type="checkbox"/> Cooling & air conditioning	
Final Status of Well			
<input checked="" type="checkbox"/> Water Supply	<input type="checkbox"/> Recharge well	<input type="checkbox"/> Unfinished	<input type="checkbox"/> Abandoned, (Other)
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Dewatering	
<input type="checkbox"/> Test Hole	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well	

Well Contractor/Technician Information	
Name of Well Contractor	Well Contractor's Licence No.
AIR ROCK DRILLING CO LTD	1119
Business Address (street name, number, city etc.)	
RR 1 RICHMOND ONT K0A2Z0	
Name of Well Technician (last name, first name)	Well Technician's Licence No.
MURCELL SHANNON	2122
Signature of Technician/Contractor	Date Submitted
X	2007 01 22

Location of Well	
In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.	
Audit No.	Date Well Completed
Z 55539	2006 11 20
Was the well owner's information package delivered?	Date Delivered
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	2006 11 21

Ministry Use Only	
Data Source	Contractor
	1119
Date Received	Date of Inspection
FEB 12 2007	
Remarks	Well Record Number

Measurements recorded in: ☒ Metric ☐ Imperial

Well Owner's Information

First Name	Last Name / Organization Uniform Urban Developments	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name) 117 Centrepont Dr., Suite 300	Municipality Nepean	Province Ontario	Postal Code K2G 5X3
		Telephone No. (inc. area code) 613 225 0770	

Well Location

Address of Well Location (Street Number/Name) Lot 37 Maple Creek	Township Rideau	Lot	Concession
County/District/Municipality Ottawa Carleton	City/Town/Village Manotick	Province Ontario	Postal Code
UTM Coordinates NAD 83 18 444275	Easting 5007075	Northing	Municipal Plan and Sublot Number
		Other	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)
From	To			
Brown	Sandy Soil			0 3.35
Grey	Sand & Gravel			3.35 10.35
Grey	Till			10.35 16.76
Grey	Limestone			16.76 37.48

Annular Space			
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)	
From	To		
18.59	0	Grouted Bentonite Slurry	.69m³

Method of Construction		Well Use	
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial
<input checked="" type="checkbox"/> Rotary (Conv. Mud)	<input type="checkbox"/> Jetting	<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Municipal
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Driving	<input type="checkbox"/> Livestock	<input type="checkbox"/> Test Hole
<input type="checkbox"/> Boring	<input type="checkbox"/> Digging	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Cooling & Air Conditioning
<input checked="" type="checkbox"/> Air percussion		<input type="checkbox"/> Industrial	
<input type="checkbox"/> Other, specify		<input type="checkbox"/> Other, specify	

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	From	To
15.86	Steel	.48	+ .45	18.59	

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

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	Depth (m/ft)	Diameter (cm/in)
From	To		
27.43	0	18.59	15.86
34.40	18.59	37.48	15.23

Well Contractor and Well Technician Information			
Business Name of Well Contractor Capital Water Supply Ltd.	Well Contractor's Licence No. 1 5 5 8		
Business Address (Street Number/Name) Box 490	Municipality Stittsville		
Province Ontario	Postal Code K2S 1A6	Business E-mail Address office@capitalwater.ca	

Bus. Telephone No. (inc. area code) 613 836 1766	Name of Well Technician (Last Name, First Name) Miller, Stephen
Well Technician's Licence No. 0 0 9 7	Signature of Technician and/or Contractor
Date Submitted 20110603	

Results of Well Yield Testing			
After test of well yield, water was:		Draw Down	
<input checked="" type="checkbox"/> Clear and sand free	<input type="checkbox"/> Other, specify	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason:		Static Level	Recovery
Pump intake set at (m/ft) 30.47		1	4.27
Pumping rate (l/min / GPM) 54.6		2	3.90
Duration of pumping 1 hrs + 0 min		3	3.82
Final water level end of pumping (m/ft) 4.89		4	3.76
If flowing give rate (l/min / GPM)		5	
Recommended pump depth (m/ft) 22.85		10	
Recommended pump rate (l/min / GPM) 45.5		15	
Well production (l/min / GPM)		20	
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		25	
		30	
		40	
		50	
		60	

Map of Well Location

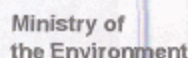
Please provide a map below following instructions on the back.

FIRST LINE Rd.

CREEK SIDE ESTATES

LOT # 37

Comments:	Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered 20110603	Date Work Completed 20110603
Ministry Use Only		Audit No. 2115717	
		Receive AUG 05 2011	



A102457

A102457

on 903 Ontario Water Resources Act

Page of

Measurements recorded in: ☒ Metric ☐ Imperial

Well Owner's Information

First Name	Last Name / Organization		E-mail Address		<input type="checkbox"/> Well Constructed by Well Owner
	Uniform Urban Developments				
Mailing Address (Street Number/Name)		Municipality	Province	Postal Code	Telephone No. (inc. area code)
117 CentrepoinTE Dr. Suite 300		Nepean	Ontario	K2G 5X3	613 225 0770

Well Location

Address of Well Location (Street Number/Name)				Township		Lot		Concession	
Lot 33 Maple Creek				Rideau		3		A	
County/District/Municipality				City/Town/Village				Province	
Ottawa Carleton				Manotick				Ontario	
UTM Coordinates		Zone	Easting	Northing		Municipal Plan and Sublot Number			Other
NAD 83		18	444301	5007152					

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
Brown	Soil	Stones		0	3.04
Grey	Sand		Packed	3.04	8.83
Grey	Till			8.83	17.67
Grey	Limestone	Sandstone Layer	Hard	17.67	45.10

Annular Space

Depth Set at (m/ft)		Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
From	To		
19.50	0	Grouted Bentonite Slurry	.69m ³

Method of Construction

<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input checked="" type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Municipal	<input type="checkbox"/> Dewatering
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Driving	<input type="checkbox"/> Livestock	<input type="checkbox"/> Test Hole	<input type="checkbox"/> Monitoring
<input type="checkbox"/> Boring	<input type="checkbox"/> Digging	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Cooling & Air Conditioning	
<input checked="" type="checkbox"/> Air percussion		<input type="checkbox"/> Industrial		
<input type="checkbox"/> Other, specify		<input type="checkbox"/> Other, specify		

Well Use

<input type="checkbox"/> Public	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Municipal	<input type="checkbox"/> Dewatering
<input type="checkbox"/> Livestock	<input type="checkbox"/> Test Hole	<input type="checkbox"/> Monitoring
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Cooling & Air Conditioning	
<input type="checkbox"/> Industrial		
<input type="checkbox"/> Other, specify _____		

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	
			From	To
15.86	Steel	.48	+.45	19.50

Status of Well

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

Construction Record - Screen

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

Water Details

Water found at Depth 41.75 (mft) <input type="checkbox"/> Gas	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Other, specify _____	<input checked="" type="checkbox"/> Untested
Water found at Depth (mft) <input type="checkbox"/> Gas	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Other, specify _____	<input type="checkbox"/> Untested
Water found at Depth (mft) <input type="checkbox"/> Gas	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Other, specify _____	<input type="checkbox"/> Untested

Hole Diameter

Depth (m/ft)		Diameter (cm/in)
From	To	
0	19.50	15.86
19.50	45.10	15.23

Well Contractor and Well Technician Information

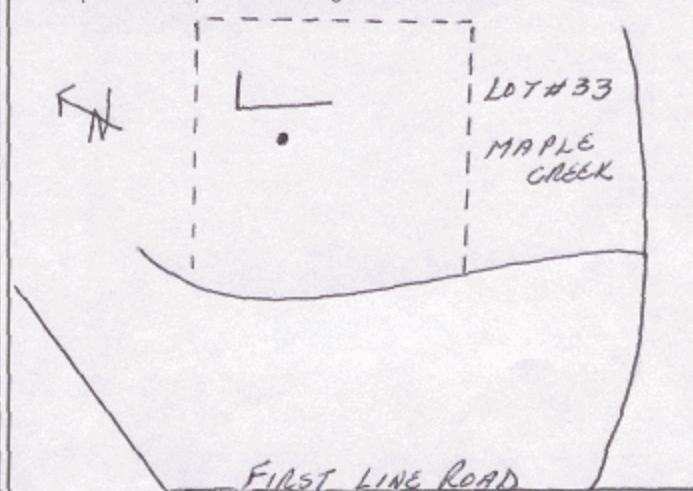
Business Name of Well Contractor		Well Contractor's Licence No.	
Capital Water Supply Ltd.		1 5 5 8	
Business Address (Street Number/Name)		Municipality	
Box 490		Stittsville	
Province	Postal Code	Business E-mail Address	
Ontario	K2S 1A6	office@capitalwater.ca	
Bus. Telephone No. (inc. area code)		Name of Well Technician (Last Name, First Name)	
613 836 1766		Miller, Stephen	
Well Technician's Licence No.	Signature of Technician and/or Contractor		Date Submitted
0 0 9 7			2 0 1 1 0 7 1 8

Results of Well Yield Testing

After test of well yield, water was:		Draw Down		Recovery	
<input checked="" type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify _____		Time (min)	Water Level (mft)	Time (min)	Water Level (mft)
If pumping discontinued, give reason:		Static Level	2.20		
		1	2.96	1	2.23
Pump intake set at (mft) 15.23		2	3.05	2	2.21
Pumping rate (l/min / GPM) 54.6		3	3.05	3	2.21
Duration of pumping 1 hrs + min		4	3.06	4	2.20
Final water level end of pumping (mft) 3.17		5	3.07	5	
If flowing give rate (l/min / GPM)		10	3.11	10	
		15	3.12	15	
Recommended pump depth (mft) 15.23		20	3.13	20	
		25	3.14	25	
Recommended pump rate (l/min / GPM) 45.5		30	3.15	30	
Well production (l/min / GPM)		40	3.16	40	
		50	3.17	50	
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		60	3.17	60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
	Date Work Completed	Audit No.
<input checked="" type="checkbox"/> Yes	20110718	z115743 NOV 02 2011
<input type="checkbox"/> No	20111007	

Address of Well Location (Street Number/Name) 3680 Bankerfield Rd. Township Nepean / Ottawa Lot 1 Concession 2

County/District/Municipality Ottawa City/Town/Village Kars Province Ontario Postal Code K0A 2E0

UTM Coordinates Zone Easting Northing Municipal Plan and Sublot Number Other

NAD 83 184438585007532 1 RP 5R5205 2RF

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)					
General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
From	To			From	To
<u>Down</u>	<u>Coarse Sand</u>	<u>Stone, gravel</u>	<u>Hard</u>	<u>0</u>	<u>7.9</u>
<u>Grey</u>	<u>Coarse Sand</u>	<u>Stone, gravel</u>	<u>Hard</u>	<u>7.9</u>	<u>18.4</u>
<u>Grey</u>	<u>Medium Sand</u>	<u>gravel, stone</u>	<u>Hard</u>	<u>18.4</u>	<u>21.7</u>
<u>Grey</u>	<u>gravel</u>	<u>Medium Sand</u>	<u>packed</u>	<u>21.7</u>	<u>25.9</u>

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
From	To	
<u>0</u>	<u>cement grout</u>	<u>.2 m³</u>

Method of Construction		Well Use		
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Municipal	<input type="checkbox"/> Dewatering
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Driving	<input type="checkbox"/> Livestock	<input type="checkbox"/> Test Hole	<input type="checkbox"/> Monitoring
<input type="checkbox"/> Boring	<input type="checkbox"/> Digging	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Cooling & Air Conditioning	
<input type="checkbox"/> Air percussion		<input type="checkbox"/> Industrial		
<input checked="" type="checkbox"/> Other, specify <u>Air Rotary</u>		<input type="checkbox"/> Other, specify		

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		
			From	To	
<u>15.55</u>	<u>Steel</u>	<u>.48</u>	<u>+6</u>	<u>25.9</u>	<input checked="" type="checkbox"/> Water Supply
					<input type="checkbox"/> Replacement Well
					<input type="checkbox"/> Test Hole
					<input type="checkbox"/> Recharge Well
					<input type="checkbox"/> Dewatering Well
					<input type="checkbox"/> Observation and/or Monitoring Hole
					<input type="checkbox"/> Alteration (Construction)
					<input type="checkbox"/> Abandoned, Insufficient Supply
					<input type="checkbox"/> Abandoned, Poor Water Quality
					<input type="checkbox"/> Abandoned, other, specify
					<input type="checkbox"/> Other, specify

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

insufficient supply

☐ Abandoned, Poor Water Quality

☐ Abandoned, other, specify

☐ Other, specify

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	Depth (m/ft)	Diameter (cm/in)
		From	To
<u>25.9</u>	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	<u>0</u>	<u>6</u>
		<u>6</u>	<u>25.9</u>

Well Contractor and Well Technician Information

Business Name of Well Contractor Bourgeois Well Drilling Well Contractor's Licence No. 74117

Business Address (Street Number/Name) 151 Montee D'Aust Municipality Nation

Province On Postal Code K0A3C0 Business E-mail Address N/A

Bus. Telephone No. (inc. area code) 613 987 5291 Name of Well Technician (Last Name, First Name) BENIER, MICHAEL

Well Technician's Licence No. 3493 Signature of Technician and/or Contractor [Signature] Date Submitted 2011/10/30

Results of Well Yield Testing			
After test of well yield, water was:		Draw Down	
		Time (min)	Water Level (m/ft)
<input checked="" type="checkbox"/> Clear and sand free			
<input type="checkbox"/> Other, specify			
If pumping discontinued, give reason:		Static Level	
		1	<u>7.22</u>
Pump intake set at (m/ft)		2	<u>7.21</u>
Pumping rate (l/min / GPM)		3	<u>7.22</u>
Duration of pumping		4	<u>7.22</u>
1 hrs + min		5	<u>7.22</u>
Final water level end of pumping (m/ft)		10	<u>7.52</u>
If flowing give rate (l/min / GPM)		15	<u>7.47</u>
Recommended pump depth (m/ft)		20	<u>7.42</u>
Recommended pump rate (l/min / GPM)		25	<u>7.42</u>
Well production (l/min / GPM)		30	<u>7.40</u>
Disinfected?		40	<u>7.40</u>
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		50	<u>7.49</u>
		60	<u>8.36</u>

Map of Well Location

Please provide a map below following instructions on the back.

Prince of Wales Dr.

60m

50m

House

well

garage

Back field

N

Well owner's information package delivered ☒ Yes ☐ No

Date Package Delivered 2011/10/25

Date Work Completed 2011/10/25

Ministry Use Only

Audit No. 2140777

Received NOV 17 2011



Well Owner's Information

First Name	Last Name / Organization Phoenix Homes	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name) 18 Bentley Ave.	Municipality Ottawa	Province Ontario	Postal Code K2E 6T8
Telephone No. (inc. area code) 613 723 9227			

Well Location

Address of Well Location (Street Number/Name) Lot 35 Cabrelle - Maple Creek	Township Rideau	Lot	Concession
County/District/Municipality Ottawa Carleton	City/Town/Village Manotick	Province Ontario	Postal Code
UTM Coordinates NAD 83 18 44 42 56 50 07 13 1	Easting 44 42 56	Northing 50 07 13 1	Municipal Plan and Sublot Number
Other			

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Sand	Gravel & Stones	Loose	0	7.61
Grey	Sand & Gravel	Large Boulders		7.61	15.84
Grey	Limestone		Medium Hard	15.84	45.71

Annular Space			
Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
18.28	0	Grouted Bentonite Slurry	.69m³

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool <input checked="" type="checkbox"/> Rotary (Conventional) <input type="checkbox"/> Rotary (Reverse) <input type="checkbox"/> Boring <input checked="" type="checkbox"/> Air percussion <input type="checkbox"/> Other, specify	<input type="checkbox"/> Diamond <input type="checkbox"/> Jetting <input type="checkbox"/> Driving <input type="checkbox"/> Digging <input type="checkbox"/> Public <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Livestock <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Other, specify
	<input type="checkbox"/> Commercial <input type="checkbox"/> Municipal <input type="checkbox"/> Test Hole <input type="checkbox"/> Cooling & Air Conditioning <input type="checkbox"/> Not used <input type="checkbox"/> Dewatering <input type="checkbox"/> Monitoring

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To	<input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify <input type="checkbox"/> Other, specify
27.31	Open		0	18.28	
15.86	Steel	.48	+1.82	18.28	
Construction Record - Screen					
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To	

Water Details		Hole Diameter	
Water found at Depth 37.18m/ft	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	Depth (m/ft) From	Diameter (cm/in) To
Water found at Depth 44.49m/ft	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	0	18.28
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	18.28	45.71
			15.55

Well Contractor and Well Technician Information			
Business Name of Well Contractor Capital Water Supply Ltd.	Well Contractor's Licence No. 1 5 5 8		
Business Address (Street Number/Name) Box 490	Municipality Stittsville		
Province Ontario	Postal Code K2S1A6	Business E-mail Address office@capitalwater.ca	

Bus.Telephone No. (inc. area code) 613 836 1766	Name of Well Technician (Last Name, First Name) Miller, Stephen	Well Technician's Licence No. 0097	Signature of Technician and/or Contractor 	Date Submitted 20150609
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Results of Well Yield Testing				
After test of well yield, water was: <input checked="" type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason:	Static Level	5.30		
	1	5.33	1	5.33
	2	5.33	2	5.31
	3	5.34	3	5.29
Pump intake set at (m/ft) 22.85	4	5.34	4	5.30
Pumping rate (l/min / GPM) 54.6	5	5.34	5	5.30
Duration of pumping 1 hrs + min	10	5.35	10	5.30
Final water level end of pumping (m/ft) 5.39	15	5.36	15	5.30
If flowing give rate (l/min / GPM)	20	5.36	20	5.30
Recommended pump depth (m/ft) 22.85	25	5.37	25	5.30
Recommended pump rate (l/min / GPM) 45.5	30	5.37	30	5.30
Well production (l/min / GPM)	40	5.38	40	5.30
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	50	5.38	50	5.30
	60	5.39	60	5.30

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

Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered 20150605	Ministry Use Only Audit No. Z188496 JUN 25 2015 Received
	Date Work Completed 20150603	

Measurements recorded in: ☐ Metric ☒ Imperial

Well Tag#: A199917

Below

A199917

Address of Well Location (Street Number/Name)		Township	Lot	Concession
232 Cabrelle Place		Rideau	4	A
County/District/Municipality		City/Town/Village	Province	Postal Code
Ottawa-Carleton		Manotick	Ontario	
UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number
NAD	83	18	444222	5007163
		4M-1407	S/L 34	

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)				
General Colour	Most Common Material	Other Materials	General Description	
	Sand	Boulders	0'	29'
	Gravel	Boulders	29'	84'
Grey	Limestone		84'	133'
Grey	Limestone		133'	152'
Grey	Limestone		152'	160'

Annular Space		
Depth Set at (m)	Type of Sealant Used (Material and Type)	Volume Placed (m³)
74'	Neat cement	37.4

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool <input type="checkbox"/> Rotary (Conventional) <input type="checkbox"/> Rotary (Reverse) <input type="checkbox"/> Boring <input checked="" type="checkbox"/> Air percussion <input type="checkbox"/> Other, specify	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Livestock <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Other, specify

Construction Record - Casing	Status of Well
Inside Diameter (cm)	<input checked="" type="checkbox"/> Water Supply
Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	<input type="checkbox"/> Replacement Well
Wall Thickness (cm)	<input type="checkbox"/> Test Hole
Depth (m)	<input type="checkbox"/> Recharge Well
From	<input type="checkbox"/> Dewatering Well
To	<input type="checkbox"/> Observation and/or Monitoring Hole
	<input type="checkbox"/> Alteration (Construction)
	<input type="checkbox"/> Abandoned, Insufficient Supply
	<input type="checkbox"/> Abandoned, Poor Water Quality
	<input type="checkbox"/> Abandoned, other, specify
	<input type="checkbox"/> Other, specify

Construction Record - Screen	Status of Well
Outside Diameter (cm)	<input type="checkbox"/> Replacement Well
Material (Plastic, Galvanized, Steel)	<input type="checkbox"/> Test Hole
Slot No.	<input type="checkbox"/> Recharge Well
Depth (m)	<input type="checkbox"/> Dewatering Well
From	<input type="checkbox"/> Observation and/or Monitoring Hole
To	<input type="checkbox"/> Alteration (Construction)
	<input type="checkbox"/> Abandoned, Insufficient Supply
	<input type="checkbox"/> Abandoned, Poor Water Quality
	<input type="checkbox"/> Abandoned, other, specify
	<input type="checkbox"/> Other, specify

Water Details	Hole Diameter
Water found at Depth	Depth (m)
133 (m)	From
152 (m)	To
Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	Diameter (cm)
<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	0' 74' 9 3/4"
	74' 160' 6"

Well Contractor and Well Technician Information	
Business Name of Well Contractor	Well Contractor's Licence No.
Air Rock Drilling Co. Ltd.	1119
Business Address (Street Number/Name)	Municipality
6659 Franktown Road, RR#1	Richmond
Province	Postal Code
ON	K0A 2Z0
Business E-mail Address	
air-rock@sympatico.ca	
Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
613882170	Hanna, Jeremy
Well Technician's Licence No.	Signature of Technician and/or Contractor
T3632	

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
<input checked="" type="checkbox"/> Yes	2016 06 09	Audit No. 202844
<input type="checkbox"/> No	Date Work Completed	AUG 10 2016
	2016 06 03	

Measurements recorded in: ☐ Metric ☒ Imperial

Page _____ of _____

Address of Well Location (Street Number/Name) 225 Cabrelle Place		Township Rideau	Lot 4	Concession A	
County/District/Municipality Ottawa Carleton		City/Town/Village Manotick	Province Ontario	Postal Code ____	
UTM Coordinates Zone	Easting	North	Municipal Plan and Sublot Number PL 4M-1407		Other S/L 32
NAD	83	15	444323	5007151	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
	Sand y	Clay		0	5'
	Sand	Gravel	and boulders	5'	52'
Gray	Limestone			52'	131'
Gray	Limestone			131'	150'
Gray	Limestone			150'	153'
Gray	Limestone			153'	180'

Annular Space			
Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
62'	0	Neat cement	31.2

Method of Construction		Well Use	
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Municipal
<input type="checkbox"/> Rotary (Reverse)	<input type="checkbox"/> Driving	<input type="checkbox"/> Livestock	<input type="checkbox"/> Test Hole
<input type="checkbox"/> Boring	<input type="checkbox"/> Digging	<input type="checkbox"/> Irrigation	<input type="checkbox"/> Cooling & Air Conditioning
<input checked="" type="checkbox"/> Air percussion		<input type="checkbox"/> Industrial	
<input type="checkbox"/> Other, specify _____		<input type="checkbox"/> Other, specify _____	

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From To	<input checked="" type="checkbox"/> Water Supply	<input type="checkbox"/> Replacement Well
6 1/4"	Steel	.188	+2' 62'	<input type="checkbox"/> Test Hole	<input type="checkbox"/> Recharge Well
6"	Open Hole		62' 160'	<input type="checkbox"/> Dewatering Well	<input type="checkbox"/> Observation and/or Monitoring Hole
				<input type="checkbox"/> Alteration (Construction)	<input type="checkbox"/> Abandoned, Insufficient Supply
				<input type="checkbox"/> Abandoned, Poor Water Quality	<input type="checkbox"/> Abandoned, other, specify _____
				<input type="checkbox"/> Other, specify _____	

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

Water Details		Hole Diameter	
Water found at Depth 131' (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	Depth (m/ft) From To	Diameter (cm/in)
150' (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	0 62'	9 3/4"
153' (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	62' 160'	6"

Business Name of Well Contractor Air Rock Drilling Co. Ltd.		Well Contractor's Licence No. 1119
Business Address (Street Number/Name) 8853 Franktown Road, RR#1		Municipality Richmond
Province ON	Postal Code K0A 2J0	Business E-mail Address air-rock@sympatico.ca
Bus. Telephone No. (inc. area code) 8188887170		Name of Well Technician (Last Name, First Name) Hanna, Jeremy
Well Technician's Licence No. T3632	Signature of Technician and/or Contractor 	Date Submitted Y/Y 2016 M/M 11 D/30

Results of Well Yield Testing				
After test of well yield, water was: <input type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify _____	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason: _____	Static Level	9'2"		9'6"
	1	9.6	1	9.4
Pump intake set at (m/ft) 120'	2	9.6	2	9.3
	3	9.6	3	9.2
Pumping rate (l/min / GPM) 20	4	9.6	4	9.2
	5	9.6	5	9.2
Duration of pumping ____ hrs + ____ min	10	9.6	10	9.2
	15	9.6	15	9.2
Final water level end of pumping (m/ft) 9'6"	20	9.6	20	9.2
	25	9.6	25	9.2
If flowing give rate (l/min / GPM)	30	9.6	30	9.2
	40	9.6	40	9.2
Recommended pump depth (m/ft) 120'	50	9.6	50	9.2
	60	9.6	60	9.2
Recommended pump rate (l/min / GPM) 20				
Well production (l/min / GPM) 20				
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

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

Comments: 1HP 20GPM Pump Set @ 100' Recommended	
Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered 2016 Date Work Completed 2016 10 25
Ministry Use Only Audit No. 2237097 NOV 28 2016 Received _____	

PROPOSED DRILLED WELL

- WELL MUST BE LOCATED AT LEAST 3.0m FROM PROPERTY LINES, BUILDINGS AND PARKING AREAS.
- WELL MUST BE LOCATED IN A LANDSCAPED AREA WITH DRAINAGE AWAY FROM THE WELL.
- WELLS MUST BE LOCATED A MINIMUM OF 15.0m FROM OTHER POTENTIAL SOURCES OF CONTAMINATION (STORMWATER FEATURES, SEWAGE SYSTEMS, ETC.)
- THE ELEVATION OF THE TOP OF CASING AND THE GROUND SURFACE IN THE VICINITY OF THE WELL MUST BE SHOWN ON ANY GRADING PLANS.
- WELL MUST BE PROTECTED FROM VEHICULAR TRAFFIC AND SHOULD NOT BE IN SNOW STORAGE AREAS.
- WELL MUST BE ACCESSIBLE IN THE FUTURE BY A DRILLING RIG.

BANKFIELD ROAD

BH 1-21
101.11

BH 3-21
99.19

BH 2-21
99.36

BH 3-22
95.30

BH 1-22
96.89

BH 2-22
95.76

PROPOSED
BUILDING

BH 5-21
101.43
(76.64)

BH 4-21
99.62

BH 4-22
95.17

ELIJAH
COURT

LEGEND:

- Proposed Water Supply Well
- Proposed Sand Mantle
- Proposed Tertiary Treatment Unit
- 15m Radius Offset
- Borehole Completed as Part of Geotechnical Investigation PG5937-1
- Borehole With Monitoring Well Completed as Part of Geotechnical Investigation PG5937-1

29/09/23	Issued with Report No. PH4334-LET.01	4
12/09/23	Issued for Review	3B
22/08/23	Issued for Review	2
20/07/22	Issued for Review	1
22/10/21	Issued for Review	0
DD/MM/YY	DESCRIPTION	REV.

Consultant:



Client:

MYERS AUTOMOTIVE
GROUP

Project:

PROPOSED COMMERCIAL
DEVELOPMENT

1468 BANKFIELD
OTTAWA, ONTARIO

Drawing:

PRELIMINARY SITE
SERVICING PLAN
(TERTIARY TREATMENT)

Scale: 1:600	Drawn by: HV
Date: 09/2023	Checked by: EA

Drawing No.:

PH4334-1(rev.4)

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group - 1464 bankfield\ph4334-1(rev.4).dwg