October 27, 2023

PH4334-LET.01

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Retaining Wall Design
Noise and Vibration Studies

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Attention: **Geoff Publow**

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

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 m^2 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 m^3/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 m^3/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.

- ❑ Site area — 1.9 ha
- ❑ Impervious area (%) — 75 %
- ❑ Daily sewage flow — 3.2 m^3/d
- ❑ Concentration of nitrate in effluent with treatment — 20 mg/L
  (Value based on nitrate reduction system (NSF 245 certified system) with 50% nitrate reduction)
- ❑ Surplus Water — 361 mm/yr
  (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.)
- ❑ 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 m^3/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

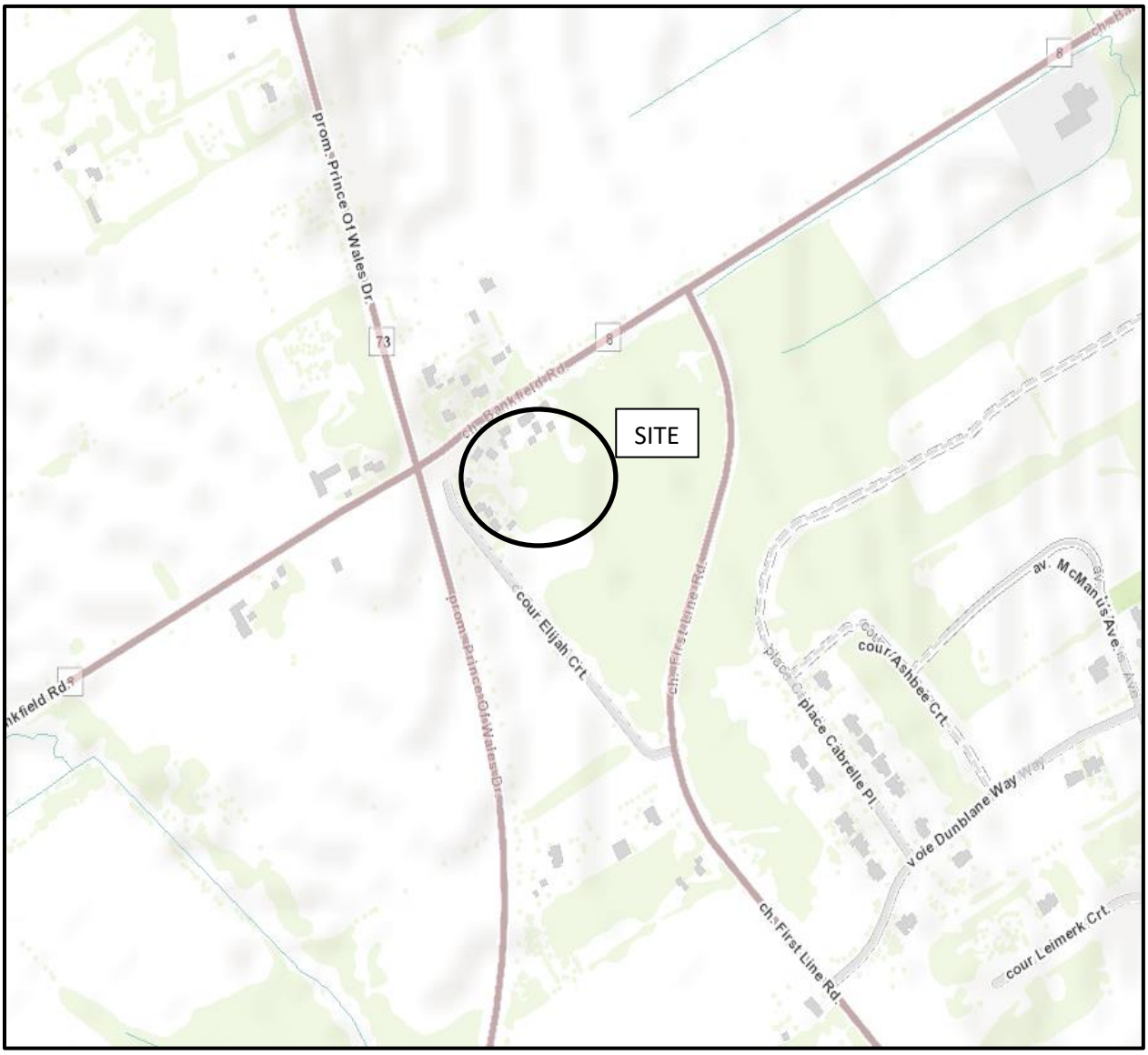


FIGURE 1

KEY PLAN

PATERSON GROUP

patersongroup Consulting Engineers

154 Colonnade Road South, Ottawa, Ontario K2E 7J5

SOIL PROFILE AND TEST DATA

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

DATUM Elevations are referenced to a geodetic datum.

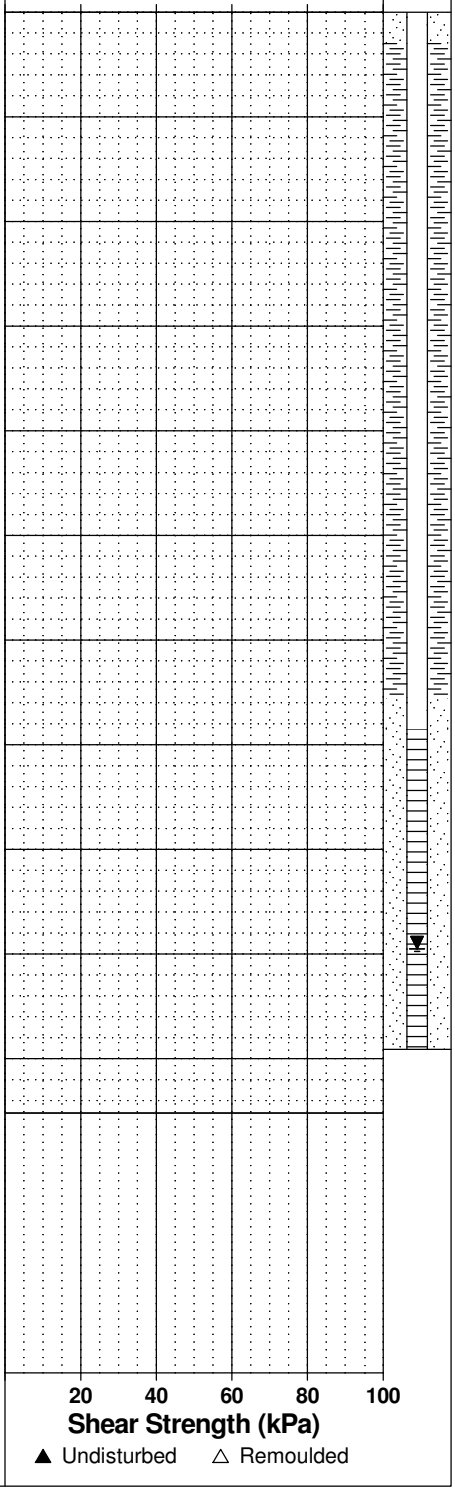
FILE NO. PG5937

REMARKS

HOLE NO. BH 1-21

BORINGS BY CME-55 Low Clearance Drill **DATE** August 13, 2021

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)	Pen. Resist. Blows/0.3m ● 50 mm Dia. Cone ○ Water Content %	Monitoring Well Construction
GROUND SURFACE						0	101.11		
FILL: Crushed stone with gravel and brown silty sand. 0.46		AU	1						
		AU	2						
		SS	3	25	18	1	100.11		
		SS	4	58	22				
Compact, brown **SILTY SAND,** trace gravel.						2	99.11		
		SS	5	58	29				
		SS	6	50	29	3	98.11		
3.96									
		SS	7	58	47	4	97.11		
		SS	8	58	31				
		SS	9	58	26	5	96.11		
		SS	10	50	50+				
GLACIAL TILL: Compact to dense, brown silty sand with gravel, cobbles and boulders		SS	11	42	50	6	95.11		
		SS	12	50	20				
		SS	13	67	28	7	94.11		
- running sand encountered at 9.8m depth		SS	14	75	19				
		SS	15	75	15	8	93.11		
10.52						9	92.11		
End of Borehole									
(GWL @ 8.95m - August 25, 2021)						10	91.11		



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154 Colonnade Road South, Ottawa, Ontario K2E 7J5

SOIL PROFILE AND TEST DATA

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

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FILE NO. PG5937

REMARKS

HOLE NO. BH 2-21

BORINGS BY CME-55 Low Clearance Drill **DATE** August 13, 2021

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	99.36
FILL: Crushed stone with gravel and brown silty sand. 0.31		AU	1				
		AU	2				
		SS	2	42	6	1	98.36
Loose to compact, brown **SILTY SAND**.		SS	3	58	15	2	97.36
- very dense, with gravel by 2.3m depth		SS	4	58	50+		
2.97						3	96.36
		SS	5	50	50+		
		SS	6	75	19	4	95.36
		SS	7	75	50+	5	94.36
GLACIAL TILL: Dense, brown silty sand with gravel, cobbles and boulders		SS	8	33	50+		
		SS	9	0	50+	6	93.36
		SS	10	75	50+	7	92.36
- running sand encountered at 7.6m depth		SS	11	67	24	8	91.36
		SS	12	58	50+		
9.14						9	90.36
End of Borehole.							
(GWL @ 7.23m - August 25, 2021)							

Pen. Resist. Blows/0.3m
● **50 mm Dia. Cone**
○ **Water Content %**

20 40 60 80

Monitoring Well Construction

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

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154 Colonnade Road South, Ottawa, Ontario K2E 7J5

SOIL PROFILE AND TEST DATA

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

DATUM Elevations are referenced to a geodetic datum.

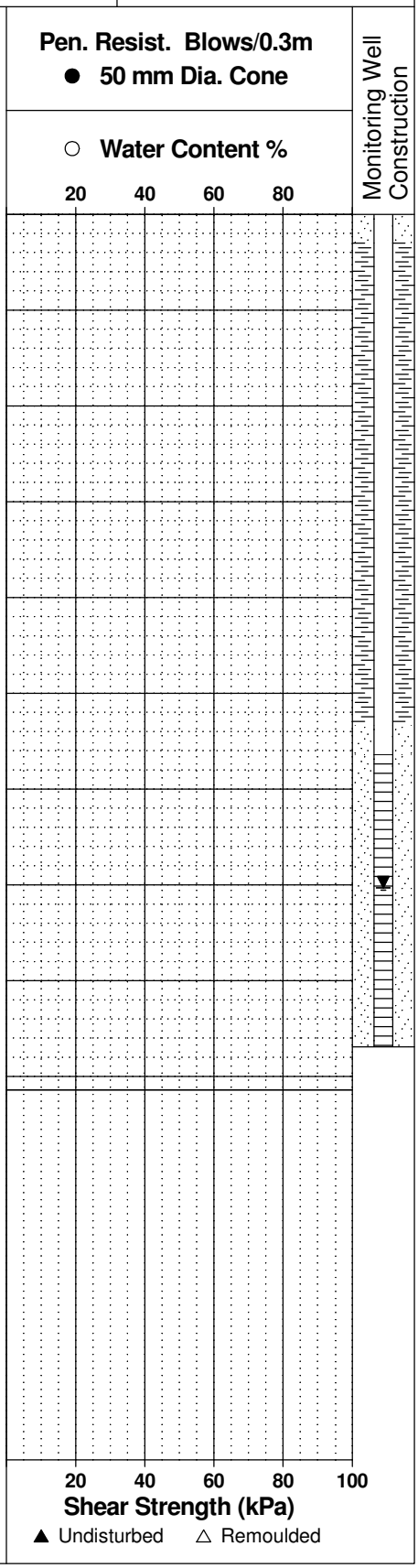
FILE NO. PG5937

REMARKS

HOLE NO. BH 3-21

BORINGS BY CME-55 Low Clearance Drill **DATE** August 13, 2021

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	99.19
FILL: Brown silty sand with crushed stone, trace gravel.		AU	1				
0.76		AU	2				
Compact to very dense, brown **SILTY SAND**.		SS	3	83	10	1	98.19
2.13		SS	4	4	50+	2	97.19
		SS	5	75	40		
		SS	6	13	50+	3	96.19
		SS	7	33	44	4	95.19
		SS	8	67	21		
GLACIAL TILL: Compact to dense, brown silty sand with gravel cobbles and boulders		SS	9	67	18	5	94.19
		SS	10	75	19	6	93.19
		SS	11	83	8	7	92.19
- running sand encountered from 7.5 to 9.1m depth		SS	12	83	36	8	91.19
		SS	13		41		
9.14						9	90.19
End of Borehole							
(GWL @ 7.03m - August 25, 2021)							



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154 Colonnade Road South, Ottawa, Ontario K2E 7J5

SOIL PROFILE AND TEST DATA

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

DATUM Elevations are referenced to a geodetic datum.

FILE NO. PG5937

REMARKS

HOLE NO. BH 4-21

BORINGS BY CME-55 Low Clearance Drill **DATE** August 13, 2021

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	99.62
FILL: Brown silty sand trace clay, gravel and asphaltic concrete. 0.31		AU	1				
		SS	2	50	14	1	98.62
		SS	3	42	8	2	97.62
FILL: Brown to grey silty clay with sand, trace gravel, cobbles, boulders, asphaltic concrete		SS	4	42	6		
- trace wood and brick by 3.0m depth		SS	5	33	5	3	96.62
						4	95.62
5.18		SS	6	4	50+	5	94.62
FILL: Brown silty sand, trace clay, gravel and organics		SS	7	50	13		
6.10						6	93.62
GLACIAL TILL: Very dense, brown silty sand with gravel, cobbles and boulders 6.71		SS	8	83	50+		
End of Borehole							
(Piezometer blocked and dry - August 25, 2021)							

Pen. Resist. Blows/0.3m
● 50 mm Dia. Cone
○ Water Content %

20 40 60 80

Piezometer Construction

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

patersongroup Consulting Engineers

154 Colonnade Road South, Ottawa, Ontario K2E 7J5

SOIL PROFILE AND TEST DATA

Geotechnical Investigation
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1464 & 1468 Bankfield Rd., Ottawa, Ontario

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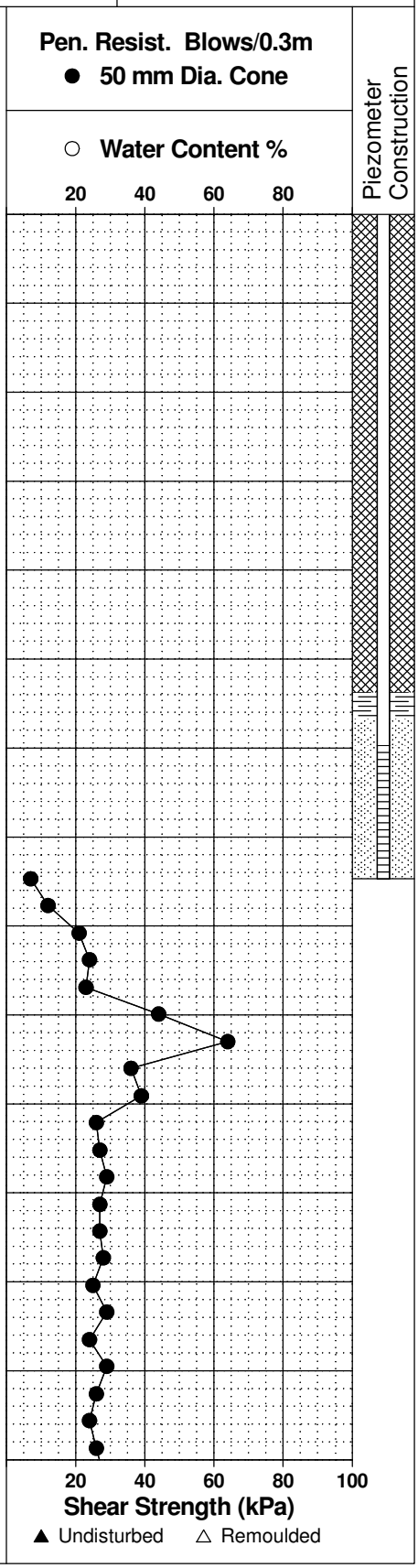
FILE NO. PG5937

REMARKS

HOLE NO. BH 5-21

BORINGS BY CME-55 Low Clearance Drill **DATE** August 13, 2021

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	101.43
FILL: Brown silty sand with clay, crushed stone and gravel (0.61)		AU	1				
FILL: Brown silty clay with sand, trace gravel and cobbles		SS	2	50	9	1	100.43
(2.13)		SS	3	50	5	2	99.43
		SS	4	8	7	3	98.43
		SS	5	21	4	4	97.43
FILL: Brown silty sand with clay, trace gravel, wood and asphaltic concrete		SS	6	75	10	5	96.43
(6.25)						6	95.43
GLACIAL TILL: Loose, brown silty sand with gravel, cobbles and boulders		SS	7	0	9	7	94.43
(7.47)		SS	8	42	8	8	93.43
Dynamic Cone Penetration Test commenced at 7.47m depth.						9	92.43
						10	91.43
						11	90.43
						12	89.43
						13	88.43
						14	87.43



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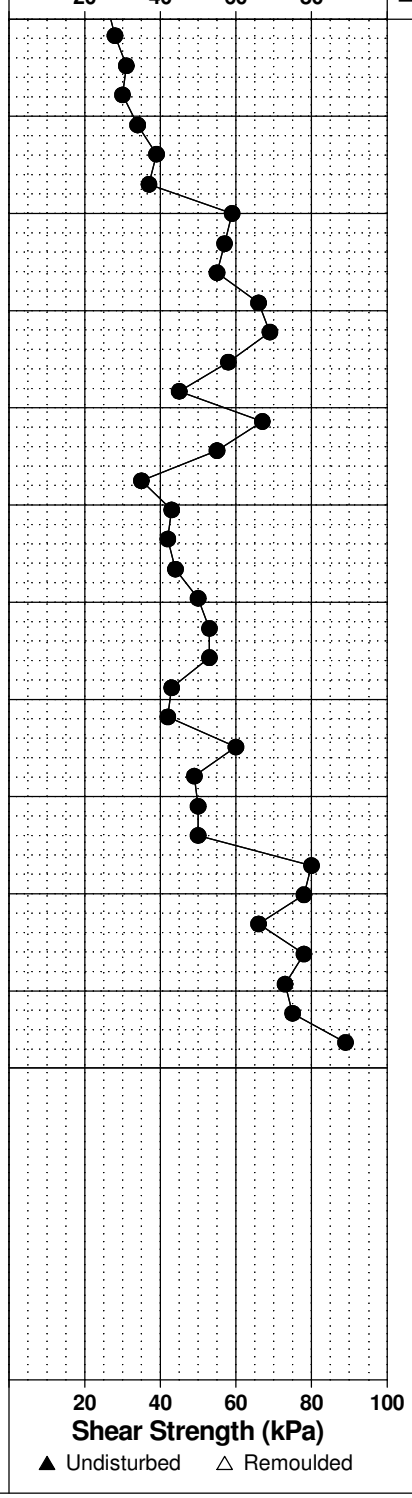
GROUND SURFACE									
						14	87.43		
						15	86.43		
						16	85.43		
						17	84.43		
						18	83.43		
						19	82.43		
						20	81.43		
						21	80.43		
						22	79.43		
						23	78.43		
						24	77.43		
24.79									
End of Borehole									
Practical DCPT refusal at 24.79m depth.									
(Piezometer blocked and dry - August 25, 2021)									



patersongroup Consulting Engineers

9 Auriga Drive, Ottawa, Ontario K2E 7T9

SOIL PROFILE AND TEST DATA

Geotechnical Investigation
Proposed Commercial Development
1450, 1458, 1464 & 1468 Bankfield Rd., Ottawa, Ontario

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

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

patersongroup Consulting Engineers

9 Auriga Drive, Ottawa, Ontario K2E 7T9

SOIL PROFILE AND TEST DATA

Geotechnical Investigation
Proposed Commercial Development
1450, 1458, 1464 & 1468 Bankfield Rd., Ottawa, Ontario

DATUM Geodetic

REMARKS

BORINGS BY CME-55 Low Clearance Drill **DATE** July 11, 2022

FILE NO. PG5937

HOLE NO. BH 2-22

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	95.76
TOPSOIL 0.38		AU	1				
Compact to dense, brown **SILTY SAND,** some gravel		SS	2	75	13	1	94.76
		SS	3	83	34	2	93.76
		SS	4	67	29		
2.97						3	92.76
GLACIAL TILL: Compact, brown silty sand to sand, some gravel, occasional cobbles		SS	5	75	27		
		SS	6	75	15	4	91.76
- some running sand by 4.3m depth		SS	7	83	19	5	90.76
		SS	8	92	28		
		SS	9	100	18	6	89.76
6.71							
End of Borehole							
(GWL @ 3.01m - July 15, 2022)							

Pen. Resist. Blows/0.3m
● **50 mm Dia. Cone**
○ **Water Content %**
20 40 60 80

Monitoring Well Construction

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

patersongroup Consulting Engineers

9 Auriga Drive, Ottawa, Ontario K2E 7T9

SOIL PROFILE AND TEST DATA

Geotechnical Investigation
Proposed Commercial Development
1450, 1458, 1464 & 1468 Bankfield Rd., Ottawa, Ontario

DATUM Geodetic

REMARKS

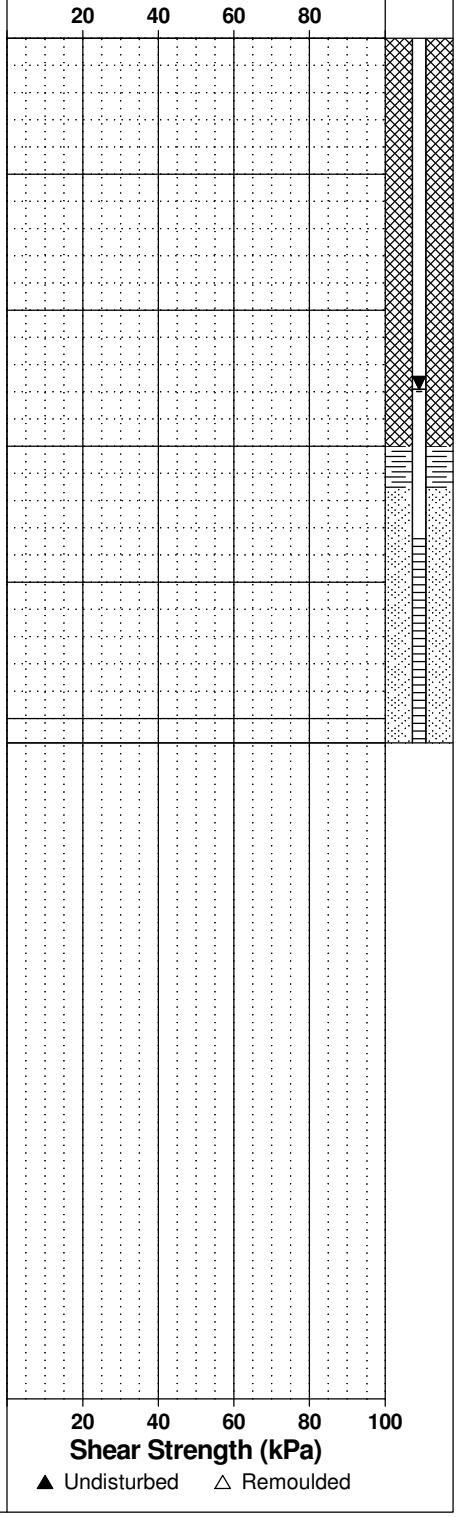
BORINGS BY CME-55 Low Clearance Drill **DATE** July 11, 2022

FILE NO. PG5937

HOLE NO. BH 3-22

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	95.30
TOPSOIL 0.30		AU	1				
Compact, brown **SILTY SAND,** some gravel, occasional cobbles		SS	2	50	17	1	94.30
		SS	3	75	19	2	93.30
2.21		SS	4	83	54		
GLACIAL TILL: Very dense to compact, brown silty sand to sand, some gravel, occasional cobbles		SS	5	100	31	3	92.30
- some running sand by 4.1m depth		SS	6	92	21	4	91.30
		SS	7	100	25		
5.18						5	90.30
End of Borehole							
(GWL @ 2.58m - July 15, 2022)							

Pen. Resist. Blows/0.3m
● **50 mm Dia. Cone**
○ **Water Content %**



Piezometer Construction

patersongroup Consulting Engineers

9 Auriga Drive, Ottawa, Ontario K2E 7T9

SOIL PROFILE AND TEST DATA

Geotechnical Investigation
Proposed Commercial Development
1450, 1458, 1464 & 1468 Bankfield Rd., Ottawa, Ontario

DATUM Geodetic

REMARKS

BORINGS BY CME-55 Low Clearance Drill **DATE** July 11, 2022

FILE NO. PG5937

HOLE NO. BH 4-22

SOIL DESCRIPTION	STRATA PLOT	SAMPLE TYPE	SAMPLE NUMBER	SAMPLE % RECOVERY	SAMPLE N VALUE or RQD	DEPTH (m)	ELEV. (m)
GROUND SURFACE						0	95.17
TOPSOIL 0.30		AU	1				
Compact to dense, brown **SILTY SAND,** some gravel		SS	2	75	18	1	94.17
		SS	3	67	46	2	93.17
2.21							
		SS	4	75	23	3	92.17
GLACIAL TILL: Compact, brown silty sand to sand, some gravel, occasional cobbles		SS	5	58	16		
- some running sand by 4.0m depth		SS	6	67	22	4	91.17
		SS	7	67		5	90.17
5.18							
End of Borehole							
(GWL @ 3.18m - July 15, 2022)							

Pen. Resist. Blows/0.3m
● 50 mm Dia. Cone
○ Water Content %

20 40 60 80

Piezometer Construction

20 40 60 80 100
Shear Strength (kPa)
▲ Undisturbed △ Remoulded

patersongroup

Myers Automotive Group - Bankfield Project

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)		
$C_T = (Q_bC_b+Q_eC_e+Q_iC_i)/(Q_b+Q_e+Q_i)$ = Cumulative Nitrate Concentration		
Q_b = flow entering the system across the upgradient area	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 calculted by Paterson Group as a preliminary design flow.

UTM 18 Z 414318101 0 E
19 R 5101712 1 10 N
Elev. 19 R 0 1 3 1 0
Basin 25

31G4g

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

15 No 6574

Water-Well Record

BW

County or Territorial District Carleton Township, Village, Town or City North Gower

[redacted] Village, Town or City)

Address Manotick

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 5"
Length(s)
Type of screen
Length of screen

Pumping Test

Static level 15'
Pumping rate 200 G.P.H.
Pumping level ~~200 G.P.H.~~ 22'
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'	50'			
gravel	50'	60'			
			60'	45'	fresh.

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. Meagher

Address 639 Navan Wood Ave

Name of Driller M. Meagher

Address

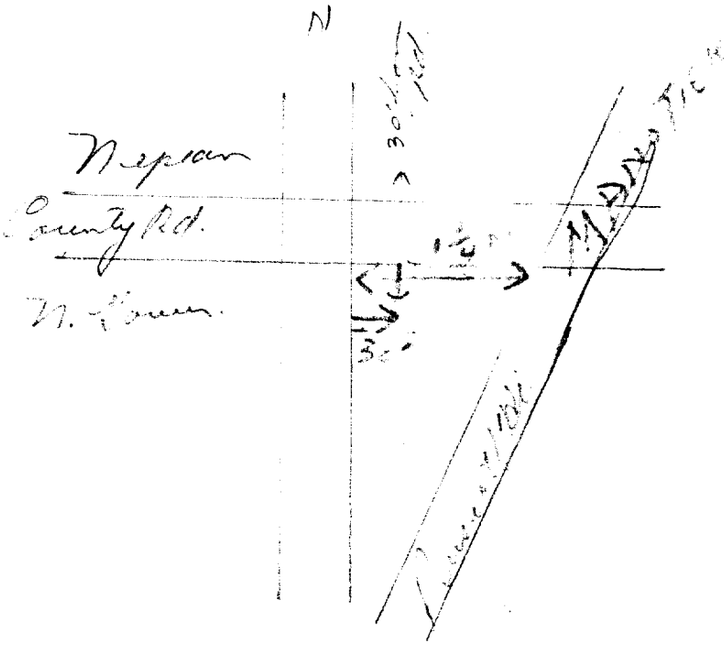
Licence Number 171

I certify that the foregoing statements of fact are true.

Date Sept 4 M. Meagher
Signature of Licensee

Location of Well

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



Form 5

UTM 18 Z 414318310 E 31G4J
19 R 5100171212 10 N

Elev. 19 R 013310

Basin 25

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

RECEIVED
15 No 6575
GEOLOGICAL SURVEY
DEPARTMENT OF MINES

Water-Well Record

County or Territorial District Carleton Township, ~~Village, Town or City~~ North Gower

[redacted] Village, Town or City)

Address Manotick

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 5"
Length(s)
Type of screen
Length of screen

Pumping Test

Static level 10'
Pumping rate 225 - 4 P.H.
Pumping level 15'
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	20'			
Sand	20'	45'			
Gravel	45'	55'	55'	45'	fresh.

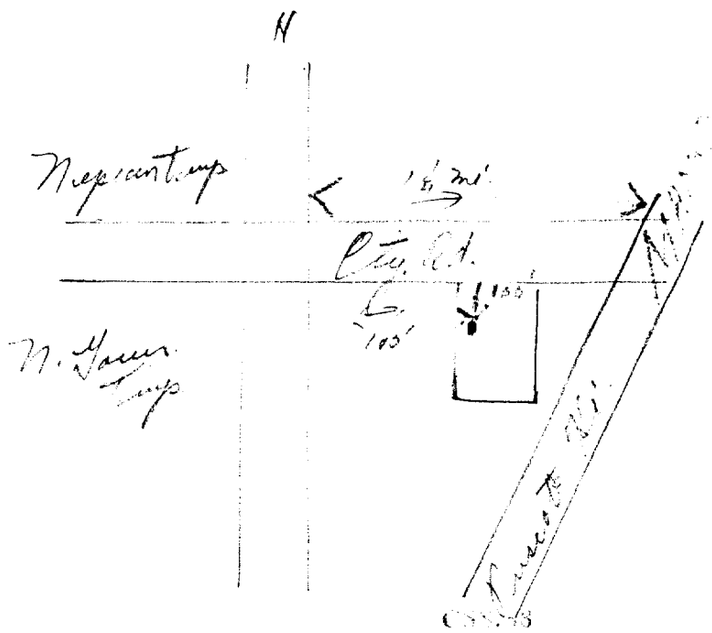
For what purpose(s) is the water to be used?
Residential
Is water clear or cloudy? clear.
Is well on upland, in valley, or on hillside?
hillside
Drilling firm W. McCaughan
Address 639 Bowan Woodlawn
Name of Driller W. McCaughan
Address
Licence Number 121

I certify that the foregoing statements of fact are true.

Date Feb 17 W. McCaughan
Signature of Licensee

Location of Well

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



Form 5

UTM 18 Z 414381410 E
19 R 5010171710 N
Elev. 19' 103310
Basin 25 A
LOT 1

3164g

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

GROUND WATER BRANCH
15 No 6580
OCT 3 1958
ONTARIO WATER RESOURCES COMMISSION

Water-Well Record

County or Territorial District.....Carleton.....Township, Village, Town or City.....N. Gower.....
[redacted] in Village, Town or City).....
Address .....Kars Ont.....

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) .....3"
Length(s) .....77 ft
Type of screen .....
Length of screen .....Nm

Pumping Test

Static level 23
Pumping rate .....500 U.S.P.H
Pumping level .....30 ft
Duration of test .....4 hrs

Well Log

Overburden and Bedrock Record	From ft.	To ft.
Boulders and sand	0	10
Sand	10	75
Broken limestone	75	86

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
86	63	Fresh

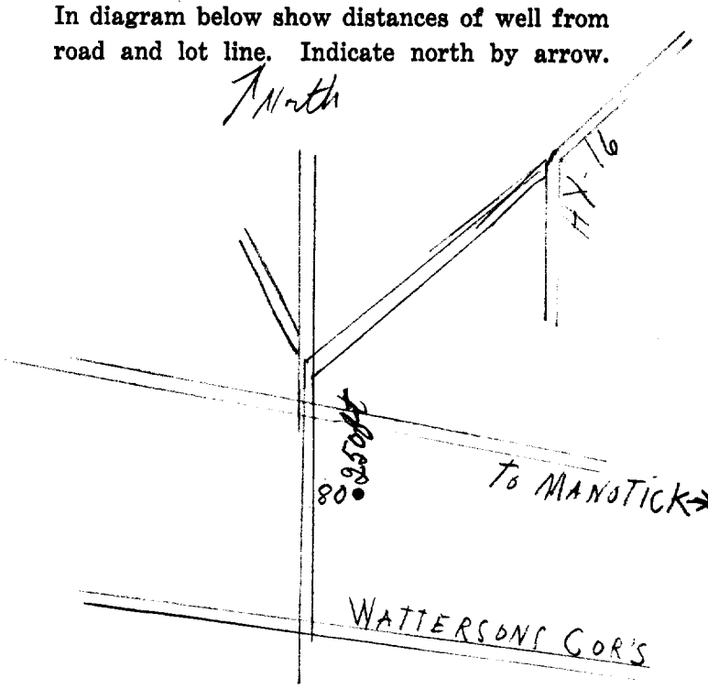
For what purpose(s) is the water to be used?
.....Home.....
Is water clear or cloudy?.....
Is well on upland, in valley, or on hillside?.....
.....
Drilling firm .....J.R. Cassette.....
Address .....1652 BASELINE RD.....
.....OTTAWA 5 ONT.....
Name of Driller .....
Address .....SAME.....
.....
Licence Number...395.....

I certify that the foregoing statements of fact are true.

Date..Oct 23/58 J.R. Cassette
Signature of Licensee

Location of Well

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



Form 5

31G49

UTM 18 Z 414318010 E
15 R 5010172110 N

Elev. 5 - 03310

Basin 25

The Ontario Water Resources Commission Act, 1957

15 No. 6585

GROUND WATER BRANCH
JUN 27 1960
ONTARIO WATER RESOURCES COMMISSION

WATER WELL RECORD

County or District Carleton
Township, Village, Town or City N. Gower
Con. A Lot 1
Date completed June 13/60 (day month year)
[redacted]ress

Casing and Screen Record

Inside diameter of casing 3"
Total length of casing 46'
Type of screen
Length of screen NONE
Depth to top of screen
Diameter of finished hole 3'

Pumping Test

Static level [redacted] 22'
Test-pumping rate 5 GPM G.P.M.
Pumping level 35'
Duration of test pumping 2 hrs
Water clear or cloudy at end of test Clear
Recommended pumping rate 5 GPM G.P.M.
with pumping level of 35'

Well Log

Overburden and Bedrock Record	From ft.	To ft.
Clay Boulders	0	20
Gravel Boulders	20	46

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, sulphur)
45	23	fresh

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

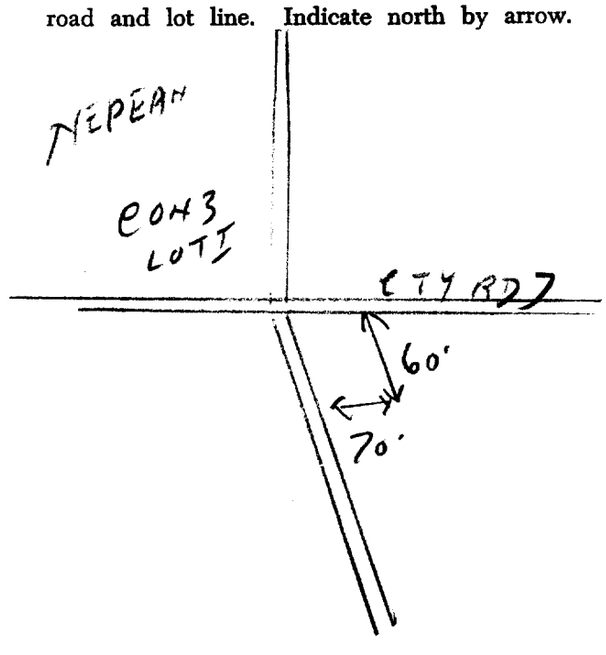
Is well on upland, in valley, or on hillside? Hillside

Drilling Firm J B Lapointe & Sons
Address 1014 Donnland
Ottawa
Licence Number 565
Name of Driller A Lapointe
Address 921 Gilmour Ottawa
Date June 20/60

J B Lapointe
(Signature of Licensed Drilling Contractor)

Location of Well

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



Form 5

316/49

The Ontario Water Resources Commission Act

WATER WELL RECORD

Water management in Ontario

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

11 (1 2) | 1510581 | MUNICIP. 15004 (10 14) | CON. GON A (15 22 23 24)

COUNTY OR DISTRICT: CARLETON

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: NORTH GOWER

CON. | BLOCK, TRACT, SURVEY, ETC.: A

LOT (25-27): 001

[redacted] TILLBURY AVE. OTTAWA

DATE COMPLETED (48-53): DAY 05 MO. 05 YR. 70 (II III IV)

NG: 007260 (24) | RC. 4 (25) | ELEVATION: 0320 (26) | RC. 5 (30) | BASIN CODE: 25 (31) (47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
	GRAVEL	SAND		0	76
GREY	LIMESTONE		HARD	76	87

31: 0076 11 09 | 0087 2 15

32: (1 2) (10) (14 15) (21) (32) (43) (54) (65) (75) (80)

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0085 (10-13)	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (14)
(15-18)	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (19)
(20-23)	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (24)
(25-28)	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (29)
(30-33)	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (34) (80)

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH – FEET FROM	DEPTH – FEET TO
(10-11) 06 ~~04~~	1 ☒ STEEL (12) 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	(13-16) 0076 ~~76~~ (20-23)
(17-18) 06 ~~04~~	1 ☐ STEEL (19) 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		76	0087 ~~82~~ (27-30)
(24-25)	1 ☐ STEEL (26) 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

SIZE(S) OF OPENING (SLOT NO.) (31-33)	DIAMETER (34-38) INCHES	LENGTH (39-40) FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN (41-44) FEET	(80)

61 PLUGGING & SEALING RECORD

DEPTH SET AT – FEET FROM	DEPTH SET AT – FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
(10-13) 15	(14-17) 30	CEMENT GROUT
(18-21)	(22-25)	
(26-29)	(30-33)	(80)

71 PUMPING TEST

PUMPING TEST METHOD (10): 1 ☐ PUMP 2 ☒ BAILER

PUMPING RATE (11-14): 0005 GPM.

DURATION OF PUMPING (15-16 HOURS) 01 (17-18 MINS.) 00

STATIC LEVEL (19-21)	WATER LEVEL END OF PUMPING (22-24)	WATER LEVELS DURING (25) 15 MINUTES (26-28)	30 MINUTES (29-31)	45 MINUTES (32-34)	60 MINUTES (35-37)
020 FEET	045 FEET	030 FEET	026 FEET	024 FEET	023 FEET

1 ☐ PUMPING 2 ☒ RECOVERY

IF FLOWING, GIVE RATE (38-41) GPM.

PUMP INTAKE SET AT FEET

WATER AT END OF TEST (42): 1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

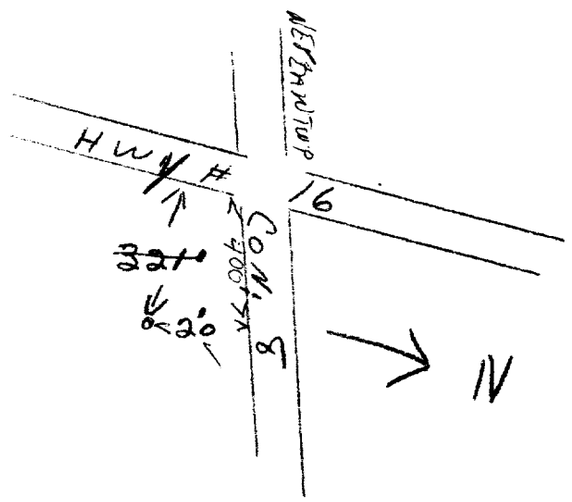
RECOMMENDED PUMP SETTING (43-45): 050 FEET

RECOMMENDED PUMPING RATE (46-49): 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:

FINAL STATUS OF WELL (54)

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

WATER USE (55-56) 01

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

METHOD OF DRILLING (57)

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

CONTRACTOR

NAME OF WELL CONTRACTOR: MCLEAN WATER SUPPLY LTD. | LICENCE NUMBER: 3504

ADDRESS: 1532 RAVEN AVE. OTTAWA 3.

NAME OF DRILLER OR BORER: W. GIBBONS | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: [signature] | SUBMISSION DATE: DAY 7 MO. 5 YR. 70

OFFICE USE ONLY

DATA SOURCE (58): 1 | CONTRACTOR (59-62): 3504 | DATE RECEIVED (63-68): 280570 (80)

DATE OF INSPECTION | INSPECTOR: S. Kim

REMARKS:

OWRC COPY

31G 49

UTM 18 Z 414381010 E
9 R 5101712610 N
Elev. 9 R 0330 From
Basin 25 W
Lot - 1.

ONTARIO

The Well Drillers Act
Department of Mines, Province of Ontario

15 No. 5883

RECEIVED
AUG 6 1954
GEOLOGICAL BRANCH
DEPARTMENT of MINES

Water Well Record

[redacted] Township, ~~Village, Town or City~~ Nepean
Village, Town or City)
ss... City View
Date Completed... June 11 / 54 (day / month / year) ... Cost of Well (excluding pump)...

Pipe and Casing Record

Casing diameter(s)... 5"
Length(s) of casing(s)... 70'
Type of screen...
Length of screen...
Distance from top of screen to ground level...
Is well a gravel-wall type?...

Pumping Test

Date... June 11
Static level... 30'
Pumping level... 30'
Pumping rate... 300 GPH
Duration of test... 1 hr.
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...

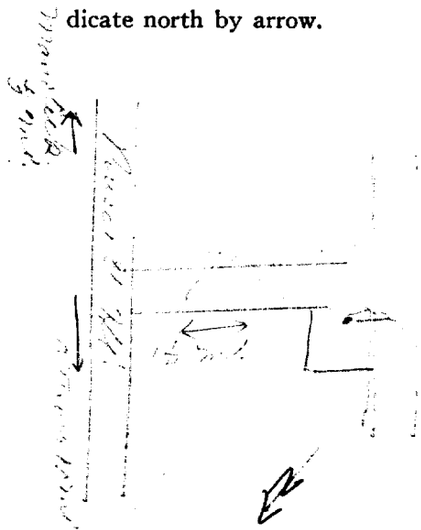
Depth(s) to Water Horizon(s)	Kind of Water	No. of F Water R.
70'	good.	40'

Well Log

Overburden and Bedrock Record	From	To
	0 ft.	....ft.
Clay	1'	60'
gravel	60'	70'

Location of Well

In diagram below show distan well from road and lot line. dicate north by arrow.



Situation: Is well on upland, in valley, or on hillside? hillside
Drilling Firm... M. Meagher
Address... Britannia Hts.
Name of Driller... M. Meagher ... Address...
Date... June 12 / 54 ... Licence Number... 171
M. Meagher
Signature of Licensee

FORM 5

GROUND WATER BRANCH
MAY 30 1957
ONTARIO WATER RESOURCES COMMISSION

15 No 5884

UTM | 18 (20) | 4413715 | E
| 5 | R | 5010731010 | N
Elev. | 4 | R | 03310
Basin | 35 | Ford

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Carleton Township, ~~Village, Town or City~~ Nepean
[redacted] Village, Town or City)
Address 9 Balsam St Ottawa
Date completed (day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4" well
Length(s) 65' of 4" with 9' of 5" at rock
Type of screen Open
Length of screen

Pumping Test

Static level 22'
Pumping rate 360 GPH.
Pumping level 25'
Duration of test 1½ hours

Well Log

Overburden and Bedrock Record	From ft.	To ft.
Clay	0'	38'
Boulders	38'	60'
Gravel	60'	80'

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
80'	5-8'	fresh

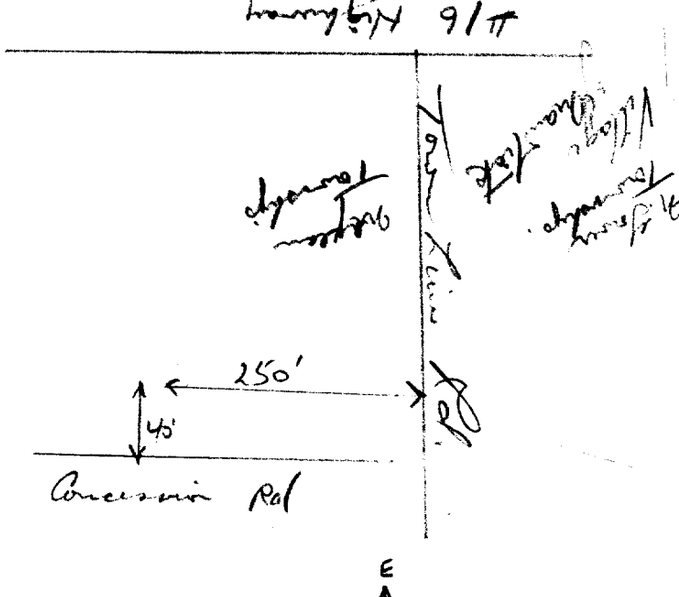
For what purpose(s) is the water to be used?
Domestic
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside?
Upland
Drilling firm Blais & Shelby
Address 1119 Talaise Rd
Ottawa S. Ont
Name of Driller Leo. Vachon
Address Montreal Rd
Ottawa S. Ont
Licence Number 1209

I certify that the foregoing statements of fact are true.

Date 15 March 57 J. L. Vachon
Signature of Licensee

Location of Well

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



Form 5

UTM | 18 | Z | 4413717 | 10 | E
| 5 | R | 5010172510 | N
Elev. | 14 | R | 03301
Basin | 25 |

JIG 4g

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

15 No 5885

GROUND WATER BRANCH
DEC 16 1957
ONTARIO WATER RESOURCES COMMISSION

Water-Well Record

[redacted] ...ip, Village, Town or City ...NEPEAN
...n Village, Town or City) .....
...Address ...MANOTICK

Date completed ...1... (day) ...SEPT... (month) ...1957... (year)

Pipe and Casing Record

Casing diameter(s) ...5"...
Length(s) ...38'...
Type of screen ...NONE...
Length of screen .....

Pumping Test

Static level ...40'...
Pumping rate ...400 G.P.H....
Pumping level ...50'...
Duration of test ...1 HOUR...

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
BOULDERS + HARD PAN	0	32	50	30	FRESH
HARD GREY LIMESTONE	32	89	89	49	"

Water Record

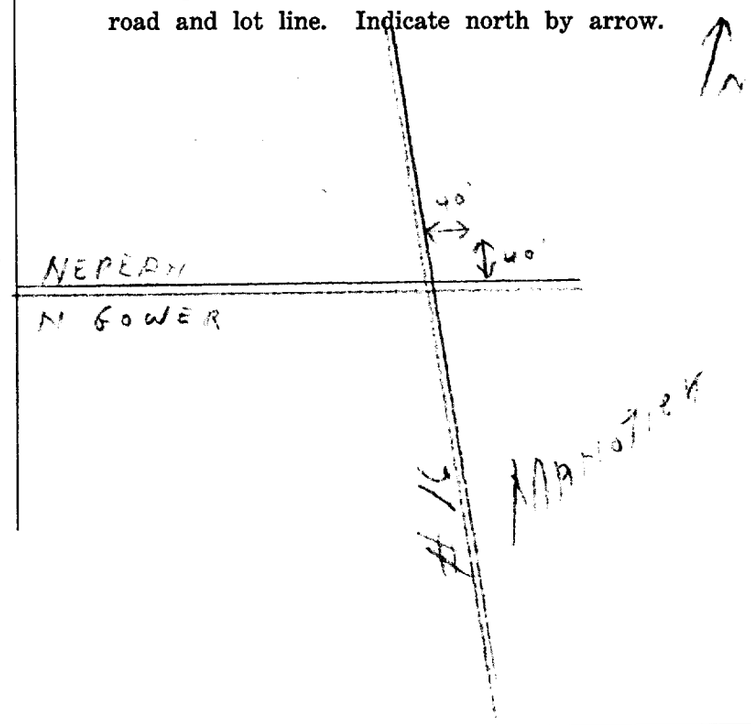
For what purpose(s) is the water to be used?
...HOUSE...
Is water clear or cloudy? ...CLEAR...
Is well on upland, in valley, or on hillside? ...UPLAND...
.....
Drilling firm ...MAHONEY...
Address ...51 McEWAN AVE OTTAWA...
.....
Name of Driller ...W. GUAY...
Address .....
.....
Licence Number.....

I certify that the foregoing statements of fact are true.

Date ...Sept 1/57... ...W. D. Mahoney...
Signature of Licensee

Location of Well

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



Form 5

UTM 1 1 8 1 4 4 1 4 1 0 1 8 1 0 E 31G49

15 5 0 1 0 1 7 1 3 1 6 1 0 N

Elev 4 0 3 1 0 1 5

Basin 25

County or District Carleton

Con 4 Lot W½ L1

GROUND WATER BRANCH
15 No 6587
OCT 2 1961
ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

WATER WELL RECORD

Township, Village, Town or City North Gower

Date completed 28th (day) August (month) 1961 (year)

[redacted] dress Kars Ont.

Casing and Screen Record

Inside diameter of casing 6¼"

Total length of casing 5'2"

Type of screen red brass.

Length of screen 4'

Depth to top of screen 48'

Diameter of finished hole 6¼"

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

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
clay loom	0	15'		
gravel	15'	5'8	45'	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 Carlton Ont

Licence Number 225

Name of Driller or Borer Melville M. Laughlin

Address Carlton Ont.

Date Aug. 25/61

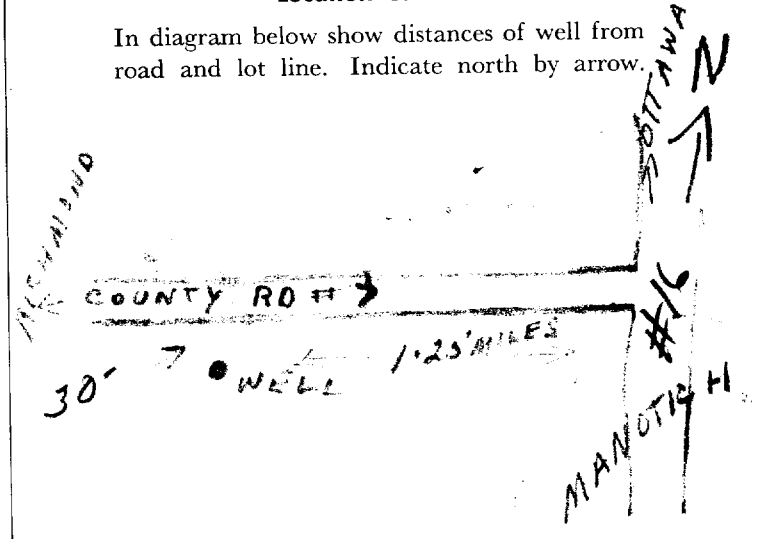
Melville M. Laughlin
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M Sets 60-5930

OWRC COPY

Location of Well

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



UTM 18 Z 441317185 E
19 R 5101710010 N
Elev. 19 R 43201
Basin 25
Lot 1

3164g

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. Yonge

[redacted] Village, Town or City)

Address

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 24'
Type of screen
Length of screen

Pumping Test

Static level 10'
Pumping rate 230 GPH
Pumping level 14'
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)
Loam	0	20	42'	32'	fresh
Gravel	20	24'			
Limestone	24	42'			

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 W. McGahey
Address 639 Buchanan Wood Ave
Ottawa
Name of Driller W. McGahey
Address

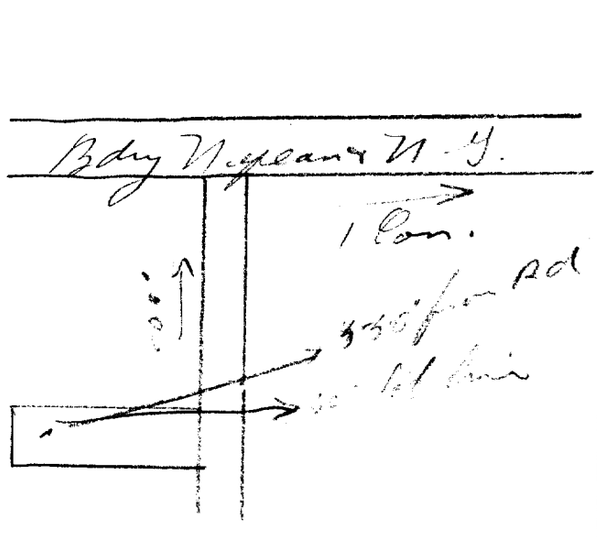
Licence Number 77

I certify that the foregoing statements of fact are true.

Date Feb 27 W. McGahey
Signature of Licensee

Location of Well

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



CSS 58

UTM 1 18 Z 4 4 4 0 6 10 E
5 R 5 0 1 0 1 8 1 4 5 N
Elev. 4 R 0 1 3 2 0
Basin 2 5

ONTARIO

The Well Drillers Act
Department of Mines, Province of Ontario

15 No. 6702

RECEIVED
OCT 14 1952
GEOLOGICAL BRANCH
DEPARTMENT of MINES

Water Well Record

[redacted] Township, ~~Village, Town or City~~ North Sarnia
~~Town or City~~
Watsons Corner
Date Completed Sept 3/52 (day) (month) (year) Cost of Well (excluding pump)

Pipe and Casing Record

MACE GOLDEN

Casing diameter(s) 3"
Length(s) of casing(s) 63
Type of screen
Length of screen
Distance from top of screen to ground level
Is well a gravel-wall type? Rock

Pumping Test

Date Sept 3/52
Static level 21 ft
Pumping level 28 ft
Pumping rate 500 gals
Duration of test 2 hrs
Distance from cylinder or bowls to ground level

Water Record

Kind (fresh or mineral) Sulph
Quality (hard, soft, contains iron, sulphur, etc.) Soft
Appearance (clear, cloudy, coloured) Clear
For what purpose(s) is the water to be used? Household
How far is well from possible source of contamination?
What is the source of contamination?
Enclose a copy of any mineral analysis that has been made of water

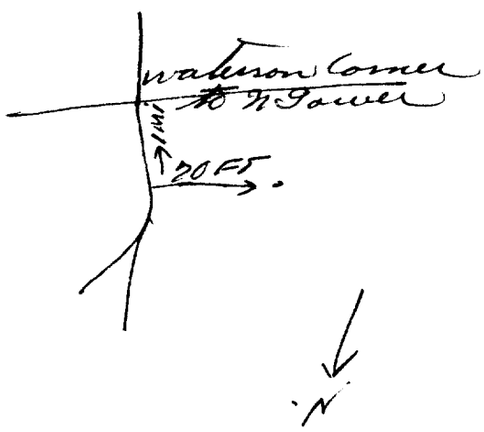
Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
65	Sulph	3 4

Well Log

Overburden and Bedrock Record	From	To
	0 ft.	....ft.
Gravel	0	63
Limestone	63	70

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 Duffy
Address 1870 Lasalle
Name of Driller F Gosselin Address
Date Sept 3/52 Licence Number 89
J B Duffy
Signature of Licensee

FORM 5

Cont

UTM 18Z 443825E 3164g

15R 5060717 6704 N

Elev. 4R 0311 5

Basin 25

WATER WELL RECORD

The Ontario Water Resources Commission Act

County or District Carleton

Township, Village, Town or City N. Gower

Con. 1 Lot 2

Date completed 24 (day) Aug (month) 1964 (year)

[redacted] ress 19 Gould St. Ottawa

Casing and Screen Record

Inside diameter of casing 6 1/4"

Total length of casing 51'

Type of screen none

Length of screen —

Depth to top of screen —

Diameter of finished hole 6 1/4

Pumping Test

Static level 8'

Test-pumping rate 20 G.P.M.

Pumping level 40'

Duration of test pumping 1 hr

Water clear or cloudy at end of test clear

Recommended pumping rate 10 G.P.M.

with pump setting of 40' feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
clay	0	20		
sandy clay	20	48		
limestone	48	65	65	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 McLEAN WATER Supply LTD.

Address 1532 RAVEN AVE. OTTAWA 3

Licence Number 1328

Name of Driller or Borer SCHARF & SMART

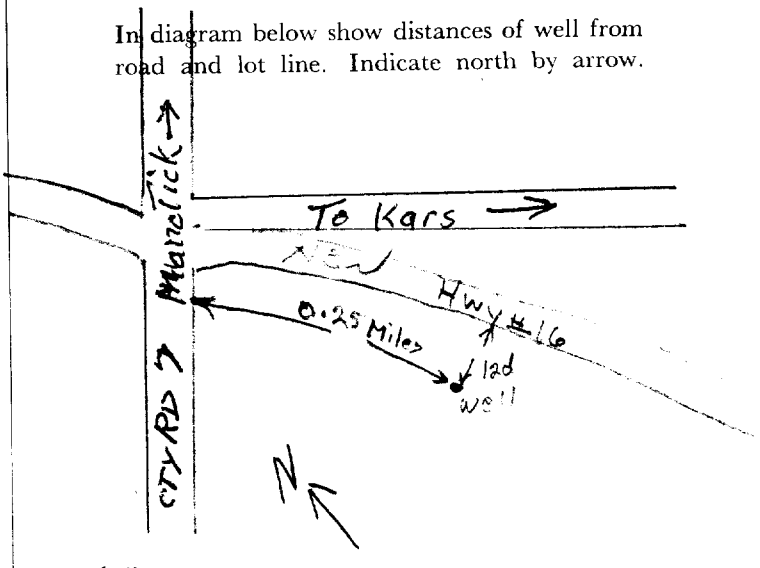
Address

Date AUG 24, 1964

(Signature of Licensed Drilling or Boring Contractor)

Location of Well

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



Form 7 15M-60-4138

OWRC COPY

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

31G/4

Ontario

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

11

1513828

MUNICIP. 15004 CON. CON 01

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	North Gower	1	001

[redacted] 596, Parkview Rd. Ottawa

DATE COMPLETED: DAY 18 MO. 10 YR. 73

UTM ... 07066 RC. 4 ELEVATION 0325 RC. 5 BASIN CODE 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	Sand			0	65
Brown	Sand	Gravel		65	74
Grey	limestone			74	83

31 00656 08 00746 08 11 00832 15

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0079	1 ☒ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06	1 ☒ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☐ OPEN HOLE	.188	0	0076
06	1 ☐ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☒ OPEN HOLE		76	~~83~~ 0083
	1 ☐ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☐ OPEN HOLE			

SCREEN

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

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER

PUMPING RATE: 0030 GPM

DURATION OF PUMPING: 02 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
020 FEET	050 FEET		050 FEET	050 FEET	050 FEET	050 FEET

IF FLOWING, GIVE RATE: GPM

PUMP INTAKE SET AT: FEET

WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

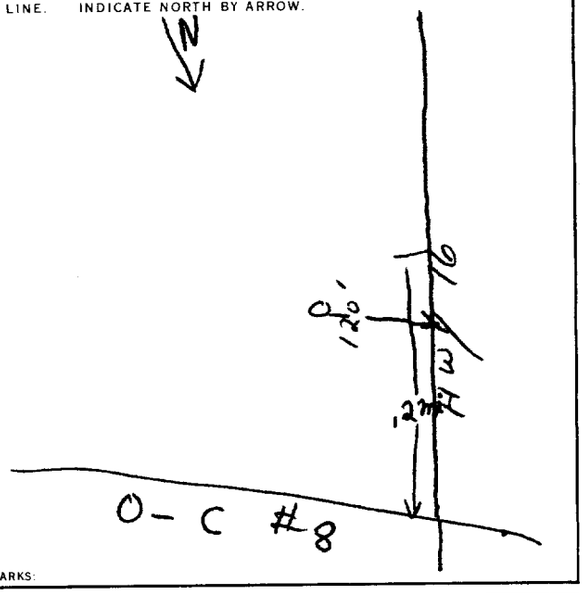
RECOMMENDED PUMP SETTING: 050 FEET

RECOMMENDED PUMPING RATE: 0005 GPM

50-53: 001.0

LOCATION OF WELL 4307

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



DRILLERS REMARKS:

FINAL STATUS OF WELL 54: 1 ☒ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED

WATER USE 55-56: 1 ☒ DOMESTIC; 2 ☐ STOCK; 3 ☐ IRRIGATION; 4 ☐ INDUSTRIAL; ☐ OTHER; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED

METHOD OF DRILLING 57: 1 ☐ CABLE TOOL; 2 ☐ ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 4 ☐ ROTARY (AIR); 5 ☒ AIR PERCUSSION; 6 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Henry Mains Well Drilling — LICENCE NUMBER: 3644

ADDRESS: Box 326, Richmond Ont.

NAME OF DRILLER OR BORER: Robert Bisson — LICENCE NUMBER:

SIGNATURE OF CONTRACTOR:

SUBMISSION DATE: DAY ____ MO. ____ YR. ____

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 3644 — DATE RECEIVED 63-68: 110274

DATE OF INSPECTION: — INSPECTOR: K.

REMARKS: CS253

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 07-091

Ministry of the Environment
Ontario

316 49

The Ontario Water Resources Act

WATER WELL RECORD

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

11 1517482 MUNICIP 15004 CON. CON A

COUNTY OR DISTRICT: Ottawa Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Gower
CON. BLOCK, TRACT, SURVEY, ETC: A
LOT: 001
[redacted]
Manotick Ont
DATE COMPLETED: DAY 15 MO 10 YR 80
ZTHING 006999 RC 4 ELEVATION 0320 RC 4 BASIN CODE 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

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

31 0062 0513 0110215 0160218

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0160	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0	0065
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

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

MATERIAL AND TYPE | DEPTH TO TOP OF SCREEN FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

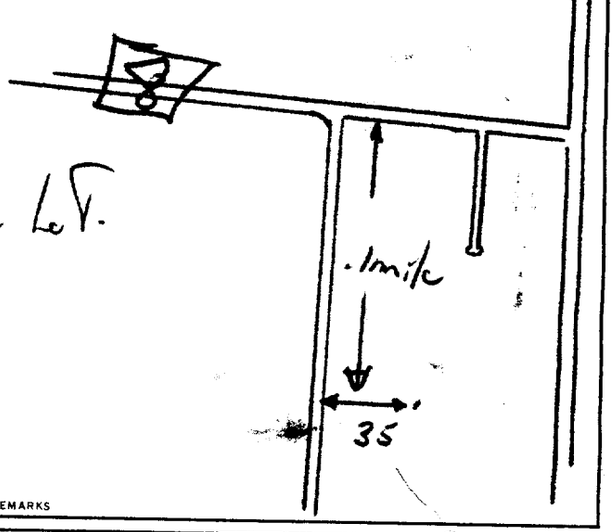
PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER
PUMPING RATE: 0012 GPM
DURATION OF PUMPING: 00 HOURS 30 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
055 FEET	070 FEET		070 FEET	070 FEET	FEET	FEET

IF FLOWING, GIVE RATE: GPM
PUMP INTAKE SET AT: FEET
WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY
RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP
RECOMMENDED PUMP SETTING: 080 FEET
RECOMMENDED PUMPING RATE: 0012 GPM

LOCATION OF WELL

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



DRILLERS REMARKS

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

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

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

CONTRACTOR

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

MINISTRY OF THE ENVIRONMENT COPY

OFFICE USE ONLY

DATA SOURCE 1 | CONTRACTOR 1119 | DATE RECEIVED 020281
DATE OF INSPECTION | INSPECTOR
REMARKS

CSS, EC

FORM NO. 0506-4-77

316 49

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 1517483 MUNICIP. 15004 CON. CON A

COUNTY OR DISTRICT: [redacted] Ottawa Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: N. Grower
CON., BLOCK, TRACT, SURVEY, ETC.: A
LOT: 001
DATE COMPLETED: DAY 10 MO 12 YR 80
[redacted] Manotick Ont.
BEARING: 0 06 9 9 9 | RC: 4 | ELEVATION: 0320 | RC: 4 | BASIN CODE: 26

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
	clay & Stone & Boulders			0	90
Grey	Limestone			90	160

31 0090 05 12 13 0160 21 5

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0155	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0 0094	
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

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

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER
PUMPING RATE: 0015 GPM
DURATION OF PUMPING: 00 HOURS 30 MINS

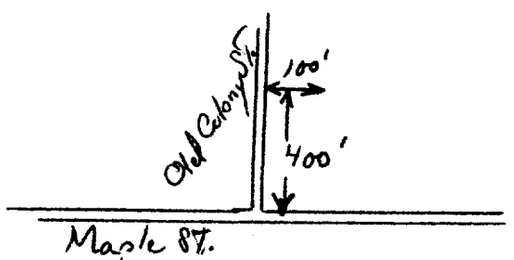
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
050 FEET	070 FEET	070 FEET	070 FEET	FEET	FEET

IF FLOWING, GIVE RATE: GPM
PUMP INTAKE SET AT: FEET
WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY
RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP
RECOMMENDED PUMP SETTING: 080 FEET
RECOMMENDED PUMPING RATE: 0015 GPM

LOCATION OF WELL

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

N



DRILLERS REMARKS:

FINAL STATUS OF WELL 54: 1 ☒ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED — 1

WATER USE 55-56: 1 ☒ DOMESTIC; 2 ☐ STOCK; 3 ☐ IRRIGATION; 4 ☐ INDUSTRIAL; ☐ OTHER; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED — 01

METHOD OF DRILLING 57: 1 ☐ CABLE TOOL; 2 ☒ ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 4 ☐ ROTARY (AIR); 5 ☐ AIR PERCUSSION; 6 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING — 2

CONTRACTOR

NAME OF WELL CONTRACTOR: Air-Rock Drilling Ltd. — LICENCE NUMBER: 1119
ADDRESS: RR # 2 Tosper Ont.
NAME OF DRILLER OR BORER: Wallace DeSaulniers — LICENCE NUMBER: 1119
SIGNATURE OF CONTRACTOR: Wallace DeSaulniers
SUBMISSION DATE: DAY 30 MO 1 YR 81

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 1119 — DATE RECEIVED 63-68: 020281 — 80
DATE OF INSPECTION: — INSPECTOR:
REMARKS:

MINISTRY OF THE ENVIRONMENT COPY

CSS, ES

FORM NO. 0506—4—77 FORM 7

Ontario Ministry of the Environment

Well Tag Number (Place sticker and print number below)
A006946
A006946

Well Record
Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

- For use in the **Province of Ontario** only. This document is a permanent **legal** document. Please retain for future reference.
- All Sections **must** be completed in full to avoid delays in processing. Further instructions and explanations are available on the back of this form.
- Questions regarding completing this application can be directed to the Water Well 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

[redacted]

Address of Well Location (County/District/Municipality): Ottawa Carleton
Township: Rideau North Gower
Lot: 1/2
Concession: A
RR#/Street Number/Name: Test Well #5, First Line Road
City/Town/Village: Manotick
Site/Compartment/Block/Tract etc.:
GPS Reading: NAD 83 | Zone 18 | Easting 44 44 29 | Northing 50 07 44 6
Unit Make/Model: Garmin
Mode of Operation: Undifferentiated [X] Averaged [ ] Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
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

Depth From	Metres To	Diameter Centimetres
0	19.20	22.53
19.20	25.90	15.23

Water Record

Water found at ___ Metres	Kind of Water
20.72	[ ] Fresh [ ] Sulphur [ ] Gas [ ] Salty [ ] Minerals [ ] Other:
22.25	[ ] Fresh [ ] Sulphur [ ] Gas [ ] Salty [ ] Minerals [ ] Other:
m	[ ] Fresh [ ] Sulphur [ ] Gas [ ] Salty [ ] Minerals [ ] Other:

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

Chlorinated [ ] Yes [ ] No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.81	[X] Steel [ ] Fibreglass [ ] Plastic [ ] Concrete [ ] Galvanized	0.48	+ 0.45	19.20
	[ ] Steel [ ] Fibreglass [ ] Plastic [ ] Concrete [ ] Galvanized			
	[ ] Steel [ ] Fibreglass [ ] Plastic [ ] Concrete [ ] Galvanized			
Screen				
Outside diam	[ ] Steel [ ] Fibreglass [ ] Plastic [ ] Concrete [ ] Galvanized	Slot No.		
No Casing or Screen				
15.23	[X] Open hole		19.20	25.90

Test of Well Yield

Pumping test method: submersible

	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Pump intake set at - (metres)	Static Level	.58		
Pumping rate - (litres/min) 12 45	1	.58	1	.38
Duration of pumping 1 hrs + ___ min	2	.60	2	.37
Final water level end of pumping .69 metres	3		3	.36
Recommended pump type. [ ] Shallow [ ] Deep	4	.60	4	.36
Recommended pump depth 15.24 metres	5	.61	5	.35
Recommended pump rate. 45 (litres/min)	10	.63	10	.33
If flowing give rate - (litres/min)	15	.64	15	.31
If pumping discontinued, give reason.	20	.64	20	.30
	25	.65	25	.30
	30	.66	30	.29
	40	.66	40	.28
	50	.68	50	.28
	60	.69	60	.27

Plugging and Sealing Record

[X] Annular space [ ] 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

[ ] Cable Tool [X] Rotary (mud) [ ] Diamond [ ] Digging
[ ] Rotary (conventional) [X] Air percussion [ ] Jetting [ ] Other
[ ] Rotary (reverse) [ ] Boring [ ] Driving

Water Use

[X] Domestic [ ] Industrial [ ] Public Supply [ ] Other
[ ] Stock [ ] Commercial [ ] Not used
[ ] Irrigation [ ] Municipal [ ] Cooling & air conditioning

Final Status of Well

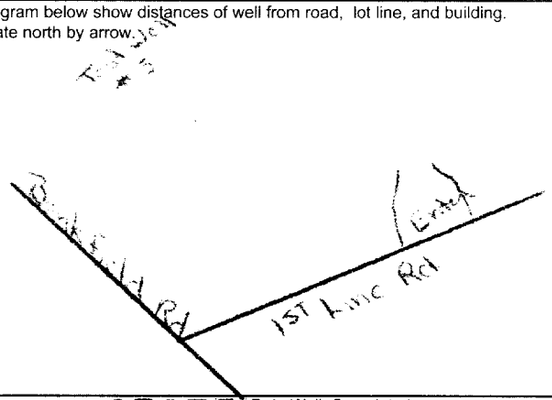
[X] Water Supply [ ] Recharge well [ ] Unfinished [ ] Abandoned, (Other)
[ ] Observation well [ ] Abandoned, insufficient supply [ ] Dewatering
[ ] Test Hole [ ] Abandoned, poor quality [ ] Replacement well

Well Contractor/Technician Information

Name of Well Contractor: Capital Water Supply Ltd.
Well Contractor's Licence No.: 1558
Business Address (street name, number, city etc.): P.O. Box 490 Stittsville, Ontario K2S 1A6
Name of Well Technician (last name, first name): Miller; Stephen
Well Technician's Licence No.: T0097
Signature of Technician/Contractor: X [signature]
Date Submitted: YYYY 2004 | MM 3 | DD 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
Was the well owner's information package delivered? [ ] Yes [X] No
Date Well Completed: YYYY 2004 | MM 3 | DD 18
Date Delivered: YYYY 2004 | MM 3 | DD 25

Ministry Use Only

Data Source
Contractor: 1558
Date Received: JUN 24 2004
Date of Inspection: YYYY | MM | DD
Remarks: CSS
Well Record Number: 1534670

Ontario Ministry of the Environment

Well Tag No. (below) A043525

A043525

Well Record

Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

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

Ministry Use Only

[redacted]

Address of Well Location (County/District/Municipality): Ottawa - Carleton | Township: Rideau | Lot: 2 | Concession: 1

RR#/Street Number/Name: #5548 First Line Road | City/Town/Village: Manotick | Site/Compartment/Block/Tract etc.:

GPS Reading: NAD 83 | Zone 18 | Easting 444121 | Northing 5006934 | Unit Make/Model: Nogelbn | Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

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

Hole Diameter

Depth From (Metres)	Depth To (Metres)	Diameter (Centimetres)
0	30.48	14.91

Water Record

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

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

Chlorinated ☐ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.88	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☒ Galvanized	.48	0	26.21
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
	☒ Open hole		25.60	30.48

Test of Well Yield

Pumping test method: SubPump

	Draw Down Time (min)	Draw Down Water Level (Metres)	Recovery Time (min)	Recovery Water Level (Metres)
Static Level		7.97		8.39
1	1	8.27	1	7.97
2	2	8.29	2	
3	3	8.32	3	
4	4	8.34	4	
5	5		5	
10	10		10	
15	15		15	
20	20		20	
25	25		25	
30	30		30	
40	40		40	
50	50		50	
60	60	8.37	60	

Pump intake set at (metres): 24.38

Pumping rate (litres/min): 91

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping: 8.37 metres

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 24.38 metres

Recommended pump rate: 91 (litres/min)

If flowing give rate - (litres/min):

If pumping discontinued, give reason:

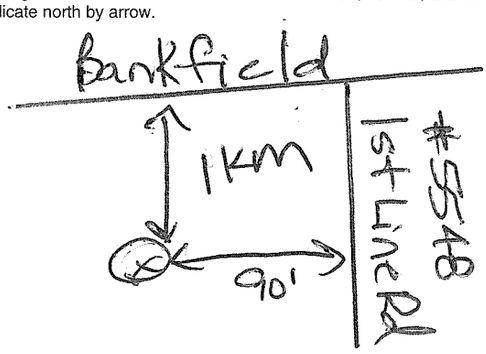
Plugging and Sealing Record

☒ Annular space ☐ Abandonment

Depth set at - Metres From	Depth set at - Metres To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
25.60	22.55	Neat Cement Slurry	.2724
22.55	0	Bentonite Slurry	.981

Location of Well

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



Method of Construction

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

Water Use

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

Final Status of Well

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

Audit No. Z 55539

Date Well Completed: YYYY 2006 MM 11 DD 20

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

Date Delivered: YYYY 2006 MM 11 DD 21

Well Contractor/Technician Information

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

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

Name of Well Technician (last name, first name): PURCELL SHANNON | Well Technician's Licence No.: 2122

Signature of Technician/Contractor: X [signature] | Date Submitted: YYYY 2007 MM 01 DD 23

Ministry Use Only

Data Source | Contractor: 1119

Date Received: YYYY 2007 MM FEB DD 12 | Date of Inspection YYYY MM DD

Remarks | Well Record Number

0506E (08/2006)

Ministry's Copy

Cette formule est disponible en français

Ontario — Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Well Tag No. (Place Sticker and/or Print Below): A102416 **A102416**

Page ____ of ____

Measurements recorded in: [X] Metric [ ] Imperial

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	[ ] Well Constructed by Well Owner
	Uniform Urban Developments		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
117 Centrepoint Dr., Suite 300	Nepean	Ontario	K2G 5X3	613 225 0770

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 37 Maple Creek	Rideau		

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	444275	5007075		

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	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) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
18.59	0	Grouted Bentonite Slurry	.69m^3

Method of Construction

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

Well Use

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

Construction Record - Casing

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

Construction Record - Screen

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

Status of Well

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

Water Details

Water found at Depth	Kind of Water	
27.43 (m/ft) [ ] Gas	[ ] Fresh [X] Untested [ ] Other, specify	
34.40 (m/ft) [ ] Gas	[ ] Fresh [X] Untested [ ] Other, specify	
(m/ft) [ ] Gas	[ ] Fresh [ ] Untested [ ] Other, specify	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	18.59	15.86
18.59	37.48	15.23

Results of Well Yield Testing

After test of well yield, water was:
[X] Clear and sand free
[ ] Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft): 30.47

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 4.89

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

Recommended pump depth (m/ft): 22.85

Recommended pump rate (l/min / GPM): 45.5

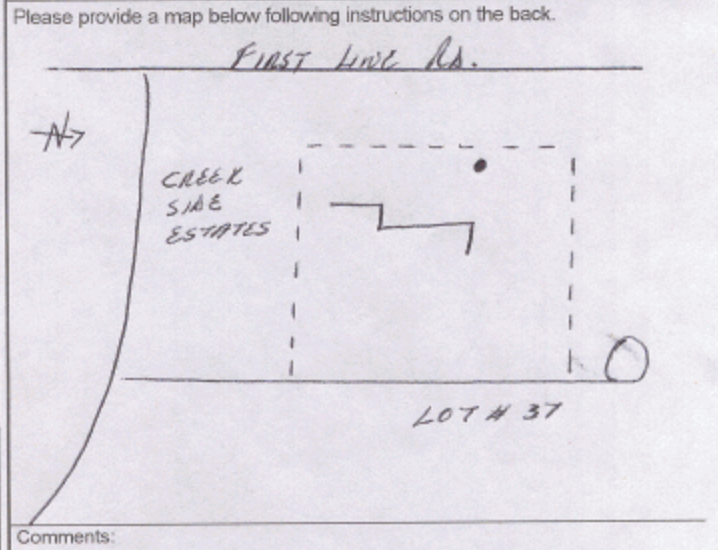
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.72		
1	4.18	1	4.27
2	4.29	2	3.90
3	4.38	3	3.82
4	4.44	4	3.76
5	4.50	5	
10	4.68	10	
15	4.72	15	
20	4.79	20	
25	4.83	25	
30	4.85	30	
40	4.88	40	
50	4.89	50	
60	4.89	60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558

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
0097		2011 06 03

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
[X] Yes [ ] No	2011 06 03	Audit No. z115717
	Date Work Completed: 2011 06 01	Received AUG 05 2011

Ministry's Copy

Ontario — Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Well Tag No. (Place Sticker and/or Print Below): A102457 A102457

Measurements recorded in: [X] Metric [ ] Imperial

Page ____ of ____

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	
	Uniform Urban Developments		[ ] Well Constructed by Well Owner

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

Method of Construction

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

Well Use

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

Construction Record - Casing

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

Construction Record - Screen

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

Status of Well

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

Water Details

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

Hole Diameter

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

Results of Well Yield Testing

After test of well yield, water was:
[X] Clear and sand free
[ ] Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft): 15.23

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 3.17

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

Recommended pump depth (m/ft): 15.23

Recommended pump rate (l/min / GPM): 45.5

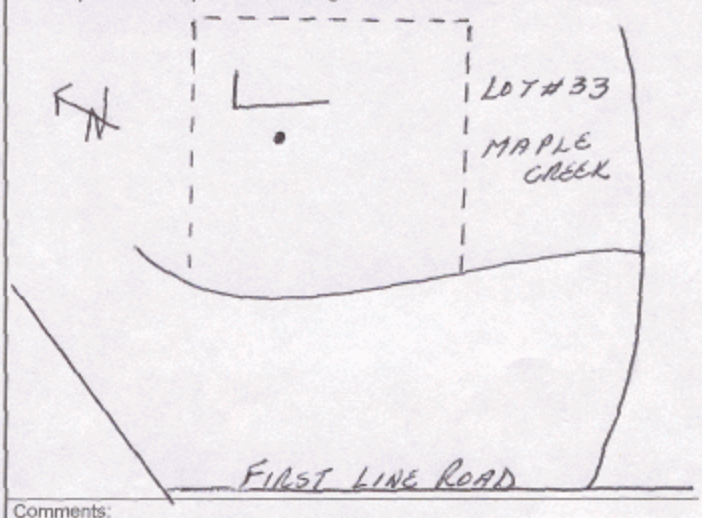
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	2.20		
1	2.96	1	2.23
2	3.05	2	2.21
3	3.05	3	2.21
4	3.06	4	2.20
5	3.07	5	
10	3.11	10	
15	3.12	15	
20	3.13	20	
25	3.14	25	
30	3.15	30	
40	3.16	40	
50	3.17	50	
60	3.17	60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558

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
0097		2011 07 18

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2011 07 18	2011 07 14

Ministry Use Only

Audit No. Z115743

Received NOV 02 2011

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Ontario — Ministry of the Environment

Measurements recorded in: ☑ Metric ☐ Imperial

Well Tag No. A116286 (A116286)

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

[redacted]

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

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa	Kars	Ontario	K0A2E0

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	443858	5007532	1RP 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	Depth (m/ft) To
Brown	Coarse Sand	Stone, gravel	Hard	0	7.9
Grey	Course Sand	Stone, gravel	Hard	7.9	18.4
Grey	Medium Sand	gravel, stone	Hard	18.4	21.7
Grey	gravel	Medium Sand	packed	21.7	25.9

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	6	cimant grout	.2 m³

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
15.55	Steel	.48	+.6	25.9

Construction Record - Screen

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

Status of Well

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

Water Details

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

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	6	24.7
6	25.9	15.55

Results of Well Yield Testing

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

If pumping discontinued, give reason:

Pump intake set at (m/ft): 22

Pumping rate (l/min / GPM): 68

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 8.36

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

Recommended pump depth (m/ft): 22

Recommended pump rate (l/min / GPM): 68

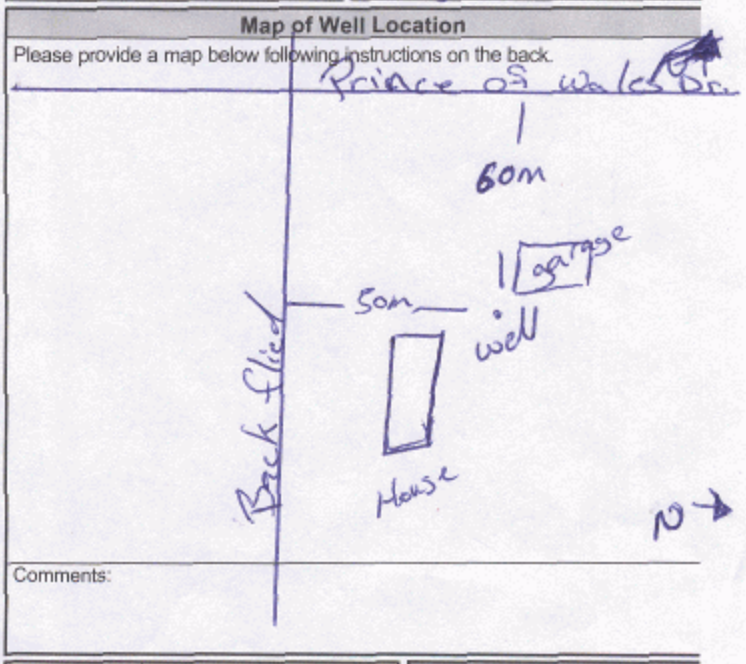
Well production (l/min / GPM):

Disinfected? ☑ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	6.85		8.36
1	7.22	1	7.28
2	7.21	2	7.26
3	7.22	3	7.24
4	7.22	4	6.93
5	7.22	5	6.87
10	7.52	10	6.86
15	7.47	15	6.86
20	7.42	20	6.86
25	7.42	25	6.85
30	7.40	30	6.85
40	7.40	40	6.85
50	7.49	50	6.85
60	8.36	60	6.85

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Bourgeois Well Drilling	7117

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

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

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
6139875291	BENIER, MICHAEL

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

Well owner's information package delivered ☑ Yes ☐ No

Date Package Delivered: 2011/10/25

Date Work Completed: 2011/10/25

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Audit No. Z140777

Received NOV 17 2011

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Ontario — Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

Measurements recorded in: [X] Metric [ ] Imperial

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

A165049

Tag #: A165049

Well Owner's Information

First Name	Last Name / Organization	E-mail Address	[ ] Well Constructed by Well Owner
	Phoenix Homes		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
18 Bentley Ave.	Ottawa	Ontario	K2E 6T8	613 723 9227

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 35 Cabrelle - Maple Creek	Rideau		

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	442562	5007131		

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	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
18.28	0	Grouted Bentonite Slurry	.69m^3

Method of Construction

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

Well Use

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

Construction Record - Casing

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

Status of Well

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

Water Details

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

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	18.28	15.86
18.28	45.71	15.55

Results of Well Yield Testing

After test of well yield, water was:
[X] Clear and sand free
[ ] Other, *specify*

If pumping discontinued, give reason:

Pump intake set at (m/ft): 22.85

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping (m/ft): 5.39

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft): 22.85

Recommended pump rate (l/min / GPM): 45.5

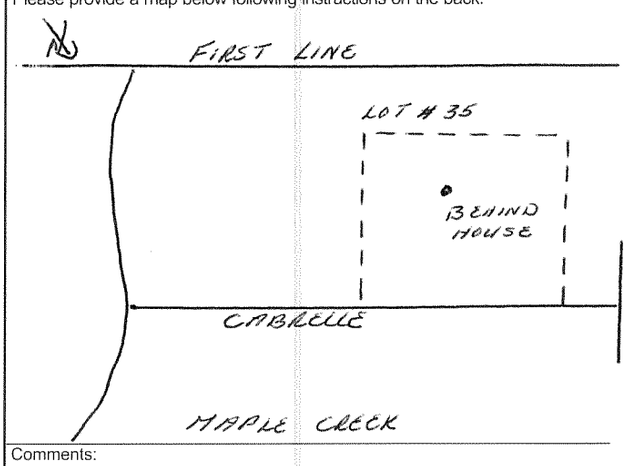
Well production (l/min / GPM)

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	5.30		
1	5.33	1	5.33
2	5.33	2	5.31
3	5.34	3	5.29
4	5.34	4	5.30
5	5.34	5	5.30
10	5.35	10	5.30
15	5.36	15	5.30
20	5.36	20	5.30
25	5.37	25	5.30
30	5.37	30	5.30
40	5.38	40	5.30
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 Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558

Business Address (Street Number/Name)	Municipality
Box 490	Stittsville

Province	Postal Code	Business E-mail Address
Ontario	K2S1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)
6138361766	Miller, Stephen

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
0097		2015 06 09

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2015 06 05	2015 06 03

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Audit No Z 188496

JUN 25 2015 Received

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Ontario — Ministry of the Environment

Measurements recorded in: ☐ Metric ☒ Imperial

We Tag#: A199917 Below)

A199917

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

[redacted]

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	Other
NAD 8 3	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	Depth (m/ft) From	Depth (m/ft) To
	Sand	& Boulders		0	29
	Gravel	& Boulders		29	64
Grey	Limestone			64	133
Grey	Limestone			133	152
Grey	Limestone			152	160

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/yd³)
74	0	Neat cement	37.4

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
6 1/4"	Steel	.188"	+2	74
6"	Open Hole		74	160

Construction Record - Screen

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

Status of Well

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

Water Details

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

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	74	9 3/4"
74	160	6"

Results of Well Yield Testing

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

If pumping discontinued, give reason: X

Pump intake set at (m/ft): 140

Pumping rate (l/min / GPM): 20

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 43.4"

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

Recommended pump depth (m/ft): 180'

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

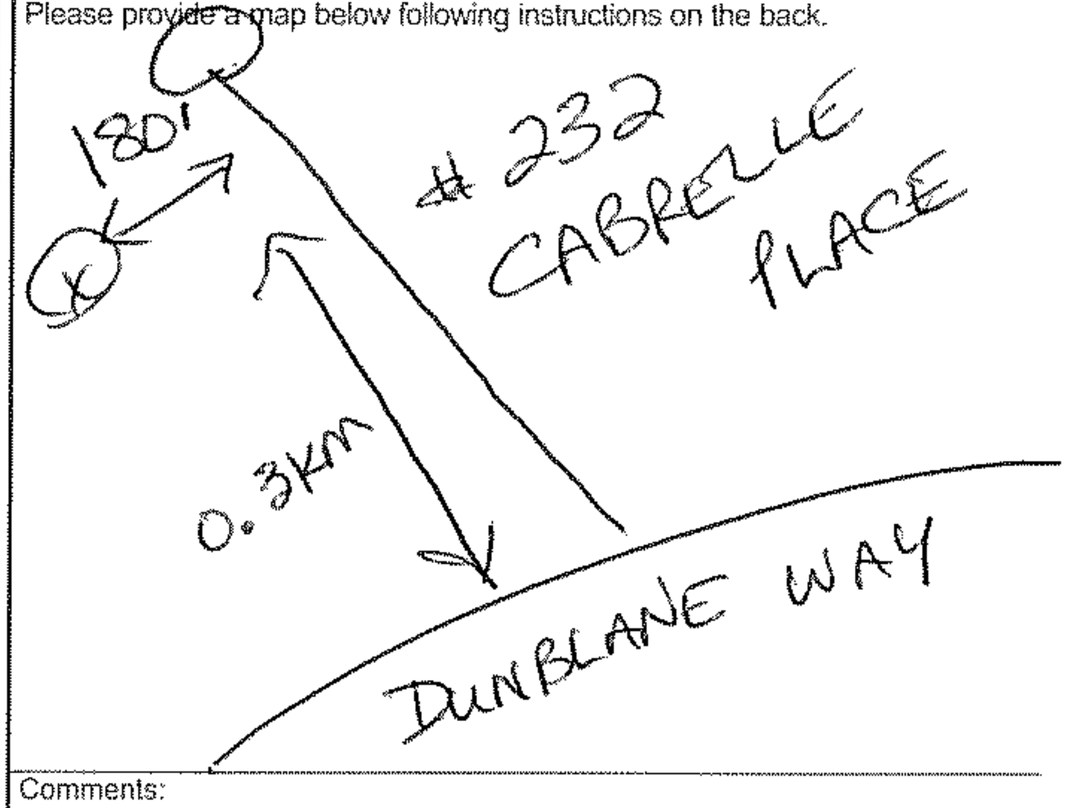
Well production (l/min / GPM): 20

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	11'3"		43'4"
1	21.5	1	23.6
2	26.6	2	18.4
3	30.4	3	15.7
4	33.5	4	12.9
5	35.7	5	11.3
10	42.3	10	11.3
15	43.2	15	11.3
20	43.3	20	11.3
25	43.4	25	11.3
30	43.4	30	11.3
40	43.4	40	11.3
50	43.4	50	11.3
60	43.4	60	11'3"

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

1 HP - 20 GPM SET @ 100 FT

Well Contractor and Well Technician Information

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

Business Address (Street Number/Name)	Municipality
6659 Franktown Road, RR#1	Richmond

Province	Postal Code	Business E-mail Address
ON	K0A 2Z0	air-rock@sympatico.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
6138882170	Hanna, Jeremy

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
T3632		2016 06 30

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
☒ Yes ☐ No	2016 06 09	Audit No. Z 202844
	Date Work Completed: 2016 06 03	AUG 10 2016 Received

Ministry's Copy

Ontario — Ministry of the Environment and Climate Change

Measurements recorded in: ☐ Metric ☑ Imperial

Well Tag No. **Tag#: A 207712**

A207712

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
225 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	Other
NAD 8 3	18	444323	5007151	PL 4M-1407	SIL 32

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

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

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
62'	0	Neat cement	31.2

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
6 1/4"	Steel	.188	+2'	62'
6"	Open Hole		62'	160'

Construction Record - Screen

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

Status of Well

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

Water Details

Water found at Depth (m/ft)		Kind of Water	
131'	☐ Gas	☐ Fresh ☑ Untested	☐ Other, *specify* _____
150'	☐ Gas	☐ Fresh ☑ Untested	☐ Other, *specify* _____
153'	☐ Gas	☐ Fresh ☑ Untested	☐ Other, *specify* _____

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
		9 3/4"
0	62'	
62'	160'	6"

Results of Well Yield Testing

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

If pumping discontinued, give reason: /

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

Pumping rate (l/min / GPM): 20

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 96'

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

Recommended pump depth (m/ft): 120'

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

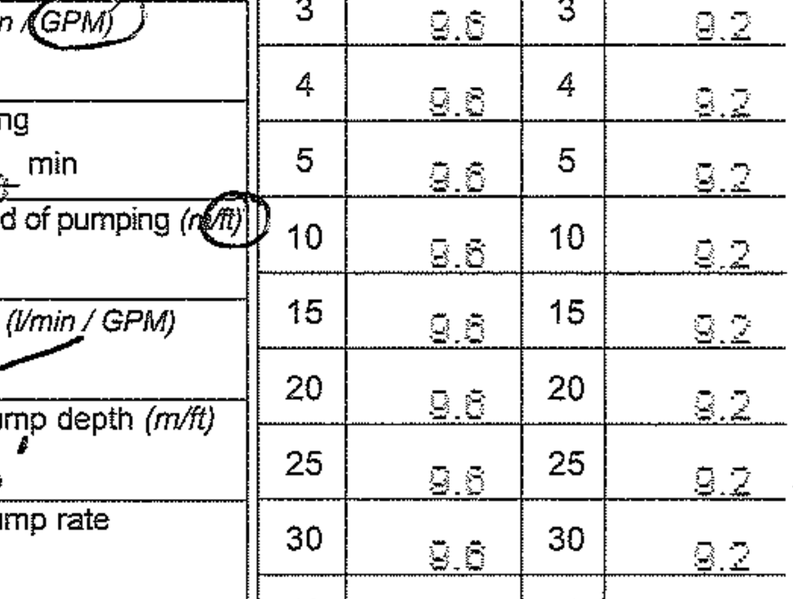
Well production (l/min / GPM): 20

Disinfected? ☑ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	9'2"		9'6"
1	9.6	1	9.4
2	9.6	2	9.3
3	9.6	3	9.2
4	9.6	4	9.2
5	9.6	5	9.2
10	9.6	10	9.2
15	9.6	15	9.2
20	9.6	20	9.2
25	9.6	25	9.2
30	9.6	30	9.2
40	9.6	40	9.2
50	9.6	50	9.2
60	9'6"	60	9'2"

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	Date Package Delivered	Ministry Use Only
☑ Yes ☐ No	2016 M 11 D 28	Audit No. Z237097
	Date Work Completed: 2016 M 10 D 25	NOV 28 2016 Received

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
6859 Franktown Road, RR#1	Richmond

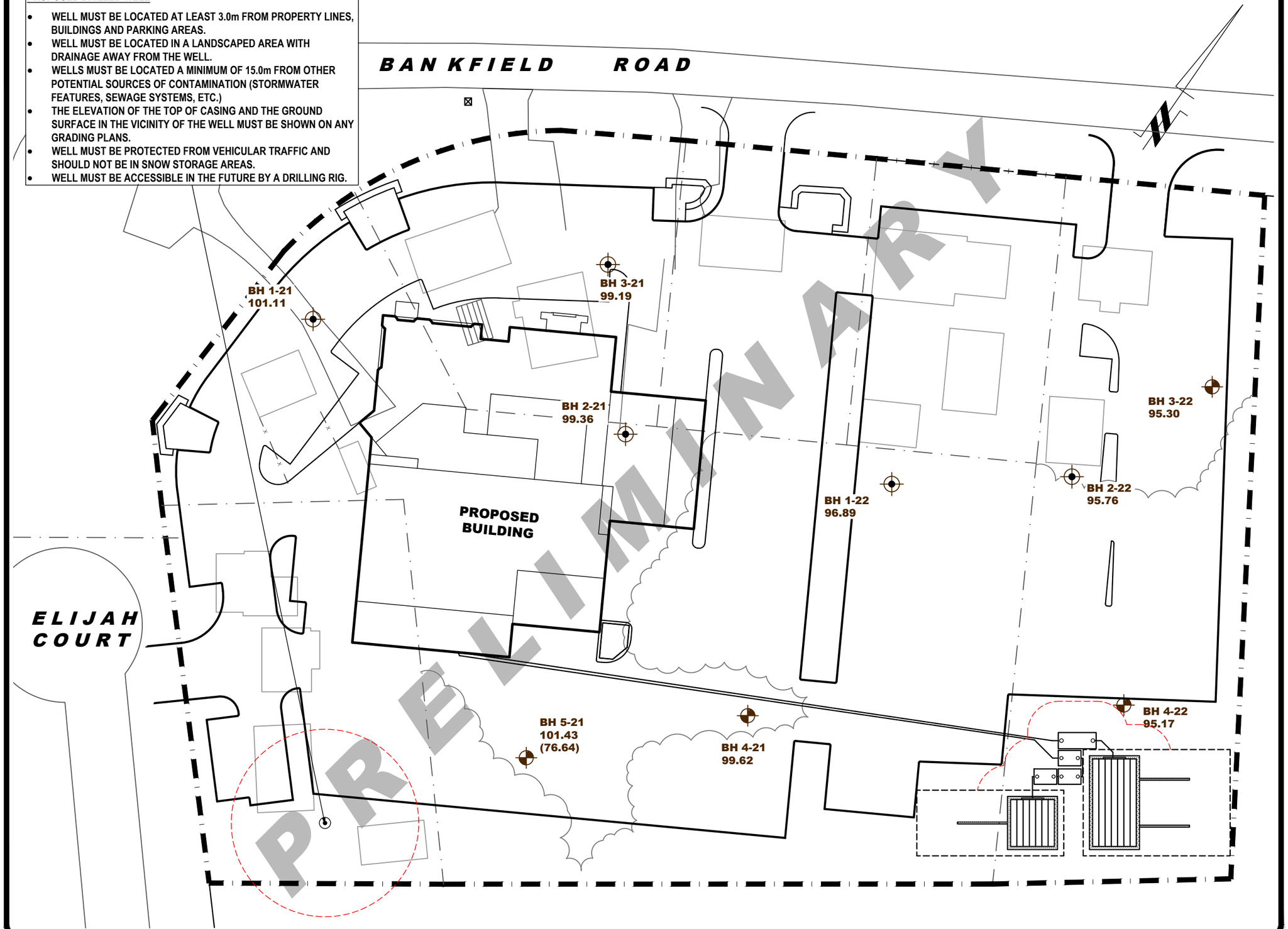
Province	Postal Code	Business E-mail Address
ON	K0A 2T0	air-rock@sympatico.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
8138882170	Hance, Jeremy

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
T8632		2016 M 11 D 28

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.



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

DD/MM/YY	DESCRIPTION	REV.
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

Consultant:
PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7S9
TEL: (613) 226-7381

Client:
MYERS AUTOMOTIVE GROUP

Project:
PROPOSED COMMERCIAL DEVELOPMENT
1468 BANKFIELD
OTTAWA, ONTARIO

Drawing:
PRELIMINARY SITE SERVICING PLAN (TERTIARY TREATMENT)

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

Drawing No.:
PH4334-1(rev.4)

p:\autocad drawings\hydrogeology\ph43xx\ph4334 - myers automotive group - 1464 bankfield\ph4334-1(rev.4).dwg