March 26, 2024 (Revision 02)

Our File Ref.: 210341

Al Roberts
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Richmond, Ontario K0A 2Z0

Subject: Hydrogeological Assessment and Terrain Analysis - Proposed Mixed Use Dog Kennel and Dwelling, 5969 Ottawa Street, Richmond, Ontario

Dear Mr. Roberts,

LRL Associates Ltd. (LRL) has conducted a Hydrogeological Assessment and Terrain Analysis Study for a proposed change in land use that would allow development on private water and wastewater services for a portion of the property located at 5969 Ottawa Street. The proposed development is a two-storey prefab building. The first floor would include a kennel to shelter up to four (4) dogs for service training. The second floor would include a two (2) bedroom caretaker's residence. The development is proposed to be constructed on the portion of the property located east of Marlborough Creek at 5969 Ottawa Street, Richmond (herein referred to as the "Site").

The proposed development intends to operate on a private, on-site supply well for drinking water, as well as a private, on-site sewage system.

The assessment was carried out to determine if the proposed development:

- Has soil conditions that are suitable for onsite water supply and sewage disposal; and
- Will not impair the use of groundwater resources on the Site or on adjacent lands.

The assessment involved a desktop review of available information on the geology and hydrogeology of the Site and adjacent lands in addition to an intrusive subsurface investigation (test pitting program), and hydrogeological pumping test of the drinking water well on the subject site.

An initial Hydrogeological Assessment and Terrain Analysis report was prepared and dated September 22, 2021. The City of Ottawa technical reviewers provided comment after a formal evaluation of the deliverable, discussed further in their October 14, 2022, first submission comments, included in **Attachment I**. A second set of comments were then received on November 14, 2023. This report revision has been prepared to address the City of Ottawa comments related to the Hydrogeological Assessment and Terrain Analysis report previously submitted (July 31, 2023).

The findings included herein are based on the work completed from between July 20, 2021, and May 29, 2023.

1 SITE AND AREA DESCRIPTION

The property is situated at the southeastern extent of Richmond at 5969 Ottawa Street, shown in **Figure 1**. For the purpose of this report, Ottawa Street direction will be inferred as east-west.

The totality of the property is triangular in shape and approximately 2.22 hectares (5.44 acres). The portion being assessed for development (the Site) is irregularly shaped, approximately 0.90 hectares (2.22 acres), and bounded by Ottawa Street on the south, the Smith Falls rail corridor on the north, an industrial lot to the east, and the Marlborough Creek to the west. The Site is vacant, approximately two thirds treed with a flat, grassed section in the southeast corner which is the proposed location of the new development. Site is zoned as RG3 – Rural General Industrial Zone (RG), Subzone 3.

The topography of the land is generally flat ranging from 94 to 95 m asl. The creek causes a slight dip in topography along the west side of the Site. GeoOttawa shows the majority of the treed portion of the Site is within a flood plain, and the grassed portion of the Site is outside of this floodplain.

These existing site features are shown in the **Figure 2**.

2 PROPOSED DEVELOPMENT

It is understood that the development will be constructed within the grassed portion of the Site between the site boundaries and the flood plain of Marlborough Creek. The associated septic system will be to the south of the proposed building; the well will be to the north. The estimated proposed building footprint is 453 m^2; being approximately 18.5 m wide (east – west) by 24.5 m in length (north – south). The building will be slab on grade and supplied by a private water well and sewage disposal system. An asphalted parking and circulation area will extend from Ottawa Street along the western extent of the development area, and will include six (6) parking spaces, encompassing an overall area of approximately 620 m^2.

As mentioned, the Site will be serviced by a private sewage disposal system, which is proposed to be located at the southeastern extent of the property. The sewage disposal system will be a pressurized shallow buried trench bed construction, with a Norweco 3780-3M treatment unit. The Ottawa Septic System Office has approved the proposed design, and the corresponding permit is included in **Attachment II**.

In June 2021, the client retained a provincially licensed well installer (Air-Rock Drilling Co Ltd., Richmond, Ontario) to install a test well at the general northeastern portion of the Site. LRL was not present during the installation process, nor was LRL consulted on the location of the test well. This test well, referred to as TW-1 (Well Tag # A320977), was used to perform the initial aquifer evaluation on the Site, as documented in the Hydrogeological Assessment and Terrain Analysis report was prepared and dated September 22, 2021. The details of the TW-1 are summarized further herein in later sections.

Based on the results of the initial TW-1, in comparison to the applicable provincial regulations and guidelines, it was established that a new, better suited supply well (TW-2) be constructed on the Site. This newly installed proposed supply well for the development is located immediately north of the proposed building footprint, maintaining a 15 m setback from the proposed sewage disposal system location. Further details pertaining to the supply well details are included in the remaining body of this report.

The proposed development plan, including the proposed lot features are shown in **Figure 3**.

3 FIELDWORK

The fieldwork discussed herein includes the overall activities related to the hydrogeological assessment and terrain analysis completed from between July 20, 2021, and May 29, 2023. The subsequent sections provide details related to the fieldwork completed to date as part of this mandate, and are outlined in chronological order.

3.1 Potable Water Sample Collection – July 2021

3.1.1 5969 Ottawa Street

A sample of untreated water was collected from the supply water well at 5969 Ottawa Street, on July 20, 2021 to confirm the quality of the proposed supply aquifer prior to proceeding with the hydrogeological pumping test. The water was allowed to run for ten minutes before collection. The samples were collected using laboratory prepared bottles and were submitted for a subdivision package analysis.

The laboratory Certificates of Analysis are included in **Attachment III**.

3.2 Terrain Analysis Test Pit Advancement – July 2021

On July 20, 2021, three (3) test pits were completed across the proposed severed lot to determine the general upper soil and groundwater conditions, as well as to establish the depth of overburden in the area over bedrock. The test pits were advanced using a backhoe operated by Landraulics Equipment (Richmond, Ontario). LRL was present to supervise and document the advancement of the test pits. The locations of the test pits are presented in **Figure 4** with the Test Pit Logs included in **Attachment IV**.

An open tube piezometer was installed in test pits TP21-1 through TP21-3 to allow for the elevation measurement and sampling of the perched water found in the overburden, herein referred to as groundwater. Groundwater samples could not be collected from the piezometers at the time of sampling on August 11, 2021, as they were found to be dry at the time of the sampling event. The piezometers have also since been removed from the Site.

Soil samples TP21-1-3, TP21-2-4, and TP-21-3-3 were submitted to LRL's geotechnical testing laboratory for grainsize analysis. The laboratory certificates of analysis are included in **Attachment V**.

3.3 Pumping Tests

3.3.1 August 2021 – TW-1

LRL conducted an initial pumping test on the drilled test well TW-1 on August 11, 2021, in order to assess the quality and quantity of the aquifer. The test well was pumped for a total of 360 minutes (approximately 6 hours) at an average pumping rate of 40 L/min for the duration of the test.

The drawdown was measured during the pumping and recovery periods using an electronic water level tape. Following the pump's cessation, the pumping well's recovery was monitored until a minimum of 95% recovery was achieved.

3.3.2 January 2023 – TW-1

Following the technical consultation with the City of Ottawa on November 16, 2022, and as further discussed in Section 0, LRL returned to 5969 Ottawa Street to attempt a second pumping test of the existing test well, TW-1, on January 24 and 25, 2023. The test was initiated to further develop

and assess the quality and quantity of the aquifer intercepted by TW-1 prior to exploring alternative solutions to previous water quality concerns.

The test well was commenced on January 24, 2023, at a pumping rate of 40 L/min for a duration of 240 minutes (approximately 4 hours), at which time the pump being used malfunctioned, resulting in the test terminating. LRL returned on January 25, 2023, to proceed with the pumping test. The test well was pumped for a total of 480 minutes (approximately 8 hours) at an average pumping rate of 40 L/min for the duration of the test.

The drawdown was measured during the pumping and recovery periods using an electronic water level tape. Following the pump's cessation, the pumping well's recovery was monitored until a minimum of 95% recovery was achieved.

3.4 Potable Water Sample Collection – March 2023

Subsequent to the initial Hydrogeological Assessment and Terrain Analysis report submission on September 22, 2021, the City of Ottawa returned comments pertaining to the quality of the aquifer assessed at 5969 Ottawa Street. As discussed in Section 6, during a technical consultation with the City of Ottawa on November 16, 2022, held to collectively review the comments provided, it was recommended that an alternative supply aquifer be examined with respect to water quality. More specifically, one encountered at a shallower depth.

On March 15, 2023, LRL visited the property located at 5949 Ottawa Street, located immediately east of the subject site, to collect a representative water sample of their supply well, confirmed to extend to a shallower depth in comparison to the test well installed at 5969 Ottawa Street. The water was allowed to run for ten minutes before collection. The samples were collected using laboratory prepared bottles and were submitted for a subdivision package analysis.

The laboratory Certificates of Analysis are included in **Attachment III**.

3.5 Secondary Test Well Installation – May 2023

On May 8, 2023, Air-Rock Drilling Co Ltd. returned to the site, upon request by the client, to advance a second test well, TW-2. The test well was located beyond the flood plain to address concerns by the City of Ottawa. LRL visited the site at the time of the well grouting to confirm the initial construction details. At the time of the site visit, the casing extended to a depth of 58.5 m and the well was extended 51.2 m into bedrock, with bedrock encountered at 6.7 m below grade. LRL witnessed the grouting of the well, and based on the well record provided, the installation continued into bedrock (open-hole construction) to a depth of 70.1 m. Adequate grouting was completed to comply with O. Reg. 903 which generally specified a 6.0 m seal depth for a bored well. Furthermore, upon further site visits, the top of casing of the test well was measured to extend 0.63 m above ground surface, which exceeds the minimum stick up requirement of 0.4 m.

3.6 Pumping Test TW-2 - May 2023

On May 29, 2023, the recently installed test well, TW-2, was pumped for a duration of 360 minutes (approximately 6 hours) at an average pumping rate of 40 L/min for the duration of the test. The drawdown was measured during the pumping and recovery periods using an electronic water level tape. Following the pump's cessation, the pumping well's recovery was monitored until a minimum of 95% recovery was achieved.

4 TOPOGRAPHY, GEOLOGY AND HYDROGEOLOGY

4.1 Geology

4.1.1 Mapping

Surficial soil deposit mapping[1] indicates that the overburden consists of fine-textured glaciomarine deposits of massive to well laminated silt and clay, minor sand and gravel; with low permeability.

Records from the Ontario Division of Mines[2] indicates that the underlying bedrock is Lower Ordovician period dolomite and sandstone from the March and Oxford Formation of the Beekmantown Group.

4.1.2 Test Pitting

The test pits completed across the Site were found to have a thin layer of topsoil over clay with varying sand and silt contents that extends to 3.0 m below ground surface (bgs) where the test pits were terminated. A 0.3 m thick layer of boulders and cobbles is present between approximately 1.8 and 2.1 m bgs across all three test pits. Neither bedrock or groundwater were encountered during test pitting activities.

Representative overburden samples of the clay material encountered on the Site were collected from each test pit during the test pitting activities and submitted for sieve and hydrometer analysis. The results are summarized as follows:

- Sample TP1-3, collected from a depth of between 0.9 and 1.8 m below grade, was reported to include 6.3% gravel, 17.3% sand (generally fine to medium grained), 63.5% silt and 12.9% clay. Based on the reported values, the material is considered as silt loam;
- Sample TP2-4, collected from a depth of between 1.8 and 2.7 m below grade, was reported to include 6.7% gravel, 36.7 % sand (generally fine to medium grained), 46.4% silt and 10.2% clay. Based on the reported values, the material is considered as loam; and
- Sample TP3-3, collected from a depth of between 1.8 and 2.7 m below grade, was reported to include 13.4% gravel, 24.1% sand (generally fine grained), 45.5% silt, and 17.0% clay. Based on the reported values, the material is considered loam.

These results are presented in the sieve and hydrometer certificates of analysis that are included in **Attachment V.** Clay loam will be used to define the soil infiltration factor and fine sandy loam will be used for moisture surplus.

[1] The Ontario Geological Survey 2010. *Surficial geology of Southern Ontario;* Ontario Geological Survey, Miscellaneous Release—Data 128-REV

[2] Hewitt D.F., 1972. *Paleozoic Geology of Southern Ontario*; Ontario Div. Mines, GR105, 18p. Accompanied by Map 2254, scale 1 inch to 16 miles.

4.1.3 Water Well Records

Within the Rideau Valley Conservation Authority, 27,459 wells are recorded[3]. Of these, 4.2% are overburden wells, indicating that bedrock aquifers are the more significant water sources. The specific capacities of the 1,156 recorded overburden wells are as follows: 222 (19.2%) have no specific data, 27 (2.3%) have less than 1 L/min/m, 136 (11.8%) have between 1.0 – 5.0 L/min/m, 161 (13.9%) have between 5.0 – 10.0 L/min/m, 382 (33.1%), the greatest fraction, have between 10.0 – 50.0 L/min/m, and 228 (19.7%) have specific capacities that exceed 50.0 L/min/m.

A search was conducted of the MECP Water Well Information System (WWIS). Searching by UTM coordinates within a 500 m radius from the site returned information for eighty-eight (88) wells; locations are presented in **Figure 5**. Available well records are included in **Attachment VI**, including those of both test wells installed on the subject site (A320977 and A342311). Geological cross section of the area, generally with 500 m of the Site, are presented in **Figure 5A** and **Figure 5B**.

A review of the records within 500 m reveals that wells are drilled and extend into the bedrock, with an average depth of 33.6 $\pm$ 14.3 m (n = 86), ranging from 10.7 to 73.2 m. The reported geological conditions are relatively similar indicating an average overburden depth of 6.9 $\pm$ 2.9 m (n = 86) of mostly clay, underlain by limestone bedrock with occasional descriptions of sandstone. The general subsurface conditions reported for the twenty-five (25) wells in closest proximity to the site are found in the table below.

MECP Well Number	Distance and Direction from Site (m)	Depth (m)	Overburden Details			Bedrock Details	Groundwater Encountered (m)	Static Water Level (m)	Type of water
			Gravel (m)	Clay/ Hardpan (m)	Sand (m)	Bedrock			
A320977 (TW-1)	**On-site**	**48.7**			**0 – 6.4**	**6.4 – 48.7 (Limestone)**	**14.6, 46.9**	**2.77**	Unspecified
A342311 (TW-2)	**On-site**	**70.1**		**0 – 6.7**		**6.7 – 50.2 (Limestone)** **50.2 – 70.1 (Limestone & Sandstone Mix)**	**68.2**	**2.52**	Unspecified
1531908	48 (WSW)	64		0 – 10.7	10.7 – 12.5	12.5 – 48.8 (Limestone) 48.8 – 64.0 (Sandstone)	64.0	3.0	Unspecified
7121463	151 (WNW)	45.1		4.3 – 8.8 (Hardpan)	0 – 4.3 (Topsoil)	8.8 – 45.1 (Limestone)	43.3	4.0	Unspecified
7123927	157 (SSW)	25.6		0 – 4.6		4.6 – 25.6 (Limestone)	16.7, 21.0, 22.3	3.4	Unspecified
7123924	158 (SSW)	73.2		0 – 17.1		17.1 – 53.6 (Limestone)	17.7, 27.1, 70.7	3.4	Unspecified
7115740	162 (WNW)	45.1		0 – 6.1		6.1 – 45.1 (Limestone)	42.4	4.6	Unspecified

[3] Singer S.N., 2003, *The Hydrogeology of Southern Ontario – Second Edition*; Environmental Monitoring and Reporting Branch, Ministry of the Environment, 2003.

MECP Well Number	Distance and Direction from Site (m)	Depth (m)	Overburden Details			Bedrock Details	Groundwater Encountered (m)	Static Water Level (m)	Type of water
			Gravel (m)	Clay/ Hardpan (m)	Sand (m)	Bedrock			
7123245	162 (WNW)	45.1		0 – 5.5		5.5 – 45.1 (Limestone)	43.6	4.9	Unspecified
1535453	171 (NW)	22.3		0 – 2.4 (Clay) 2.4 – 4.3 (Hardpan)		4.3 – 22.3 (Limestone)	8.5, 12.5, 16.2	4.0	Unspecified
7121464	172 (NW)	45.1		4.3 – 7.0 (Hardpan)	0 – 4.3 (Topsoil)	7.0 – 45.1 (Limestone)	43.3	3.7	Unspecified
7123247	178 (WNW)	45.1		0 – 5.8		5.8 – 45.1 (Limestone)	42.7	4.0	Unspecified
7139891	184 (NW)	37.5		0 – 4.3		4.3 – 37.5 (Limestone)	34.4	4.0	Unspecified
7127126	190 (WNW)	51.8		0 – 6.1		6.1 – 43.0 (Limestone) 43.0 – 51.8 (Sandstone)	50.6	4.3	Unspecified
7112996	194 (WNW)	45.1		0 – 6.1		6.1 – 45.1 (Limestone)	41.8	4.0	Unspecified
7123244	198 (WNW)	45.1			0 – 5.8 (Topsoil)	5.8 – 45.1 (Limestone)	43.9	4.0	Unspecified
7112957	205 (NW)	29.9		0 – 6.1		6.1 – 29.9 (Limestone)	27.7	4.6	Unspecified
1535994	205 (SSW)	29.6		0 – 3.7		3.7 – 29.6 (Limestone)	24.4, 27.4	1.8	Unspecified
7119244	211 (WNW)	48.8		0 – 5.8		5.8 – 48.8 (Limestone)	46.6	4.3	Unspecified
7127128	213 (W)	29.9			0 – 6.1 (Topsoil)	6.1 – 29.9 (Limestone)	25.9	3	Unspecified
7127131	216 (W)	45.1			0 – 6.1 (Topsoil)	6.4 – 45.1 (Limestone)	35.1, 43.3	4	Unspecified
7139854	225 (NW)	45.1		0 – 4.3		4.3 – 45.1 (Limestone)	43.6	4	Unspecified
7115738	229 (NW)	45.1			0 – 5.5	5.5 – 45.1 (Limestone)	42.4	4.3	Unspecified
7112965	232 (WNW)	37.5		0 – 5.5		5.5 – 37.5 (Limestone)	35.7	4	Unspecified
7139835	235 (NW)	45.1		0 – 6.4		6.4 – 45.1 (Limestone)	43.6	3.7	Unspecified

MECP Well Number	Distance and Direction from Site (m)	Depth (m)	Overburden Details			Bedrock Details	Groundwater Encountered (m)	Static Water Level (m)	Type of water
			Gravel (m)	Clay/ Hardpan (m)	Sand (m)	Bedrock			
7112983	240 (W)	29.9		0 – 4.6		4.6 – 29.9 (Limestone)	12.2, 27.4	2.7	Unspecified
7119251	242 (W)	47.2		0 – 4.6		4.6 – 47.2 (Limestone)	44.8	4	Unspecified
7139902	245 (W)	45.1			0 – 4.9 (Topsoil)	4.9 – 45.1 (Limestone)	27.4, 43.3	4.6	Unspecified

Notes

BOLD On-site test well

4.2 Hydrology

An un-named watercourse bisects the subject site in a general north-south direction. As confirmed through the Government of Canada, *The Atlas of Canada – Toporama*, the watercourse flows generally north into the Jock River, approximately 1.1 km north of the Site. Local topography of the site indicates that local overburden groundwater flow direction is most likely north/northeast following that of the un-named watercourse which bisects the site.

The Jock River flow in a northernly direction for a distance of approximately 7 km north of the site, where it intersects the Mahoney Creek and continues east to the Rideau River.

As indicated in the Plan of Survey prepared by H.A. Ken Shipman Surveying Ltd., dated July 19, 2021, and included in **Attachment VII**, the northern extent of the Site is identified as a floodplain. It is worth noting that although Ontario Regulation 903 doesn't specifically prohibit the installation of a well in the floodplain, the City of Ottawa does not recommend such practice. Further shown in the plan of survey, TW-1 is located within the identified floodplain area, and therefore the City of Ottawa requires the following specifications for installations in floodplains should they exist:

- The casing (and air vent) of the well must be 40 cm above the potential flood level; and
- The well installation cap, and vent, must be floodproof.

4.2.1 Groundwater from Test Pits

Standpipe piezometers were installed in the bottom of each of the three (3) test pits. Groundwater samples were to be collected from the piezometers. At the time of sampling on August 11, 2021, all three (3) piezometers were found to be dry.

The test pits were advanced such that it was anticipated that the local shallow groundwater would be intercepted, based on the water levels observed in the bisecting un-named watercourse, approximately 1.5 – 2.0 m below grade. The silty conditions in conjunction with the excavation methodology may have influenced groundwater infiltration conditions. LRL did not return to the site to verify if levels have changed thereafter.

4.3 Topography

The topography of the land is generally flat ranging from 94 to 95 m asl. The creek causes a slight dip in topography along the west side of the Site. GeoOttawa shows the majority of the treed portion of the Site is within a flood plain, and the grassed portion of the Site is outside of this floodplain.

5 WATER SUPPLY ASSESSMENT – AUGUST 2021 (TW-1)

The supply well of 5969 Ottawa Street (A320977) used as part of this assessment was installed by the client in June 2021 within the limestone bedrock aquifer. The location of the newly installed supply is shown in **Figure 2.** This well was installed to serve as the drinking water well for the Site and was tested directly as part of the assessment.

5.1 Quality

The chemistry of the water was determined by the sampling of untreated water from the supply water well at 5969 Ottawa Street (A320977) which was installed in June 2021 by the client for future drinking water supply at the proposed development.

Table 1A summarizes the water analysis and also includes the relative Ontario Drinking Water Standards (ODWS) (O. Reg. 169/03) for the parameters tested. The analytical results for the six (6) hour sample meet the ODWS for the parameters tested except for the following:

- Hardness was reported to be 509 mg/L in the six (6) hour sample, above the Operational Guideline (OG) of 100 mg/L and D-5-5 guideline of 500 mg/L. High levels of hardness can lead to scale deposits and excessive scum with regular soaps upon heading the water. Hardness can be reduced through the use of a water softener; however the use of sodium chloride as a regenerant for the resins can increase the sodium content of the water.
    - The Langelier Saturation Index (LSI) is used to determine the calcium carbonate stability of water and the pH at which water is saturated with calcium carbonate (pHs). The Ryznar Stability Index (RI) is used to determine the aggressiveness of water which can indicate the scale and corrosion potential. The calculations for RI and LSI for the six (6) hour sample are shown in **Table 2**. Using a water temperature of 10°C, the LSI was calculated to be 0.66 which indicates the water is scale forming but non-corrosive. The RI was calculated to be 6.47 which indicates light scale or corrosion.
- Colour with a value of 30 TCU at the 6 hour samples, above the AO of 5 TCU and the level considered reasonably treatable of 7 TCU. Although the level of colour is above the value considered reasonable treatable, color can be reduced by use of an AC filter or a water softener.
- TDS was reported at 814 mg/L after six (6) hours, above the ODWS AO of 500 mg/L. TDS can be reduced through the use of a water softener; however, the use of sodium chloride as a regenerant for the resins can increase the sodium content of the water. For individuals with sodium restricted diets, potassium chloride can be substituted for sodium in the ion-exchange system to lower the TDS in the water supply.
- Turbidity was reported to be 4.9 NTU after six (6) hours, below the AO of 5 NTU but above the MAC of 1.0 NTU if the treatment system is required to provide filtration. Turbidity measures the suspended solids and the relative clarity of the water. Turbidity can reduce the aesthetics of water and also reduce the efficiency of disinfection of microbiological parameters, such as in treatment processes requiring filtration.
- Chloride was reported to be 264 mg/L after six (6) hours, above the ODWS AO and D-5-5 level considered reasonably treatable of 250 mg/L. Chloride can cause a salty taste in the water. Chloride is found in nature in various forms, including salts such as sodium (NaCl), potassium (KCl) and calcium ($CaCl_2$) chloride. A reverse osmosis treatment system can be used to lower level of chloride in drinking water.
- Iron exceeded the 0.3 mg/L ODWS value with a level of 0.5 mg/L. This is below the MECP D-5-5 level considered reasonable treatable of 5 mg/L. Iron can be reduce through the use of a water softener or a manganese greensand filter.
- Sodium was reported to be 111 mg/L after six (6) hours, which is above the ODWS AO but within the level considered reasonably treatable in Procedure D-5-5 of 200 mg/L. The concentration is above the 20 mg/L warning level notification limit for those on a sodium restricted diet. The local Medical Officer of Health should be notified of these levels so that this information may be communicated to local physicians with regards to homeowners who follow a sodium-restricted diet. Sodium can be reduced through the use of a point-of-use reverse osmosis system, if required.

5.1.1 In-Field Measurements

Throughout the duration of the pumping test, field measurements, in addition to water levels, were collected. These measurements included pH, Conductivity, total dissolved solids, colour, turbidity and residual chlorine. PH, Conductivity and total dissolved solids values were recorded using a Hanna Instruments HI98129 pen, and colour, turbidity and residual chlorine were measured using a LaMotte TC-300e tri-meter. The meters were calibrated and refenced to available solution standards prior to use. The measurements collected are summarized in the included **Table 3A**.

It should be noted that chlorine residuals were measured prior to obtaining a water sample for lab submission and free chlorine was measured to be 0.03 mg/L at the time of the 3-hour and 0.00 mg/L at the 6-hour sample collection. The machine detection limits of the Lamotte TC-3000 Trimeter are as follows:

- Turbidity of 0.01 NTC, with an accuracy of +/- 0.05 (or 2%, whichever is greater);
- Colour of 0.1 CU, with an accuracy of +/- 0.5 (or 2%, whichever is greater); and
- Chlorine of 0.01 ppm, with an accuracy of +/-0.02 (or 2%, whichever is greater).

For the purposes of this report, values read as less than the corresponding limits will be reported as <0.01, or <0.1.

The following calibration, or zeroing techniques performed as part of this assessment, during the filed investigations is summarized in the following Table:

Parameter	Equipment Used	Calibration and Zeroing Techniques
Turbidity	Lamotte TC-3000 Trimeter	Prior to use, the equipment was calibrated using the 'two-point' method, following manufacturer instructions. Standard calibration solutions of 0.0 NTU and a 1.0 NTU were used to calibrate the machine. The solutions were pre-made by a supplier.
Colour	Lamotte TC-3000 Trimeter	Prior to the use of the equipment, and periodically during the pumping test, colour measurements were first zeroed by following the manufacturer's instructions and using Deionized Water (prepared and supplied by Hanna Instruments – HI7040-2).
Chlorine	Lamotte TC-3000 Trimeter	Prior to each chlorine reading, a blank sample, including Deionized Water (prepared and supplied by Hanna Instruments – HI7040-2) was screened to zero the machine.
Conductivity	HI98129 Hanna Instruments	Prior to each event, where the meter is used (typically daily), the instrument was calibrated using the Hanna Instrument prepared 1413 µs/cm conductivity solution (HI7031).
pH	HI98129 Hanna Instruments	Prior to each event, where the meter is used (typically daily), the instrument was calibrated using the 'two-point' method, following manufactures specifications. As the pH readings are anticipated to be within the neutral to slightly acid range based on our knowledge of the area and past experience, solutions of 7.01 pH Units (Hanna Instruments HI7007) and 4.01 pH Units (Hanna Instruments HI7004) were used.

5.2 Quantity

5.2.1 6-Hr Pump Test

The initial static water level was measured as 2.96 m btc. The drawdown after six (6) hours of pumping was 2.17 m (final static water level of 5.13 m btc). This represents approximately 5% of the available drawdown in the well. The specific capacity of the well after six (6) hours of pumping was calculated to be 0.307 L/s/m. The calculation is presented in **Table 4**. The well achieved approximately 96% recovery within 60 minutes of the end of pumping, at which time further monitoring was ceased as targets had been achieved.

5.2.2 Aquifer Characteristics

Following the completion of the constant rate pumping test, the data was analysed using the Aquifer Test software package, by Waterloo Hydrogeologic. The data underwent Theis and Agarwal-Theis Recovery analysis, the results of which are shown in the table below. Graphical analyses are provided for reference purposes in **Attachment VIII**.

Based on the information gathered from the pump test, the wells' transmissivity and coefficient of storage were calculated using the average of the Theis logarithmic approximation for the drawdown and Agarwal/Theis for the recovery. The specific yield of the well was calculated using the information obtained from the pump test, the transmissivity and coefficient of storage. The yield takes into account a minimum safety factor of 3. The characteristics of the well are summarized in the table below. The yield was calculated using the safety factor; therefore the theoretical yields can be higher.

Parameter	**Test Well TW-1**
	6 Hour Test
Transmissivity (m^2/day)	25.4
Coefficient of Storage	5.2×10^{-3}
Pumping Rate (L/min)	40
Available Drawdown (m)	27.1
Maximum Drawdown (m)	2.13
% Drawdown	5%
Maximum Pumping Rate (L/min)	189.4
Long Term Availability (m^3/day)	272.7

6 CITY OF OTTAWA – TECHNICAL REVIEW COMMENTS AND CORRESPONDENCE

The information and data indicated above in Section 5 was present in the initial Hydrogeological Assessment and Terrain Analysis report prepared and dated September 22, 2021. The City of Ottawa technical reviewers provided comment after a formal evaluation of the deliverable, discussed further in their October 14, 2022, first submission comments, included in **Attachment I**. The findings discussed below in Section 7 are primarily to address the concerns presented by the City of Ottawa, as well as to demonstrate that an adequate water supply is available for the Site and the indented uses.

A summary of the comments presented by the City of Ottawa, limited to the September 22, 2021, Hydrogeological Assessment and Terrain Analysis report, and water quality and quantity concerns are as follows. Note that general comments and discussion points are excluded from the following list, although are included in **Attachment I** for reference, and corresponding revisions to the report have been completed:

- As discussed in section 5.1 (September 2021 submission) of the report, the water quality sampling showed that the D-5-5 Maximum Concentration Considered Reasonably Treatable was exceeded for hardness, colour, and chloride. In addition, there was a ODWO exceedance for TDS, which doesn't have a Maximum Concentration Considered Reasonably Treatable. Given the exceedances of the D-5-5 Maximum Concentration Considered Reasonably Treatable, it hasn't been demonstrated that the proposed supply well is capable of supplying water of adequate quality for the proposed development. Consultation with a City Hydrogeologist and the City Senior Engineer on the file is required to discuss the hydrogeological concerns.
- As displayed on the Plan of Survey prepared by H.A. Ken Shipman Surveying Ltd., and dated July 19, 2021, the well is located within the floodplain. Although Ontario Regulation 903 doesn't specifically prohibit the installation of a well in the floodplain, it's not recommended. The following items are required:
    - The casing height (and air vent) must be 40cm above the potential flood level.
    - The well cap and vent must be floodproof.
- As per section 5.2.4 v) of the City's Hydrogeological and Terrain Analysis Guidelines, the minimum required water quality sampling parameters for a Site Plan application are the Subdivision Package, as well as trace metals, and VOCs. Given that the pre-application consultation meeting occurred prior to when the City's Guidelines came into effect, testing for trace metals and VOCs weren't required for the Hydrogeological Assessment and Terrain Analysis dated September 22, 2021. Please note that this exception isn't intended to set a precedent. Any additional hydrogeological assessment on this Site Plan Control application, and on future applications, are subject to the requirements of the City's Hydrogeological and Terrain Analysis Guidelines, including the minimum water quality sampling parameters for Site Plans.

7 FURTHER INVESTIGATION

7.1 Subsequent January 2023 Pumping Test – TW-1

To address the water quality concerns raised by the City of Ottawa following their review of the initial Hydrogeological Assessment and Terrain Analysis submission, September 21, 2021, it was decided that an additional pumping event of the on-site TW-1 (Well # A320977) be performed. The additional pumping was intended to extend over a period of over 24 hours consecutively, at

a rate of 40 L/minute to (28,800 L/day) to further develop the well and provide a more accurate representation of the aquifer quality conditions. The test commenced on January 24, 2023, using a submersible pump, powered by a generator, and supplied by Air-Rock Drilling Co Ltd.

The pump test was set at a pumping rate of 40 L/min for a duration of 240 minutes (approximately 4 hours), at which time the pump being used malfunctioned, resulting in the test terminating. A groundwater sample was collected immediately prior to the pump test being terminated at 4 hours of pumping, and the well was permitted to recover to a water level within 95% of the initial column level.

LRL returned the following day, on January 25, 2023, to proceed with the pumping test. Using the same equipment as previously, the test well was pumped for a total of 490 minutes (approximately 8 hours) at an average pumping rate of 40 L/min for the duration of the test. Representative samples were collected at 4 hour, and at the eight (8) hour elapsed time interval. Following the collection of the eight (8) hour sample, the pumping was seized and the well was permitted to recover to at least 95% of the initial water level.

7.1.1 Quality

Further evaluation, in addition to that of the August 2021 pumping test data, was performed on the TW-1 aquifer through chemical analysis of representative water samples collected from the 5969 Ottawa Street test well (A320977). **Table 1A** summarizes the water analysis and also includes the relative Ontario Drinking Water Standards (ODWS) (O. Reg. 169/03) for the parameters tested at both four (4) hour intervals, and the eight (8) hour interval. The analytical results for the January 25, 2023 eight (8) hour sample meet the ODWS for the parameters tested except for the following:

- Dissolved Organic Carbon (DOC) was reported above the ODWS of 5 mg/L with a value of 8.9 mg/L. This value is below the MECP D-5-5 level considered reasonably treatable of 10 mg/L through available technologies including ion exchange units like water softeners. DOC was noted to be elevated in comparison to the August 2021 sample results;
- Hardness was reported to be 524 mg/L in the eight (8) hour sample, above the Operational Guideline (OG) of 100 mg/L and D-5-5 guideline of 500 mg/L. This value is comparable to those collected in the August 2021 pumping test. High levels of hardness can lead to scale deposits and excessive scum with regular soaps upon heading the water. Hardness can be reduced through the use of a water softener; however the use of sodium chloride as a regenerant for the resins can increase the sodium content of the water.
- TDS was reported at 836 mg/L after eight (8) hours, above the ODWS AO of 500 mg/L. TDS can be reduced through the use of a water softener; however, the use of sodium chloride as a regenerant for the resins can increase the sodium content of the water. For individuals with sodium restricted diets, potassium chloride can be substituted for sodium in the ion-exchange system to lower the TDS in the water supply. The levels encountered at this time are comparable to those retrieved in the August 2021 sampling event;
- Chloride was reported to be 299 mg/L after eight (8) hours, above the ODWS AO and D-5-5 level considered reasonably treatable of 250 mg/L. Chloride can cause a salty taste in the water. Chloride is found in nature in various forms, including salts such as sodium (NaCl), potassium (KCl) and calcium ($CaCl_2$) chloride. A reverse osmosis treatment system can be used to lower level of chloride in drinking water;

- Iron exceeded the 0.3 mg/L ODWS value with a level of 0.5 mg/L. This is below the MECP D-5-5 level considered reasonable treatable of 5 mg/L. This value is comparable to the August 2021 six (6) hour pumping test sample result also of 0.5 mg/L. Iron can be reduce through the use of a water softener or a manganese greensand filter; and
- Sodium was reported to be 112 mg/L after eight (8) hours, which is above the ODWS AO but within the level considered reasonably treatable in Procedure D-5-5 of 200 mg/L. The concentration is above the 20 mg/L warning level notification limit for those on a sodium restricted diet. The local Medical Officer of Health should be notified of these levels so that this information may be communicated to local physicians with regards to homeowners who follow a sodium-restricted diet. Sodium can be reduced through the use of a point-of-use reverse osmosis system, if required.

As mentioned, the water quality results encountered in the January 25, 2023, eight (8) hour pumping samples, in comparison to the August 11, 2021, six (6) hour pumping sample, were generally comparable, with select variances. Notable decreases in previously encountered parameters of concern include colour which was reported less than the detection limit (<2 CU) in the eight (8) hour sample, and turbidity which was reported less than the ODWS limit, and MECP D-5-5 value of 5 NTU.

Although significant improvement in select parameters were encountered, the majority of those identified as a concern by the City of Ottawa, including hardness, chloride and TDS, as well as the most recent elevated concentrations of DOC detected, the upper Limestone aquifer on the site is not considered an adequate supply source for the proposed development.

7.1.2 Quantity

Although the water quality was established to be not acceptable in accordance with applicable provincial guidelines, LRL proceeded to evaluate the demand potential of the aquifer based on the January 2023, pumping data results.

The initial static water level was measured as 3.32 m btc on January 24, 2023 (with the pump installation) and 3.29 m btc upon returning to the site on January 25, 2023 (with the pump installation). The drawdown after eight (8) hours of pumping on January 25, 2023, was calculated to be 1.93 m (final water level at the end of pumping was measured as 5.22 m btc). This represents approximately 4% of the available drawdown in the well. The pumping test details, and corresponding measurements are included **Table 3B** and **Table 3C**. The well achieved approximately 99% recovery within 30 minutes of the end of pumping, at which time further monitoring was ceased as targets had been achieved.

The results from the pumping test are found to support the proposed demand requirements in accordance with current provincial guidelines.

7.2 Shallow Bedrock Aquifer Characterization

As discussed above, the previously installed test well (TW-1) installed in June 2021 at 5969 Ottawa Street (A320977) was found to have inadequate groundwater quality in comparison to applicable provincial guidelines and standards. It was decided to investigate the conditions of the shallower bedrock aquifer in the area, through the sampling of a neighbouring supply well, 5949 Ottawa Street, immediately east of the Site. The supply well extended to a depth of approximately 30.3 m below grade (measured on Site), and according to the property owner, is not in use, but rather they obtain their supply from a second well on the property, extending to a depth of approximately 51 m below grade. Well records were not retrieved for these respective installations.

The neighbouring well, which extends approximately 30.3 m in depth, was sampled on March 15, 2023. A sample of untreated water was collected. The water was allowed to run for approximately ten minutes before collection. The samples were collected using laboratory prepared bottles and were submitted for a subdivision package analysis. The laboratory Certificates of Analysis are included in **Attachment III**.

A summary of the results is included in **Table 1A**. The water results were found to be generally comparable as those on the Site in TW-1, with exceedances to the Ontario Drinking Water Standards for TDS, hardness, turbidity and chloride, of which values were encountered above the D-5-5 limits considered reasonably treatable. The shallow bedrock aquifer is not considered a suitable source of water supply for the Site.

8 WATER SUPPLY ASSESSMENT – MAY 2023 (TW-2)

As discussed above, the previously installed test well (TW-1) installed in June 2021 at 5969 Ottawa Street (A320977) was found to have inadequate groundwater quality in comparison to applicable provincial guidelines and standards. Further investigation into shallower bedrock aquifer wells, namely that at 5949 Ottawa Street, returned comparable results and conclusions.

The client retained the services of a local well installer (Air-Rock Drilling Co Ltd., Richmond, Ontario) to complete a new test well on the Site. The well was extended to a greater depth (70.1 m) than that of the previously advanced TW-1 and was placed beyond the limits of the identified floodplain. The well construction details are included above in Section 3.5. The location of the newly installed test well is shown in **Figure 2**.

On May 29, 2023, the recently installed test well, TW-2, was pumped for a duration of 360 minutes (approximately 6 hours) at an average pumping rate of 40 L/min for the duration of the test. The test was performed using the existing submersible pump installed in the well, connected to a local power supply. Using a water level measuring tape, the top of the pump was measured to be set at approximately 49.9 m below top of casing.

Throughout the duration of the test, the drawdown was measured during the pumping and recovery periods using an electronic water level tape. Following the pump's cessation, the pumping well's recovery was monitored until a minimum of 95% recovery was achieved.

8.1 Quality

The chemistry of the water was determined by the sampling of untreated water from the newly installed test well at 5969 Ottawa Street (A342311). **Table 1A** and **Table 1B** summarizes the water analysis and also includes the relative Ontario Drinking Water Standards (ODWS) (O. Reg. 169/03) for the parameters tested.

Throughout the duration of the pumping test, field measurements, in addition to water levels, were collected. These measurements included colour, turbidity and residual chlorine, measured using a LaMotte TC-300e tri-meter. The meters were calibrated and refenced to available solution standards prior to use. The measurements collected are summarized in the pumping test measurement **Table 3D**.

Chlorine residuals were measured prior to obtaining a water sample for lab submission and free chlorine was measured to be 0.02 mg/L at the time of the 3-hour and the 6-hour sample collection. The machine detection limits of the Lamotte TC-3000 Trimeter are as follows:

- Turbidity of 0.01 NTC, with an accuracy of +/- 0.05 (or 2%, whichever is greater);
- Colour of 0.1 CU, with an accuracy of +/- 0.5 (or 2%, whichever is greater); and

- Chlorine of 0.01 ppm, with an accuracy of +/-0.02 (or 2%, whichever is greater).

For the purposes of this report, values read as less than the corresponding limits will be reported as <0.01, or <0.1.

Calibration, or zeroing techniques performed as part of this assessment, during the filed investigations is summarized above in Section 5.1.

The analytical results for the six (6) hour sample meet the ODWS for the parameters tested except for the following:

- Hardness was reported to be 478 mg/L in the six (6) hour sample, above the OG of 100 mg/L, although less than the D-5-5 guideline of 500 mg/L. High levels of hardness can lead to scale deposits and excessive scum with regular soaps upon heading the water. Hardness can be reduced through the use of a water softener; however, the use of sodium chloride as a regenerant for the resins can increase the sodium content of the water.

  TDS was reported at 718 mg/L after both three (3) and six (6) hours, above the ODWS AO of 500 mg/L. Where TDS levels exceed the ODWS AO, it is required that a professional comment regarding treatment include "*written rationale that corrosion, encrustation or taste problems will not occur*", according to the MECP D-5-5 Guideline. As indicated in the ODWS for TDS parameter "*The term total dissolved solids refer to inorganic substances dissolved in water. The principal constituents of TDS are chloride, sulphates, calcium, magnesium and bicarbonates. The effects of TDS on drinking water quality depend on the levels of the individual components. Excessive hardness, taste, mineral deposition or corrosion are common properties of highly mineralized water. The palatability of drinking water with a TDS level less than 500 mg/L is generally considered to be good*."

  In support of the required rationale with respect to TDS levels in excess of 500 mg/L, the Ryznar Stability Index (RSI) and Langelier Saturation Index (LSI) were calculated for the water sample to determine the corrosivity or scale formation potential of the water. The Langelier Saturation Index (LSI) is used to determine the calcium carbonate stability of water and the pH at which water is saturated with calcium carbonate (pHs). The Ryznar Stability Index (RI) is used to determine the aggressiveness of water which can indicate the scale and corrosion potential. Using a water temperature of 10°C, the LSI was calculated to be 0.549 which indicates the water is scale forming but non-corrosive. The RI was calculated to be 6.60 which indicates light scale or corrosion. Corrosion resistant piping and pluming fixtures can be used throughout the proposed development.

  Furthermore, it should be noted that parameters which contribute to TDS in a water supply, including sodium, sulphates and chlorides, are noted to be within their corresponding ODSW AO. Sodium was reported with a level of 70.7 mg/L and a chloride level of 191 mg/L, which are within the AO of 200 mg/L and 250 mg/L, respectively. Therefore, these parameters are considered to be at levels which are unlikely to contribute to unpleasant taste in the water supply. Additionally, sulphates were reported less than the 150 mg/L ODWS, with a level of 57 mg/L. This is indicative that sulphates will most likely not result in a distinctive or unpleasant taste.

  TDS levels are also influenced by concentrations of calcium, magnesium and bicarbonates, which can result in elevated hardness. As noted above, hardness was found to exceed the ODWS OG of 100 mg/L, although less than the D-5-5 guideline of 500 mg/L. Therefore, by improving the hardness of the water, TDS levels should be

directly correlated with the improvement of quality and reduce the potential for scale formation associated with TDS. High levels of hardness can lead to scale deposits and excessive scum with regular soaps upon heading the water. Hardness can be reduced through the use of a water softener; however the use of sodium chloride as a regenerant for the resins can increase the sodium content of the water.

According to the Government of Canada, Guidelines for Canadian Drinking Water Quality: Guideline Technical Document – Total Dissolved Solids (TDS), the palatability of a drinking water supply (with respect to TDS) has been rated by participants, and the findings are as follows:

- **Excellent,** less than 300 mg/L;
- **Good,** between 300 and 600 mg/L;
- **Fair,** between 600 and 900 mg/L;
- **Poor,** between 900 and 1200 mg/L; and
- **Unacceptable,** greater than 1200 mg/L.

From the analysis results collected, and with reference to the Guideline Technical Document – Total Dissolved Solids (TDS), the proposed water supply at the site is anticipated to be good to fair, as concentrations were reported to be 718 mg/L after six (6) hour of pumping. Therefore, based on the overall quality of the water supply, with consideration to the TDS and the likely palatability of the supply source, it is anticipated that corrosion, encrustation or taste problems will not occur. It should also be noted that water with very low TDS concentrations may also exhibit unacceptable palatability. Based on the lack of variance between the three (3) hour and the six (6) hour sample collected, it is unlikely the TDS values would diminish to such a value which would have unacceptable palatability.

TDS can be reduced through the use of a water softener.

- Turbidity was reported to be 9.0 NTU after six (6) hours, above the AO of 5 NTU, and the D-5-5 of 5 mg/L. Turbidity measures the suspended solids and the relative clarity of the water. Turbidity can reduce the aesthetics of water and also reduce the efficiency of disinfection of microbiological parameters, such as in treatment processes requiring filtration. At the time of sampling, the levels in the field were measured as 1.40 NTU. The holding time from the point of sample collection, and possible chemical reactions with such compounds as iron within the sample likely attributed to the elevated turbidity. The field results are considered representative of the sample, and aquifer conditions.
- Iron exceeded the 0.3 mg/L ODWS value with a level of 0.6 mg/L. This is below the MECP D-5-5 level considered reasonable treatable of 5 mg/L. Iron can be reduce through the use of a water softener or a manganese greensand filter.
- Sodium was reported to be 70.7 mg/L after six (6) hours, which is above the ODWS AO but within the level considered reasonably treatable in Procedure D-5-5 of 200 mg/L. The concentration is above the 20 mg/L warning level notification limit for those on a sodium restricted diet. The local Medical Officer of Health should be notified of these levels so that this information may be communicated to local physicians with regards to homeowners who follow a sodium-restricted diet. Sodium can be reduced through the use of a point-of-use reverse osmosis system, if required.

Volatile Organic Compounds (VOCs) were also collected as part of the analysis package. VOCs were not detected in the sample submitted, and the results are summarized in **Table 1B**.

8.1.1 Well Development Adequacy & Analytical Results Reliability Confidence

Based on the turbidity measurements collected by LRL throughout the six (6) hour pumping duration, it is most likely that the well is in fact developed adequately, and the conditions encountered are true to that of the proposed supply aquifer. In-field turbidity measurements collected are summarized in the table included below. As presented, there is little variance in the measurements collected throughout the pumping test, and all levels throughout this duration were less than the 5 NTU, which is the Ontario Drinking Water Standard aesthetic objective for all water at the point of consumption.

According to Ontario Regulation 170/03, if a drinking-water system is to provide filtration, and as detailed in the Ontario Drinking Water Standard, a value of greater than 1.0 NTU is considered an adverse result if the system is required to provide filtration. Iron levels encountered in the sample collected after six (6) hours of steady pumping were elevated, and the use of a manganese greensand filter was proposed as a potential treatment option. The effectiveness of a manganese greensand filter is not anticipated to be impaired by the slightly elevated turbidity which may occur in the proposed supply well, as alternatively, manganese greensand filter is an effective method to reduce turbidity levels. The point of consumption turbidity levels is anticipated to be less than 5 NTU as encountered during the pumping test and summarized in the following table:

Elapsed Time for Commencement of Pumping Test (minutes/hours)	**Turbidity Level Measured (NTU)**
30 minutes	0.78
50 minutes	1.08
60 minutes (1 Hour)	0.49
2 Hours	1.53
3 Hours	2.55
4 Hours	0.48
5 Hours	0.60
6 Hours	1.40

Furthermore, with respect to the development of the well, the use of pH, and conductivity, are also valuable parameters used when confirming if a well has reached suitable development. A range of +/- 0.1 is considered acceptable for pH levels; and conductivity values should be within +/- 3% for the well to be deemed developed. The pH values reported in the three (3) hour and six (6) hour had a variance of 0.1 pH unit, which is considered acceptable. And the conductivity during both the three (3) and six (6) hour sampling events are reported as 1290 µS/cm.

The test well was sufficiently developed, and it is our professional opinion that the analytical data, and the corresponding rationale presented herein is representative of the proposed supply aquifer conditions.

8.2 Quantity

8.2.1 6-Hr Pump Test

The initial static water level was measured as 3.19 m below top of casing (btc). The drawdown after six (6) hours of pumping was 2.205 m (final static water level of 5.395 m btc). This represents approximately 4.7% of the available drawdown in the well. The water level was measured to drop to a maximum depth of 5.45 m at the 3-hour pumping duration which accounts for a maximum drawdown of 2.26 m (4.8% of the total available drawdown) but recovered slightly afterwards. The specific capacity of the well after six (6) hours of pumping was calculated to be 0.302 L/s/m. The calculation is presented in **Table 4**. The well achieved approximately 95% recovery within 15 minutes of the end of pumping, and approximately 98% recovery within 60 minutes, at which time further monitoring was ceased as targets had been achieved.

8.2.2 Aquifer Characteristics

Following the completion of the constant rate pumping test, the data was analysed using the Aquifer Test software package, by Waterloo Hydrogeologic. The data underwent Theis and Agarwal-Theis Recovery analysis, the results of which are shown in the table below. Graphical analyses are provided for reference purposes in **Attachment VIII**.

Based on the information gathered from the pump test, the wells' transmissivity and coefficient of storage were calculated using the average of the Theis logarithmic approximation for the drawdown and Agarwal/Theis for the recovery. The specific yield of the well was calculated using the information obtained from the pump test, the transmissivity and coefficient of storage. The yield takes into account a minimum safety factor of 3. The characteristics of the well are summarized in the table below. The yield was calculated using the safety factor, therefore the theoretical yields can be higher.

Parameter	**Test Well TW-2**
	6 Hour Test
Transmissivity (m^2/day)	24.6
Coefficient of Storage	1.45×10^{-3}
Pumping Rate (L/min)	40
Available Drawdown (m)	46.75
Maximum Drawdown (m)	2.26
% Drawdown	4.8%
Maximum Pumping Rate (L/min)	184.8
Long Term Availability (m^3/day)	266.1

The required quantity of water is generally based on a per-person requirement of 450 L/day of water per day. However, based on the septic design calculations presented by others, and included in Section 9, the grand total required quantity per day is 3,450 L/day (3.45 m^3/day).

Based on the observed drawdown/recovery relationship, it is concluded that the long-term yield of the test well TW-2 is in excess of minimum daily demand of 3,450 L. The maximum pumping rate is also more than sufficient to supply a peak flow demand for a residential/commercial water supply as indicated in MECP Procedure D-5-5.

9 TERRAIN ANALYSIS

The terrain analysis was conducted to demonstrate that the unconsolidated material on the Site is appropriate for the construction of an on-Site subsurface sewage disposal system. The subsurface conditions indicated for the Site are considered suitable for a Class IV septic sewage

disposal system with a fully raised leaching bed depending on the lot specific soil and groundwater conditions at the actual location of the proposed septic system leaching bed. The leaching bed should be constructed to conform to the specifications set out in the Ontario Building Code (OBC).

The client retained the services of a certified sewage disposal system designer (Green Valley Environmental), who prepared the proposed system design and application to the City of Ottawa's, Ottawa Septic System Office (OSSO) for approval and permit issue. A copy of the permit, in addition to the supporting submission package, is included in **Attachment II**. Green Valley Environmental (GVE) proposed the use of a Class IV shallow buried trench, along with Norweco 3780-3M treatment unit.

GVE has calculated a daily design flow of 3,450 L/day. There assumptions area presented as follows:

Ontario Building Code: 8.2.1.3 - Sewage System Design Flows (Values from Table 8.2.1.3.A and 8.2.1.3.B)				
Use	**Design Flow per Unit (L)**	**Units**	**Number of Units**	**Design Flow Subtotal (L) per day**
Warehouse				
Two (2) Washrooms	950	Washroom	2	1,900
Two (2) Loading Bays	150	Loading Bay	2	300
			Total	**2,200**
Apartment				
Two (2) Bedrooms	275	Per Person	4	1,100
			Total	**1,100**
Kennel (Veterinary Clinic [1])				
Employee	75	Employees [2]	1	75
Floor Drain	75	Floor Drain	1	75
			Total	**150**
			Daily Flow Total	**3,450**

Notes

(1) Veterinary clinic was the considered the closest applicable property use in the OBC table for animal kenneling. No veterinary services are to be completed on Site.

(2) Assumes employees work one 8-hr shift per day and spend the rest of the day in the caretaker suite.

Based on a daily design flow of 3,450 L per day, GVE has calculated a total length of pipe required for the shallow buried trench installation, of 52.32 m and an orifice spacing of 0.6 m. The system will include a minimum 3,600 L capacity pretreatment tank with a maximum cover of 300 mm of soil. The actual treatment unit will have a capacity of 3,780 L. Based on the design details proved in the GVE application, the system will require a surface area of approximately 15 m by 15 m, or approximately 230 m². Including a replicate area to account for a replacement area, it is estimated that a total footprint of approximately 460 m² would be required to adequately install and maintain the proposed system. Further details related to the proposed construction are included in Attachment II.

The proposed development property has an area of approximately 9,000 m^2. Accordingly, it is considered that sufficient area exists at the proposed development for the installation of a septic system in accordance with the OBC, and includes sufficient replacement area in the event it is required. The proposed Site layout, including the anticipated septic location and configuration is shown in **Figure 3**.

The OSSO approved the application, and a permit was issued.

10 GROUNDWATER IMPACT ASSESSMENT

The groundwater impact assessment addresses the ability of the land to attenuate the sewage effluent created by the development. Three methods for conducting the assessment are outlined in MECP's *Procedure D-5-4 Technical Guideline for Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment* (1996):

- *Lot Size Consideration* for lot greater than 10 000 m²;
- *System Isolation Consideration* for areas where the septic system is hydrogeologically isolated from the potable water source; and
- *Contaminate Attenuation Consideration* for sites that do not meet the above two points.

Based on the review of the available information and site visit (above) the site is not obviously hydrogeologically sensitive (i.e. karstic areas, areas of fractured bedrock at the surface, areas of thin soil over highly permeable soils).

The Site has a total area of 22,200 m². In accordance with Section 22.5.8 of the MECP Design Guidelines for Sewage Works, the Marlborough Creek which intercepts the subject property along the western extent of the proposed development area, must be considered in the extent of the allowable dilution area. Therefore, an area of 8,976 m² has been considered for the proposed development footprint, and septic attenuation areas. Therefore, "***Contamination Attenuation***" was considered in this terrain analysis.

10.1 Contamination Attenuation Method (Predictive Assessment)

The Contaminant Attenuation Method (Predictive Assessment) was used to determine the impact of the individual on-site septic systems to the property boundaries. This procedure assesses the risk that the individual on-site systems will cause the concentration of the nitrate-nitrogen to a property boundary, or in this instances, at the surface water body extents, to exceed 10 mg/L at the property boundaries. Dilution is the only attenuation mechanism considered for nitrate-nitrogen, with precipitation being the only source of infiltration. The following parameters and assumptions were used in the nitrate-nitrogen attenuation calculations:

Infiltration factors for the proposed development property are;

- Total area of 8,976 m²;
- Flat topography;
- **Infiltration Factors:**
    i. Based on the soil gradation completed on samples from the test pits showed the soil to be loam to silty loam across the Site. As such clay loam was used for this calculation;
    ii. Based approximate measurements from aerial photos of the property, it was determined that around 6,079 m^2 of the property is woodland, and the remaining 2,897 m^2 is cultivated land. Due to most of the forested land being within the floodplain, it is assumed that this ratio will be maintained during the Site development;

- **Moisture Surplus:**
    i. The forested portion of the property was considered closed mature forest, and the remaining area was considered moderately rooted crops as the post development ground cover,
    ii. Silt loam as defined by the sieve and hydrometer testing.
- Groundwater was not encountered in the test pit piezometers. Therefore, it is assumed that background nitrate-nitrogen concentration is 0 mg/L;
- Impervious areas of 453.25 m^2 for the building and 620 m^2 of paved driveway and circulation area; and,
- Moisture surplus values from the Ottawa weather station (Environment Canada, 2011). The moisture surplus printout is included in **Attachment IX**.

Based on the total proposed sewage volume for the entire Site of 3,450 L/day, the existing available lot size, soil conditions, a nitrate concentration of the sewage of 40 mg/L, the calculated levels of nitrates at the property limits are estimated as 17.53 mg/L as presented in the attached **Table 5A**. This is above the procedure's guideline limit of 10 mg/L at the property line. Based on the "Contaminant Attenuation Method", without tertiary treatment the current lot size and soil conditions are not suitable to attenuate the nitrate impacts generated by the septic systems of the proposed development in accordance with D-5-4 guideline.

The above calculations are based on the current D-5-4 guideline which requires the use of 40 mg/L as the contaminant source as per Section 5.6.2 (a). Therefore, the use of an advanced tertiary treatment system such as Norweco tertiary system is necessary to reduce the levels of nitrates prior to discharge to the disposal field. This particular system is approved by the OBC and the Building Materials Evaluation Commission of the Ontario Ministry of Municipal Affairs and Housing. Furthermore, Section 5.7 of the D-5-4 guideline states that the Ministry recognises "*that as research continues, information and technologies may become available which warrant minor or substantial revisions to this guideline*".

The Norweco 3780-3M treatment unit is certified for a minimum 50% total nitrogen reduction, and was used in the proposed modification, and proposed development sewage disposal designs. Therefore, a nitrate effluent concentration of 20 mg/L was used for the proposed system. A copy of the specifications for the Norweco tertiary system is included in **Attachment X**.

The detailed calculations for the proposed development are presented in **Table 5B**. It is assumed that the level of nitrates in the effluent from the proposed Norweco tertiary systems are 20 mg/L (based on a 50% nitrate reduction as indicated in the corresponding specifications). Based on these assumptions the nitrates at the property limits are estimated as 8.76 mg/L. This is below the procedure's guideline of 10.0 mg/L. Based on the "***Contaminant Attenuation Method***" the current lot size and soil conditions are suitable to attenuate the nitrate impacts generated by the septic systems on the development in accordance with current D-5-4 guidelines, provided an appropriate and maintained tertiary treatment system is used for the proposed building.

11 CONCLUSIONS

Based on our review of available information and the results of the groundwater sampling and laboratory analytical program, we conclude the following:

- Based on the information collected through the intrusive investigation completed, the site is not considered to be hydrologically sensitive.
- Sufficient area exists at the proposed developed lot for a well and the installation of a septic system in accordance with the OBC to service the dog kenneling business and the upstairs two-bedroom caretaker dwelling with a design sewage flow of up to 3,450 L/day.
- Pre-treatment of the sewage from the proposed sewage disposal systems with Norweco tertiary systems, which have a certified nitrogen reduction of a minimum of 50%, yields a calculated nitrate concentration at the property line of 8.76 mg/L, based on the "Contaminant Attenuation Method".
- Surrounding lands are serviced by private wells and septic/holding tanks sewage systems, including domestic wells within 500 m of the Site. The potable water source of these wells is the bedrock aquifer. A layer of either clay or sand being between 4.3 and 12.5 m thick over bedrock (limestone).
- The proposed development can be adequately and safely supplied with potable water as demonstrated through the installation and corresponding tests of TW-2, which extends to a depth of 70.1 m below grade, into the deeper limestone & sandstone mix bedrock formation. Although, as discussed in Section 12, select parameters encountered are elevated in comparison to the applicable ODWS, but a re considered reasonably treatable through the use of a conventional treatment system.
- TW-2 has been constructed in accordance with O. Reg. 903 and is considered acceptable for use as a supply well for the proposed development on the Site.
- The results of the six (6) hour sample submitted from the May 2023 test well, TW-2, generally met the Procedure D-5-5 and ODWS limits for the tested parameters with the following exceptions:
    - Hardness was reported to be 478 mg/L in the six (6) hour sample, above the OG of 100 mg/L, although less than the D-5-5 guideline of 500 mg/L which is considered reasonably treatable. The three (3) hour sample collected was reported to have a hardness level of 409 mg/L. Elevated levels of hardness can result in scale deposits and excessive scum accumulation. **As the levels are considered reasonably treatable, with respect to D-5-5, hardness can be reduced through the use of a water softener**:
        - It should be noted that use of sodium chloride as a regenerant for the resins can increase the sodium content of the water, which are currently above the 20 mg/L warning level notification limit for those on a sodium restricted diet.
        - For individuals with sodium restricted diets, potassium chloride can be substituted for sodium in the ion exchange system to lower the hardness in the water supply.
    - TDS was reported at 718 mg/L after both three (3) and six (6) hours, above the ODWS AO of 500 mg/L. Where TDS levels exceed the ODWS AO, it is required that a professional comment regarding treatment include "*written rationale that*

corrosion, encrustation or taste problems will not occur", according to the MECP D-5-5 Guideline. As indicated in the ODWS for TDS parameter "*The term total dissolved solids refer to inorganic substances dissolved in water. The principal constituents of TDS are chloride, sulphates, calcium, magnesium and bicarbonates. The effects of TDS on drinking water quality depend on the levels of the individual components. Excessive hardness, taste, mineral deposition or corrosion are common properties of highly mineralized water. The palatability of drinking water with a TDS level less than 500 mg/L is generally considered to be good.*"

In support of the required rationale with respect to TDS levels in excess of 500 mg/L, the Ryznar Stability Index (RSI) and Langelier Saturation Index (LSI) were calculated for the water sample to determine the corrosivity or scale formation potential of the water. The Langelier Saturation Index (LSI) is used to determine the calcium carbonate stability of water and the pH at which water is saturated with calcium carbonate (pHs). The Ryznar Stability Index (RI) is used to determine the aggressiveness of water which can indicate the scale and corrosion potential. Using a water temperature of 10°C, the LSI was calculated to be 0.549 which indicates the water is scale forming but non-corrosive. The RI was calculated to be 6.60 which indicates light scale or corrosion. **Corrosion resistant piping and pluming fixtures can be used throughout the proposed development.**

Furthermore, it should be noted that parameters which contribute to TDS in a water supply, including sodium, sulphates and chlorides, are noted to be within their corresponding ODSW AO. Sodium was reported with a level of 70.7 mg/L and a chloride level of 191 mg/L, which are within the AO of 200 mg/L and 250 mg/L, respectively. Therefore, these parameters are considered to be at levels which are unlikely to contribute to unpleasant taste in the water supply. Additionally, sulphates were reported less than the 150 mg/L ODWS, with a level of 57 mg/L. This is indicative that sulphates will most likely not result in a distinctive or unpleasant taste.

TDS levels are also influenced by concentrations of calcium, magnesium and bicarbonates, which can result in elevated hardness. As noted above, hardness was found to exceed the ODWS OG of 100 mg/L, although less than the D-5-5 guideline of 500 mg/L. Therefore, by improving the hardness of the water, TDS levels should be directly correlated with the improvement of quality and reduce the potential for scale formation associated with TDS. High levels of hardness can lead to scale deposits and excessive scum with regular soaps upon heading the water. Hardness can be reduced through the use of a water softener; **however the use of sodium chloride as a regenerant for the resins can increase the sodium content of the water.**

According to the Government of Canada, Guidelines for Canadian Drinking Water Quality: Guideline Technical Document – Total Dissolved Solids (TDS), the palatability of a drinking water supply (with respect to TDS) has been rated by participants, and the findings are as follows:

- **Excellent**, less than 300 mg/L;
- **Good**, between 300 and 600 mg/L;
- **Fair**, between 600 and 900 mg/L;
- **Poor**, between 900 and 1200 mg/L; and
- **Unacceptable**, greater than 1200 mg/L.

From the analysis results collected, and with reference to the Guideline Technical Document – Total Dissolved Solids (TDS), the proposed water supply at the site is anticipated to be good to fair, as concentrations were reported to be 718 mg/L after six (6) hour of pumping. Therefore, based on the overall quality of the water supply, with consideration to the TDS and the likely palatability of the supply source, it is anticipated that corrosion, encrustation or taste problems will not occur. It should also be noted that water with very low TDS concentrations may also exhibit unacceptable palatability. Based on the lack of variance between the three (3) hour and the six (6) hour sample collected, it is unlikely the TDS values would diminish to such a value which would have unacceptable palatability.

TDS can be reduced through the use of a water softener.

- Turbidity was reported to be 9.0 NTU after six (6) hours, above the AO and the D-5-5 of 5 mg/L. Turbidity measures the suspended solids and the relative clarity of the water. Turbidity can reduce the aesthetics of water and also reduce the efficiency of disinfection of microbiological parameters, such as in treatment processes requiring filtration. At the time of sampling, the levels in the field were measured as 1.40 NTU in the six (6) hour sample collected.

  The holding time from the point of sample collection to analysis, and possible chemical reactions with such compounds as iron within the sample likely attributed to the elevated turbidity. The field results are considered representative of the sample, and aquifer conditions at the point of consumption.

  - Based on the turbidity measurements collected by LRL throughout the six (6) hour pumping duration, it is most likely that the well is in fact developed adequately, and the conditions encountered are true to that of the proposed supply aquifer.
  - In-field turbidity measurements collected are summarized in the following table. As presented, there is little variance in the measurements collected throughout the pumping test, and all levels throughout this duration were less than the 5 NTU, which is the Ontario Drinking Water Standard aesthetic objective for all water at the point of consumption.
  - According to Ontario Regulation 170/03, if a drinking-water system is to provide filtration, a value of greater than 1.0 NTU is considered an adverse result. Iron levels encountered in the sample collected after six (6) hours of steady pumping was elevated, and the use of a manganese greensand filter was proposed as a potential treatment option. The

effectiveness of a manganese greensand filter is not anticipated to be impaired by the slightly elevated turbidity which may occur in the proposed supply well, as alternatively, manganese greensand filter is an effective method to reduce turbidity levels. The point of consumption turbidity levels are anticipated to be less than 5 NTU as encountered during the pumping test;

- Iron exceeded the 0.3 mg/L ODWS value with a level of 0.6 mg/L. This is below the MECP D-5-5 level considered reasonable treatable of 5 mg/L. **Iron can be reduce through the use of a water softener** or a manganese greensand filter;
    - As indicated above, for individuals with sodium restricted diets, potassium chloride can be substituted for sodium in the ion exchange system to lower the iron in the water supply, injunction with lowering the hardness; and
- Sodium was reported to be 70.7 mg/L after six (6) hours, which is above the ODWS AO but within the level considered reasonably treatable in Procedure D-5-5 of 200 mg/L. The concentration is above the 20 mg/L warning level notification limit for those on a sodium restricted diet. The local Medical Officer of Health should be notified of these levels so that this information may be communicated to local physicians with regards to homeowners who follow a sodium-restricted diet. Sodium can be reduced through the use of a point-of-use reverse osmosis system, if required.
    - Sodium can be reduced through the use of a point-of-use reverse osmosis system, if required.
    - Based on the slightly elevated concentrations of sodium encountered, and dependant on the occupants of the proposed development personal health limitation, if water softener is to be introduced, potassium chloride can be substituted for sodium in the ion exchange system to lower the iron in the water supply, injunction with lowering the hardness.

- Based on our review of available information, fieldwork and the results of the groundwater sampling and laboratory analytical programs, it is LRL's opinion that the potential proposed development can be supplied with a sufficient quantity of water, considered reasonably treatable through conventional units to supply a satisfactory quality of potable water.
    - A treatment system specialist should be consulted to obtain specific treatment system requirements and specifications.
    - If water treatment systems are used, they should be maintained on a regular basis in accordance with the manufacturer's recommendations to ensure that it is properly functioning and providing a safe drinking water.
    - LRL will not be responsible for ensuring adequate treatment is obtained for the drinking water supply. This is the sole responsibility of the individual home-owner. LRL makes no guarantee that all parameters can be treated to levels deemed aesthetically satisfactory to the individual home-owner.
- Treatment options should be considered on an induvial bases by a treatment system specialist to confirm the conditions encountered previously correspond with exiting quality at the time of development. Although this is not anticipated to be the case, it is considered best practice, and will support proper dosing or filtration rates (if applicable). Conventional

treatment options exist for the parameters exceeding the ODWS and D-5-5 guidelines, which include the following:

  - Hardness, TDS and iron can be reduced through the use of a water softener. It is recommended, due to the slightly elevated concentrations of sodium encountered, that the potassium chloride be substituted for sodium in the ion exchange system of the water softener;
  - Individual with a sodium-restricted diet may considered the installation of a point-of-use reverse osmosis system to reduce sodium intake as concentrations were considered above the 20 mg/L warning level notification limit.

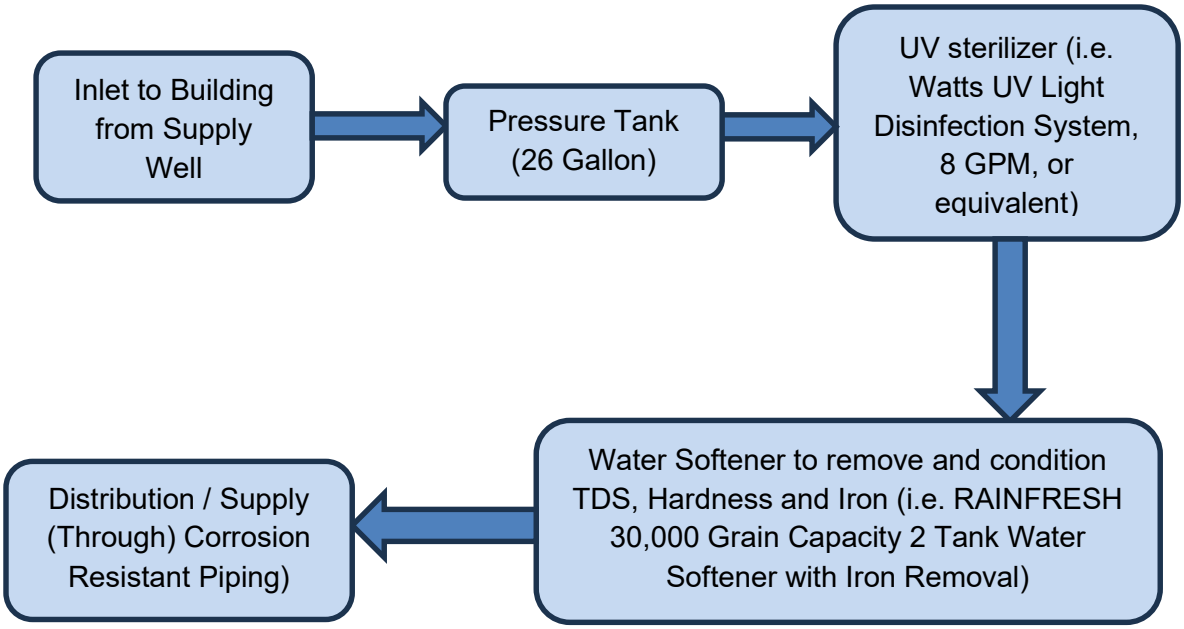
- Based on the scale and corrosion potential of the water supply, corrosion resistant piping and plumbing fixtures should be considered.
- Volatile Organic Compounds (VOCs) were also collected as part of the analysis package. VOCs were not detected in the sample submitted.
- The neighbouring land in the area are generally either un-developed, or include low-density residential developments. A train-track boarders the northern extent of the Site, which is followed by un-developed land and a higher-density residential development. Commercial/Light Industrial activities occupy the adjacent land to the east, and the neighbouring property further east. These industries include an automotive repair facility (5949 Ottawa Street) and Quatrosense Environmental Ltd., a hazardous gas detection equipment manufacturer, sales and calibration service provided (5935 Ottawa Street). Based on the types of property uses in the vicinity of the Site, it is anticipated that there would be little interference with respect to water well quantity from neighbouring lands. Furthermore, based on the available well records reviewed as part of this assessment, limited supply wells within 500 m of the Site intercept the same aquifer, or extend to a comparable depth, as that of TW-2, the proposed water well to the anticipated development.

12 RECOMMENDATIONS

1. Treatment options should be considered on an individual basis. Conventional treatment options exist for the parameters exceeding the ODWS and D-5-5 guidelines, which include the following:
    a. Hardness and TDS can be reduced through the use of a water softener; and
    b. Iron can be reduce through the use of a water softener or an manganese greensand filter.

    The use of an Ultra-violet system can also be implemented as an additional precautionary measure to mitigate the risk of microbial impacts in the supply line.

The series of the water treatment units should be as follows:



2. The well placement should be located upgradient of any septic field beds. The drilled well should be a minimum distance of 15 m from any septic beds and 15 m from other wells. It is also recommended that a setback of at least 3.0 m from the property boundary be maintained for further mitigation measures related to groundwater impairment from neighbouring land uses.
3. Based on the scale and corrosion potential of the water supply, corrosion resistant piping and plumbing fixtures should be considered.
4. Water should be tested on an individual basis and a water treatment specialist be consulted prior to the final design and installation of any water treatment system.
5. The water treatment system should be maintained on a regular basis in accordance with the manufacturer's recommendations to ensure that it is properly functioning and providing a safe drinking water.
6. The residence is advised to have their water regularly analysed for bacteria and septic indicator parameters, such as chloride, ammonia, nitrates, nitrites, Total Kjeldahl Nitrogen, E. Coli and Total Coliforms.
7. The owner should maintain their well as outlined in the Ontario Ministry of Agricultural and Rural Affairs Best Management Series – Water Wells.
8. The subsurface conditions indicated for the proposed lots are considered suitable for a Class IV septic sewage disposal system. Use of an advanced tertiary treatment system such as Norweco tertiary system is necessary to reduce the levels of nitrates prior to discharge to the disposal field.
9. TW-1 should be decommissioned in accordance with O. Reg. 903.
10. The casing of the proposed supply well, TW-2, must maintain a minimum stickup above the groundsurface of 40 cm, following Site development and grading activities. Consideration to strategic grading to encourage surface water diversion from the supply well is recommended.

11. Based on the proposed use of the Site, possible contaminant sources that could be present at the property are identified as: waste storage (dog feces), septic systems, and animal enclosures. The sewage systems and dog waste storage should be at least 15 metres from the well location.

13 LIMITATIONS

The findings contained in this report are based on data and information collected during the Terrain Analysis of the subject property conducted by LRL Associates Ltd. The conclusions and recommendations are based solely on-Site conditions encountered at the time of our fieldwork on July 20, 2021, and May 29, 2023, supplemented by historical information and data obtained as described in this report. The information presented in this report represents the groundwater conditions at the locations sampled. Due to natural variations in geological conditions, no inference is made to the soil or groundwater conditions between sampling points. No assurance is made regarding changes in conditions subsequent to the time of this investigation. If additional information is discovered or obtained, LRL Associates Ltd. should be requested to re-evaluate the conclusions presented in this report and to provide amendments as required.

In evaluating the subject property, LRL Associates Ltd. has relied in good faith on information provided by individuals as noted in this report. We assume that the information provided is factual and accurate. We accept no responsibility for any deficiencies, misstatements or inaccuracies contained in this report as a result of omissions, misinterpretation or fraudulent acts of the persons contacted.

Yours truly,
LRL Associates Ltd.

Jessica Arthurs
Environmental Engineering Manager/Associate

LICENSED PROFESSIONAL ENGINEER
K. MOHAMMADI
100172155
Mar. 26, 2024
PROVINCE OF ONTARIO

Kourosh Mohammadi, Ph.D., P.Eng.
Hydrogeological Engineer

FIGURES

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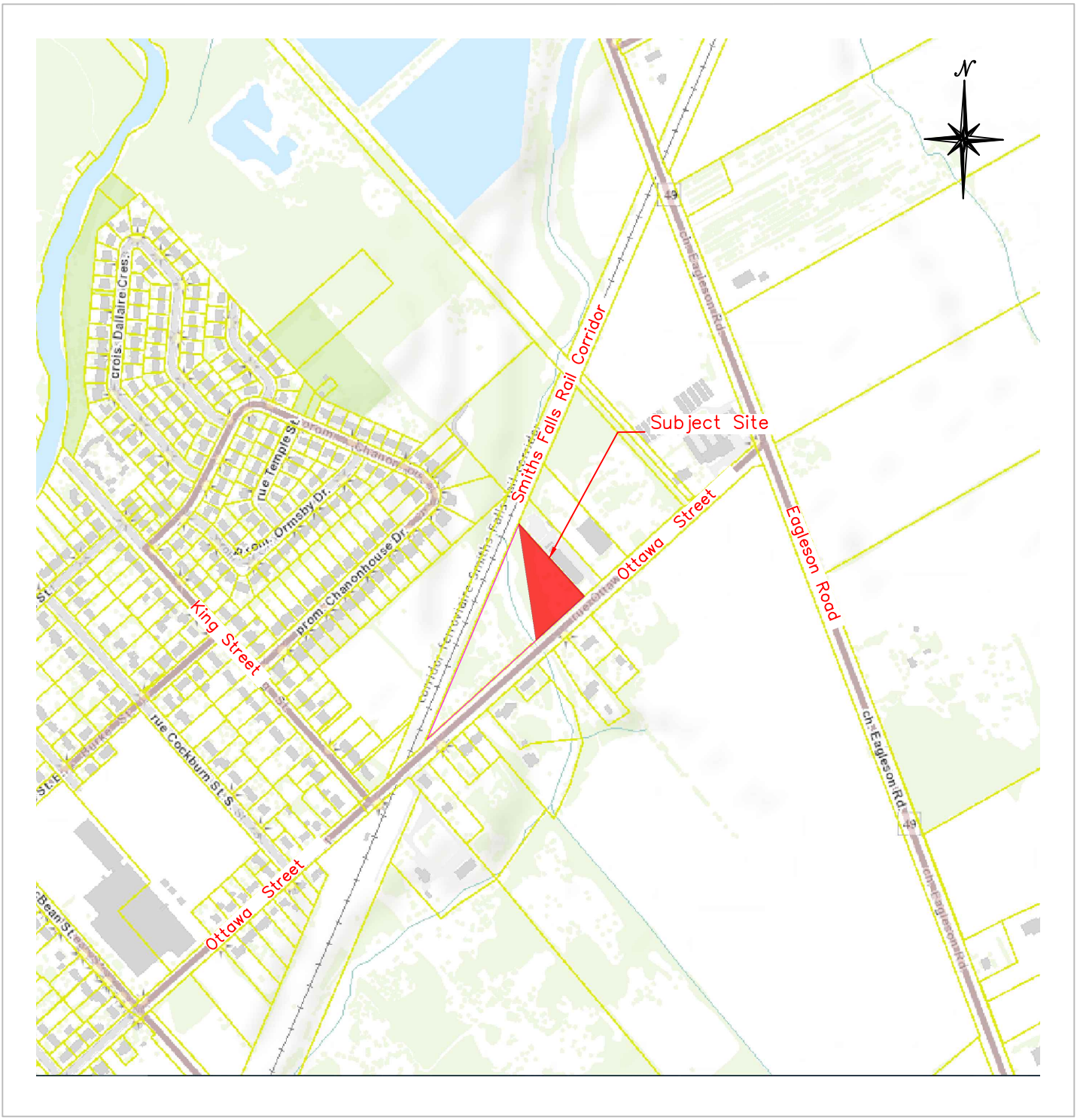
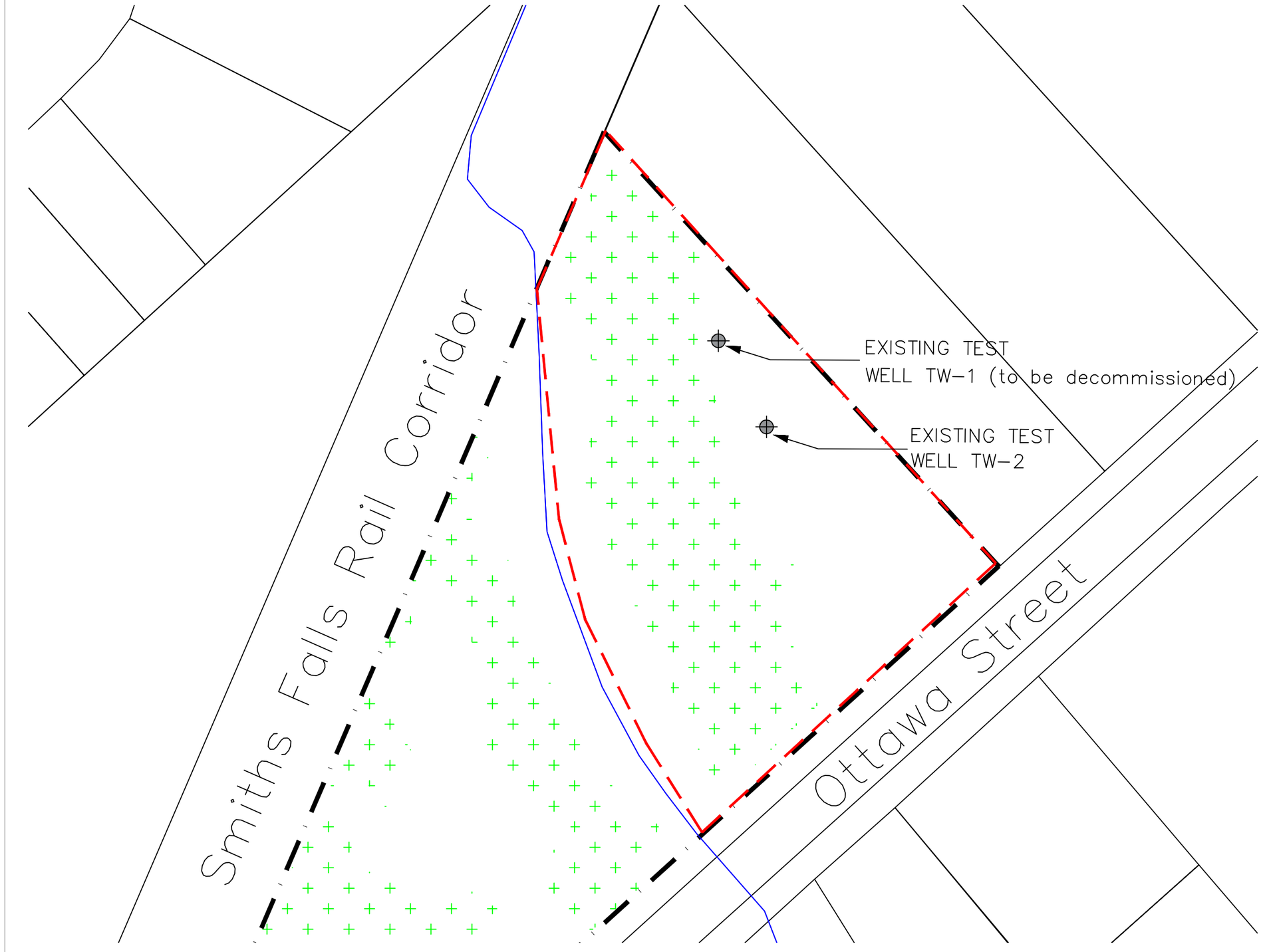
PROJECT
HYDROGEOLOGICAL ASSESSMENT AND TERRAIN ANALYSIS
PROPOSED MIX USE DEVELOPMENT
5969 OTTAWA STREET,
RICHMOND, ONTARIO

DRAWING TITLE
SITE LOCATION
(NOT TO SCALE)
SOURCE: GEOOTTAWA

CLIENT	DATE	PROJECT
A. ROBERTS	JULY 2023	210341

FIGURE 1





LEGEND

- Property line
- Proposed Development Area
- Existing building
- Treed
- Existing Supply Well

20m 10 0 20 40m

SCALE: 1:1000

No.	REVISIONS	BY	DATE
02	REVISION	J.A.	27/07/23
01	ISSUED FOR REVIEW	A.K.	22/09/21

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CLIENT

A. ROBERTS

DESIGNED BY:	DRAWN BY:	APPROVED BY:
--	A.K.	A.W.

PROJECT

HYDROGEOLOGICAL ASSESSMENT AND TERRAIN ANALYSIS
PROPOSED MIXED USE DEVELOPMENT
5969 OTTAWA STREET,
RICHMOND, ON

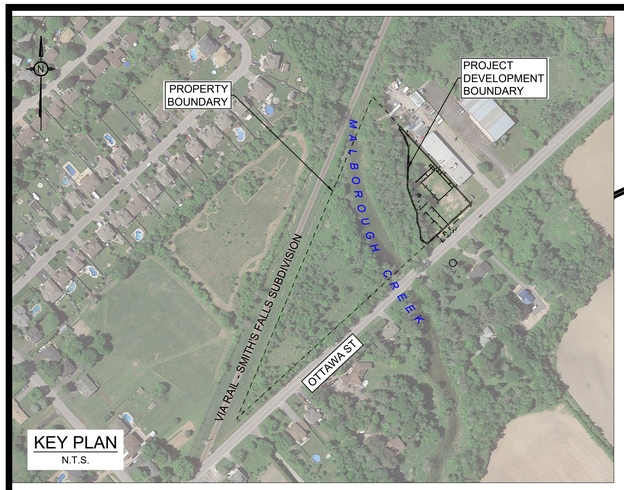
DRAWING TITLE

SITE PLAN

PROJECT NO.
210341

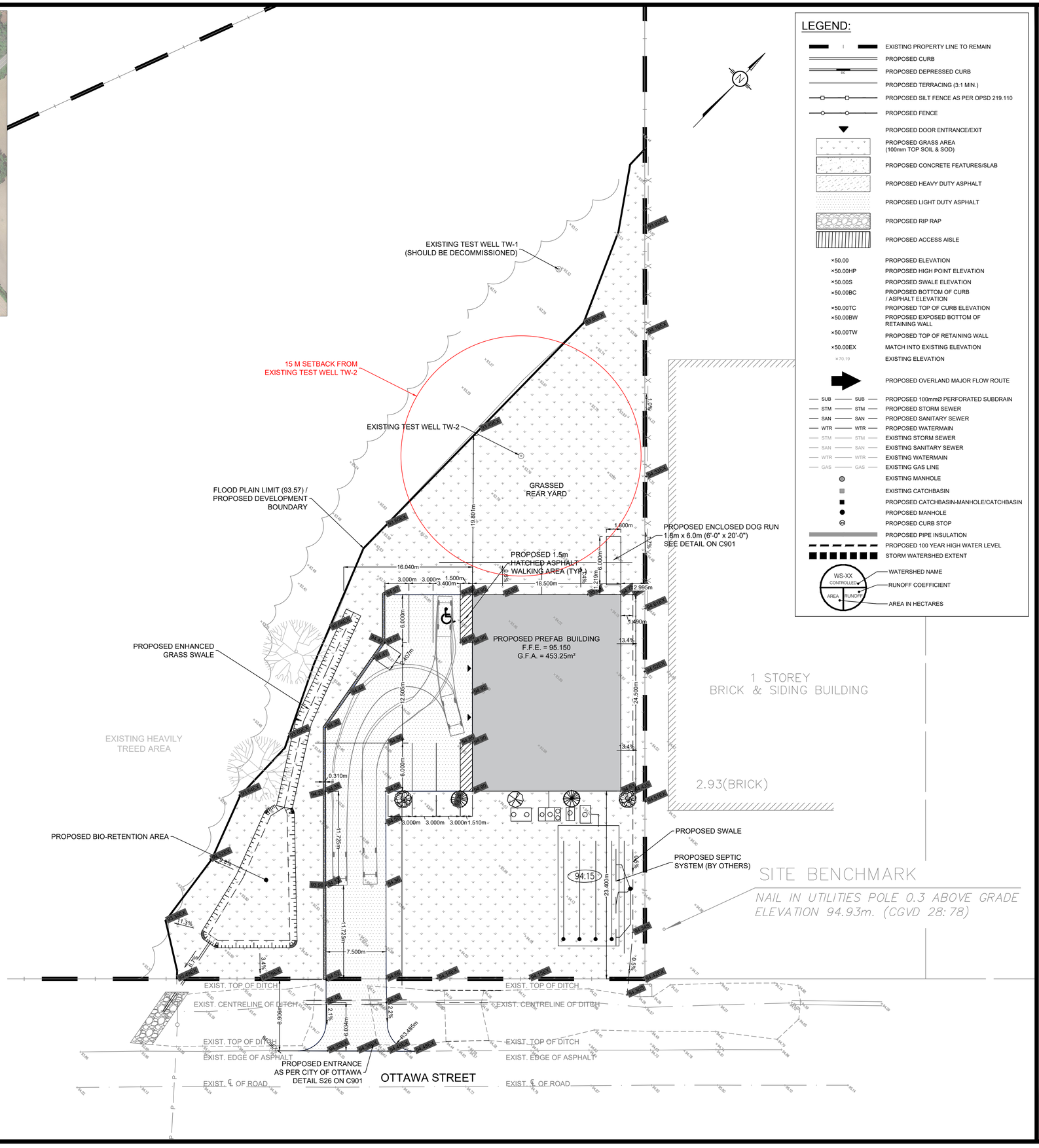
DATE
JULY 2023

FIGURE 2



DETAILS OF DEVELOPMENT

DATA		REQUIRED	PROVIDED
	ZONING	RG3[385r] (RURAL GENERAL)	
SETBACKS	FY	15.0m	23.4m
	RY	15.0m	19.8m
	INT.SY	3.0m	16.0m
	EXT.SY	3.0m	3.0m
NET LOT AREA (sqm)		3240 sqm	
BUILDING COVERAGE		50 % (MAX)	14 %
BUILDING HEIGHT		15 m (MAX)	7.62 m (25')
GROSS FLOOR AREA		453.25 sqm	
No. of UNITS		1	
LOADING SPACES		N/A	N/A
PARKING:		4	5 + 1 HC
No. OF STOREYS			2
OTHER:			



LEGEND:

- EXISTING PROPERTY LINE TO REMAIN
- PROPOSED CURB
- PROPOSED DEPRESSED CURB
- PROPOSED TERRACING (3:1 MIN.)
- PROPOSED SILT FENCE AS PER OPSD 219.110
- PROPOSED FENCE
- PROPOSED DOOR ENTRANCE/EXIT
- PROPOSED GRASS AREA (100mm TOP SOIL & SOD)
- PROPOSED CONCRETE FEATURES/SLAB
- PROPOSED HEAVY DUTY ASPHALT
- PROPOSED LIGHT DUTY ASPHALT
- PROPOSED RIP RAP
- PROPOSED ACCESS AISLE
- ×50.00 PROPOSED ELEVATION
- ×50.00HP PROPOSED HIGH POINT ELEVATION
- ×50.00S PROPOSED SWALE ELEVATION
- ×50.00BC PROPOSED BOTTOM OF CURB / ASPHALT ELEVATION
- ×50.00TC PROPOSED TOP OF CURB ELEVATION
- ×50.00BW PROPOSED EXPOSED BOTTOM OF RETAINING WALL
- ×50.00TW PROPOSED TOP OF RETAINING WALL
- ×50.00EX MATCH INTO EXISTING ELEVATION
- ×70.19 EXISTING ELEVATION
- PROPOSED OVERLAND MAJOR FLOW ROUTE
- SUB SUB PROPOSED 100mmØ PERFORATED SUBDRAIN
- STM STM PROPOSED STORM SEWER
- SAN SAN PROPOSED SANITARY SEWER
- WTR WTR PROPOSED WATERMAIN
- STM STM EXISTING STORM SEWER
- SAN SAN EXISTING SANITARY SEWER
- WTR WTR EXISTING WATERMAIN
- GAS GAS EXISTING GAS LINE
- EXISTING MANHOLE
- EXISTING CATCHBASIN
- PROPOSED CATCHBASIN-MANHOLE/CATCHBASIN
- PROPOSED MANHOLE
- PROPOSED CURB STOP
- PROPOSED PIPE INSULATION
- PROPOSED 100 YEAR HIGH WATER LEVEL
- STORM WATERSHED EXTENT
- WS-XX CONTROLLED AREA RUNOFF
- WATERSHED NAME
- RUNOFF COEFFICIENT
- AREA IN HECTARES

USE AND INTERPRETATION OF DRAWINGS

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION ARE PART OF THE CONTRACT DOCUMENTS AND DESCRIBE USE AND INTENT OF THE DRAWING. THE CONTRACT DOCUMENTS INCLUDE NOT ONLY THE DRAWINGS, BUT ALSO THE OWNER-CONTRACTOR AGREEMENTS, CONDITIONS OF THE CONTRACT, THE SPECIFICATIONS, ADDENDA, AND MODIFICATIONS ISSUED AFTER EXECUTION OF THE CONTRACT. THESE CONTRACT DOCUMENTS ARE COMPLEMENTARY, AND WHAT IS REQUIRED BY ANY ONE SHALL BE BINDING AS IF REQUIRED BY ALL. WORK NOT COMPLETELY DELINEATED HEREON SHALL BE CONSTRUCTED OF THE SAME MATERIALS AND DETAILED SIMILARLY AS WORK SHOWN MORE COMPLETELY ELSEWHERE IN THE CONTRACT DOCUMENTS.

BY USE OF THE DRAWINGS FOR CONSTRUCTION OF THE PROJECT, THE OWNER CONFIRMS THAT HE HAS REVIEWED AND APPROVED THE DRAWINGS. THE CONTRACTOR CONFIRMS THAT HE HAS VISITED THE SITE, FAMILIARIZED HIMSELF WITH THE LOCAL CONDITIONS, VERIFIED FIELD DIMENSIONS AND CORRELATED HIS OBSERVATIONS WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS.

AS INSTRUMENTS OF SERVICE, ALL DRAWINGS, SPECIFICATIONS, CADD FILES OR OTHER ELECTRONIC MEDIA AND COPIED THERE OF FURNISHED BY THE ENGINEER ARE HIS PROPERTY. THEY ARE TO BE USED ONLY FOR THIS PROJECT AND ARE NOT TO BE USED ON ANY OTHER PROJECT, INCLUDING REPEATS OF THE PROJECT. CHANGES TO THE DRAWINGS MAY ONLY BE MADE BY THE ENGINEER.

UNLESS THE REVISION TITLE IS "ISSUED FOR CONSTRUCTION", THESE DRAWINGS SHALL BE CONSIDERED PRELIMINARY AND SHALL NOT BE USED AS A CONSTRUCTION DOCUMENT.

THESE DRAWINGS ILLUSTRATES THE WORK TO BE DONE. THE ENGINEER IS NOT RESPONSIBLE FOR THE MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES USED TO DO THE WORK, OR THE SAFETY ASPECTS OF CONSTRUCTION, AND NOTHING ON THESE DRAWINGS EXPRESSED OR IMPLIED CHANGES THIS CONDITION. CONTRACTOR SHALL DETERMINE ALL CONDITIONS AT THE SITE AND SHALL BE RESPONSIBLE FOR KNOWING HOW THEY AFFECT THE WORK. SUBMITTAL OF A BID TO PERFORM THIS WORK IS ACKNOWLEDGEMENT OF THE RESPONSIBILITIES, AND THAT THEY HAVE BEEN FULLY CONSIDERED IN PLANNING OF THE WORK, AND THE BID PRICE. NO CLAIMS FOR EXTRA CHARGES DUE TO THESE CONDITIONS WILL BE FORTHCOMING.

UNAUTHORIZED CHANGES:

IN THE EVENT THE CLIENT, THE CLIENT'S CONTRACTORS OR SUBCONTRACTORS, OR ANYONE FOR WHOM THE CLIENT IS LEGALLY LIABLE MAKES OR PERMITS TO BE MADE ANY CHANGES TO ANY REPORTS, PLANS, SPECIFICATIONS OR OTHER CONSTRUCTION DOCUMENTS PREPARED BY LRL ASSOCIATES LTD. (LRL) WITHOUT OBTAINING LRL'S PRIOR WRITTEN CONSENT, THE CLIENT SHALL ASSUME FULL RESPONSIBILITY FOR THE RESULTS OF SUCH CHANGES, THEREFORE THE CLIENT AGREES TO WAIVE ANY CLAIM AGAINST LRL AND TO RELEASE LRL FROM ANY LIABILITY ARISING DIRECTLY OR INDIRECTLY FROM SUCH UNAUTHORIZED CHANGES.

IN ADDITION, THE CLIENT AGREES, TO THE FULLEST EXTENT PERMITTED BY LAW, TO INDEMNIFY AND HOLD HARMLESS LRL FROM ANY DAMAGES, LIABILITIES OR COST, INCLUDING REASONABLE ATTORNEY'S FEES AND COST OF DEFENSE, ARISING FROM SUCH CHANGES.

IN ADDITION, THE CLIENT AGREES TO INCLUDE IN ANY CONTRACTS FOR CONSTRUCTION APPROPRIATE LANGUAGE THAT PROHIBITS THE CONTRACTOR OR ANY SUBCONTRACTORS OF ANY TIER FROM MAKING ANY CHANGES OR MODIFICATIONS TO LRL'S CONSTRUCTION DOCUMENTS WITHOUT THE PRIOR WRITTEN APPROVAL OF LRL AND THAT FURTHER REQUIRES THE CONTRACTOR TO INDEMNIFY BOTH LRL AND THE CLIENT FROM ANY LIABILITY OR COST ARISING FROM SUCH CHANGES MADE WITHOUT SUCH PROPER AUTHORIZATION.

GENERAL NOTES:

EXISTING SERVICES AND UTILITIES SHOWN ON THESE DRAWINGS ARE TAKEN FROM THE BEST AVAILABLE RECORDS, BUT MAY NOT BE COMPLETE OR TO DATE. CONTRACTOR SHALL VERIFY IN FIELD FOR LOCATION AND ELEVATION OF PIPES AND CHECK WITH THE UTILITY COMPANIES BEFORE DIGGING OR PERFORMING WORK.

CONTRACTOR IS ADVISED TO COLLECT INFORMATION ON SOIL CONDITIONS BEFORE START OF CONSTRUCTION.

THE ENGINEER WAIVES ANY AND ALL RESPONSIBILITY AND LIABILITY FOR PROBLEMS WHICH ARISE FROM FAILURE TO FOLLOW THESE PLANS, SPECIFICATIONS AND THE DESIGN INTENT THEY CONVEY, OR FOR PROBLEMS WHICH ARISE FROM OTHERS' FAILURE TO OBTAIN AND/OR FOLLOW THE ENGINEER'S GUIDANCE WITH RESPECT TO ANY ERRORS, OMISSIONS, INCONSISTENCIES AMBIGUITIES OR CONFLICTS WHICH ARE ALLEGED.

CONTRACTOR TO VERIFY ALL DIMENSIONS AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES BEFORE WORK COMMENCES. DO NOT SCALE DRAWINGS.

5m 0 5 10m

SCALE: 1:250

No.	REVISIONS	BY	DATE
02	ISSUED FOR APPROVAL	M.L.	02 JUN 2022
01	ISSUED FOR APPROVAL	M.A.	25 NOV 2021

NOT AUTHENTIC UNLESS SIGNED AND DATED

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CLIENT

AL ROBERTS

DESIGNED BY:	DRAWN BY:	APPROVED BY:
M.A.	M.A.	M.B.

PROJECT

PROPOSED DOG KENNEL
5969 OTTAWA STREET,
OTTAWA, ON

DRAWING TITLE

SITE DEVELOPMENT PLAN

PROJECT NO.
210341

DATE
27 JULY 2021

FIGURE3

LEGEND

- Property Line
- Tree Line
- Existing Supply Well
- Proposed Development Area
- Test Pit Location

20m 10 0 20 40m

SCALE: 1:1000

No.	REVISIONS	BY	DATE
02	REVISION	J.A.	27/07/23
01	ISSUED FOR REVIEW	A.K.	22/09/21

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www.lrl.ca | (613) 842-3434

CLIENT

A. ROBERTS

DESIGNED BY:	DRAWN BY:	APPROVED BY:
--	A.K.	A.W.

PROJECT

HYDROGEOLOGICAL ASSESSMENT AND TERRAIN ANALYSIS
PROPOSED MIXED USE DEVELOPMENT
5969 OTTAWA STREET,
RICHMOND, ON

DRAWING TITLE

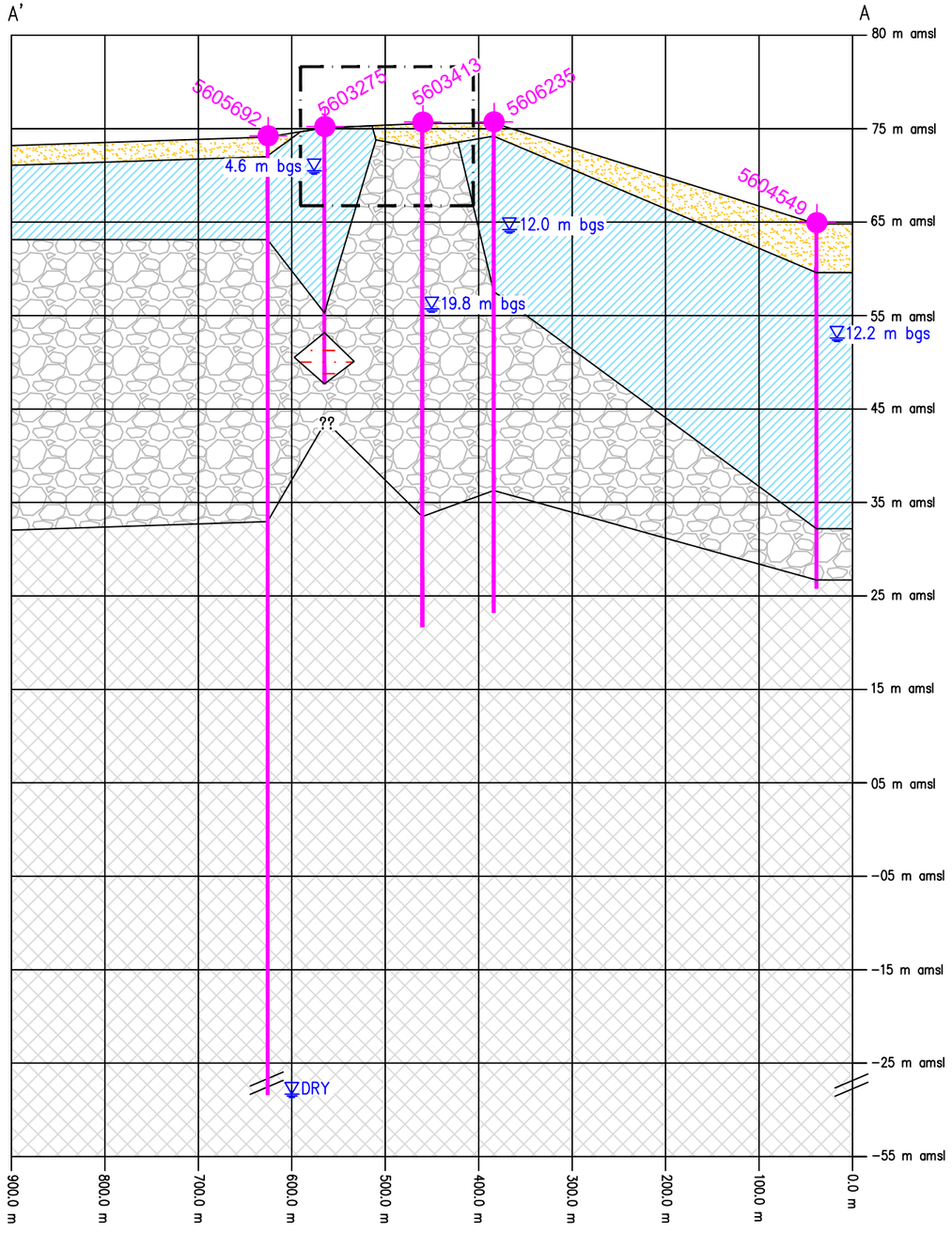
TEST PIT LOCATION

PROJECT NO.
210341

DATE
JULY 2023

FIGURE 4

Cross Section A' – A



Legend

- Sand
- Clay stratum
- Till stratum
- Gravel stratum
- Weathered Bedrock/Bedrock
- xxxx — Well
- 99.9 m — Groundwater encountered
- Approximate Site location

No.	REVISIONS	BY	DATE
02	REVISION	J.A.	27/07/23
01	ISSUED FOR REVIEW	A.K.	22/09/21

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5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

CLIENT

A. ROBERTS

DESIGNED BY:	DRAWN BY:	APPROVED BY:
--	A.K.	A.W.

PROJECT

HYDROGEOLOGICAL ASSESSMENT AND TERRAIN ANALYSIS
PROPOSED MIXED USE DEVELOPMENT
5969 OTTAWA STREET,
RICHMOND, ON

DRAWING TITLE

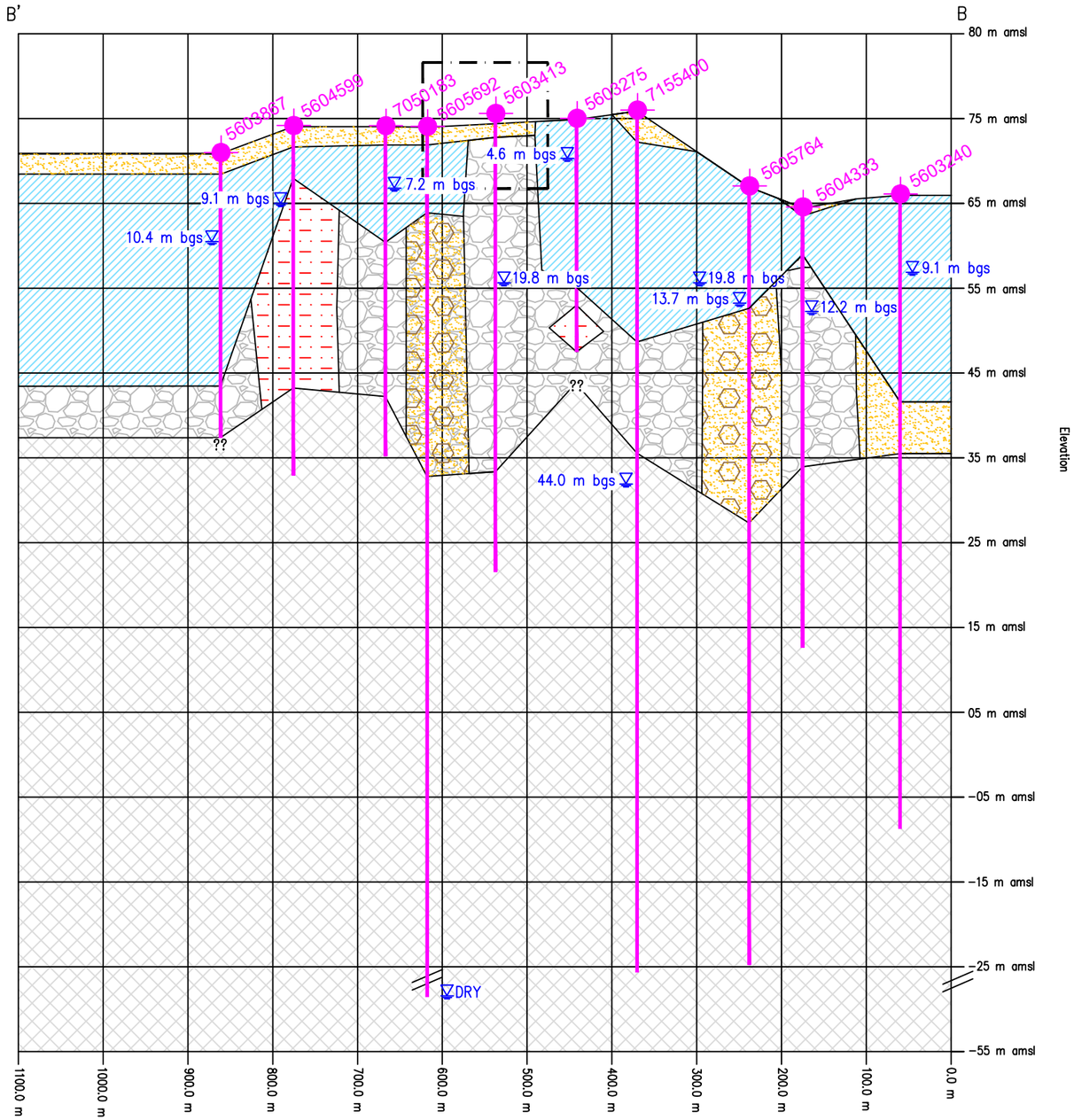
GEOLOGICAL CROSS SECTION A'-A

PROJECT NO.
210341

DATE
JULY 2023

FIGURE 5A

Cross Section B' – B



Legend

- Sand
- Clay stratum
- Till stratum
- Boulder stratum
- Gravel stratum
- Weathered Bedrock/Bedrock
- xxxx — Well
- 99.9 m — Groundwater encountered
- Approximate Site location
- ?? — Unknown location of transition between stratum

No.	REVISIONS	BY	DATE
02	REVISION	J.A.	27/07/23
01	ISSUED FOR REVIEW	A.K.	22/09/21

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PROPOSED MIXED USE DEVELOPMENT
5969 OTTAWA STREET,
RICHMOND, ON

DRAWING TITLE

GEOLOGICAL CROSS SECTION B'-B

PROJECT NO.
210341

DATE
JULY 2023

FIGURE 5B

TABLES

Table 1A
Summary of Supply Well Water Quality
Hydrogeological Assessment and Terrain Analysis - Proposed Mix Use Development
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

			Ontario Drinking Water Standards			TW-1						TW-2		Neighbour's Well (5949 Ottawa St.)
						2021 Initial Submission			2023 Further Well Development			Pumping Test		
Parameter	**Units**	**MRL**	**Standard**	**Type**	**MECP D-5-5[5]**	**SA-1**	**3 hr**	**6 hr**	**4 hr**	**4 hr**	**8 hr**	**3 hr**	**6hr**	
Sample Date (d/m/y)						20.07.2021	11.08.2021		24.01.2023	25.01.2023		29.05.2023		15.03.2023
Microbiological Parameters														
Chlorine (Field Measurement)	ppm	0.01				--	0.03	0.00	0.02	0.02	0.02	0.01	0.01	--
E. Coli	CFU/100 mL	1	0	MAC		<1	<1	<1	<1	<1	<1	<1	<1	<1
Fecal Coliforms	CFU/100 mL	1	0 [1]	MAC		<1	<1	<1	<1	<1	<1	<1	<1	<1
Heterotrophic Plate Count	CFU/ml	10	--			190	280	120	<10	<10	10	80	50	100
Total Coliforms	CFU/100 mL	1	0/5[1]	MAC		13	<1	<1	<1	<1	<1	<1	<1	<1
General Inorganics														
Alkalinity, total	mg/L	5	30 - 500	OG		274	269	269	268	268	267	274	274	259
Ammonia as N	mg/L	0.01	--			0.13	0.12	0.12	0.13	0.15	0.13	0.10	0.10	0.16
Dissolved Organic Carbon	mg/L	0.5	5	AO	10	0.7	1.8	1.9	5.7	8.9	8.9	1.6	1.8	<0.5
Colour	TCU	2	5	AO	7	***25***	***21***	***30***	<2	<2	<2	<2	<2	<2
Conductivity	uS/cm	5	--			1560	1550	1530	1680	1720	1710	1290	1290	1800
Hardness	mg/L	1	80 - 100	OG	500	***532***	***514***	***509***	***549***	***535***	***524***	409	478	***515***
pH	pH Units	0.05	6.5 - 8.5	OG		7.7	7.8	7.8	7.7	7.9	7.9	7.8	7.7	7.7
Phenolics	mg/L	0.001	--			<0.001	0.001	0.001	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Total Dissolved Solids	mg/L	10	500	AO		874	796	814	898	892	836	718	718	946
Sulphide	mg/L	0.02	0.05	AO		<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02	<0.02
Tannin & Lignin	mg/L	0.1	--			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Total Kjeldahl Nitrogen	mg/L	0.1	--			0.2	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.2
Organic Nitrogen	mg/L		0.15	OG		0.07	0.08	-0.02	--	0.05	-0.03	0.10	0.00	--
Turbidity	NTU	0.1	1/5[2]	MAC/AO	5	***7.9***	***5.2***	4.9	***6.4***	4.1	3.8	***8.1***	***9.0***	***7***
Anions														
Chloride	mg/L	1	250	AO	250	***267***	***266***	***264***	***298***	***299***	***299***	192	191	***325***
Fluoride	mg/L	0.1	1.5[3]/2.4	MAC		0.3	0.4	0.4	0.3	0.2	0.3	0.4	0.4	0.3
Nitrate as N	mg/L	0.1	10	MAC		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrite as N	mg/L	0.05	1	MAC		<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Sulphate	mg/L	1	500	AO	500	99	82	82	77	79	78	57	57	75
Metals														
Aluminum	mg/L	0.001	0.1	OG		--	--	--	--	0.012	0.014	0.007	0.005	--
Antimony	mg/L	0.0005	0.006	MAC		--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--
Arsenic	mg/L	0.001	0.01	MAC		--	--	--	--	<0.001	<0.001	<0.001	<0.001	--
Barium	mg/L	0.001	1	MAC		--	--	--	--	0.14	0.136	0.119	0.137	--
Beryllium	mg/L	0.0005	--			--	--	--	--	--	--	<0.0005	<0.0005	
Boron	mg/L	0.01	5	MAC		--	--	--	--	0.22	0.22	0.15	0.16	--
Cadmium	mg/L	0.0001	0.005	MAC		--	--	--	--	<0.0001	<0.0001	<0.0001	<0.0001	--
Calcium	mg/L	0.1	--			126	125	124	136	132	131	105	122	127
Chromium	mg/L	0.001	0.05	MAC		--	--	--	--	<0.001	<0.001	<0.001	<0.001	--
Cobalt	Mg/L	0.0005				--	--	--	--	--	--	<0.0005	<0.0005	
Copper	mg/L	0.0005	1	OG		--	--	--	--	<0.0005	<0.0005	<0.0005	<0.0005	--
Iron	mg/L	0.1	0.3	AO	5/10	0.7	0.5	0.5	0.6	0.6	0.5	0.5	0.6	0.2
Lead	mg/L	0.0001	0.01	MAC		--	--	--	--	0.0002	<0.0001	<0.0001	<0.0001	--
Magnesium	mg/L	0.2	--			52.7	49.4	48.4	50.8	50	47.9	35.8	42.0	47.8
Manganese	mg/L	0.005	0.05	AO	1	0.018	0.016	0.016	0.016	0.017	0.017	0.014	0.016	0.016
Molybdenum	mg/L	0.0005				--	--	--	--	--	--	0.0020	0.0022	
Nickel	mg/L	0.001				--	--	--	--	--	--	<0.001	<0.001	
Potassium	mg/L	0.1	--			9.1	8.5	8.1	8.1	8.4	8.4	6.1	6.9	8.5
Selenium	mg/L	0.001	0	MAC		--	--	--	--	<0.001	0.001	<0.001	<0.001	--
Silver	mg/L	0.0001				--	--	--	--	--	--	<0.0001	<0.0001	
Sodium	mg/L	0.2	20[4]/200	AO	200	***115***	***114***	***111***	***120***	***118***	***112***	***61.6***	***70.7***	***129***
Strontium	mg/L	0.01				--	--	--	--	--	--	4.03	4.09	
Thallium	mg/L	0.001				--	--	--	--	--	--	<0.001	<0.001	
Tin	mg/L	0.01				--	--	--	--	--	--	<0.01	<0.01	
Titanium	mg/L	0.005				--	--	--	--	--	--	<0.005	<0.005	
Tungsten	mg/L	0.01				--	--	--	--	--	--	<0.01	<0.01	
Uranium	mg/L	0.0001	0.02	MAC		--	--	--	--	0.0006	0.0006	0.0005	0.0006	--
Vanadium	mg/L	0.0005				--	--	--	--	--	--	<0.0005	<0.0005	
Zinc	mg/L	0.005	5	AO		--	--	--	--	<0.005	<0.005	<0.005	<0.005	--

NOTES

MRL Minimum Reportable Limit
MAC Maximum Acceptable Concentration
AO Aesthetic Objective
OG Operational Guideline

ODWS Ontario Drinking Water Standards (2006)
NA Not Analysed
UNDERLINE Parameter level above ODWS
Italics Notify Medical Officer of Health
BOLD Parameter level above D-5-5 maximum treatability limits

[1] As per Table 1 of MECP's technical guideline "*D-5-5 Private Wells: Water Supply Assessment*"
[2] 1.0 NTU MAC if treatment system required to provide filtration for disinfection. 5.0 NTU AO for all points of consumption
[3] Where supplies of naturally occuring flouride at levels above 1.5 mg/L but below 2.4 mg/L the Ministry of Health recommends notification of local board of health of levels to avoid excesses exposure from other sources.

[4] Limit at which Local Medical Officer of Health should be notified of Levels.
[5] MECP D-5-5 guideline, maximum concentration considered reasonably treatable

Table 1B
Summary of Supply Well Water Quality - Volatile Organic Compounds
Hydrogeological Assessment and Terrain Analysis - Proposed Mix Use Development
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

			Ontario Drinking Water Standards		TW-1		TW-2	
Parameter	**Units**	**MRL**	**Standard**	**Type**	**4 hr**	**8 hr**	**3 hr**	**6hr**
Sample Date (d/m/y)					**25.01.2023**		**29.05.2023**	
Volatiles								
Acetone	mg/L	0.005			<0.005	<0.005	<0.005	<0.005
Benzene	mg/L	0.0005	0.001	MAC	<0.0005	<0.0005	<0.0005	<0.0005
Bromodichloromethane	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
Bromoform	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
Bromomethane	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
Carbon Tetrachloride	mg/L	0.0002	0.002	MAC	<0.0002	<0.0002	<0.0002	<0.0002
Chlorobenzene	mg/L	0.0005	0.08	MAC	<0.0005	<0.0005	<0.0005	<0.0005
Chloroethane	mg/L	0.001			<0.001	<0.001	<0.001	<0.001
Chloroform	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
Dibromochloromethane	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
Dichlorodifluoromethane	mg/L	0.001			<0.001	<0.001	<0.001	<0.001
Ethylene dibromide (dibromoethane, 1,2	mg/L	0.0002			<0.0002	<0.0002	<0.0002	<0.0002
1,2-Dichlorobenzene	mg/L	0.0005	0.2	MAC	<0.0005	<0.0005	<0.0005	<0.0005
1,3-Dichlorobenzene	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
1,4-Dichlorobenzene	mg/L	0.0005	0.005	MAC	<0.0005	<0.0005	<0.0005	<0.0005
1,1-Dichloroethane	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
1,2-Dichloroethane	mg/L	0.0005	0.005	MAC	<0.0005	<0.0005	<0.0005	<0.0005
1,1-Dichloroethylene	mg/L	0.0005	0.014	MAC	<0.0005	<0.0005	<0.0005	<0.0005
cis-1,2-Dichloroethylene	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
trans-1,2-Dichloroethylene	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
1,2-Dichloroethylene, total	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
1,2-Dichloropropane	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
cis-1,3-Dichloropropylene	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
trans-1,3-Dichloropropylene	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
1,3-Dichloropropene, total	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
Ethylbenzene	mg/L	0.0005	0.14	MAC	<0.0005	<0.0005	<0.0005	<0.0005
Hexane	mg/L	0.001			<0.001	<0.001	<0.001	<0.001
Methyl Ethyl Ketone (2-Butanone)	mg/L	0.005			<0.005	<0.005	<0.005	<0.005
Methyl Isobutyl Ketone	mg/L	0.005			<0.005	<0.005	<0.005	<0.005
Methyl tert-butyl ether	mg/L	0.002			<0.002	<0.002	<0.002	<0.002
Methylene Chloride	mg/L	0.005	0.05	MAC	<0.005	<0.005	<0.005	<0.005
Styrene	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
1,1,1,2-Tetrachloroethane	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
1,1,2,2-Tetrachloroethane	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
Tetrachloroethylene	mg/L	0.0005	0.01	MAC	<0.0005	<0.0005	<0.0005	<0.0005
Toluene	mg/L	0.0005	0.06	MAC	<0.0005	<0.0005	<0.0005	<0.0005
1,1,1-Trichloroethane	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
1,1,2-Trichloroethane	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
Trichloroethylene	mg/L	0.0005	0.005	MAC	<0.0005	<0.0005	<0.0005	<0.0005
Trichlorofluoromethane	mg/L	0.001			<0.001	<0.001	<0.001	<0.001
Vinyl Chloride	mg/L	0.0002	0.001	MAC	<0.0002	<0.0002	<0.0002	<0.0002
m/p-Xylene	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
o-Xylene	mg/L	0.0005			<0.0005	<0.0005	<0.0005	<0.0005
Xylenes, total	mg/L	0.0005	0.09	MAC	<0.0005	<0.0005	<0.0005	<0.0005

NOTES

MRL	Minimum Reportable Limit	**ODWS**	Ontario Drinking Water Standards (2006)
MAC	Maximum Acceptable Concentration	**NA**	Not Analysed
AO	Aesthetic Objective	**UNDERLINE**	Parameter level above ODWS
OG	Operational Guideline	*Italics*	Notify Medical Officer of Health
		BOLD	Parameter level above D-5-5 maximum treatability limits

Table 2
Langelier and Ryznar Calculations
Hydrogeological Assessment and Terrain Analysis - Proposed Mix Use Development
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

TW1 - August 2021					**TW2 - May 2023**				
Analyzed Parameters					**Analyzed Parameters**				
TDS (mg/L)	814				TDS (mg/L)	718			
Hardness(mg/L)	509				Hardness(mg/L)	478			
alkalinity(mg/L)	269				alkalinity(mg/L)	274			
pH (pH units)	7.8				pH (pH units)	7.7			
Temperature °C	10				Temperature °C	10			
Langelier					**Langelier**				
LSI = pH - pHs					LSI = pH - pHs				
pHs = (9.3 +A+B) - (C+D)	Where	A= (Log10(TDS)-1)/10	=	0.19106244	pHs = (9.3 +A+B) - (C+D)	Where	A= (Log10(TDS)-1)/10	=	0.185612
		B= (-13.12*Log10(T°C+273)+34.55	=	2.382561966			B= (-13.12*Log10(T°C+273)+34.5	=	2.382562
		C= Log10(Hardness)-0.4	=	2.306717782			C= Log10(Hardness)-0.4	=	2.279428
		D= Log10(Alkalinity)	=	2.42975228			D= Log10(Alkalinity)	=	2.437751
Ryznar					Ryznar				
RI=2pHs-pH					RI=2pHs-pH				
pHs=	7.137154				pHs=	7.150996			
LSI=	0.662846				**LSI=**	0.549004			
RI=	6.474309				**RI=**	6.601992			

Table 3A
Hydrogeological Assessment and Terrain Analysis - Proposed Mix Use Development - August 2021 Pumping Test Data
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

Date:	21/08/2021	**Technician:**	A. Kader
Well Number:	TW1	**Pump Depth (m BTC):**	--
Depth of Well (m BTC):	48.80	**Start Time:**	7:58 AM
Ground Surface Elev. (m):	TBC	**End Time:**	3:20 PM
Top of Casing Elev. (m):	TBC	**Average Pump Rate (L/min):**	40.0
Water Level before Pump In (m BTC)	2.96		

				Field Parameters					
Time[1] (min)	**Water Level (Pump In) (m BTC)**	**Drawdown (m)**	**Flow Rate (L/min)**	**Turbidity (NTU)**	**Residual Chlorine (mg/L)**	**Colour (TCU)**	**pH**	**Conductivity (µs)**	**Total Dissolved (mg/L)**
0.0	2.96	0.00	40.0						
0.5	3.47	0.51	40.0						
1.0	3.83	0.87	40.0						
1.5	4.20	1.24	40.0						
2.0	4.39	1.43	40.0						
2.5	4.52	1.56	40.0						
3.0	3.73	0.77	40.0						
3.5	4.76	1.80	40.0						
4.0	4.79	1.83	40.0						
4.5	4.81	1.85	40.0						
5.0	4.84	1.88	40.0						
6.0	4.87	1.91	40.0						
7.0	4.89	1.93	40.0						
8.0	4.91	1.95	40.0						
9.0	4.93	1.97	40.0						
10.0	4.94	1.98	40.0						
20.0	4.99	2.03	40.0						
30.0	5.05	2.09	40.0	1.73	0.00	<0	7.74	1246	624
60.0	5.07	2.11	40.0	1.04	0.01	15	7.65	1244	619
90.0	5.08	2.12	40.0	1.04	0.01	146	7.67	1237	618
120.0	5.11	2.15	40.0	0.64	0.05	94	7.68	1240	621
150.0	5.11	2.15	40.0	0.40	0.03	134	7.51	1234	622
180.0	5.11	2.15	40.0	0.48	0.03	87	7.44	1235	621
240.0	5.12	2.16	40.0	0.51	0.06	82	7.52	1240	620
300.0	5.13	2.17	40.0	0.73	0.03	85	7.53	1236	617
360.0	5.13	2.17	40.0	0.68	0.00	21	7.49	1241	621
Recovery				**% Recovery**					
0 (360)	5.13	2.17		0.0					
0.5	4.43	1.47		32.3					
1.0	3.92	0.96		55.8					
1.5	3.67	0.71		67.3					
2.0	3.45	0.49		77.4					
2.5	3.34	0.38		82.5					
3.0	3.31	0.35		83.9					
3.5	3.30	0.34		84.3					
4.0	3.28	0.32		85.3					
4.5	3.26	0.30		86.2					
5.0	3.25	0.29		86.6					
6.0	3.24	0.28		87.1					
7.0	3.23	0.27		87.6					
8.0	3.21	0.25		88.5					
9.0	3.20	0.24		88.9					
10.0	3.19	0.23		89.4					
20.0	3.12	0.16		92.6					
30.0	3.09	0.13		94.0					
60.0	3.05	0.09		95.9					

[1] Time elapse from pump turning on or off.
BTC: Below Top of Casing
NM: Not Measured
TCB: To Be Confirmed

Table 3B
Hydrogeological Assessment and Terrain Analysis - Proposed Mix Use Development - Janaury 2023 Pumping Test Data
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

Date:	24/01/2023	**Technician:**	A. Kader
Well Number:	TW1	**Pump Depth (m BTC):**	44.20
Depth of Well (m BTC):	48.80	**Start Time:**	8:02 AM
Ground Surface Elev. (m):	TBC	**End Time:**	12:40 PM
Top of Casing Elev. (m):	TBC	**Average Pump Rate (L/min):**	40.0
Water Level before Pump In (m BTC)	3.39		

				Field Parameters					
Time[1] (min)	**Water Level (Pump In) (m BTC)**	**Drawdown (m)**	**Flow Rate (L/min)**	**Turbidity (NTU)**	**Residual Chlorine (mg/L)**	**Colour (TCU)**	**pH**	**Conductivity (µs)**	**Total Dissolved (mg/L)**
0.0	3.32	0.00	40.0						
0.5	4.28	0.96	40.0						
1.0	4.89	1.57	40.0						
1.5	5.08	1.76	40.0						
2.0	5.18	1.86	40.0						
2.5	5.25	1.93	40.0						
3.0	5.30	1.98	40.0						
3.5	5.34	2.02	40.0						
4.0	5.36	2.04	40.0						
4.5	5.39	2.07	40.0						
5.0	5.41	2.09	40.0						
6.0	5.42	2.10	40.0						
7.0	5.44	2.12	40.0						
8.0	5.45	2.13	40.0						
9.0	5.45	2.13	40.0						
10.0	5.46	2.14	40.0						
20.0	5.48	2.16	40.0						
30.0	5.49	2.17	40.0						
60.0	5.49	2.17	40.0	11.27	0.02	236	7.33	1603	804
90.0	5.48	2.16	40.0						
120.0	5.47	2.15	40.0	4.6	0.02	124	7.24	1749	857
150.0	5.44	2.12	40.0						
180.0	5.43	2.11	40.0	2.86	0.02	81	7.25	1497	752
210.0	5.43	2.11	40.0						
240.0	5.42	2.10	40.0	3.23	0.02	52	7.46	1622	811

Recovery			**% Recovery**
0 (490)	5.22	1.90	9.3
0.5	4.13	0.81	61.3

1 Time elapse from pump turning on or off.
BTC: Below Top of Casing
NM: Not Measured
TCB: To Be Confirmed

Table 3C
Hydrogeological Assessment and Terrain Analysis - Proposed Mix Use Development - Janaury 2023 Pumping Test Data
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

Date:	25/01/2023	**Technician:**	A. Kader
Well Number:	TW1	**Pump Depth (m BTC):**	44.20
Depth of Well (m BTC):	48.80	**Start Time:**	8:00 AM
Ground Surface Elev. (m):	TBC	**End Time:**	4:10 PM
Top of Casing Elev. (m):	TBC	**Average Pump Rate (L/min):**	40.0
Water Level before Pump In (m BTC)	3.26		

				Field Parameters					
Time[1] (min)	**Water Level (Pump In) (m BTC)**	**Drawdown (m)**	**Flow Rate (L/min)**	**Turbidity (NTU)**	**Residual Chlorine (mg/L)**	**Colour (TCU)**	**pH**	**Conductivity (µs)**	**Total Dissolved (mg/L)**
0.0	3.29	0.00	40.0						
0.5	4.38	1.09	40.0						
1.0	4.62	1.33	40.0						
1.5	4.80	1.51	40.0						
2.0	4.91	1.62	40.0						
2.5	4.99	1.70	40.0						
3.0	5.05	1.76	40.0						
3.5	5.09	1.80	40.0						
4.0	5.12	1.83	40.0						
4.5	5.15	1.86	40.0						
5.0	5.17	1.88	40.0						
6.0	5.20	1.91	40.0						
7.0	5.23	1.94	40.0						
8.0	5.25	1.96	40.0						
9.0	5.26	1.97	40.0						
10.0	5.27	1.98	40.0						
20.0	5.29	2.00	40.0						
30.0	5.30	2.01	40.0						
60.0	5.32	2.03	40.0	4.35	0.01	72	7.64	1484	745
90.0	5.33	2.04	40.0						
120.0	5.33	2.04	40.0	1.43	0.03	33	7.72	1499	753
150.0	5.36	2.07	40.0						
180.0	5.33	2.04	40.0	1.09	0.02	17	7.68	1491	747
210.0	5.34	2.05	40.0						
240.0	5.36	2.07	40.0	0.66	0.02	9	7.53	1527	761
300.0	5.31	2.02	40.0	0.43	0.02	7	7.45	1461	732
360.0	5.26	1.97	40.0	0.31	0.03	9	7.52	1453	725
420.0	5.25	1.96	40.0	0.33	0.02	7	7.53	1467	732
480.0	5.24	1.95	40.0	0.39	0.02	10	7.63	1426	714
490.0	5.22	1.93	40.0						
Recovery			**% Recovery**						
0 (490)	5.22	1.93	0.0						
0.5	4.13	0.84	56.5						
1.0	3.67	0.38	80.3						
1.5	3.58	0.29	85.0						
2.0	3.54	0.25	87.0						
2.5	3.51	0.22	88.6						
3.0	3.50	0.21	89.4						
3.5	3.48	0.19	90.2						
4.0	3.46	0.17	91.2						
4.5	3.45	0.16	91.7						
5.0	3.44	0.15	92.2						
6.0	3.42	0.13	93.3						
7.0	3.41	0.12	94.0						
8.0	3.40	0.11	94.6						
9.0	3.39	0.09	95.1						
10.0	3.38	0.09	95.3						
20.0	3.32	0.03	98.4						
30.0	3.31	0.02	99.0						
60.0	--	--	--						

1 Time elapse from pump turning on or off.
BTC: Below Top of Casing
NM: Not Measured
TCB: To Be Confirmed

Table 3D
Hydrogeological Assessment and Terrain Analysis - Proposed Mix Use Development - May 2023 Pumping Test Data
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

Date:	29/05/2023	**Technician:**	J. Arthurs
Well Number:	TW2	**Pump Depth (m BTC):**	49.94
Depth of Well (m BTC):	70.10	**Start Time:**	7:46 AM
Ground Surface Elev. (m):	TBC	**End Time:**	1:48 PM
Top of Casing Elev. (m):	TBC	**Average Pump Rate (L/min):**	40
Water Level before Pump In (m BTC)	3.19		

				Field Parameters					
Time[1] (min)	**Water Level (Pump In) (m BTC)**	**Drawdown (m)**	**Flow Rate (L/min)**	**Turbidity (NTU)**	**Residual Chlorine (mg/L)**	**Colour (TCU)**	**pH**	**Conductivity (µs)**	**Total Dissolved (mg/L)**
0.0	3.19	0.00	40.0						
0.5	4.15	0.96	40.0						
1.0	4.32	1.13	40.0						
1.5	4.43	1.24	40.0						
2.0	4.46	1.27	40.0						
2.5	4.67	1.48	40.0						
3.0	4.70	1.51	40.0						
3.5	4.83	1.64	40.0						
4.0	4.84	1.65	40.0						
4.5	4.90	1.71	40.0						
5.0	4.86	1.67	40.0						
6.0	4.94	1.75	40.0						
7.0	4.95	1.76	40.0						
8.0	4.95	1.76	40.0						
9.0	5.05	1.86	40.0						
10.0	5.00	1.81	40.0						
15.0	5.01	1.82	40.0						
20.0	5.11	1.92	40.0	1.08					
25.0	5.23	2.04	40.0						
30.0	5.26	2.07	42.0	0.78		80			
40.0	5.30	2.11	40.0						
50.0	5.31	2.12	40.0	1.08	0.00	63			
60.0	5.33	2.14	40.0	0.48	0.00	16			
120.0	5.37	2.18	40.0	1.53	0.00	50			
180.0	5.45	2.26	40.0	2.55	0.01	2			
240.0	5.38	2.19	40.0	0.48	0.01	0.0			
300.0	5.40	2.21	40.0	0.60	0.01	0.0			
360.0	5.40	2.21	40.0	1.40	0.01	0.0			
Recovery				**% Recovery**					
0 (360)	5.40	2.21		-0.2					
0.5	3.66	0.47		78.7					
1.0	3.79	0.60		72.8					
1.5	3.63	0.44		80.0					
2.0	3.51	0.32		85.5					
2.5	3.47	0.28		87.3					
3.0	3.45	0.26		88.2					
3.5	3.42	0.23		89.6					
4.0	3.41	0.22		90.2					
4.5	3.39	0.20		90.9					
5.0	3.85	0.66		70.1					
6.0	3.36	0.17		92.3					
7.0	3.35	0.16		92.7					
8.0	3.34	0.15		93.2					
9.0	3.33	0.14		93.7					
10.0	3.32	0.13		94.1					
15.0	3.29	0.10		95.5					
20.0	3.27	0.08		96.4					
25.0	3.25	0.06		97.3					
30.0	3.25	0.06		97.3					
40.0	3.24	0.05		97.7					
50.0	3.23	0.04		98.2					
60.0	3.22	--		98.6					

[1] Time elapse from pump turning on or off.

BTC: Below Top of Casing
NM: Not Measured
TCB: To Be Confirmed

Table 4
Specific Capacity and Longterm Availability
Hydrogeological Assessment and Terrain Analysis - Proposed Mix Use Development
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

Tested By: LRL Associates Ltd.
Test Date TW-1: 11-Aug-21
Test Date TW-2: 29-May-23

Well	Cs - Static mTOC	Cp - Pump* mTOC	Cp - Cs	Drawdown (m)	Pumping Rate L/min	*Sc* - Specific Capacity L/sec/m	Qsc -Maximum Pumping Rate L/min	Long Term Availability m^3/day	Qsc GPM (US)	Qsc GPM (IMP)
TW-1	3.29	44.20	40.9	1.93	40.0	0.345	189.4	272.7	50.0	41.7
TW-2	3.19	49.94	46.8	2.26	40.0	0.295	184.8	266.1	48.8	40.6

Notes:

$$Qsc = 0.67\frac{(C_p - C_s)S_c}{SF}$$

Qsc	Pumping rate with safety factor (SF) of 3 (L/min);
$C_p - C_s$	Difference between pump level and static water level (m);
S_c	Specific capacity (L/min/m); and
0.67	Is a factor that compensates for the variation of the static water level due to
SF	3
Minimum Demand	3.450 m^3/day
*	Assumed
	Greater than Minimum Demand
	Less than Minimum Demand
TOC	Top of Casing

Table 5A
Nitrate Attenuation Calculations
Hydrogeological Assessment and Terrain Study - Proposed Mix Use Development
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

1. Potential Infiltration

Weather Station Ottawa

No.	Section Area (m^2)	Infiltration Factor (IF)[1]							Moisture Surplus (MS)				Potential Infiltration (PI) (IF*MS) (mm)	
		Topography	Value	Soil	Value	Cover	Value	Total	Ground Cover	Soil Type	Moisture Retention[2] (mm)	Moisture Surplus[3] (mm)	Section	Weighted
1	6,079	Flat	0.3	Clay Loam	0.2	Woodland	0.2	0.7	Closed Mature Forest	3 Silt Loam	400	301	210.7	142.7
2	2,897	Flat	0.3	Clay Loam	0.2	Cultivated Land	0.1	0.6	Moderately Rooted Crops	3 Silt Loam	200	318	190.8	61.6
Total	8,976												**Total**	204.3

2. Area Available for Infiltration

Number of Lots			n	1	
Approximate footprint of house/garage			H	453	m^2
Approximate area of paved driveways			d[4]	620	m^2
Approximate Length of Road			L	0	m
Approximate Width of Road			w	0	m
Total Area of Property				8976	m^2
Impervious Area				1073.3	m^2
	Roads	l x w	0 m^2		
	Driveway	n x d	620 m^2		
	Houses	n x H	453 m^2		
Area available Infiltration			A	7,903	m^2

3. Nitrate Diluation Calculations

Nitrate Concentration of Infiltration	C_i	0	mg/L
Site Infiltration	$Q_i = A*PI$	1614	m^3
Daily Sewage Volume per Lot [5]	Q_d	3.45	m^3
Maximum Yearly Sewage Volume (water)	$Q_e=365*n*Q_d$	1259	m^3
Nitrate Concentration in Sewage[5]	C_e	40	mg/L
Maximum Allowable Nitrate Concentration at Boundary	C_m	10.0	mg/L
Increase in Nitrate Concentration at Boundaries	$C = (Q_eC_e+Q_iC_i)/(Q_e+Q_i)$	17.53	mg/L

NOTES

1 Table 2: Infiltration Factors, *Hydrogical Technical Information Requirements for Land Development Applications*, Ministry of the Energy and Environment, April 1995.

2 Thornthwaite and Mather's (1957) Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance.

3 Moisture surplus for data for Ottawa ON (Environment Canada Meteorological Service of Canada, 2010).

4 Area based on 10m long and 3m wide driveways

5 As per *Technical Guideline for Individual On-Site Sewage Systems: Water Quality and Impact Risk Assessment*, Ministry of the Energy and Environment, August 1996.

Table 5B
Nitrate Attenuation Calculations
Hydrogeological Assessment and Terrain Study - Proposed Mix Use Development
5969 Ottawa Street, Richmond, Ontario
LRL File No. 210341

1. Potential Infiltration

Weather Station Ottawa

No.	Section Area (m^2)	Infiltration Factor (IF)[1]							Moisture Surplus (MS)				Potential Infiltration (PI) (IF*MS) (mm)	
		Topography	Value	Soil	Value	Cover	Value	Total	Ground Cover	Soil Type	Moisture Retention[2] (mm)	Moisture Surplus[3] (mm)	Section	Weighted
1	6,079	Flat	0.3	Clay Loam	0.2	Woodland	0.2	0.7	Closed Mature Forest	3 Silt Loam	400	301	210.7	142.7
2	2,897	Flat	0.3	Clay Loam	0.2	Cultivated Land	0.1	0.6	Moderately Rooted Crops	3 Silt Loam	200	318	190.8	61.6
Total	8,976												**Total**	204.3

2. Area Available for Infiltration

Number of Lots		n	1	
Approximate footprint of house/garage		H	453	m^2
Approximate area of paved driveways		d[4]	620	m^2
Approximate Length of Road		L	0	m
Approximate Width of Road		w	0	m
Total Area of Property			8976	m^2
Impervious Area			1073.3	m^2
	Roads	l x w	0 m^2	
	Driveway	n x d	620 m^2	
	Houses	n x H	453 m^2	
Area available Infiltration		A	7,903	m^2

3. Nitrate Diluation Calculations

Nitrate Concentration of Infiltration	C_i	0	mg/L
Site Infiltration	$Q_i = A*PI$	1614	m^3
Daily Sewage Volume per Lot [5]	Q_d	3.45	m^3
Maximum Yearly Sewage Volume (water)	$Q_e=365*n*Q_d$	1259	m^3
Nitrate Concentration in Sewage[5]	C_e	20	mg/L
Maximum Allowable Nitrate Concentration at Boundary	C_m	10.0	mg/L
Increase in Nitrate Concentration at Boundaries	$C = (Q_eC_e+Q_iC_i)/(Q_e+Q_i)$	8.76	mg/L

NOTES

1 Table 2: Infiltration Factors, *Hydrogical Technical Information Requirements for Land Development Applications*, Ministry of the Energy and Environment, April 1995.

2 Thornthwaite and Mather's (1957) Instructions and Tables for Computing Potential Evapotranspiration and the Water Balance.

3 Moisture surplus for data for Ottawa ON (Environment Canada Meteorological Service of Canada, 2010).

4 Area based on 10m long and 3m wide driveways

5 As per *Technical Guideline for Individual On-Site Sewage Systems: Water Quality and Impact Risk Assessment*, Ministry of the Energy and Environment, August 1996.

ATTACHMENT I

City Comments

Application D07-12-22-0046, 5969 Ottawa St
First submission comments October 14, 2022

Planning Comments

- Fencing of the rail corridor seems to be required. Can you please confirm that there is currently no fencing? Alternative fencing may be needed as the EIS would not be supportive of that fencing.
- Please look to add trees to the grassed areas at the rear of the building and along Ottawa Street
- Confirm garbage will be kept in the building as no exterior areas are shown
- Lot area on zoning chart on Site Plan should identify the 1 ha plus not the lot area to be developed.

Cheryl McWilliams

Parks Planning –

Parkland Dedication:

a. The amount of parkland dedication that is required is to be calculated as per the City of Ottawa Parkland Dedication By-law No 2022-280.
b. For Commercial or Industrial purposes the parkland requirement is calculated as 2% of the gross land area; "gross land area" means, for the purposes of this by-law, the lesser of the area defined as: c) For industrial or commercial redevelopment, the portion of property that is impacted by the proposed development; But not including any hazard lands or natural heritage features identified in the official plan, an approved Secondary Plan, or through an environmental impact study accepted by the City.
c. A survey or plan will be required identifying the portion of the site being developed for commercial uses (including parking, and interior roads servicing the commercial uses). Based on the survey details provided in the Planning Rationale the developable area is 3,240 m2 (0.8 acres).
d. Parks & Facilities Planning will be requesting Cash in lieu of parkland for this proposal, to be collected at registration of the site plan agreement.
e. The value of the land will be determined by the City's Realty Services Branch. The owner is responsible for any appraisal costs incurred by the City.
f. Please note that the park comments above are preliminary and subject to change. Should the proposed land use changes during the course of the Site Plan Approval process, then the parkland dedication requirement be re-evaluated accordingly.

Anissa McAlpine

Environmental Comments

After reviewing the provided documentation for 5969 Ottawa Street, I have no further concerns about potential environmental impacts from the proposed development.

The major concern from the preconsultation notes was the presence of Blanding's Turtle habitat. However, the applicant has sought out and acquired approval from the Ministry of the

Environment, Conservation and Parks (see email dated November 8th, 2021, from Brooke Michell).
The provided EIS clearly demonstrates that applicable setbacks will be followed and that there will be enhanced grass swales and fencing to limit the impacts of a large number of dogs on site. I accept its conclusion that there are likely to be no negative impacts from this development.

While the site's location in a heavily vegetated area obviates concerns about the urban that island effect I would still encourage the applicant to consider the addition of tree plantings in the enclosed dog run to help create a cooler microclimate and provide shade on hot days.

Mark Elliott

Engineering Comments

A. List of Drawing(s):

General

Comments:

A1. Please include a reference on the drawings to the Plan of Survey and include a note that references the horizontal and vertical datums that were used and tied into to complete the project.

A2. The drawing included with the provided OSSO Septic Permit No. 21-035 shows a different tank and treatment unit location than the Civil drawings. Please confirm which layout is correct and update the drawings or Septic Permit, as required.

General Notes, C001, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 01, dated November 25, 2021.

Comments:

A3. Section 5.2 of the Geotechnical Investigation dated October 2021, provides an allowable grade raise restriction. Please make note of the allowable grade raise restriction in the C001 notes or on C301.

Erosion and Sediment Control Plan, C101, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 02, dated June 2, 2022.

Comments:

A4. Drawing C001 references a mud mat, and a gravel entrance is referenced in the 'During Construction' notes on C101. Please show the location of mud mat/gravel entrance on C101.

A5. Please remove references to any items not applicable to the site from the notes on the drawing. For example, references to ESC measures which aren't proposed and references to infrastructure not existing or proposed on the site should be removed from the drawing notes.

Demolition Plan, C102, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 02, dated June 2, 2022.

No Comments.

Site Development Plan, C201, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 02, dated June 2, 2022.

No Comments.

Grading and Drainage Plan, C301, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 02, dated June 2, 2022.

Comments:

A6. Please display the benchmark location.

A7. Please indicate the elevations of the underside of footing and top of foundation for the proposed building.

A8. Section 5.1 of the Geotechnical Investigation dated October 2021, states that it is anticipated that the footings for the proposed building will be founded below the frost penetration depth on the native, undisturbed glacial till material. Based on the Borehole Logs for BH1, BH2, and BH3 provided in Appendix B of the Geotechnical Investigation, the glacial till material starts at 1.45m below ground surface. Section 6.1 of the Geotechnical Investigation notes that it's anticipated that the max depth of excavation for the building will not extend below 1.5-1.8m. Please confirm that the applicant is aware of the extent of excavation required and the limitations on the re-use of the excavated overlying material.

A9. Please display the limits of the stormwater retention/ponding for the 5-year and 100-year storm events.

A10. Please include the pavement structure design information provided in the Geotechnical Investigation dated October 2021.

A11. Adjacent to the west side of the building there are two rectangular hatched areas which are labelled on C201 as asphalt walking areas. The hatch used in these areas isn't on the legend or labelled on C301. Please identify the hatch used in the legend or with a label. If the light duty asphalt is intended to extend into these two areas, please indicate that on C301.

A12. Does the 'Typical Stormwater Bio-Swale Cross-Section' apply to the proposed new swale along the eastern property line? If so, please update the label on the swale along the eastern property line. If not, please provide a cross-section detail for that swale.

A13. The drawing included with the provided OSSO Septic Permit No. 21-035 doesn't appear to reflect the proposed Grading and Drainage Plan. Please confirm that the proposed grading and drainage in the vicinity of the proposed septic system have been accounted for in the design of the septic system, and that the proposed grading and drainage has accounted for the proposed septic system. For example, the proposed new swale along the eastern property line runs close

to the proposed septic system distribution chamber and some of the pipes (C301). Please confirm that there's no grading conflict at this location, and that the swale doesn't impact the septic system frost protection at this location.

A14. Please indicate the proposed slope away from the north, east, and south sides of the building.

A15. Please indicate the proposed slopes in the grass area south of the building/parking lot.

A16. Please indicate the proposed slope between the gravel diaphragm and the enhanced grass swale/bioretention facility.

A17. Please verify the proposed slopes shown west and south of the bioretention facility. A spot check found different slopes than indicated.

A18. For the proposed driveway, please include a reference to City of Ottawa Standard Detail Drawing S26, 'Private Entrance Detail – Rural'.

A19. As per the City of Ottawa Private Approach By-Law 2003-447, the maximum width of a private approach is 9m. It appears that the entrance exceeds 9m at the roadway edge. Please confirm and revise as required.

A20. Bollards, or other means of preventing vehicle access, will need to be provided between areas with vehicle access and the proposed septic system leaching bed.

A21. Please indicate the top of casing elevation for the well to confirm that the casing height (and air vent) are 40cm above the potential flood level.
Note that a comment has been also made on the Hydrogeological Assessment and Terrain Analysis about this well casing requirement.

A22. Please provide grading information in the vicinity of the well to confirm that the surface drainage will not collect or pond in the vicinity of the well (as per O.Reg. 903, section 12.3).

Stormwater Management & Servicing Plan, C601, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 02, dated June 2, 2022.

Comments:

A23. Under the 'Project Notes' on the first drawing in the Robertson 'Building Drawings Combined Set', it's noted that there will be downspouts for the roof drainage. Please indicate the downspout locations on the drawing.

A24. Where the bioretention area outlets to the ROW, there is an existing hydro pole and guywire located near the proposed storm outlet pipe and associated rip rap. Please confirm that the stormwater outlet pipe and rip rap can be constructed while meeting any applicable setbacks from the hydro infrastructure.

A25. The outlet invert of the proposed storm pipe discharging to the ROW is 93.33. It's a 200mm diameter pipe, so the lowest pipe overt would be approximately 93.53 at the outlet. Where the pipe crosses the property line, the ground elevation is shown as 93.49. Therefore, it appears the storm outlet pipe would be partially above the ground surface. Please confirm and revise as required.

A26. The SWM Report and Site Servicing Brief includes specifications for the type and size of stone to be used in the gravel diaphragm border (e.g., washed stone between 3 and 10 mm in diameter) and specifications for each of the

bioretention facility materials. Please note the specifications for the material on a drawing or include a reference to where the information can be found in the SWM Report and Site Servicing Brief.

A27. Please indicate the snow storage location.

A28. There's a label pointing to the eastern property line indicting an 'Existing Natural Swale'. The Plan of Survey doesn't appear to show an existing swale at this location. Please confirm.

Pre-Development Watershed Plan, C701, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 02, dated June 2, 2022.

No Comments.

Post-Development Watershed Plan, C702, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 02, dated June 2, 2022.

No Comments.

Construction Detail Plan, C901, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 02, dated June 2, 2022.

No Comments.

B. <u>List of Report(s):</u>

Geotechnical Investigation, prepared by LRL Engineering, LRL File No.: 210341, dated October 2021.

Comments:

A1. Section 2 of the report states that the site is approximately 800m^2 in size. This doesn't appear to match other project documents. Please confirm that this is correct.

A2. Table 1 indicates the BH2 sample submitted for lab gradation analysis had 0% fine gravel. The Particle Size Analysis in Appendix D shows 8.9% fine gravel. Please confirm.

A3. Table 3 indicates the USCS Group Symbol is CL for BH3, SS2. The Appendix D results indicate it is ML. Please clarify.

A4. Section 4.8 states that the groundwater was measured upon completion of drilling and all boreholes were found to be dry. As per section 2.7 of the Geotechnical Investigation and Reporting Guidelines for Development Applications in the City of Ottawa, in lower permeability soils or rock, the groundwater level could take a week or more before stabilizing and shouldn't not be recorded prematurely. Given the silt and clay content of the soil, please provide the rational for the decision to not install a piezometer and allow the groundwater level to stabilize before taking the groundwater level measurement.

A5. Section 4.8 notes that groundwater levels can fluctuate with seasonal weather conditions and due to construction activities at or near the vicinity of the site.

The proposed bioretention facility requires a minimum clearance of 1 m between the bottom of the LID measure and the seasonally high groundwater elevation (refer to the Stormwater Management Report and Servicing Brief, dated November 25, 2021). Please provide sufficient information to confirm that the seasonally high groundwater elevation is not expected to be within 1m of the bottom of the bioretention area.

A6. Section 5.2 states that the bearing capacity limits the allowable grade raise to 2.5m. Is the bearing capacity this is based on specific to the undisturbed glacial till material? If so, what's the allowable grade raise where the silt layer remains in place over the glacial till?

A7. Section 5.9 provides the recommendations for whether permanent perimeter foundation drainage is required. Is foundation drainage proposed for this building? Section 5.4 states that the lateral earth pressure expression assumes that perimeter drainage system prevents the build-up of any hydrostatic pressure behind the foundation wall. If no foundation drainage is proposed, please make any required updates to the assumptions provided in section 5.4.

A8. Table 4 indicates that the resistivity of the BH2 sample was 1,160 Ohm.cm. The Appendix D laboratory results indicate a resistivity of 116 Ohm.m. It appears there is a typo or conversion error. Please update Table 4.

A9. Section 5.12 states that the measured soil resistivity falls within the "corrosive" range. Please include the recommendations associated with this finding.

A10. Section 7.2 states that a typical value of 75 kPa for residential construction was assumed for the design load for the building. Do the Robertson 'Building Drawings Combined Set' included with the Site Plan Control application include the actual design load for the building? If not, please confirm that the 75 kPa for typical residential construction provides a conservative approximation for the proposed building use, given that it's not only residential.

A11. Please discuss in the report how the soil parameters presented in Table 5 were established.

A12. Please provide a scaled plan showing the location of the slope, the significant features of the planned development (e.g., structures and paved areas), the locations of the cross-sections used to establish the slope geometry, and the locations of the cross-sections where the slope stability has been assessed.

Hydrogeological Assessment and Terrain Analysis, prepared by LRL Engineering, LRL File No.: 210341, dated September 22, 2021.

Comments:

A13. As discussed in section 5.1 of the report, the water quality sampling showed that the D-5-5 Maximum Concentration Considered Reasonably Treatable was exceeded for hardness, colour, and chloride. In addition, there was a ODWO exceedance for TDS, which doesn't have a Maximum Concentration Considered Reasonably Treatable. Given the exceedances of the D-5-5 Maximum Concentration Considered Reasonably Treatable, it hasn't been demonstrated that the proposed supply well is capable of supplying water of adequate quality

for the proposed development. Consultation with a City Hydrogeologist and the City Senior Engineer on the file is required to discuss the hydrogeological concerns. Please contact Damien.Whittaker@ottawa.ca to set up a meeting.

A14. As displayed on the Plan of Survey prepared by H.A. Ken Shipman Surveying Ltd., and dated July 19, 2021, the well is located within the floodplain. Although O.Reg. 903 doesn't specifically prohibit the installation of a well in the floodplain, it's not recommended. The following items are required:

- The casing height (and air vent) must be 40cm above the potential flood level.
- The well cap and vent must be floodproof.

Note that a comment has been also made on the Grading and Drainage Plan to indicate the top of casing elevation of the well.

A15. Please provide the Well Record for the supply well.

A16. Please include a discussion of the Hydrogeologist's assessment of whether the existing well is in conformance with O.Reg. 903.

A17. Now that there are additional details about the proposed development available, please update section 2 of the report and Figure 3, as well as any other sections or figures which require updates based on available information.

A18. In section 4, it's stated that the inferred groundwater flow direction is east towards the North Castor River, and that the nearest open water body that flows into the North Castor River is approximately 1.1. km east of the site. It appears that this description doesn't apply to this site. Please update.

A19. Section 4 states that test pits found a thin layer of topsoil over clay with varying sand and silt contents. The Appendix C Particle Size Analysis results indicate that silt is the primary material in all three samples submitted, with varying amounts of sand, clay, and gravel. Please confirm and update the soil descriptions as required.

A20. Please include a discussion about any well quantity interference with neighbouring properties.

A21. Please include a discussion of the field parameters tested.

A22. In the table in section 5.2.2, is the 'Maximum Drawdown' value supposed to be 2.17m instead of 2.13m? Please confirm and update as required.

A23. In section 6, the calculated daily sewage flow (1,550 L/d) is different than the daily design flow (5,250 L/day) calculated in the provided OSSO Septic Permit Application number 21-035. However, it appears that the daily design flow calculated for the Septic Permit may not reflect the currently proposed development. Please confirm and revise if required.

A24. The current version of the plans indicates a building footprint of 453.25m^2 and a paved driveway/parking area larger than the area noted in section 7.1. Please confirm the impervious areas, and update section 7.1 and the calculations as required.

A25. The Table 4 Nitrate Attenuation Calculations use a daily sewage volume per lot of 1m^3. Please provide an explanation of why the daily sewage design flow calculated in section 6 of the report (1.55m^3/day) isn't use in the calculation.

A26. In the Appendix A Test Pit Logs, the soil descriptions of the layers where samples were collected don't appear to reflect the results presented in the Appendix C Particle Size Analysis. Please confirm and update as required.

A27. As per section 5.2.4 v) of the City's Hydrogeological and Terrain Analysis Guidelines, the minimum required water quality sampling parameters for a Site Plan application are the Subdivision Package, as well as trace metals, and VOCs. Given that the pre-application consultation meeting occurred prior to when the City's Guidelines came into effect, testing for trace metals and VOCs weren't required for the Hydrogeological Assessment and Terrain Analysis dated September 22, 2021. Please note that this exception isn't intended to set a precedent. Any additional hydrogeological assessment on this Site Plan Control application, and on future applications, are subject to the requirements of the City's Hydrogeological and Terrain Analysis Guidelines, including the minimum water quality sampling parameters for Site Plans.

Stormwater Management Report and Servicing Brief, prepared by LRL Engineering, LRL File No.: 210341, dated November 25, 2021.

Comments:

A28. Section 5.3.1, item 6), states that it is anticipated that a clearance exceeding 1m is achieved between the bottom of the LID measures and the expected groundwater level. Please note that Section 4.8 of the Geotechnical Investigation dated October 2021, notes that groundwater levels can fluctuate with seasonal weather conditions and due to construction activities at or near the vicinity of the site. Although groundwater wasn't observed during the hydrogeological or geotechnical investigations, they were both completed August. Higher groundwater levels are typically expected during wet periods of the year, such as early spring. As per the bioretention facility fact sheet provided in Appendix C, a minimum of 1m separating the seasonally high water table and the bottom of the bioretention facility is required. *Note that a comment has been also made on the Geotechnical Investigation to include the seasonally high groundwater elevation to be used for design.*

A29. Section 5.3.1 states that the proposed LID approaches will likely result in the targeted 80% TSS removal. It needs to be demonstrated that 80% TSS removal is achieved. Please provide additional information to demonstrate that the proposed LID approaches provide 80% TSS removal.

A30. Based on the existing and proposed grades shown on the Grading and Drainage Plan, it appears that some of the runoff from 5949 Ottawa Street would flow southwest onto the site both pre and post development. In the report, please discuss how the proposed development will affect the runoff from the neighbouring property and how the existing stormwater runoff from the adjacent site that crosses the property will be accommodated by the proposed stormwater management design.

A31. Please make note of the calculated water demands and sanitary daily design flow in the report.

A32. The proposed septic system design provided in Appendix E shows a different tank and treatment unit location than the drawing included with the provided OSSO Septic Permit No. 21-035. Please confirm which layout is correct and update as required.

Rail Safety Study – VIA Rail Corridor Proximity, prepared by Hatch, dated June 28, 2021.

Comments:

A33. As per section 3.7.1 of the Guidelines for New Development in Proximity to Railway Operations, all new residential developments in proximity to railway corridors must include a 1.83m high chainlink fence along the entire mutual property line. Figure A2 shows that there is an existing fence along the rail corridor at the at-grade crossing at the south end of the property. Does this existing fence continue along the entire mutual property line?
If not, please discuss if the requirement for a fence is applicable to this site. Note that the mutual property line is within the floodplain, and any work proposed within the floodplain is subject to approval from RVCA and would also need to be addressed in the EIS which is subject to MECP approval. Depending on VIA Rail and floodplain regulatory requirements, it may be preferable to propose any required fencing outside of the floodplain.

A34. As per section 3.2 of the Guidelines for New Development in Proximity to Railway Operations, consultation with the railway is required. Please provide confirmation that the railway has been consulted and has concurred with the findings of the Rail Safety Study.

A35. The Rail Safety Study must be stamped and sealed by a Professional Engineer.

C. Additional Comments:

C1. Fire routes are to be designated by By-law for Fire Services to establish them as a legal fire route. Please complete the attached **Application for a Fire Route Designation** form and send to fireroutes@ottawa.ca in order to add the fire route to the By-law. The form must be filled out by the applicant/agent of the property as well as the property owner. Please cc the file lead (Cheryl.McWilliams@ottawa.ca) and Damien.Whittaker@ottawa.ca as confirmation that the form has been submitted.

C2. Due to the industrial zoning of the site, an ECA application is required for the proposed stormwater management works, even without a proposed direct discharge to a watercourse. It may be possible for the proposed stormwater management works to be approved under the City's Transfer of Review (ToR) ECA, instead of a direct submission ECA. A ToR ECA has a quicker approval time than a direct submission ECA. A request can be made to the City (Damien.Whittaker@ottawa.ca) to consider a Transfer of Review (ToR) ECA for stormwater works for this private property, instead of the direct submission ECA. This is subject to approval by the City and MECP. If proceeding with a direct

submission ECA, after all comments are resolved, please provide the draft ECA application for the City to review prior to submission to MECP.

C3. Please note that as per section 4.4.2 of MECP's Procedure D-5-5, warning clauses will need to be registered on title due to the water quality exceedances of the ODWO for sodium and hardness: "In cases where raw water sodium levels exceed 20 mg/L, warning clauses should be addressed to people on sodium restricted diets and should be registered on title. In addition, if water softening is utilized to reduce hardness, a warning should be registered on the title with a recommendation that a separate tap, which by-passes the softener, be installed to supply un-softened drinking water.".
Warning clauses will also need to be registered on title for any other water treatment equipment required due to exceedances of the ODWO.

C4. Please note that later in the Site Plan Control process (prior to Site Plan approval), information on the proposed exterior lighting design will need to be provided. The location of the fixtures, fixture types (make, model, and part number), and the mounting heights will need to be submitted. A Site Lighting Certificate prepared by a qualified Professional Engineer, licensed in the Province of Ontario, will be also required. The Certificate must state that the exterior site lighting has been designed to meet the following criteria:

- It must be designed using only fixtures that meet the criteria for full cut-off (sharp cut-off) classification, as recognized by the Illuminating Engineering Society of North America (IESNA or IES).
- and it must result in minimal light spillage onto adjacent properties. As a guideline, 0.5 fc is normally the maximum allowable spillage.

C5. Mapping of the 1 in 350-year floodplain is not yet available for this property (http://ottawa.ca/floodplainmaps), but it is anticipated that portions of this proposed development will be within the 1 in 350-year floodplain. The area between the 1 in 100-year floodplain and the 1 in 350-year floodplain is defined as the climate change flood vulnerable area. Unlike the 1 in 100-year floodplain maps, the 1 in 350-year floodplain maps are not presently used to define or control limits of development. This comment is provided for information purposes to provide advance notice that once the 1 in 350-year floodplain mapping is available, it may show that this proposed development is within the climate change flood vulnerable area.

Please consider these comments in combination with comments you receive from other technical groups, agencies, and the public.

Chris Reist

ViaRail Comments – link for contact/submisisons is https://railrequest.viarail.ca/

The Applicant must submit engineering drawings signed and sealed by a certified professional. The engineering drawings will be reviewed by an engineering firms designated by VIA at the Applicant's expenses.
The Applicant must also submit locates to VIA. The locates must be submitted to VIA electronically and physically.
The Applicant must meet the following requirements:

- **Transport Canada**:
- *Railway Safety Act*, Part III, Sections 24 and 25.
- **For Clearance**:
- *Railway Right of Way Access Control Policy*;
- *Wire Crossings and Proximities Regulations* – C.R.C., c. 1195;
- *Standards Respecting Railway Clearances* – TC E-05;
- Notice of Railway Works Regulations, a copy of the notice must be sent to VIA.
- **For pipelines or other utilities crossings under railways**:
- *Standards Respecting Pipeline Crossings Under Railways* – TC E-10.
- **Traffic control near a railways**:
- *Circular 13 Railway Association of Canada*

- **For Grade Crossings**:
- *Grade Crossings Regulations*;
- The provisions that must be adhered to with respect to the creation of new entrance ways or intersecting roads from the nearest rail. Reference GCR Sub-Section 101(1) and Grade Crossings Standards Article 11.
- *Grade Crossings Standards*;
- *Transport Canada Standard for LED Signals Modules at Highway/Railway Grade Crossings* – TC E-14;
- *Minimum Railway/Road Crossing Sightline Requirements for All Grade Crossings Without Automatic Warning Devices* – G4-A.
- The requirements surrounding sightlines, of which any construction or activities (Duplex development) on the property or new properties must ensure they do not obstruct the required minimum grade crossing sightlines. (reference Section 21 of the GCR).

- **Canadian Standards Association**:
- CAN/CSA C22.3 No. 1 – Overhead Systems;
- CAN/CSA C22.3 No. 7 - Underground Systems;
- CAN/CSA Z662 – Oil and Pipeline Systems;
- CAN/CSA-B137.4 - Polyethylene Piping Systems for Gas Services.
- **VIA**:
- *Buried Signal and Communication Guidelines*;
- *Guidelines for New Development*;
- *guidance which the Federation of Canadian Municipalities (FCM) has created on this topic specifically, you can find their guidance within the following link: Guidelines for New Development in Proximity to Railway Operations.*

- Adjacent landowners, buildings and overhead structures are not allowed to drain or modify existing drainage ways to divert water onto railway property without a hydraulic study and approval of the VIA Rail Infrastructure Department;
- All loads must be in compliance with Cooper E90;

- **The Federation of Canadian Municipalities and the Railway Association of Canada**:
- *Guidelines for New Development in Proximity to Railway Operations*.
- **Other**:
- Proper fencing must be included or planned to be installed in order to avoid any trespassing or intrusions into the VIA right-of-way;
- All fence maintenance will be done on the Applicant expense.

In addition, the Applicant must comply with the following areas of concern for which VIA request information, reassurances and/or commitments with regards to the application:

- **Utilities**:
- <u>Electrical and Gas Supply</u>

VIA would like assurances from the City and the Applicant that the new development will not negatively impact on the capacity, availability, stability of the supply and future growth capability thereof.

- <u>Communications</u>

VIA would like assurances from the City and the Applicant, that the new development will not impact VIA's operations as a result of potential alterations to the existing cellphone towers or any other fibre-optic infrastructures supplying the VIA station and property.

- **Water & Wastewater**:
- <u>Drainage Sanitary/Storm</u>

VIA would like assurances that the new development will not limit or interfere with its operations, specifically the main sanitary drainage that runs South-to-North from the Train Yards, through VIA's property towards the proposed development. Refer to the blue dashed line of Exhibit A, attached to this letter.

- <u>Water supply</u>

VIA would like assurances that the new development will not affect the supply and water pressure that is provided for the station.

- **Construction Disturbances**:
- VIA requests a copy of the Pedestrian study (from New Development to LRT).
- VIA is concerned by the flow of people that will go through our premises (either interior or exterior) to access the LRT station.
- <u>Station access (vehicle traffic)</u>

Confirmation that the New Development access/exits, and traffic volumes will not affect or interfere VIA traffic circulation between Tremblay Rd and the Station parking. VIA also needs confirmation that Avenue L (yellow dotted line shown on Exhibit A), as well as the access to it, will be kept for our operations and upcoming growth.

- **Neighbour Relationships**:
- VIA requests the Applicant's monitoring and management plan of the impacts of its construction, including but not limited to:
- Air contaminants / Dust pollution;
- Noise pollution / Working hours;
- Existing conditions;
- and the impacts of vibrations.
- VIA requests the Applicant's communication and management plan for future tenants and or owners of the project with respect to VIA's active train station nearby, that may produce one or more of, but not limited to, the following: emission of noise, dust, vibration, fumes, odours and other gaseous or non-gaseous emissions that may affect the enjoyment of the development for which VIA shall not be held responsible.

VIA requests the Applicant's commitment to making all efforts not to interfere with VIA's operations, VIA's track infrastructure or use of VIA property. When in the vicinity of VIA property or Railway right-of-way, VIA requests the Applicant commitment to comply with and conform to all VIA, Department of Transport and Canadian Transportation Agency rules and regulations, or any other authority having jurisdiction.

When and where the City's or the Applicant's actions, whether direct or indirect, negatively impact any of the above, VIA's operations, and or VIA's property, VIA wants assurances from the City and the Applicant that they will take all necessary and possible steps to mitigate or eliminate those impacts.

In light of our requests, VIA requires the City and the Applicant to indemnify VIA against any and all claims, damages or proceedings (including legal costs and other costs and expenses) that may arise in relation to the non-compliance to any condition contained in this letter.

Should you have any questions or concerns, please feel free to contact the undersigned.

Sincerely,

Paul Charbachi
Infrastructure Engineer
M: 514-607-5833
Paul_Charbachi@viarail.ca

RVCA Comments – The RVCA has reviewed the above noted Site Plan Control application for a kennel, workshop and caretaker's residence on part of the property and have no objections.

Eric Lalande

Enbridge – see separate email

Rogers – from
Mohammed Ali Khan
Rogers Communications
475 Richmond Rd
Ottawa, Ontario, M1P 4Z3
Phone: 416-627-9363
Email: MohammedAli.Khan@rci.rogers.com

Comments received:
Mostly concerned with one aspect of this development proposal: servicing,

Additional comments:
Rogers has no comment or concerns regarding this circulation. Please contact Graham Winn at 613-216-4452 or e-mail at graham.winn@rci.rogers.com for Rogers Site Servicing if approved, or if you require additional information. Regards

D07-12-22-0046 – 5969 Ottawa Street November 9, 2023

Submission 2 comments:

Planning:

- We would still prefer some additional trees nearer the road.
- We will require something (by way of copy is fine) of the outcome of the discussions/agreement with VIA, show any existing fencing. Use the Key plan if needed

Parks: Will still need a surveyed area to calculate cash in lieu of parkland requirements and update the proposed site plan conditions.

Engineering:

Application (in whole)
-The fence discussions are required to come to a conclusion with VIA to be shown on plans

C301, Grading and Drainage Plan, prepared by LRL Engineering, LRL Project No.: 210341, dated July 27, 2021, revision 01, dated November 25, 2021.
-The previous request was for one of the plans to state the datums used to tie in the projects horizontal and vertical location, however only the vertical has been listed on drawing C301 (and the vertical could be clearer)
-It is suggested that the location of the well found on C301 does not corelate well to either TW1 or TW2 of Figure 2 of the Hydrogeological Assessment and Terrain Analysis – Proposed Mixed use Dog kennel and Dwelling, 5959 Ottawa Street, prepared by LERL Engineering, LRL file no. 210341, revision 01, dated July 31, 2023
-It is suggested that the location of the well found on C301 does not corelate well to TW2 of Figure 3 of the Hydrogeological Assessment and Terrain Analysis – Proposed Mixed use Dog kennel and Dwelling, 5959 Ottawa Street, prepared by LERL Engineering, LRL file no. 210341, revision 01, dated July 31, 2023
-The snow storage appears to run off uncontrolled through the woods to the creek rather than being treated
-The dog run runoff appears to run off uncontrolled through the woods to the creek rather than being treated
-It is suggested that there is a risk of snow and dog run runoff impacting the well.

The Geotechnical Investigation, Proposed Dog Kennel, 5969 Ottawa Street, LRL file no. 210341, dated October 2021, revised August 2023
-The response to the City comment regarding seasonal groundwater elevation is that the results of July 2021 were sufficient, are disagreed to. the response continues to say that it is believed that the result is representative, without discussion of why. The reporting states that groundwater levels could fluctuate and this concept is agreed to, so more analysis is requested
-While the change is not anticipated to see a significant shift the slope stability section should be parallel to the greatest slope, and sections should be shown to be the worst-case scenario
-The report is not stamped and sealed

Hydrogeological Assessment and Terrain Analysis – Proposed mixed use Dog Kennel and Dwelling, 5969 Ottawa Street, LRL file no. 210341, revision 1, revised July 31, 2023

-The turbidity results, discussed in section 8.1, suggest that the well requires further development
-Please expand on "btc" om section 8.2.1 (It is suspected to be 'below the collar')
-It is suggested that the comments about a "place of worship, and the proposed assembly hall" found in section 10.1 are misplaced
-The comments of water treatment of section 11 are not precise
-The turbidity comments in the conclusions, section 11, are expanded from those of section 8.1
-The treatment recommendations in the first bullet of section 12 are not concluded, nor is there discussion on possible conflicts of choices

ATTACHMENT II

Ottawa Septic System Office – Permit and Design Application

Rideau Valley Conservation Authority

RECEIVED
JUL 13 2023
TO:

STREET/CIVIC INITIAL ☐
EMAIL ONLY

SEPTIC FILE # 23-042
OTTAWA

Septic Office

3889 Rideau Valley Drive Box 599 Manotick, ON K4M 1A5

Phone: 613-692-3571 PRESS "4" for septic office 1-800-267-3504 Fax: 613-692-1507 Email: septic@rvca.ca

SITE ADDRESS: 5969 Ottawa Township: OSG-HUN-GLO-FIT-CUM-NEP-GOU-RID-KAN-TOR

CONTACT: 1. GVE 2. ROBERTS, AI 3.

INFORMATION FOR OWNER/APPLICANT

Attached is your Sewage System Permit. **A minimum of two inspections are required before your proposed sewage system can be approved for use (additional inspections may be required for clay soils/bedrock and/or re-inspections).** Inspections must be requested in writing. Please see attached:

- Inspection fax request form (all inspections MUST be requested in writing)
- As-built components and drawing form
- Copy of the approved application and schedule pages
- Approved Part 8 permit: *Electronic copy only – Be sure to INCLUDE in B
  Plans Examiner at CITY of OTTAWA client services, if NEW or RENO co

NON-RESIDENTIAL
☒ Commercial
☐ Industrial
☐ Institutional

Special Note

- **A permit is valid for 12 months from the original date of issuance noted in "*permit date*".** If lapsed, it may be renewed only once for a period of 12 months *from the date of expiry.*

- No person shall make a material change or cause a material change to be made to a plan, specification, document or other information on the basis of which a permit was issued without notifying, filing details with and obtaining the authorization of the Chief Building Official. *(Building Code Act 1992, c.23, s.8(12))*

Sewage System Permit Construction Requirements

1. Clay Soils/Bedrock only (if required per issued Approval)
In clay soils/bedrock, a site preparation inspection is required. The total contact area must be properly prepared. Scarification must be done under dry conditions prior to importing leaching bed fill.

2. Installation Inspection – 2nd inspection
When the sewage system is substantially completed (i.e., before the final fill is placed over the septic tank and leaching bed system) an installation inspection is required. Prior to any inspection request, the following must be submitted:

a) "as-built components" and "as-built drawings" — see attached form
b) "engineer letter" — if the system is engineered
c) grain size analysis and weight bills for all Filter Media types of septic systems
d) Weigh bills for washed septic stone, where applicable
e) Maintenance/service contract for treatment unit installed

3. Final Grading Inspection – 3rd inspection
When construction of the sewage system is complete, a final grading inspection is required. Before a Certificate of Completion can be issued, the following must be complete:

a) The leaching bed and septic tank must be covered with sand fill and topsoil and graded accordingly
b) All conditions of the Sewage System Permit & comments on the installation inspection report must be met
c) The depth of cover & material type must be identified by inspection pipes or holes placed over trenches at 4 corners of bed
d) The 4 corners of the bed must be staked

Application for a Permit to Construct or Demolish

This form is authorized under subsection 8(1.1) of the *Building Code Act, 1992*

For use by Principal Authority	
Application number:	Permit number (if different): SEPTIC FILE # 23-042 OTTAWA
Date received: R.V.C.A. RECEIVED JUL 13 2023	Roll number:

Application submitted to: OTTAWA SEPTIC SYSTEM OFFICE
(Name of municipality, upper-tier municipality, board of health or conservation authority)

A. Project information

Building number, street name	Unit number	Lot/con.
5969 Ottawa st.		25/3

Municipality	Postal code	Plan number/other description
Goulbourn	K0A 2Z0	04430 - 001 OLT

Project value est. $	Area of work (m^2)

B. Purpose of application

✓ New construction | Addition to an existing building | Alteration/repair | Demolition | Conditional Permit

Proposed use of building	Current use of building
Commercial	Vacant

Description of proposed work
Install a septic system for proposed commercial building with multiple occupancies.

C. Applicant

Applicant is: Owner or Authorized agent of owner

Last name	First name	Corporation or partnership
Patel	Davis	Green Valley Environmental Inc.

Street address	Unit number	Lot/con.
6107 First Line Rd.		

Municipality	Postal code	Province	E-mail
North Gower	K4M 1A7	ON	engineering@gvegroup.ca

Telephone number	Fax	Cell number
(613) 692-2616	( )	(613) 229-5890

D. Owner (if different from applicant)

Last name	First name	Corporation or partnership
Roberts	Allan	

Street address	Unit number	Lot/con.
61 Stranchan St.		

Municipality	Postal code	Province	E-mail
Goulbourn	K0A 2Z0	ON	jannroberts@yahoo.com

Telephone number	Fax	Cell number
(613) 410-9561	( )	( )

E. Builder (optional)

Last name	First name	Corporation or partnership (if applicable)	
Street address		Unit number	Lot/con.
Municipality	Postal code	Province	E-mail
Telephone number ( )	Fax ( )		Cell number ( )

R.V.C.A. RECEIVED JUL 13 2023

SEPTIC FILE # 23-042 OTTAWA

F. Tarion Warranty Corporation (Ontario New Home Warranty Program)

i. Is proposed construction for a new home as defined in the *Ontario New Home Warranties Plan Act*? If no, go to section G.	Yes	No ✓
ii. Is registration required under the *Ontario New Home Warranties Plan Act*?	Yes	No ✓

iii. If yes to (ii) provide registration number(s): _____

G. Required Schedules

i) Attach Schedule 1 for each individual who reviews and takes responsibility for design activities.

ii) Attach Schedule 2 where application is to construct on-site, install or repair a sewage system.

H. Completeness and compliance with applicable law

i) This application meets all the requirements of clauses 1.3.1.3 (5) (a) to (d) of Division C of the Building Code (the application is made in the correct form and by the owner or authorized agent, all applicable fields have been completed on the application and required schedules, and all required schedules are submitted).	Yes ✓	No
Payment has been made of all fees that are required, under the applicable by-law, resolution or regulation made under clause 7(1)(c) of the *Building Code Act, 1992*, to be paid when the application is made.	Yes ✓	No
ii) This application is accompanied by the plans and specifications prescribed by the applicable by-law, resolution or regulation made under clause 7(1)(b) of the *Building Code Act, 1992*.	Yes ✓	No
iii) This application is accompanied by the information and documents prescribed by the applicable by-law, resolution or regulation made under clause 7(1)(b) of the *Building Code Act, 1992* which enable the chief building official to determine whether the proposed building, construction or demolition will contravene any applicable law.	Yes ✓	No
iv) The proposed building, construction or demolition will not contravene any applicable law.	Yes ✓	No

I. Declaration of applicant

I Davis Patel (print name) declare that:

1. The information contained in this application, attached schedules, attached plans and specifications, and other attached documentation is true to the best of my knowledge.
2. If the owner is a corporation or partnership, I have the authority to bind the corporation or partnership.

Date July 13, 2023 Signature of applicant Davis

Personal information contained in this form and schedules is collected under the authority of subsection 8(1.1) of the *Building Code Act, 1992*, and will be used in the administration and enforcement of the *Building Code Act, 1992*. Questions about the collection of personal information may be addressed to: a) the Chief Building Official of the municipality or upper-tier municipality to which this application is being made, or, b) the inspector having the powers and duties of a chief building official in relation to sewage systems or plumbing for an upper-tier municipality, board of health or conservation authority to whom this application is made, or, c) Director, Building and Development Branch, Ministry of Municipal Affairs and Housing 777 Bay St., 2nd Floor. Toronto, M5G 2E5 (416) 585-6666.

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SEPTIC FILE #
23-042

Schedule 1: Designer Information

Use one form for each individual who reviews and takes responsibility for design activities with respect to the project.

A. Project information

Building number, street name		Unit no.	Lot/con.
5969 Ottawa St.			25/3
Municipality	**Postal code**	**Plan number/ other description**	
Goulbourn	K0A 2Z0	04430-0010 LT	

B. Individual who reviews and takes responsibility for design activities

Name		Firm	
Davis Patel		Green Valley Environmental Inc.	
Street address		**Unit no.**	**Lot/con.**
6107 First Line Rd.			
Municipality	**Postal code** / **Province**	**E-mail**	
North Gower	K4M 1A7 / ON	engineering@gvegroup.ca	
Telephone number	**Fax number**	**Cell number**	
(613) 692-2616	( )	(613) 229-5890	

C. Design activities undertaken by individual identified in Section B. [Building Code Table 3.5.2.1. of Division C]

House	HVAC – House	Building Structural
Small Buildings	Building Services	Plumbing – House
Large Buildings	Detection, Lighting and Power	Plumbing – All Buildings
Complex Buildings	Fire Protection	✓ On-site Sewage Systems

Description of designer's work

Design a septic system for proposed residential building with multiple occupancies.

D. Declaration of Designer

I Davis Patel declare that (choose one as appropriate):
(print name)

I review and take responsibility for the design work on behalf of a firm registered under subsection 3.2.4.of Division C, of the Building Code. I am qualified, and the firm is registered, in the appropriate classes/categories.

Individual BCIN: 119685

Firm BCIN: 16035

I review and take responsibility for the design and am qualified in the appropriate category as an "other designer" under subsection 3.2.5.of Division C, of the Building Code.

Individual BCIN: _____

Basis for exemption from registration: _____

The design work is exempt from the registration and qualification requirements of the Building Code.

Basis for exemption from registration and qualification: _____

I certify that:

1. The information contained in this schedule is true to the best of my knowledge.
2. I have submitted this application with the knowledge and consent of the firm.

Date July 13, 2023 Signature of Designer

NOTE:

1. For the purposes of this form, "individual" means the "person" referred to in Clause 3.2.4.7(1)(c).of Division C, Article 3.2.5.1. of Division C, and all other persons who are exempt from qualification under Subsections 3.2.4. and 3.2.5. of Division C.
2. Schedule 1 is not required to be completed by a holder of a license, temporary license, or a certificate of practice, issued by the Ontario Association of Architects. Schedule 1 is also not required to be completed by a holder of a license to practise, a limited license to practise, or a certificate of authorization, issued by the Association of Professional Engineers of Ontario.

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SEPTIC FILE # 23-042 OTTAWA

Schedule 2: Sewage System Installer Information

A. Project Information

Building number, street name		Unit number	Lot/con.
5969 Ottawa St.			25/3
Municipality	**Postal code**	**Plan number/ other description**	
Gowlbourn	K0A 2Z0	04430-0010LT	

B. Sewage system installer

Is the installer of the sewage system engaged in the business of constructing on-site, installing, repairing, servicing, cleaning or emptying sewage systems, in accordance with Building Code Article 3.3.1.1, Division C?

✓ Yes (Continue to Section C) No (Continue to Section E) Installer unknown at time of application (Continue to Section E)

C. Registered installer information (where answer to B is "Yes")

Name			BCIN	
Green Valley Environmental Inc.			16035	
Street address			**Unit number**	**Lot/con.**
6107 First Line Rd.				
Municipality	**Postal code**	**Province**	**E-mail**	
North Gower	K4M 1A7	ON	wseabrook@gvegroup.ca	
Telephone number	**Fax**		**Cell number**	
(613) 692-2616	( )		(613) 229-3900	

D. Qualified supervisor information (where answer to section B is "Yes")

Name of qualified supervisor(s)	Building Code Identification Number (BCIN)
Bill Seabrook	11234

E. Declaration of Applicant:

I Davis Patel (print name) declare that:

I am the applicant for the permit to construct the sewage system. If the installer is unknown at time of application, I shall submit a new Schedule 2 prior to construction when the installer is known;

OR

I am the holder of the permit to construct the sewage system, and am submitting a new Schedule 2, now that the installer is known.

I certify that:

1. The information contained in this schedule is true to the best of my knowledge.
2. If the owner is a corporation or partnership, I have the authority to bind the corporation or partnership.

Date July 13, 2023 Signature of applicant

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Permit # _____
Revision # _____
Date _____

Schedule 4
Proposed Services
Complete Sections 1 thru 7

SEPTIC FILE # 23-042 OTTAWA

1. **Engineered**
   - ☐ Yes
   - ☑ No

2. **Water supply**
   - ☑ Proposed
   - ☐ Existing

3. **Type of work proposed**
   - ☑ New Installation
   - ☐ Replacement
   - ☐ Alteration

4. **Type of Well**
   - ☐ Dug/bored/Sandpoint well
   - ☑ Drilled well
   - ☐ Municipal
   - ☐ Other

5. **Residential** Sewage Design Flow Info.
   Bedrooms _____
   House (floor area) _____ **m²**
   People _____
   Total Fixture Units _____ **(Schedule 8)**
   Residential Flow _____ **L/day**

6. Sewage Design Flow **Other Occupancies**
   Design Flow 3450 L/day
   Detailed sewage flow calculations:
   See attached description

7. **Type of System**
   - ☑ Treatment Unit Norweco 3780-3M
   - ☐ Class 2 – Leaching Pit
   - ☐ Class 3 – Cesspool
   - ☑ Class 4 – Shallow Buried Trench

   ☐ Class 4 – Trench **(Schedule 9)**
   - ☐ Fully raised
   - ☐ Partially raised
   - ☐ In-ground

   ☐ Class 4 – Filter Media **(Schedule 10)**
   - ☐ Fully raised
   - ☐ Partially raised
   - ☐ In-ground

   ☐ Class 4 – BMEC Area Bed **(Schedule 11)**
   - ☐ Fully raised
   - ☐ Partially raised
   - ☐ In-ground

   ☐ Class 4 – "Type A" Dispersal **(Schedule 13)**
   - ☐ Fully raised
   - ☐ Partially raised
   - ☐ In-ground

   ☐ Class 4 – "Type B" Dispersal **(Schedule 14)**
   - ☐ Fully raised
   - ☐ Partially raised
   - ☐ In-ground

   ☐ Class 5 – Holding Tank (9000L min)
   ☐ Tank/TreatmentUnit/PumpChamber ONLY
   ☐ Effluent Filter/Risers ONLY

Allan Roberts(5969 Ottawa St.)

Warehouse		
2 Washroom	950 Per Washroom	1900 L/day
2 Loading Bay	150 Per Loading Bay	300 L/day
Sub-Total		2200 L/day

Apartment		
2 Bedrooms	275 Per person	1100 L/day

Kennel (Vetrinary Clinic)		
1 Employees	75 Per Employee	75 L/day
1 Floor Drain	75 Per Drain	75 L/day
Sub-Total		150 L/day

Total	3450 L/day

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Date _____

Schedule 5
Sewage System Details

Type of System Class 4 Shallow Buried Trench (Schedule 4)
Septic/Holding Tank Size: 3600 Litres Make: MacLaggan
Septic Tank Effluent Filter Make: _____ Model: _____

Treatment Unit – Make & Model Norweco HK 3780-3M
Number of Units: 1 Other: _____
Refer to Typical Drawing # PC-5-1172 Pump(s) required Liberty 280 (0.5hp)
Mantle Information: Pump Rate _____ L/15min
Native or imported =15m in _____ direction(s) **Note:** Alarm required for all pumping systems.

Slope subgrade _____ % slope
_____ direction(s)

Site to be Scarified (If clay) YES / (NO)
Clay Seal Required (If bedrock) YES / (NO)

☐ **Trench**
Distribution Pipe Length _____ m
Loading Area _____ m²
Type of Chamber _____
Length of Chamber _____ m

☐ **Dispersal Bed**

☐ **BMEC** ☐ **Type A** ☐ **Type B**
Stone _____ m²
Sand _____ m²
Pipe _____ m²
Linear Loading _____ L/m²

☑ **Shallow Buried Trench**
Pipe Length 52.32 m

☐ **Filter Media Bed**
Stone _____ m²
Extended Base _____ m²
Pipe _____ m
Weight of Filter Media _____ Kg
Loading Area _____ m

☐ **Tank/Treatment Unit/Pump Chamber Replacement** ONLY
☐ **Effluent Filter & Riser** ONLY

Construction Notes:

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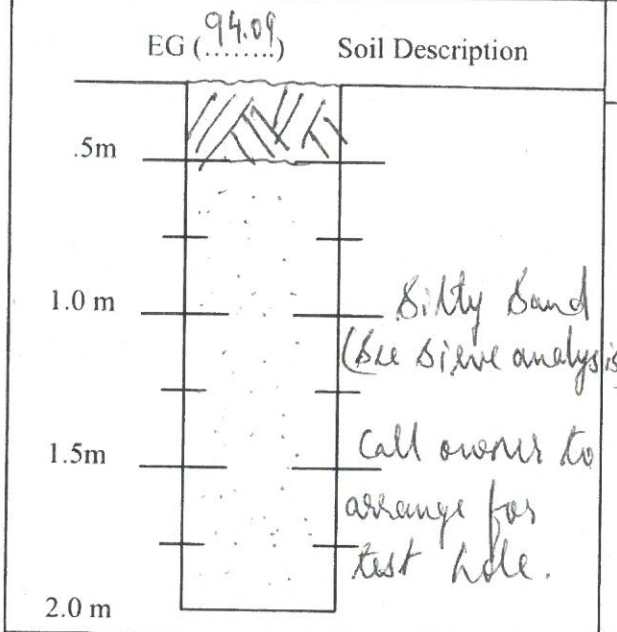
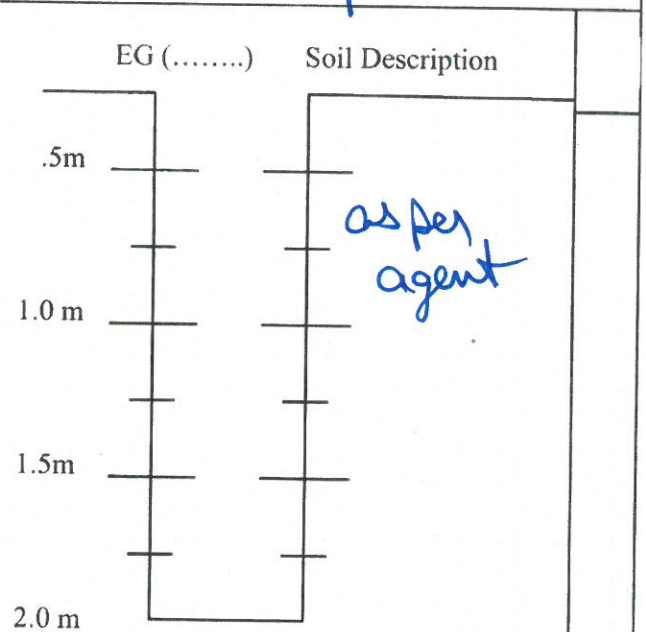
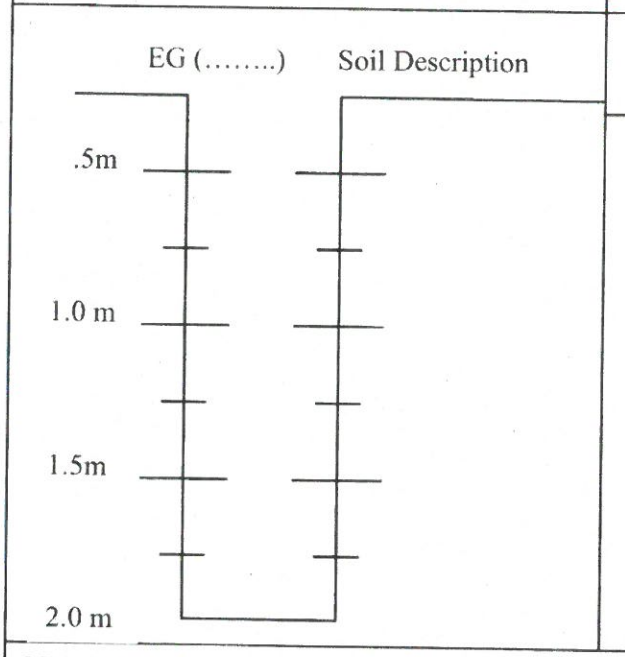
Schedule 6
Soil and Water Table Information
(Minimum depth of test pit: 2 metres)

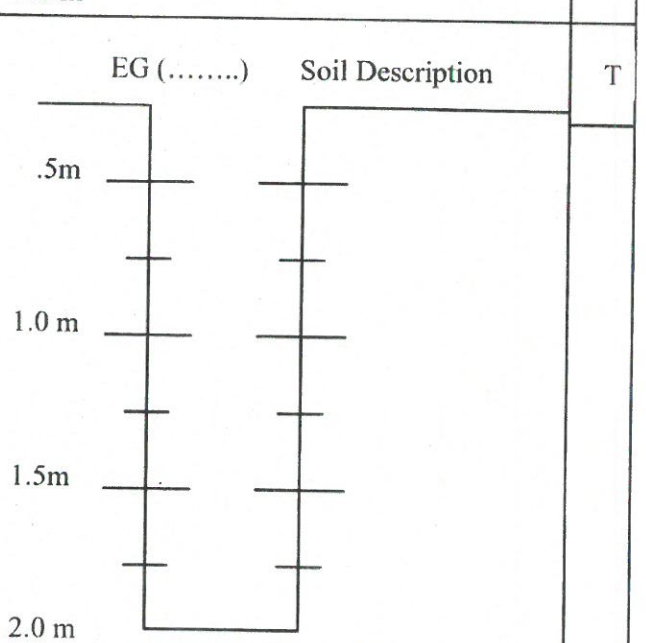
Name of Applicant/Agent: GVE
Date: Jan 5, 2021 Time: 8:30 am
Applicant/Agent Signature: [signature]

Inspector: _____
Date: _____ Time: _____
Inspector Signature: [signature]









LEGEND
BR = Bedrock
GWT = Ground water table
HGWT = High ground water table
M = metres
EG = Existing grade
T = percolation rate

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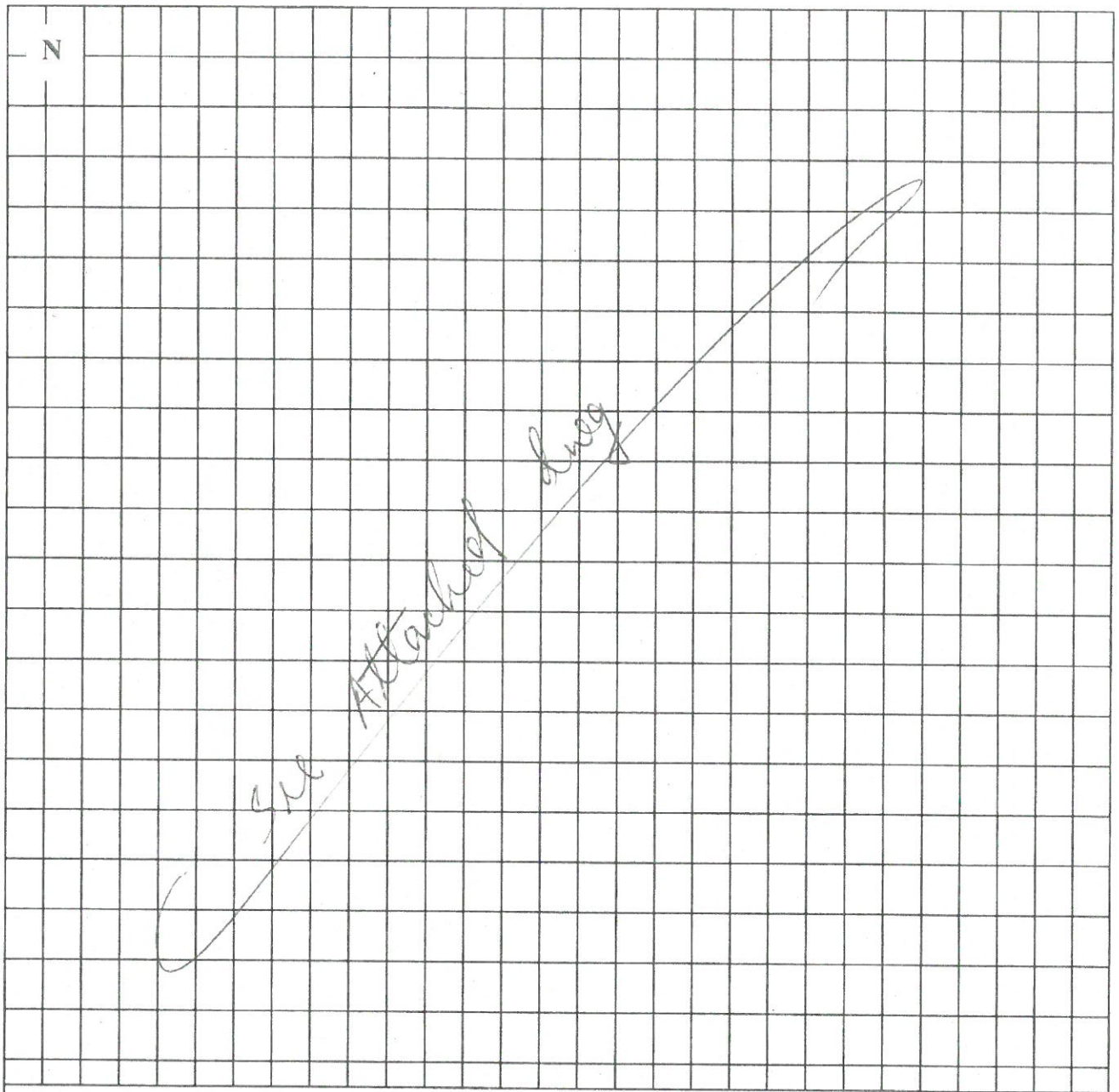
Scale: 1Block = NTS

~~Schedule 7~~
Layout Section



○Dug Well ●Drilled Well ▲Neighbouring Homes ◊Benchmark ---Tile Drainage ——Property Line

Elevations (metric only)
B.M. 94.99 m
B.M.Description Top of the concrete pad for transformer, south of property
Exact Location _____

Min. of 5 elevations in proposed system area (in X pattern)

X_1	X_2
X_3	X_4
X_5	X_6 (toe)
X_7	X_8

See attached drwg

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Permit # _____
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Date _____

~~Schedule 8~~
Fixture unit count

Fixtures OTTAWA	# Existing	+	# Proposed	X	unit count	=	Fixture Count
Bathroom							
Bathroom group (toilet, sink and tub or shower) installed in the same room	1	+		X	6	=	6
Bathtub with/without overhead shower		+		X	1.5	=	
Shower stall		+		X	1.5	=	
Wash basin (SINK) (1½inch trap)	2	+		X	1.5	=	3
Watercloset (TOILET) tank operated	2	+		X	4	=	8
Bidet		+		X	1	=	
Kitchen							
Dishwasher	1	+		X	1	=	1
Sink with/without garbage grinder(s), domestic and other small type single, double or 2 single with a common trap	1	+		X	1.5	=	1.5
Other							
Domestic washing machine	1	+		X	1.5	=	1.5
Combination sink and laundry tray single or double (Installed on 1½ trap)	1	+		X	1.5	=	1.5

***Total:** 22.5

***Insert the TOTAL in section 5 of Schedule 4** (0.Reg 151/13 Table 7.4.9.3)

1. **Sump pumps and floor drains are not to be connected to the sewage system.** Connection of such fixtures to a sewage system may lead to a hydraulic failure of the said system. The above mentioned fixtures should be discharged separately to an approved Class 2 (leaching pit) sewage system.
2. Where laundry waste is not more than 20% of the total daily design sanitary sewage flow, it may discharge to a sewage system (Part 8, OBC, 8.1.3.1(2)).

[signature] — July 13, 2023

Agent/Owner signature **Date**

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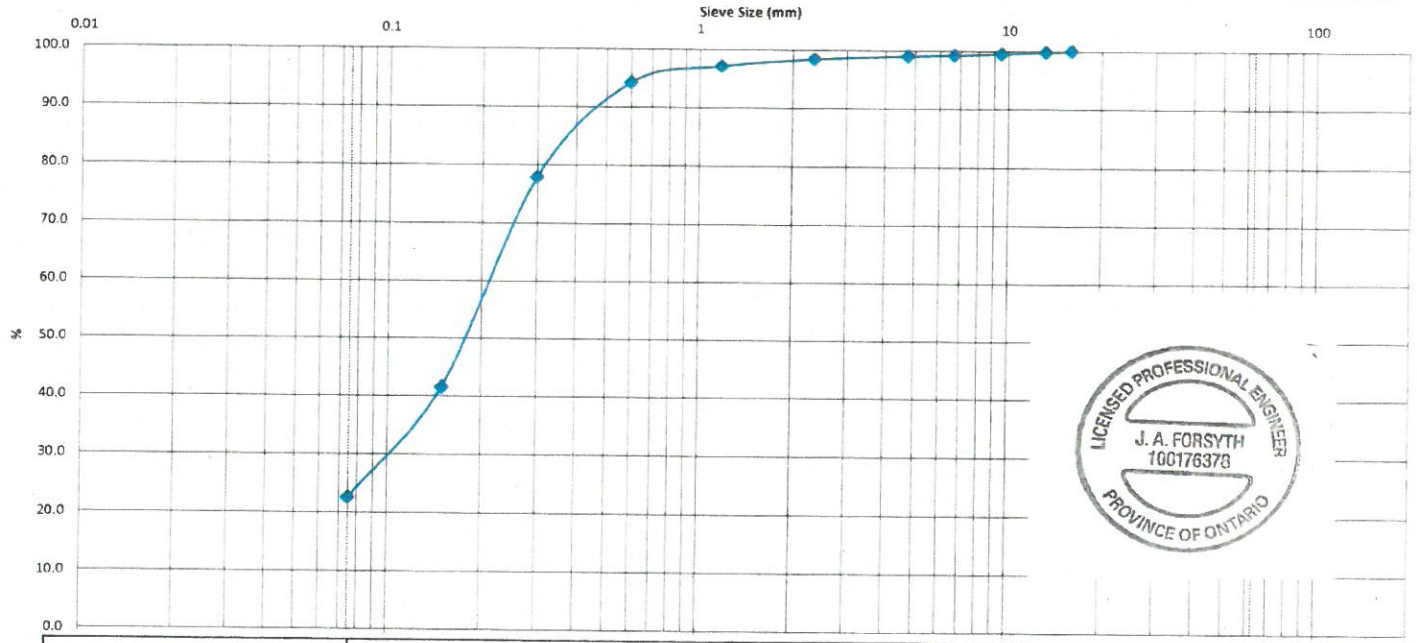
consulting engineers

SIEVE ANALYSIS
ASTM C136

CLIENT:	Green Valley Enviro. Services	DESCRIPTION:	Sand	FILE NO:	PM10264
CONTRACT NO.:	-	SPECIFICATION:	**Septic Sand**	LAB NO:	34450
PROJECT:	Laboratory Testing	INTENDED USE:	Septic Bed	DATE RECEIVED:	9-Jun-22
		PIT OR QUARRY:	-	DATE TESTED:	10-Jun-22
DATE SAMPLED:	9-Jun-22	SOURCE LOCATION:	5969 Ottawa St	DATE REPORTED:	22-Jun-22
SAMPLED BY:	Client	SAMPLE LOCATION:	Richmond	TESTED BY:	C.P/A.L/R.E



Silt and Clay	Sand			Gravel		Cobble
	Fine	Medium	Coarse	Fine	Coarse	

Identification	Soil Classification					MC(%)	LL	PL	PI	Cc	Cu
										1.31	5.2
	D100	D60	D30	D10	Gravel (%)	Sand (%)		Silt (%)		Clay (%)	
	16	0.22	0.11	0.042	1.0	76.4		22.6			

Comments: The sample is representative of a Silty Sand (SM) with an Estimated T Time = **18 to 20 min/cm**. The percolation rate provided above is based on the gradation of the test sample submitted, and as such, is approximate only. The values chosen for design should take into account the expected density in the field.

REVIEWED BY:	Curtis Beadow	Joe Fosyth, P. Eng.

LICENSED PROFESSIONAL ENGINEER
J. A. FORSYTH
100176378
PROVINCE OF ONTARIO

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23-042

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consulting engineers

SIEVE ANALYSIS ASTM C136

CLIENT:	Green Valley Enviro. Services	DESCRIPTION:	Sand	FILE NO.:	PM10264
CONTRACT NO.:	-	SPECIFICATION:	**Septic Sand**	LAB NO.:	34450
PROJECT:	Laboratory Testing	INTENDED USE:	Septic Bed	DATE REC'D:	9-Jun-22
		PIT OR QUARRY:	-	DATE TESTED:	10-Jun-22
DATE SAMPLED:	9-Jun-22	SOURCE LOCATION:	5969 Ottawa St	DATE REP'D:	22-Jun-22
SAMPLED BY:	Client	SAMPLE LOCATION:	Richmond	TESTED BY:	C.P/A.L/R.E

WEIGHT BEFORE WASH	896.1
WEIGHT AFTER WASH	706.2

SIEVE SIZE (mm)	WEIGHT RETAINED	PERCENT RETAINED	PERCENT PASSING	LOWER SPEC	UPPER SPEC	REMARK
150						
106						SEPTIC FILE #
75						23-042
63						
53						OTTAWA
37.5						
26.5						
19						
16	**0.0**	0.0	**100.0**			
13.2	**1.5**	0.2	**99.8**			
9.5	**4.8**	0.5	**99.5**			
6.7	**7.4**	0.8	**99.2**			
4.75	**9.1**	1.0	**99.0**			
2.36	**14.7**	1.6	**98.4**			
1.18	**25.6**	2.9	**97.1**			
0.6	**51.6**	5.8	**94.2**			
0.3	**198.4**	22.1	**77.9**			
0.15	**523.4**	58.4	**41.6**			
0.075	**693.3**	77.4	**22.6**			
PAN	**706.2**					
SIEVE CHECK FINE		0.00	0.3% max.			

OTHER TESTS	RESULT	REFERENCE MATERIAL LAB NO.	REFERENCE MATERIAL RESULT

REVIEWED BY:	Curtis Beadow	Joe Forsyth, P. Eng.

Properties

PIN 04430 - 0010 LT Interest/Estate Fee Simple

Description PCL 10-3, SEC 4D-26; PT UNIT 10, PL 4D-26, PT 1, 4R7050 ; GOULBOURN

Consideration

Consideration $30,000.00

Transferor(s)

The transferor(s) hereby transfers the land to the transferee(s).

Name QUATROSENSE ENVIRONMENTAL LTD.

Address for Service Acting as a company
5935 Ottawa Street
Richmond, Ontario,
K0A 2Z0

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I, DAVID JENKINS (PRESIDENT), have the authority to bind the corporation.

This document is not authorized under Power of Attorney by this party.

Transferee(s)

		Capacity	Share
Name	ROBERTS, ROBERTA ANNE Acting as an individual	Joint Tenants	
Date of Birth	1949 06 17		
Address for Service	61 Strachan Street Richmond, ON K0A 2Z0		
Name	ROBERTS, ALLAN WAYNE Acting as an individual	Joint Tenants	
Date of Birth	1948 12 17		
Address for Service	61 Strachan Street Richmond, ON K0A 2Z0		

Calculated Taxes

Provincial Land Transfer Tax $150.00

File Number

Transferee Client File Number : 51248002

Rideau Valley Conservation Authority

Permit
Part 8 – Sewage System
Ontario Building Code

Do Not Complete
Permit No 23-042
Revision No
Date
Related Application

A copy of this permit must be posted on the property at all time during construction. OBC, Division C — Part 1, Section 1.3.2.1

This permit verifies that the on-site sewage system was reviewed and approved for construction under the *Ontario Building Code* and *O.Reg. 323/12* as amended by *O.Reg. 151/13.*

Inspected & Recommended by: J.HUTTON
Owner: Al Roberts
Inspection Date & Time: Civic: July 17, 2023 (3:45PM)
Weather: sun (29C)
Address: 5969 Ottawa St
Legal:
In the former Township/City of Goulbourn

Design Flow for Commercial / Institutional / Industrial (as per Table 8.2.1.3.B)

Q: 3450 L/day

septic tank 3600 L
effluent filter
pump rate time dosed L/15 MIN
treatment unit Norweco HK3780L-3M
number of units 1

weigh bills for	❒ yes	■ no
grain size analysis required	❒ yes	■ no
site to be scarified	■ yes	❒ no
clay seal inspection	❒ yes	■ no
mantle required	❒ yes	■ no
sub-grade inspection	❒ yes	■ no

ELEVATION ☐ In Ground ☐ Partially Raised ☐ Fully Raised

TYPE OF SYSTEM

❒ **Trench**
○ **Pipe and Stone or** ○ **Chambers**
type of chamber
loading area m^2
total trench length m
trench configuration

❒ **Dispersal Bed**
○ BMEC ○ Type A ○ Type B
stone m^2
sand m^2
pipe
weight of sand kg

■ **Shallow Buried Trench**
pipe length 52.32 m
orifice spacing 0.6 m

❒ **Filter Media Bed**
stone m^2
extended base m^2
pipe
weight of filter media kg
loading area m^2

❒ **Class 5 Holding Tank**

❒ **Septic Tank Only**

Manager, Septic System Approvals: Terry Hurdson Permit Date: July 18, 2023
Comments: 1. Refer to RVCA#RV5-21/23

■ maintenance/pumping required ■ ESA permit # required ❒ engineer to verify ❒ subgrade ❒ squirt height
❒ Class 5 Holding Tank approval only valid for three years from date of issue

Manager, Septic System Approvals: Revision Date:
Comments:

NOTE: For further details, refer to corresponding application.

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OTTAWA ST.

TBM
ELEV = 94.99

CENTER LINE DITCH

4.9

3.6

12.5

PRESSURIZED SHALLOW BURIED TRENCH BED WITH 4 RUNS OF 13.08m AT 2.0m O/C

94.15

TP #01
TOP 94.09

July 18/23

FORCEMAIN, POLYETHYLENE PIPE, 1.5" Ø, BURIED 1.5m DEEP, OR SELF DRAINING, OR INSULATED.

5.7

3

2.6

23.4

EXISTING BUILDING

INSTALL A 3600L SEPTIC TANK WITH NORWECO HK 3780L-3M TREATMENT UNIT. SYSTEM COMPONENTS TO MEET MINIMUM REQUIREMENTS AS PER ATTACHED SCHEMATIC.
INSTALL 200 GAL PUMP CHAMBER WITH 0.5 hp LIBERTY 280 EFFLUENT PUMP, TIMER DOSED @ 30 SECS./30 MINS.

PROPOSED DRIVEWAY

PROPOSED BUILDING

15m

FLOOD PLAIN

NOTES:

1. ALL TREATMENT UNITS AND LEACHING BED ARE TO BE INSTALLED IN ACCORDANCE WITH MINIMUM OBC CLEARANCE DISTANCES. ANY OMISSIONS OR INACCURACIES SHALL BE BROUGHT TO THE ATTENTION OF GVE AND OSSO.

2. CARE IS TO BE EXERCISED DURING CONSTRUCTION ACTIVITIES NEAR OVERHEAD HYDRO WIRES.

3. EXISTING ELEVATIONS ARE APPROXIMATE. CONTRACTOR MUST VERIFY ALL ELEVATIONS AND DIMENSIONS PRIOR TO CONSTRUCTION.

4. SOIL CONDITIONS ARE ACCURATE FOR THE LOCATIONS SHOWN. CONTRACTOR MUST CONTACT THE DESIGN ENGINEER OR REGULATORY AUTHORITY SHOULD SOIL CONDITIONS DIFFER.

5. ALL DIMENSIONS AND CONDITIONS TO BE VERIFIED ON SITE. FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALE.

6. UTILITY LOCATES SHALL BE COMPLETED PRIOR TO ANY EXCAVATION.

7. THIS IS NOT A PLAN OF SURVEY AND SHALL NOT BE USED EXCEPT FOR THE PURPOSE INDICATED IN THE TITLE BLOCK.

8.

9. EXISTING LOT SERVICED WITH A DRILLED WELL.

METRIC:

DISTANCES AND ELEVATIONS SHOWN ON THIS PLAN ARE IN METERS AND MAY BE CONVERTED TO FEET BY DIVIDING BY 0.3048.

LEGEND:

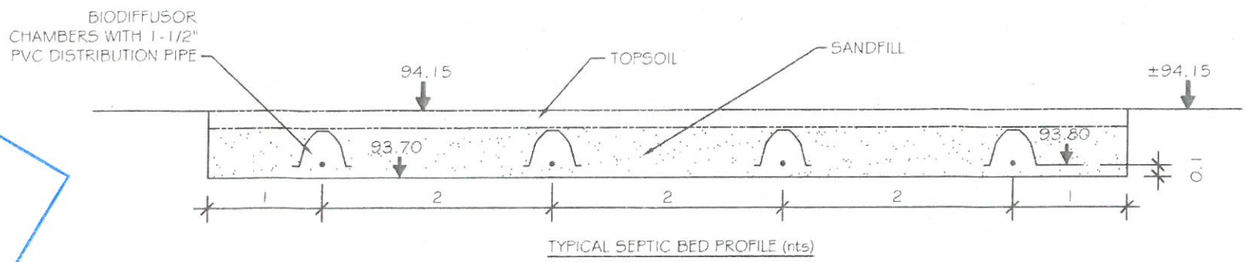
- PROPOSED ELEVATION
- EXISTING ELEVATION
- EXISTING WORKS
- PROPOSED SEWAGE WORKS
- FENCE LINE
- PROPERTY LINE
- TBM — TEMPORARY BENCH MARK (DESCRIPTION: TOP OF CONCRETE PAD)
- TEST PIT LOCATION

SEPARATION DISTANCES:

1. MINIMUM CLEARANCE FROM SEPTIC PIPE TO:
   LOT LINE = 3.0m
   HOUSE = 5.0m
   DRILLED WELL = 15.0m

2. MINIMUM CLEARANCE FROM TREATMENT UNITS TO:
   LOT LINE = 3.0m
   HOUSE = 1.5m
   DRILLED WELL = 15.0m

Drawn by: DP	Driven by: DP	Checked by: WS	
Rev.	Description		Date
Township	Plan#	Lot / Sublot / Con	
			Drwg. No.: SP6982-21
County:	Civic Address: 5969 OTTAWA ST.	Date: 11/07/23	Scale: 1:200
GREEN VALLEY ENVIRONMENTAL			
On-Site Sewage Treatment Plan for the Residence of: AL ROBERTS			



SEPTIC FILE #
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OTTAWA

July 18/23

1. THIS CROSS SECTION IS NOT TO SCALE. ALL FIGURED DIMENSIONS TAKE PRECEDENCE OVER SCALE
2.

PRETREATMENT TANK

- INSTALL MIN. 3600L PRETREATMENT TANK.
- A MAXIMUM OF 300mm OF SOIL SHALL COVER THE PRETREATMENT TANK.
- RISERS AND LIDS SHALL BE INSTALLED FOR EASE OF ACCESS

NORWECO TREATMENT UNIT

- THE TREATMENT UNIT SHALL CONSIST OF A NORWECO HYDRO-KENETIC 3780L-3M TREATMENT UNIT.
- THE TREATMENT UNIT SHALL BE INSTALLED IN SERIES AND DOWN STREAM FROM THE PRETREATMENT TANK.
- THE TREATMENT UNIT SHALL PRODUCE A TERTIARY TREATMENT EFFLUENT QUALITY IN ACCORDANCE WITH COLUMN 2 AND 3 OPPOSITE A LEVEL IV TREATMENT UNIT OF TABLE 8.6.2.2. OF THE ONTARIO BUILDING CODE.
- THE TREATMENT UNIT SHALL BE INSTALLED ACCORDING TO THE MANUFACTURER'S SPECIFICATIONS BY A CERTIFIED INSTALLER.
- THE OWNER OF THE TREATMENT UNIT MUST ENTER INTO A MAINTENANCE AGREEMENT WITH THE MANUFACTURER'S REPRESENTATIVE.
- THE TREATMENT UNIT SHALL BE BACKFILLED AND COMPACTED, IN LIFTS, WITH SELECT GRANULAR FILL, SUCH AS SAND OR CLEAR STONE
- THE TOP OF THE TREATMENT UNIT SHALL BE ACCESSIBLE TO THE SURFACE. INSTALL RISERS AND LIDS TO SUIT.

NORWECO FILTER VAULT(S)

- FILTER VAULT(S) SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS
- FILTER VAULT(S) SHALL BE INSTALLED IN SERIES AND DOWN STREAM FROM THE TREATMENT UNIT
- FILTER VAULT(S) SHALL BE ACCESSIBLE TO THE SURFACE. INSTALL RISERS AND LIDS TO SUIT.

SHALLOW BURIED TRENCH BED

- THE DISPERSAL BED SHALL CONSIST OF A TOTAL LENGTH EQUAL TO Q/75 = 3450/75 = 46m
- TOTAL LENGTH USED = 52.32m
- SAND FILL SHALL EXTEND 1.0m ON ALL SIDES.
- REMOVE LAYER OF TOP SOIL TO APPROXIMATE FOOT PRINT OF SEPTIC BED AND SIDE SLOPES
- THE PRESSURIZED DISTRIBUTION SYSTEM SHALL HAVE A PRESSURE HEAD OF NOT LESS THAN 600mm WHEN MEASURED AT THE MOST DISTANT POINT FROM THE PUMP.
- DISPERSAL BED SHALL BE BACKFILLED SO AS TO ENSURE THAT THE SURFACE WILL NOT FORM ANY DEPRESSIONS
- ALL SIDE SLOPES SHALL BE AT 1:4
- AT NO POINT DURING OR AFTER CONSTRUCTION SHALL A WHEELED VEHICLE DRIVE OVER THE SEPTIC BED AREA.
- EACH RUN SHALL CONSIST OF ONLY FULL CHAMBERS.
- SEPTIC DESIGN BASED ON ADS BIO3 CHAMBERS.
- EACH RUN SHALL CONSIST OF 6 FULL ADS BIO3 CHAMBERS WITH A TOTAL OF 24 FULL BIO3 CHAMBERS FOR THE ENTIRE SEPTIC BED.

MINIMUM CLEARANCE DISTANCE FROM LEACHING BED

- 4.0m FROM ANY PROPERTY LINE
- 6.0m FROM ANY STRUCTURE
- 16.0m FROM ANY DRILLED WELL

MINIMUM CLEARANCE DISTANCE FROM TANKS

- 3.0m FROM ANY PROPERTY LINE
- 1.5m FROM ANY STRUCTURE
- 15.0m FROM ANY DRILLED WELL

GENERAL

- THE BACKWASH WATERS FROM ANY HOUSEHOLD TREATMENT SUCH AS WATER SOFTENER SHALL NOT DISCHARGE INTO THE SEWAGE SYSTEM
- CONTRACTOR SHALL BE QUALIFIED AND REGISTERED UNDER PART 8 OF THE ONTARIO BUILDING CODE.
- CONTRACTOR SHALL VISIT THE SITE AND REVIEW ALL DOCUMENTATION TO DETERMINE SUITABLE METHODS OF CONSTRUCTION.
- INSPECTION BY THE REGULATING AUTHORITIES IS A REQUIREMENT BY SOME REGULATING AUTHORITIES AND IS STRONGLY RECOMMENDED BY GREEN VALLEY ENVIRONMENTAL INC.
- IT IS RECOMMENDED THAT ALL TREES WITHIN 5m OF THE BED AREA BE REMOVED TO PREVENT ROOTS FROM INFILTRATING THE SYSTEM.
- THE CONTRACTOR SHALL BE RESPONSIBLE TO LOCATE AND PROTECT ALL EXISTING UNDERGROUND SERVICES.
- SHOULD THE CONTRACTOR AT ANY TIME DURING CONSTRUCTION ENCOUNTER CONDITIONS THAT DIFFER FROM THE DESIGN CRITERIA IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO NOTIFY THE DESIGNER AND THE REGULATING AUTHORITY.
- GREEN VALLEY ENVIRONMENTAL INC. HAS PROVIDED DESIGNS BASED ON OUR INTERPRETATION OF THE ONTARIO BUILDING CODE AND THE TEST HOLES DUG ON THE PROPERTY.

Drawn by: DP	Designed by: DP	Checked by: WS

Rev.	Description	Date	Approved

Township	Plan#	Lot	Sublot	Con	
					Drwg. No.: 157261-22

County	Civic Address: 5969 OTTAWA ST	Date: 13/07/23	Scale: NTS

GREEN VALLEY ENVIRONMENTAL

On-Site Sewage Treatment Plan for the Residence of:

AL ROBERTS

ATTACHMENT III

Laboratory Certificate of Analysis - Water

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Devin Clouthier

Client PO:
Project: 210341
Custody: 14477

Report Date: 23-Jul-2021
Order Date: 20-Jul-2021

Order #: 2130209

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2130209-01	SA-1

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 23-Jul-2021

Order Date: 20-Jul-2021

Project Description: 210341

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total to pH 4.5	EPA 310.1 - Titration to pH 4.5	22-Jul-21	22-Jul-21
Ammonia, as N	EPA 351.2 - Auto Colour	21-Jul-21	21-Jul-21
Anions	EPA 300.1 - IC	21-Jul-21	21-Jul-21
Colour	SM2120 - Spectrophotometric	21-Jul-21	21-Jul-21
Conductivity	EPA 9050A- probe @25 °C	22-Jul-21	22-Jul-21
Dissolved Organic Carbon	MOE E3247B - Combustion IR, filtration	22-Jul-21	22-Jul-21
E. coli	MOE E3407	21-Jul-21	22-Jul-21
Fecal Coliform	SM 9222D	21-Jul-21	22-Jul-21
Heterotrophic Plate Count	SM 9215C	20-Jul-21	22-Jul-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	21-Jul-21	21-Jul-21
pH	EPA 150.1 - pH probe @25 °C	22-Jul-21	22-Jul-21
Phenolics	EPA 420.2 - Auto Colour, 4AAP	21-Jul-21	21-Jul-21
Hardness	Hardness as CaCO3	21-Jul-21	21-Jul-21
Sulphide	SM 4500SE - Colourimetric	21-Jul-21	21-Jul-21
Tannin/Lignin	SM 5550B - Colourimetric	22-Jul-21	22-Jul-21
Total Coliform	MOE E3407	21-Jul-21	22-Jul-21
Total Dissolved Solids	SM 2540C - gravimetric, filtration	22-Jul-21	22-Jul-21
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	21-Jul-21	22-Jul-21
Turbidity	SM 2130B - Turbidity meter	21-Jul-21	21-Jul-21

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 23-Jul-2021

Order Date: 20-Jul-2021

Project Description: 210341

	Client ID:	SA-1	-	-	-
	Sample Date:	20-Jul-21 12:30	-	-	-
	Sample ID:	2130209-01	-	-	-
	MDL/Units	Drinking Water	-	-	-
Microbiological Parameters					
E. coli	1 CFU/100 mL	ND	-	-	-
Fecal Coliforms	1 CFU/100 mL	ND	-	-	-
Total Coliforms	1 CFU/100 mL	13	-	-	-
Heterotrophic Plate Count	10 CFU/mL	190	-	-	-
General Inorganics					
Alkalinity, total	5 mg/L	274	-	-	-
Ammonia as N	0.01 mg/L	0.13	-	-	-
Dissolved Organic Carbon	0.5 mg/L	0.7	-	-	-
Colour	2 TCU	25	-	-	-
Conductivity	5 uS/cm	1560	-	-	-
Hardness	mg/L	532	-	-	-
pH	0.1 pH Units	7.7	-	-	-
Phenolics	0.001 mg/L	<0.001	-	-	-
Total Dissolved Solids	10 mg/L	874	-	-	-
Sulphide	0.02 mg/L	<0.02	-	-	-
Tannin & Lignin	0.1 mg/L	<0.1	-	-	-
Total Kjeldahl Nitrogen	0.1 mg/L	0.2	-	-	-
Turbidity	0.1 NTU	7.9	-	-	-
Anions					
Chloride	1 mg/L	267	-	-	-
Fluoride	0.1 mg/L	0.3	-	-	-
Nitrate as N	0.1 mg/L	<0.1	-	-	-
Nitrite as N	0.05 mg/L	<0.05	-	-	-
Sulphate	1 mg/L	99	-	-	-
Metals					
Calcium	0.1 mg/L	126	-	-	-
Iron	0.1 mg/L	0.7	-	-	-
Magnesium	0.2 mg/L	52.7	-	-	-
Manganese	0.005 mg/L	0.018	-	-	-
Potassium	0.1 mg/L	9.1	-	-	-
Sodium	0.2 mg/L	115	-	-	-

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 23-Jul-2021

Order Date: 20-Jul-2021

Project Description: 210341

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Sulphate	ND	1	mg/L						
General Inorganics									
Alkalinity, total	ND	5	mg/L						
Ammonia as N	ND	0.01	mg/L						
Dissolved Organic Carbon	ND	0.5	mg/L						
Colour	ND	2	TCU						
Conductivity	ND	5	uS/cm						
Phenolics	ND	0.001	mg/L						
Total Dissolved Solids	ND	10	mg/L						
Sulphide	ND	0.02	mg/L						
Tannin & Lignin	ND	0.1	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
Turbidity	ND	0.1	NTU						
Metals									
Calcium	ND	0.1	mg/L						
Iron	ND	0.1	mg/L						
Magnesium	ND	0.2	mg/L						
Manganese	ND	0.005	mg/L						
Potassium	ND	0.1	mg/L						
Sodium	ND	0.2	mg/L						
Microbiological Parameters									
E. coli	ND	1	CFU/100 mL						
Fecal Coliforms	ND	1	CFU/100 mL						
Total Coliforms	ND	1	CFU/100 mL						
Heterotrophic Plate Count	ND	10	CFU/mL						

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 23-Jul-2021

Order Date: 20-Jul-2021

Project Description: 210341

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	129	1	mg/L	129			0.2	10	
Fluoride	0.74	0.1	mg/L	0.74			1.1	10	
Nitrate as N	ND	0.1	mg/L	ND			NC	10	
Nitrite as N	ND	0.05	mg/L	ND			NC	10	
Sulphate	48.8	1	mg/L	49.0			0.3	10	
General Inorganics									
Alkalinity, total	270	5	mg/L	274			1.4	14	
Ammonia as N	0.306	0.01	mg/L	0.299			2.4	17.7	
Dissolved Organic Carbon	2.0	0.5	mg/L	2.2			7.8	37	
Colour	25	2	TCU	25			0.0	12	
Conductivity	1540	5	uS/cm	1560			1.8	5	
pH	7.6	0.1	pH Units	7.7			0.1	3.3	
Phenolics	ND	0.001	mg/L	ND			NC	10	
Total Dissolved Solids	80.0	10	mg/L	74.0			7.8	10	
Sulphide	ND	0.02	mg/L	ND			NC	10	
Tannin & Lignin	ND	0.1	mg/L	ND			NC	11	
Total Kjeldahl Nitrogen	0.38	0.1	mg/L	0.40			5.4	16	
Turbidity	8.2	0.1	NTU	7.9			3.6	10	
Metals									
Calcium	9.0	0.1	mg/L	9.1			0.8	20	
Iron	ND	0.1	mg/L	ND			NC	20	
Magnesium	2.0	0.2	mg/L	2.0			0.9	20	
Manganese	ND	0.005	mg/L	ND			NC	20	
Potassium	0.7	0.1	mg/L	0.7			2.3	20	
Sodium	16.9	0.2	mg/L	17.4			2.8	20	
Microbiological Parameters									
E. coli	ND	1	CFU/100 mL	ND			NC	30	
Fecal Coliforms	4	1	CFU/100 mL	6			40.0	30	BAC04
Total Coliforms	ND	1	CFU/100 mL	ND			NC	30	
Heterotrophic Plate Count	ND	10	CFU/mL	ND			NC	30	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	139	1	mg/L	129	95.5	77-123			
Fluoride	1.63	0.1	mg/L	0.74	88.2	79-121			
Nitrate as N	1.02	0.1	mg/L	ND	102	79-120			
Nitrite as N	1.01	0.05	mg/L	ND	101	84-117			
Sulphate	58.0	1	mg/L	49.0	89.9	74-126			
General Inorganics									
Ammonia as N	0.541	0.01	mg/L	0.299	96.8	81-124			
Dissolved Organic Carbon	11.9	0.5	mg/L	2.2	96.6	60-133			
Phenolics	0.027	0.001	mg/L	ND	107	69-132			
Total Dissolved Solids	94.0	10	mg/L	ND	94.0	75-125			
Sulphide	0.50	0.02	mg/L	ND	101	79-115			
Tannin & Lignin	1.1	0.1	mg/L	ND	105	71-113			
Total Kjeldahl Nitrogen	2.39	0.1	mg/L	0.40	99.1	81-126			
Metals									
Calcium	18700	0.1	mg/L	9100	96.3	80-120			
Iron	2560	0.1	mg/L	17.9	102	80-120			
Magnesium	11400	0.2	mg/L	2050	93.4	80-120			
Manganese	53.6	0.005	mg/L	2.37	102	80-120			
Potassium	10600	0.1	mg/L	740	98.2	80-120			
Sodium	25100	0.2	mg/L	17100	80.3	80-120			

Qualifier Notes:

Login Qualifiers :

Sample - Filtered and preserved by Paracel upon receipt at the laboratory - Metals preserved in the lab

Applies to samples: SA-1

Sample Qualifiers :

QC Qualifiers :

BAC04 : Duplicate QC data falls within method prescribed 95% confidence limits.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

PARACEL LABORATORIES LTD

Paracel ID: 2130209

Paracel Order Number	Chain Of Custody Ontario Drinking Water Samples
2130209	№ 14477

Client Name:	LRL Associates	Project Ref:	210341	Waterworks Name:	Samples Taken By:
Contact Name:	Devin Clouthier	Quote #:		Waterworks Number:	Name: Devin Clouthier
Address:	5430 Canotek Rd. Ottawa, ON	PO #:		Address:	Signature:
After Hours Contact:	" "	E-mail:	dclouthier@lrl.ca awedd@lrl.ca		Page 1 of 1
Telephone:	613-842-3434	Fax:		Public Health Unit:	Turn Around Time Required: ☐ 1 day ☐ 2 day ☐ 3 day ☒ 4 day

Samples Submitted Under: (Indicate **ONLY** one)
☐ ON REG 170/03 ☐ ON REG 319/08 ☒ Private Well
☐ ON REG 243/07 ☐ Other

Have LSN forms been submitted to MOE/MOHLTC?: ☐ Yes ☒ No ☐ N/A

Are these samples for human consumption?: ☒ Yes ☐ No

All information must be completed before samples will be processed.

Sample Type: R = Raw ; T = Treated ; D = Distribution; P = Plumbing
Source Type: G = Ground Water; S = Surface Water
Reportable: Requires AWQI reporting as per Regulation - Y = Yes; N = No

	LOCATION NAME	SAMPLE ID	Sample Type: R/T/D/P	Source Type: G / S	Reportable: Y / N	Resample	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	# of Containers	Free/Combined Chlorine Residual mg/L	Standing / Flushed: S / F (REG 243)	Required Analyses: Total Coliform/E. Coli	HPC	Lead	THM	Subdivision Package			
1		SA-1	R	G	N		July 20/21	12:30	8							X			
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Comments: Metals bottle was not filtered, bottle was rinsed 3x before putting sample in it.

Method of Delivery: DNP Box

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Devin Clouthier	Date/Time:	Date/Time: 20 Jul 2021 1425	Date/Time: JULY 20, 2021 15:01
Date/Time: July 20/21 2pm	Temperature: °C	Temperature: 10.8 °C	pH Verified: ☑ By: BS

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Abdul Kader Alhaj

Client PO:
Project: 210341
Custody: 15679

Report Date: 17-Aug-2021
Order Date: 11-Aug-2021

Order #: 2133418

This Certificate of Analysis contains analytical data applicable to the following samples as submitted:

Paracel ID	Client ID
2133418-01	5969 Ottawa St. - Supply well 3 hr
2133418-02	5969 Ottawa St. - Supply well 6 hr

Approved By:

Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 17-Aug-2021

Order Date: 11-Aug-2021

Project Description: 210341

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total to pH 4.5	EPA 310.1 - Titration to pH 4.5	12-Aug-21	12-Aug-21
Ammonia, as N	EPA 351.2 - Auto Colour	13-Aug-21	13-Aug-21
Anions	EPA 300.1 - IC	12-Aug-21	12-Aug-21
Colour	SM2120 - Spectrophotometric	12-Aug-21	12-Aug-21
Conductivity	EPA 9050A- probe @25 °C	12-Aug-21	12-Aug-21
Dissolved Organic Carbon	MOE E3247B - Combustion IR, filtration	12-Aug-21	12-Aug-21
E. coli	MOE E3407	12-Aug-21	13-Aug-21
Fecal Coliform	SM 9222D	12-Aug-21	13-Aug-21
Heterotrophic Plate Count	SM 9215C	12-Aug-21	12-Aug-21
Metals, ICP-MS	EPA 200.8 - ICP-MS	12-Aug-21	12-Aug-21
pH	EPA 150.1 - pH probe @25 °C	12-Aug-21	12-Aug-21
Phenolics	EPA 420.2 - Auto Colour, 4AAP	12-Aug-21	12-Aug-21
Hardness	Hardness as CaCO3	12-Aug-21	12-Aug-21
Sulphide	SM 4500SE - Colourimetric	17-Aug-21	17-Aug-21
Tannin/Lignin	SM 5550B - Colourimetric	13-Aug-21	13-Aug-21
Total Coliform	MOE E3407	12-Aug-21	13-Aug-21
Total Dissolved Solids	SM 2540C - gravimetric, filtration	13-Aug-21	16-Aug-21
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	12-Aug-21	12-Aug-21
Turbidity	SM 2130B - Turbidity meter	12-Aug-21	12-Aug-21

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 17-Aug-2021

Order Date: 11-Aug-2021

Project Description: 210341

	Client ID:	5969 Ottawa St. - Supply well 3 hr	5969 Ottawa St. - Supply well 6 hr	-	-
	Sample Date:	11-Aug-21 11:10	11-Aug-21 14:10	-	-
	Sample ID:	2133418-01	2133418-02	-	-
	MDL/Units	Drinking Water	Drinking Water	-	-
Microbiological Parameters					
E. coli	1 CFU/100 mL	ND	ND	-	-
Fecal Coliforms	1 CFU/100 mL	ND	ND	-	-
Total Coliforms	1 CFU/100 mL	ND	ND	-	-
Heterotrophic Plate Count	10 CFU/mL	280	120	-	-
General Inorganics					
Alkalinity, total	5 mg/L	269	269	-	-
Ammonia as N	0.01 mg/L	0.12	0.12	-	-
Dissolved Organic Carbon	0.5 mg/L	1.8	1.9	-	-
Colour	2 TCU	21	30	-	-
Conductivity	5 uS/cm	1550	1530	-	-
Hardness	mg/L	514	509	-	-
pH	0.1 pH Units	7.8	7.8	-	-
Phenolics	0.001 mg/L	0.001	0.001	-	-
Total Dissolved Solids	10 mg/L	796	814	-	-
Sulphide	0.02 mg/L	<0.02	<0.02	-	-
Tannin & Lignin	0.1 mg/L	<0.1	<0.1	-	-
Total Kjeldahl Nitrogen	0.1 mg/L	0.2	0.1	-	-
Turbidity	0.1 NTU	5.2	4.9	-	-
Anions					
Chloride	1 mg/L	266	264	-	-
Fluoride	0.1 mg/L	0.4	0.4	-	-
Nitrate as N	0.1 mg/L	<0.1	<0.1	-	-
Nitrite as N	0.05 mg/L	<0.05	<0.05	-	-
Sulphate	1 mg/L	82	82	-	-
Metals					
Calcium	0.1 mg/L	125	124	-	-
Iron	0.1 mg/L	0.5	0.5	-	-
Magnesium	0.2 mg/L	49.4	48.4	-	-
Manganese	0.005 mg/L	0.016	0.016	-	-
Potassium	0.1 mg/L	8.5	8.1	-	-
Sodium	0.2 mg/L	114	111	-	-

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 17-Aug-2021

Order Date: 11-Aug-2021

Project Description: 210341

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Sulphate	ND	1	mg/L						
General Inorganics									
Alkalinity, total	ND	5	mg/L						
Ammonia as N	ND	0.01	mg/L						
Dissolved Organic Carbon	ND	0.5	mg/L						
Colour	ND	2	TCU						
Conductivity	ND	5	uS/cm						
Phenolics	ND	0.001	mg/L						
Total Dissolved Solids	ND	10	mg/L						
Sulphide	ND	0.02	mg/L						
Tannin & Lignin	ND	0.1	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
Turbidity	ND	0.1	NTU						
Metals									
Calcium	ND	0.1	mg/L						
Iron	ND	0.1	mg/L						
Magnesium	ND	0.2	mg/L						
Manganese	ND	0.005	mg/L						
Potassium	ND	0.1	mg/L						
Sodium	ND	0.2	mg/L						
Microbiological Parameters									
E. coli	ND	1	CFU/100 mL						
Fecal Coliforms	ND	1	CFU/100 mL						
Total Coliforms	ND	1	CFU/100 mL						
Heterotrophic Plate Count	ND	10	CFU/mL						

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 17-Aug-2021

Order Date: 11-Aug-2021

Project Description: 210341

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	264	5	mg/L	266			0.7	10	
Fluoride	0.35	0.1	mg/L	0.36			3.0	10	
Nitrate as N	ND	0.1	mg/L	ND			NC	10	
Nitrite as N	ND	0.05	mg/L	ND			NC	10	
Sulphate	83.9	1	mg/L	82.4			1.8	10	
General Inorganics									
Alkalinity, total	263	5	mg/L	269			2.3	14	
Ammonia as N	0.267	0.01	mg/L	0.267			0.0	17.7	
Dissolved Organic Carbon	1.9	0.5	mg/L	2.2			16.8	37	
Colour	20	2	TCU	21			4.9	12	
Conductivity	1530	5	uS/cm	1550			1.4	5	
pH	7.7	0.1	pH Units	7.8			0.1	3.3	
Phenolics	0.001	0.001	mg/L	0.001			8.0	10	
Total Dissolved Solids	62.0	10	mg/L	62.0			0.0	10	
Sulphide	ND	0.02	mg/L	ND			NC	10	
Tannin & Lignin	ND	0.1	mg/L	ND			NC	11	
Total Kjeldahl Nitrogen	ND	0.1	mg/L	0.20			NC	16	
Turbidity	5.3	0.1	NTU	5.2			2.1	10	
Metals									
Calcium	29.8	0.1	mg/L	30.0			0.7	20	
Iron	ND	0.1	mg/L	ND			NC	20	
Magnesium	7.9	0.2	mg/L	8.2			3.3	20	
Manganese	ND	0.005	mg/L	ND			NC	20	
Potassium	0.3	0.1	mg/L	0.3			2.7	20	
Sodium	11.8	0.2	mg/L	11.7			0.6	20	
Microbiological Parameters									
E. coli	ND	1	CFU/100 mL	ND			NC	30	
Fecal Coliforms	ND	1	CFU/100 mL	ND			NC	30	
Total Coliforms	ND	1	CFU/100 mL	ND			NC	30	

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	8.70	1	mg/L	ND	87.0	85-115			
Fluoride	1.27	0.1	mg/L	0.36	90.8	79-121			
Nitrate as N	1.03	0.1	mg/L	ND	103	79-120			
Nitrite as N	0.993	0.05	mg/L	ND	99.3	84-117			
Sulphate	90.6	1	mg/L	82.4	81.3	74-126			
General Inorganics									
Ammonia as N	0.522	0.01	mg/L	0.267	102	81-124			
Dissolved Organic Carbon	13.4	0.5	mg/L	2.2	112	60-133			
Phenolics	0.025	0.001	mg/L	0.001	96.5	69-132			
Total Dissolved Solids	94.0	10	mg/L	ND	94.0	75-125			
Sulphide	0.51	0.02	mg/L	ND	101	79-115			
Tannin & Lignin	1.1	0.1	mg/L	ND	106	71-113			
Total Kjeldahl Nitrogen	2.04	0.1	mg/L	0.20	92.1	81-126			
Metals									
Calcium	37600	0.1	mg/L	30000	76.1	80-120			QM-07
Iron	2350	0.1	mg/L	6.4	93.8	80-120			
Magnesium	16800	0.2	mg/L	8200	86.1	80-120			
Manganese	49.0	0.005	mg/L	0.448	97.1	80-120			
Potassium	9590	0.1	mg/L	307	92.9	80-120			
Sodium	20500	0.2	mg/L	11700	87.6	80-120			

Qualifier Notes:

Sample Qualifiers :

QC Qualifiers :

QM-07 : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

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Paracel ID: 2133418

Chain Of Custody
Ontario Drinking Water Samples

№ 15679

Client Name:	LRL Engineering	Project Ref:	210341	Waterworks Name:	Samples Taken By:
Contact Name:	Abdul Kader Alhaj	Quote #:		Waterworks Number:	Name: Abdul Kader Alhaj
Address:	5430 Canotek Rd.	PO #:		Address:	Signature:
After Hours Contact:		E-mail:	akader@lrl.ca awood@lrl.ca		Page 1 of 1
Telephone:	819 328 2592	Fax:		Public Health Unit:	Turn Around Time Required: Regular ☐ 1 day ☐ 2 day ☐ 3 day ☐ 4 day

Samples Submitted Under: (Indicate **ONLY** one)
☐ ON REG 170/03 ☐ ON REG 319/08 ☑ Private Well
☐ ON REG 243/07 ☐ Other

Have LSN forms been submitted to MOE/MOHLTC?: ☐ Yes ☐ No ☐ N/A

Are these samples for human consumption?: ☐ Yes ☐ No

All information must be completed before samples will be processed.

Sample Type: R = Raw ; T = Treated ; D = Distribution; P = Plumbing
Source Type: G = Ground Water; S = Surface Water
Reportable: Requires AWQI reporting as per Regulation - Y = Yes; N = No

	LOCATION NAME	SAMPLE ID	Sample Type: R/T/D/P	Source Type: G / S	Reportable: Y / N	Resample	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	# of Containers	Free/Combined Chlorine Residual mg/L	Standing / Flushed: S / F (REG 243)	Required Analyses: Total Coliform/E. Coli	HPC	Lead	THM	Subdivision			
1	5969 Ottawa Street	5969 Ottawa St. - Supply well 3hr	R	G	N		Aug. 11. 2021	11:10 am	8							X			
2	5969 Ottawa Street.	5969 Ottawa St. - Supply well 6hr	↓	↓	↓		Aug. 11. 2021	2:10 p.m	↓							X			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Comments:

Method of Delivery: Drop Box

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: Ottawa Dorval	Verified By:
Relinquished By (Print): Abdul Kader Alhaj	Date/Time:	Date/Time: AUG 11 2021 04:28	Date/Time: Aug 11 2021 9:42
Date/Time: 11.08.2021, 4:10 p.m	Temperature: °C	Temperature: 14.9 °C	pH Verified: ☑ By:

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Abdul Kader Alhaj

Client PO:
Project: 210341
Custody: 18578

Report Date: 25-Jan-2023
Order Date: 24-Jan-2023

Order #: 2304200

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Paracel ID	Client ID
2304200-01	Supply Well - 4hr

Approved By: Mark Foto

Mark Foto, M.Sc.
Lab Supervisor

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 25-Jan-2023

Order Date: 24-Jan-2023

Project Description: 210341

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Colour	SM2120 - Spectrophotometric	25-Jan-23	25-Jan-23
Turbidity	SM 2130B - Turbidity meter	25-Jan-23	25-Jan-23

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 25-Jan-2023

Order Date: 24-Jan-2023

Project Description: 210341

	Client ID:	Supply Well - 4hr	-	-	-
	Sample Date:	24-Jan-23 12:05	-	-	-
	Sample ID:	2304200-01	-	-	-
	MDL/Units	Drinking Water	-	-	-
General Inorganics					
Colour	2 TCU	<2	-	-	-
Turbidity	0.1 NTU	6.4	-	-	-

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 25-Jan-2023

Order Date: 24-Jan-2023

Project Description: 210341

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Colour	ND	2	TCU						
Turbidity	ND	0.1	NTU						

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 25-Jan-2023

Order Date: 24-Jan-2023

Project Description: 210341

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
General Inorganics									
Colour	ND	2	TCU	ND			NC	12	
Turbidity	6.5	0.1	NTU	6.4			1.5	10	

Qualifier Notes:

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

PARACE LABORATORIES

Paracel ID: 2304200

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Paracel Order Number	Chain Of Custody Ontario Drinking Water Samples
2304185 - rg. 2304200 - Rush	№ 18578

Client Name:	LRL Associates	Project Ref:	210341	Waterworks Name:	Samples Taken By:
Contact Name:	Abdul Kader	Quote #:		Waterworks Number:	Name: Abdul Kader
Address:	5430 Canotek Rd	PO #:		Address:	Signature:
After Hours Contact:		E-mail:	akader@lrl.ca		Page 1 of 1
Telephone:	6133156602	Fax:		Public Health Unit:	Turn Around Time Required: ☒ 1 day ☐ 2 day ☐ 3 day ☒ 4 day

Samples Submitted Under: (indicate ONLY one)
☐ ON REG 170/03 ☐ ON REG 319/08 ☐ Private Well
☐ ON REG 243/07 ☐ Other ODWS

Sample Type: R = Raw ; T = Treated ; D = Distribution; P = Plumbing
Source Type: G = Ground Water; S = Surface Water
Reportable: Requires AWQI reporting as per Regulation - Y = Yes; N = No

Have LSN forms been submitted to MOE/MOHLTC?: ☐ Yes ☐ No ☐ N/A
Are these samples for human consumption?: ☐ Yes ☐ No
All information must be completed before samples will be processed.

	LOCATION NAME	SAMPLE ID	Sample Type: R/T/D/P	Source Type: G/S	Reportable: Y/N	Resample	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	# of Containers	Free/Combined Chlorine Residual mg/L	Standing / Flushed: S / F (REG 243)	Required Analyses: Total Coliform/E. Coli	HPC	Lead	THM	X Subdivision Package
1	5969 Ottawa Street	Supply well - 4hr	R	G	N		2023.01.24	12:05	10							X
2																
3																
4																
5																
6																
7																
8																
9																
10																

Comments: Rush the colour & Turbidity results (report as available).

Method of Delivery: Walk in

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab:	Verified By: Sandra Demaine
Relinquished By (Print): Abdul Kader	Date/Time:	Date/Time: 2023.1.24 2:44pm	Date/Time: Jan 24 3:13
Date/Time: 2023.01.24 / 2:40	Temperature: °C	Temperature: 10.9 °C	pH Verified: ☐ By: Sandra

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Abdul Kader Alhaj

Client PO:
Project: 210341
Custody: 18578

Report Date: 30-Jan-2023
Order Date: 24-Jan-2023

Order #: 2304185

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Paracel ID	Client ID
2304185-01	Supply Well - 4hr

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 30-Jan-2023
Order Date: 24-Jan-2023
Project Description: 210341

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total to pH 4.5	EPA 310.1 - Titration to pH 4.5	25-Jan-23	25-Jan-23
Ammonia, as N	EPA 351.2 - Auto Colour	27-Jan-23	27-Jan-23
Anions	EPA 300.1 - IC	25-Jan-23	25-Jan-23
Conductivity	EPA 9050A- probe @25 °C	25-Jan-23	25-Jan-23
Dissolved Organic Carbon	MOE E3247B - Combustion IR, filtration	25-Jan-23	25-Jan-23
E. coli	MOE E3407	25-Jan-23	25-Jan-23
Fecal Coliform	SM 9222D	25-Jan-23	25-Jan-23
Heterotrophic Plate Count	SM 9215C	25-Jan-23	25-Jan-23
Metals, ICP-MS	EPA 200.8 - ICP-MS	25-Jan-23	25-Jan-23
pH	EPA 150.1 - pH probe @25 °C	25-Jan-23	25-Jan-23
Phenolics	EPA 420.2 - Auto Colour, 4AAP	25-Jan-23	25-Jan-23
Hardness	Hardness as CaCO3	25-Jan-23	25-Jan-23
Sulphide	SM 4500SE - Colourimetric	26-Jan-23	26-Jan-23
Tannin/Lignin	SM 5550B - Colourimetric	30-Jan-23	30-Jan-23
Total Coliform	MOE E3407	25-Jan-23	25-Jan-23
Total Dissolved Solids	SM 2540C - gravimetric, filtration	26-Jan-23	27-Jan-23
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	27-Jan-23	30-Jan-23

PARACEL LABORATORIES LTD.

Order #: 2304185

Certificate of Analysis

Client: **LRL Associates Ltd.**

Client PO:

Report Date: 30-Jan-2023

Order Date: 24-Jan-2023

Project Description: 210341

	Client ID:	Supply Well - 4hr	-	-	-
	Sample Date:	24-Jan-23 12:05	-	-	-
	Sample ID:	2304185-01	-	-	-
	MDL/Units	Drinking Water	-	-	-
Microbiological Parameters					
E. coli	1 CFU/100mL	ND	-	-	-
Fecal Coliforms	1 CFU/100mL	ND	-	-	-
Total Coliforms	1 CFU/100mL	ND	-	-	-
Heterotrophic Plate Count	10 CFU/mL	<10	-	-	-
General Inorganics					
Alkalinity, total	5 mg/L	268	-	-	-
Ammonia as N	0.01 mg/L	0.13	-	-	-
Dissolved Organic Carbon	0.5 mg/L	5.7	-	-	-
Conductivity	5 uS/cm	1680	-	-	-
Hardness	mg/L	549	-	-	-
pH	0.1 pH Units	7.7	-	-	-
Phenolics	0.001 mg/L	<0.001	-	-	-
Total Dissolved Solids	10 mg/L	898	-	-	-
Sulphide	0.02 mg/L	<0.02	-	-	-
Tannin & Lignin	0.1 mg/L	<0.1	-	-	-
Total Kjeldahl Nitrogen	0.1 mg/L	0.2	-	-	-
Anions					
Chloride	1 mg/L	298	-	-	-
Fluoride	0.1 mg/L	0.3	-	-	-
Nitrate as N	0.1 mg/L	<0.1	-	-	-
Nitrite as N	0.05 mg/L	<0.05	-	-	-
Sulphate	1 mg/L	77	-	-	-
Metals					
Calcium	0.1 mg/L	136	-	-	-
Iron	0.1 mg/L	0.6	-	-	-
Magnesium	0.2 mg/L	50.8	-	-	-
Manganese	0.005 mg/L	0.016	-	-	-
Potassium	0.1 mg/L	8.1	-	-	-
Sodium	0.2 mg/L	120	-	-	-

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 30-Jan-2023
Order Date: 24-Jan-2023
Project Description: 210341

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Sulphate	ND	1	mg/L						
General Inorganics									
Alkalinity, total	ND	5	mg/L						
Ammonia as N	ND	0.01	mg/L						
Dissolved Organic Carbon	ND	0.5	mg/L						
Conductivity	ND	5	uS/cm						
Phenolics	ND	0.001	mg/L						
Total Dissolved Solids	ND	10	mg/L						
Sulphide	ND	0.02	mg/L						
Tannin & Lignin	ND	0.1	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
Metals									
Calcium	ND	0.1	mg/L						
Iron	ND	0.1	mg/L						
Magnesium	ND	0.2	mg/L						
Manganese	ND	0.005	mg/L						
Potassium	ND	0.1	mg/L						
Sodium	ND	0.2	mg/L						
Microbiological Parameters									
E. coli	ND	1	CFU/100mL						
Fecal Coliforms	ND	1	CFU/100mL						
Total Coliforms	ND	1	CFU/100mL						
Heterotrophic Plate Count	ND	10	CFU/mL						

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 30-Jan-2023
Order Date: 24-Jan-2023
Project Description: 210341

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	298	1	mg/L	298			0.1	20	
Fluoride	0.26	0.1	mg/L	0.27			4.2	20	
Nitrate as N	ND	0.1	mg/L	ND			NC	20	
Nitrite as N	ND	0.05	mg/L	ND			NC	20	
Sulphate	76.9	1	mg/L	76.9			0.0	20	
General Inorganics									
Alkalinity, total	265	5	mg/L	268			1.4	14	
Ammonia as N	0.031	0.01	mg/L	ND			NC	17.7	
Dissolved Organic Carbon	4.6	0.5	mg/L	5.7			21.1	37	
Conductivity	1660	5	uS/cm	1680			1.3	5	
pH	7.8	0.1	pH Units	7.7			0.9	3.3	
Phenolics	ND	0.001	mg/L	ND			NC	10	
Total Dissolved Solids	ND	10	mg/L	ND			NC	10	
Sulphide	ND	0.02	mg/L	ND			NC	10	
Tannin & Lignin	ND	0.1	mg/L	ND			NC	11	
Total Kjeldahl Nitrogen	0.19	0.1	mg/L	0.22			NC	16	
Metals									
Calcium	9.5	0.1	mg/L	9.7			1.7	20	
Iron	0.4	0.1	mg/L	0.4			0.5	20	
Magnesium	2.2	0.2	mg/L	2.3			5.8	20	
Manganese	ND	0.005	mg/L	ND			NC	20	
Potassium	0.6	0.1	mg/L	0.6			1.8	20	
Sodium	17.4	0.2	mg/L	18.3			5.1	20	
Microbiological Parameters									
E. coli	ND	1	CFU/100mL	ND			NC	30	
Fecal Coliforms	ND	1	CFU/100mL	ND			NC	30	
Total Coliforms	ND	1	CFU/100mL	ND			NC	30	
Heterotrophic Plate Count	ND	10	CFU/mL	ND			NC	30	

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 30-Jan-2023
Order Date: 24-Jan-2023
Project Description: 210341

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	307	1	mg/L	298	89.3	70-124			
Fluoride	1.24	0.1	mg/L	0.27	96.6	70-130			
Nitrate as N	1.00	0.1	mg/L	ND	100	77-126			
Nitrite as N	0.936	0.05	mg/L	ND	93.6	82-115			
Sulphate	86.1	1	mg/L	76.9	91.9	70-130			
General Inorganics									
Ammonia as N	1.04	0.01	mg/L	ND	104	81-124			
Dissolved Organic Carbon	7.9	0.5	mg/L	ND	79.0	60-133			
Phenolics	0.026	0.001	mg/L	ND	105	67-133			
Total Dissolved Solids	92.0	10	mg/L	ND	92.0	75-125			
Sulphide	0.51	0.02	mg/L	ND	102	79-115			
Tannin & Lignin	1.0	0.1	mg/L	ND	97.3	71-113			
Total Kjeldahl Nitrogen	1.20	0.1	mg/L	0.22	97.5	81-126			
Metals									
Calcium	17700	0.1	mg/L	9660	80.7	80-120			
Iron	2440	0.1	mg/L	416	81.1	80-120			
Magnesium	11100	0.2	mg/L	2290	88.4	80-120			
Manganese	49.5	0.005	mg/L	3.75	91.5	80-120			
Potassium	9090	0.1	mg/L	647	84.4	80-120			
Sodium	24900	0.2	mg/L	18300	66.0	80-120			QM-07

Qualifier Notes:

Sample Qualifiers :

QC Qualifiers :

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

PARACE LABORATORIES I

Paracel ID: 2304185

Paracel Order Number	Chain Of Custody
2304185 - Reg. 2304200 - Rush	Ontario Drinking Water Samples № 18578

Client Name:	LRL Associates	Project Ref:	21034	Waterworks Name:	Samples Taken By:
Contact Name:	Abdul Kader	Quote #:		Waterworks Number:	Name: Abdul Kader
Address:	5430 Canotek Rd	PO #:		Address:	Signature:
After Hours Contact:		E-mail:	akader@lrla		Page 1 of 1
Telephone:	6133156602	Fax:		Public Health Unit:	Turn Around Time Required: ☒ 1 day ☐ 2 day ☐ 3 day ☒ 4 day

Samples Submitted Under: (Indicate **ONLY** one)
☐ ON REG 170/03 ☐ ON REG 319/08 ☐ Private Well
☐ ON REG 243/07 ☐ Other ODWS

Have LSN forms been submitted to MOE/MOHLTC?: ☐ Yes ☐ No ☐ N/A

Are these samples for human consumption?: ☐ Yes ☐ No

All information must be completed before samples will be processed.

Sample Type: R = Raw ; T = Treated ; D = Distribution; P = Plumbing
Source Type: G = Ground Water; S = Surface Water
Reportable: Requires AWQI reporting as per Regulation - Y = Yes; N = No

	LOCATION NAME	SAMPLE ID	Sample Type: R/T/D/P	Source Type: G / S	Reportable: Y / N	Resample	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	# of Containers	Free/Combined Chlorine Residual mg/L	Standing / Flushed: S / F (REG 243)	Required Analyses: Total Coliform/E. Coli	HPC	Lead	THM	Subdivision Package
1	5969 Ottawa Street	Supply well - 4hr	R	G	N		2023.01.24	12:05	10							X
2																
3																
4																
5																
6																
7																
8																
9																
10																

Comments: Rush the colour & Turbidity results (report as available).

Method of Delivery: Walk in

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab:
Relinquished By (Print): Abdul Kader	Date/Time:	Date/Time: 2023.1.24 2:44pm
Date/Time: 2023.01.24 / 2:40	Temperature: °C	Temperature: 10.9 °C

Verified By: Sandra Desrosiers
Date/Time: Jan 24 3:13
pH Verified: ☑ By: Sandra Desrosiers

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Abdul Kader Alhaj

Client PO:
Project: 210341
Custody: 18572

Report Date: 1-Feb-2023
Order Date: 26-Jan-2023

Order #: 2304338

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Paracel ID	Client ID
2304338-01	Supply Well - 4hrs
2304338-02	Supply Well - 8hrs

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 01-Feb-2023
Order Date: 26-Jan-2023
Project Description: 210341

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total to pH 4.5	EPA 310.1 - Titration to pH 4.5	27-Jan-23	27-Jan-23
Ammonia, as N	EPA 351.2 - Auto Colour	27-Jan-23	27-Jan-23
Anions	EPA 300.1 - IC	30-Jan-23	30-Jan-23
Colour	SM2120 - Spectrophotometric	26-Jan-23	26-Jan-23
Conductivity	EPA 9050A- probe @25 °C	27-Jan-23	27-Jan-23
Dissolved Organic Carbon	MOE E3247B - Combustion IR, filtration	30-Jan-23	30-Jan-23
E. coli	MOE E3407	26-Jan-23	26-Jan-23
Fecal Coliform	SM 9222D	26-Jan-23	26-Jan-23
Heterotrophic Plate Count	SM 9215C	26-Jan-23	26-Jan-23
Metals, ICP-MS	EPA 200.8 - ICP-MS	27-Jan-23	27-Jan-23
pH	EPA 150.1 - pH probe @25 °C	27-Jan-23	27-Jan-23
Phenolics	EPA 420.2 - Auto Colour, 4AAP	27-Jan-23	27-Jan-23
Hardness	Hardness as CaCO3	27-Jan-23	27-Jan-23
Sulphide	SM 4500SE - Colourimetric	26-Jan-23	26-Jan-23
Tannin/Lignin	SM 5550B - Colourimetric	30-Jan-23	30-Jan-23
Total Coliform	MOE E3407	26-Jan-23	26-Jan-23
Total Dissolved Solids	SM 2540C - gravimetric, filtration	26-Jan-23	27-Jan-23
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	27-Jan-23	30-Jan-23
Turbidity	SM 2130B - Turbidity meter	26-Jan-23	26-Jan-23
VOCs by P&T GC-MS	EPA 624 - P&T GC-MS	28-Jan-23	28-Jan-23

PARACEL LABORATORIES LTD.

Order #: 2304338

Certificate of Analysis

Client: **LRL Associates Ltd.**

Client PO:

Report Date: 01-Feb-2023

Order Date: 26-Jan-2023

Project Description: 210341

	Client ID:	Supply Well - 4hrs	Supply Well - 8hrs	-	-
	Sample Date:	25-Jan-23 12:05	25-Jan-23 16:00	-	-
	Sample ID:	2304338-01	2304338-02	-	-
	MDL/Units	Drinking Water	Drinking Water	-	-
Microbiological Parameters					
E. coli	1 CFU/100mL	ND	ND	-	-
Fecal Coliforms	1 CFU/100mL	ND	ND	-	-
Total Coliforms	1 CFU/100mL	ND	ND	-	-
Heterotrophic Plate Count	10 CFU/mL	<10	10	-	-
General Inorganics					
Alkalinity, total	5 mg/L	268	267	-	-
Ammonia as N	0.01 mg/L	0.15	0.13	-	-
Dissolved Organic Carbon	0.5 mg/L	8.9	8.9	-	-
Colour	2 TCU	<2	<2	-	-
Conductivity	5 uS/cm	1720	1710	-	-
Hardness	mg/L	535	524	-	-
pH	0.1 pH Units	7.9	7.9	-	-
Phenolics	0.001 mg/L	<0.001	<0.001	-	-
Total Dissolved Solids	10 mg/L	892	836	-	-
Sulphide	0.02 mg/L	<0.02	<0.02	-	-
Tannin & Lignin	0.1 mg/L	<0.1	<0.1	-	-
Total Kjeldahl Nitrogen	0.1 mg/L	0.2	0.1	-	-
Turbidity	0.1 NTU	4.1	3.8	-	-
Anions					
Chloride	1 mg/L	299	299	-	-
Fluoride	0.1 mg/L	0.2	0.3	-	-
Nitrate as N	0.1 mg/L	<0.1	<0.1	-	-
Nitrite as N	0.05 mg/L	<0.05	<0.05	-	-
Sulphate	1 mg/L	79	78	-	-
Metals					
Aluminum	0.001 mg/L	0.012	0.014	-	-
Antimony	0.0005 mg/L	<0.0005	<0.0005	-	-
Arsenic	0.001 mg/L	<0.001	<0.001	-	-
Barium	0.001 mg/L	0.140	0.136	-	-
Boron	0.01 mg/L	0.22	0.22	-	-
Cadmium	0.0001 mg/L	<0.0001	<0.0001	-	-
Calcium	0.1 mg/L	132	131	-	-
Chromium	0.001 mg/L	<0.001	<0.001	-	-
Copper	0.0005 mg/L	<0.0005	<0.0005	-	-
Iron	0.1 mg/L	0.6	0.5	-	-

Certificate of Analysis

Client: **LRL Associates Ltd.**

Client PO:

Report Date: 01-Feb-2023

Order Date: 26-Jan-2023

Project Description: 210341

	Client ID:	Supply Well - 4hrs	Supply Well - 8hrs	-	-
	Sample Date:	25-Jan-23 12:05	25-Jan-23 16:00	-	-
	Sample ID:	2304338-01	2304338-02	-	-
	MDL/Units	Drinking Water	Drinking Water	-	-
Lead	0.0001 mg/L	0.0002	<0.0001	-	-
Magnesium	0.2 mg/L	50.0	47.9	-	-
Manganese	0.005 mg/L	0.017	0.017	-	-
Potassium	0.1 mg/L	8.4	8.4	-	-
Selenium	0.001 mg/L	<0.001	<0.001	-	-
Sodium	0.2 mg/L	118	112	-	-
Uranium	0.0001 mg/L	0.0006	0.0006	-	-
Zinc	0.005 mg/L	<0.005	<0.005	-	-
Volatiles					
Acetone	0.0050 mg/L	<0.0050	<0.0050	-	-
Benzene	0.0005 mg/L	<0.0005	<0.0005	-	-
Bromodichloromethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Bromoform	0.0005 mg/L	<0.0005	<0.0005	-	-
Bromomethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Carbon Tetrachloride	0.0002 mg/L	<0.0002	<0.0002	-	-
Chlorobenzene	0.0005 mg/L	<0.0005	<0.0005	-	-
Chloroethane	0.0010 mg/L	<0.0010	<0.0010	-	-
Chloroform	0.0005 mg/L	<0.0005	<0.0005	-	-
Dibromochloromethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Dichlorodifluoromethane	0.0010 mg/L	<0.0010	<0.0010	-	-
1,2-Dibromoethane	0.0002 mg/L	<0.0002	<0.0002	-	-
1,2-Dichlorobenzene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,3-Dichlorobenzene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,4-Dichlorobenzene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1-Dichloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
1,2-Dichloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1-Dichloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
cis-1,2-Dichloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
trans-1,2-Dichloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,2-Dichloroethylene, total	0.0005 mg/L	<0.0005	<0.0005	-	-
1,2-Dichloropropane	0.0005 mg/L	<0.0005	<0.0005	-	-
cis-1,3-Dichloropropylene	0.0005 mg/L	<0.0005	<0.0005	-	-
trans-1,3-Dichloropropylene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,3-Dichloropropene, total	0.0005 mg/L	<0.0005	<0.0005	-	-
Ethylbenzene	0.0005 mg/L	<0.0005	<0.0005	-	-

Certificate of Analysis

Client: **LRL Associates Ltd.**

Client PO:

Report Date: 01-Feb-2023

Order Date: 26-Jan-2023

Project Description: 210341

	Client ID:	Supply Well - 4hrs	Supply Well - 8hrs	-	-
	Sample Date:	25-Jan-23 12:05	25-Jan-23 16:00	-	-
	Sample ID:	2304338-01	2304338-02	-	-
	MDL/Units	Drinking Water	Drinking Water	-	-
Hexane	0.0010 mg/L	<0.0010	<0.0010	-	-
Methyl Ethyl Ketone (2-Butanone)	0.0050 mg/L	<0.0050	<0.0050	-	-
Methyl Isobutyl Ketone	0.0050 mg/L	<0.0050	<0.0050	-	-
Methyl tert-butyl ether	0.0020 mg/L	<0.0020	<0.0020	-	-
Methylene Chloride	0.0050 mg/L	<0.0050	<0.0050	-	-
Styrene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1,1,2-Tetrachloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1,2,2-Tetrachloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Tetrachloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
Toluene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1,1-Trichloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1,2-Trichloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Trichloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
Trichlorofluoromethane	0.0010 mg/L	<0.0010	<0.0010	-	-
Vinyl chloride	0.0002 mg/L	<0.0002	<0.0002	-	-
m,p-Xylenes	0.0005 mg/L	<0.0005	<0.0005	-	-
o-Xylene	0.0005 mg/L	<0.0005	<0.0005	-	-
Xylenes, total	0.0005 mg/L	<0.0005	<0.0005	-	-
4-Bromofluorobenzene	Surrogate	114%	116%	-	-
Dibromofluoromethane	Surrogate	127%	127%	-	-
Toluene-d8	Surrogate	109%	109%	-	-

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 01-Feb-2023
Order Date: 26-Jan-2023
Project Description: 210341

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Sulphate	ND	1	mg/L						
General Inorganics									
Alkalinity, total	ND	5	mg/L						
Ammonia as N	ND	0.01	mg/L						
Dissolved Organic Carbon	ND	0.5	mg/L						
Colour	ND	2	TCU						
Conductivity	ND	5	uS/cm						
Phenolics	ND	0.001	mg/L						
Total Dissolved Solids	ND	10	mg/L						
Sulphide	ND	0.02	mg/L						
Tannin & Lignin	ND	0.1	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
Turbidity	ND	0.1	NTU						
Metals									
Aluminum	ND	0.001	mg/L						
Antimony	ND	0.0005	mg/L						
Arsenic	ND	0.001	mg/L						
Barium	ND	0.001	mg/L						
Boron	ND	0.01	mg/L						
Cadmium	ND	0.0001	mg/L						
Calcium	ND	0.1	mg/L						
Chromium	ND	0.001	mg/L						
Copper	ND	0.0005	mg/L						
Iron	ND	0.1	mg/L						
Lead	ND	0.0001	mg/L						
Magnesium	ND	0.2	mg/L						
Manganese	ND	0.005	mg/L						
Potassium	ND	0.1	mg/L						
Selenium	ND	0.001	mg/L						
Sodium	ND	0.2	mg/L						
Uranium	ND	0.0001	mg/L						
Zinc	ND	0.005	mg/L						
Microbiological Parameters									
E. coli	ND	1	CFU/100mL						
Fecal Coliforms	ND	1	CFU/100mL						
Total Coliforms	ND	1	CFU/100mL						
Heterotrophic Plate Count	ND	10	CFU/mL						
Volatiles									
Acetone	ND	0.0050	mg/L						
Benzene	ND	0.0005	mg/L						
Bromodichloromethane	ND	0.0005	mg/L						
Bromoform	ND	0.0005	mg/L						
Bromomethane	ND	0.0005	mg/L						
Carbon Tetrachloride	ND	0.0002	mg/L						
Chlorobenzene	ND	0.0005	mg/L						
Chloroethane	ND	0.0010	mg/L						
Chloroform	ND	0.0005	mg/L						
Dibromochloromethane	ND	0.0005	mg/L						
Dichlorodifluoromethane	ND	0.0010	mg/L						
1,2-Dibromoethane	ND	0.0002	mg/L						
1,2-Dichlorobenzene	ND	0.0005	mg/L						
1,3-Dichlorobenzene	ND	0.0005	mg/L						
1,4-Dichlorobenzene	ND	0.0005	mg/L						

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 01-Feb-2023
Order Date: 26-Jan-2023
Project Description: 210341

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,1-Dichloroethane	ND	0.0005	mg/L						
1,2-Dichloroethane	ND	0.0005	mg/L						
1,1-Dichloroethylene	ND	0.0005	mg/L						
cis-1,2-Dichloroethylene	ND	0.0005	mg/L						
trans-1,2-Dichloroethylene	ND	0.0005	mg/L						
1,2-Dichloroethylene, total	ND	0.0005	mg/L						
1,2-Dichloropropane	ND	0.0005	mg/L						
cis-1,3-Dichloropropylene	ND	0.0005	mg/L						
trans-1,3-Dichloropropylene	ND	0.0005	mg/L						
1,3-Dichloropropene, total	ND	0.0005	mg/L						
Ethylbenzene	ND	0.0005	mg/L						
Hexane	ND	0.0010	mg/L						
Methyl Ethyl Ketone (2-Butanone)	ND	0.0050	mg/L						
Methyl Isobutyl Ketone	ND	0.0050	mg/L						
Methyl tert-butyl ether	ND	0.0020	mg/L						
Methylene Chloride	ND	0.0050	mg/L						
Styrene	ND	0.0005	mg/L						
1,1,1,2-Tetrachloroethane	ND	0.0005	mg/L						
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L						
Tetrachloroethylene	ND	0.0005	mg/L						
Toluene	ND	0.0005	mg/L						
1,1,1-Trichloroethane	ND	0.0005	mg/L						
1,1,2-Trichloroethane	ND	0.0005	mg/L						
Trichloroethylene	ND	0.0005	mg/L						
Trichlorofluoromethane	ND	0.0010	mg/L						
Vinyl chloride	ND	0.0002	mg/L						
m,p-Xylenes	ND	0.0005	mg/L						
o-Xylene	ND	0.0005	mg/L						
Xylenes, total	ND	0.0005	mg/L						
Surrogate: 4-Bromofluorobenzene	*0.0918*		*mg/L*		*115*	*50-140*			
Surrogate: Dibromofluoromethane	*0.103*		*mg/L*		*129*	*50-140*			
Surrogate: Toluene-d8	*0.0870*		*mg/L*		*109*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	255	1	mg/L	255			0.0	20	
Fluoride	0.22	0.1	mg/L	0.22			1.5	20	
Nitrate as N	ND	0.1	mg/L	ND			NC	20	
Nitrite as N	ND	0.05	mg/L	ND			NC	20	
Sulphate	ND	1	mg/L	ND			NC	20	
General Inorganics									
Alkalinity, total	265	5	mg/L	268			0.9	14	
Ammonia as N	0.031	0.01	mg/L	ND			NC	17.7	
Dissolved Organic Carbon	7.7	0.5	mg/L	8.9			14.2	37	
Colour	ND	2	TCU	ND			NC	12	
Conductivity	1690	5	uS/cm	1720			1.8	5	
pH	7.9	0.1	pH Units	7.9			0.8	3.3	
Phenolics	ND	0.001	mg/L	ND			NC	10	
Total Dissolved Solids	ND	10	mg/L	ND			NC	10	
Sulphide	ND	0.02	mg/L	ND			NC	10	
Tannin & Lignin	ND	0.1	mg/L	ND			NC	11	
Total Kjeldahl Nitrogen	0.19	0.1	mg/L	0.22			NC	16	
Turbidity	0.2	0.1	NTU	0.2			5.1	10	
Metals									
Aluminum	0.026	0.001	mg/L	0.019			34.2	20	QR-05
Antimony	ND	0.0005	mg/L	ND			NC	20	
Arsenic	ND	0.001	mg/L	ND			NC	20	
Barium	0.104	0.001	mg/L	0.112			8.1	20	
Boron	0.11	0.01	mg/L	0.11			0.3	20	
Cadmium	ND	0.0001	mg/L	ND			NC	20	
Calcium	85.0	0.1	mg/L	83.0			2.4	20	
Chromium	ND	0.001	mg/L	ND			NC	20	
Iron	2.3	0.1	mg/L	2.4			4.1	20	
Lead	0.0066	0.0001	mg/L	0.0064			4.4	20	
Magnesium	12.2	0.2	mg/L	12.2			0.2	20	
Manganese	0.049	0.005	mg/L	0.050			0.8	20	
Potassium	0.8	0.1	mg/L	0.7			5.4	20	
Selenium	ND	0.001	mg/L	ND			NC	20	
Sodium	17.1	0.2	mg/L	18.4			7.3	20	
Uranium	0.0003	0.0001	mg/L	0.0003			0.2	20	
Zinc	0.024	0.005	mg/L	0.024			1.5	20	
Microbiological Parameters									
E. coli	ND	1	CFU/100mL	ND			NC	30	
Fecal Coliforms	ND	1	CFU/100mL	ND			NC	30	
Total Coliforms	ND	1	CFU/100mL	ND			NC	30	
Heterotrophic Plate Count	ND	10	CFU/mL	ND			NC	30	
Volatiles									
Acetone	ND	0.0050	mg/L	ND			NC	30	
Benzene	ND	0.0005	mg/L	ND			NC	30	
Bromodichloromethane	0.0039	0.0005	mg/L	0.0036			6.1	30	
Bromoform	ND	0.0005	mg/L	ND			NC	30	
Bromomethane	ND	0.0005	mg/L	ND			NC	30	
Carbon Tetrachloride	ND	0.0002	mg/L	ND			NC	30	
Chlorobenzene	ND	0.0005	mg/L	ND			NC	30	
Chloroethane	ND	0.0010	mg/L	ND			NC	30	
Chloroform	0.0234	0.0005	mg/L	0.0229			2.5	30	
Dibromochloromethane	ND	0.0005	mg/L	ND			NC	30	
Dichlorodifluoromethane	ND	0.0010	mg/L	ND			NC	30	
1,2-Dibromoethane	ND	0.0002	mg/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.0005	mg/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.0005	mg/L	ND			NC	30	

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,4-Dichlorobenzene	ND	0.0005	mg/L	ND			NC	30	
1,1-Dichloroethane	ND	0.0005	mg/L	ND			NC	30	
1,2-Dichloroethane	ND	0.0005	mg/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.0005	mg/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.0005	mg/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.0005	mg/L	ND			NC	30	
1,2-Dichloropropane	ND	0.0005	mg/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.0005	mg/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.0005	mg/L	ND			NC	30	
Ethylbenzene	ND	0.0005	mg/L	ND			NC	30	
Hexane	ND	0.0010	mg/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	0.0050	mg/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	0.0050	mg/L	ND			NC	30	
Methyl tert-butyl ether	ND	0.0020	mg/L	ND			NC	30	
Methylene Chloride	ND	0.0050	mg/L	ND			NC	30	
Styrene	ND	0.0005	mg/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.0005	mg/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L	ND			NC	30	
Tetrachloroethylene	ND	0.0005	mg/L	ND			NC	30	
Toluene	ND	0.0005	mg/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.0005	mg/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.0005	mg/L	ND			NC	30	
Trichloroethylene	ND	0.0005	mg/L	ND			NC	30	
Trichlorofluoromethane	ND	0.0010	mg/L	ND			NC	30	
Vinyl chloride	ND	0.0002	mg/L	ND			NC	30	
m,p-Xylenes	ND	0.0005	mg/L	ND			NC	30	
o-Xylene	ND	0.0005	mg/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*0.0902*		*mg/L*		*113*	*50-140*			
Surrogate: Dibromofluoromethane	*0.104*		*mg/L*		*130*	*50-140*			
Surrogate: Toluene-d8	*0.0866*		*mg/L*		*108*	*50-140*			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	265	1	mg/L	255	99.4	70-124			
Fluoride	1.22	0.1	mg/L	0.22	100	70-130			
Nitrate as N	1.01	0.1	mg/L	ND	101	77-126			
Nitrite as N	0.937	0.05	mg/L	ND	93.7	82-115			
Sulphate	10.0	1	mg/L	ND	100	70-130			
General Inorganics									
Ammonia as N	1.04	0.01	mg/L	ND	104	81-124			
Dissolved Organic Carbon	17.2	0.5	mg/L	8.9	82.6	60-133			
Phenolics	0.027	0.001	mg/L	ND	109	67-133			
Total Dissolved Solids	92.0	10	mg/L	ND	92.0	75-125			
Sulphide	0.51	0.02	mg/L	ND	102	79-115			
Tannin & Lignin	1.0	0.1	mg/L	ND	97.3	71-113			
Total Kjeldahl Nitrogen	1.20	0.1	mg/L	0.22	97.5	81-126			
Metals									
Aluminum	61.7	0.001	mg/L	18.6	86.2	80-120			
Arsenic	48.9	0.001	mg/L	0.193	97.4	80-120			
Barium	154	0.001	mg/L	112	83.9	80-120			
Boron	147	0.01	mg/L	110	74.4	80-120			QM-07
Cadmium	47.7	0.0001	mg/L	0.0172	95.3	80-120			
Calcium	9450	0.1	mg/L	ND	94.5	80-120			
Chromium	50.6	0.001	mg/L	0.354	100	80-120			
Copper	45.6	0.0005	mg/L	ND	91.1	80-120			
Iron	4470	0.1	mg/L	2360	84.4	80-120			
Lead	49.5	0.0001	mg/L	6.35	86.2	80-120			
Magnesium	20700	0.2	mg/L	12200	84.7	80-120			
Manganese	99.4	0.005	mg/L	49.9	99.0	80-120			
Potassium	10300	0.1	mg/L	717	95.8	80-120			
Selenium	39.9	0.001	mg/L	0.137	79.6	80-120			QM-07
Sodium	27100	0.2	mg/L	18400	86.8	80-120			
Uranium	42.4	0.0001	mg/L	0.339	84.2	80-120			
Zinc	66.0	0.005	mg/L	23.5	85.0	80-120			
Volatiles									
Acetone	0.116	0.0050	mg/L	ND	116	50-140			
Benzene	0.0486	0.0005	mg/L	ND	122	60-130			
Bromodichloromethane	0.0458	0.0005	mg/L	ND	114	60-130			
Bromoform	0.0417	0.0005	mg/L	ND	104	60-130			
Bromomethane	0.0431	0.0005	mg/L	ND	108	50-140			
Carbon Tetrachloride	0.0445	0.0002	mg/L	ND	111	60-130			
Chlorobenzene	0.0427	0.0005	mg/L	ND	107	60-130			
Chloroethane	0.0441	0.0010	mg/L	ND	110	50-140			
Chloroform	0.0452	0.0005	mg/L	ND	113	60-130			
Dibromochloromethane	0.0479	0.0005	mg/L	ND	120	60-130			
Dichlorodifluoromethane	0.0435	0.0010	mg/L	ND	109	50-140			
1,2-Dibromoethane	0.0450	0.0002	mg/L	ND	113	60-130			
1,2-Dichlorobenzene	0.0354	0.0005	mg/L	ND	88.6	60-130			
1,3-Dichlorobenzene	0.0357	0.0005	mg/L	ND	89.2	60-130			
1,4-Dichlorobenzene	0.0328	0.0005	mg/L	ND	82.1	60-130			
1,1-Dichloroethane	0.0445	0.0005	mg/L	ND	111	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
1,2-Dichloroethane	0.0485	0.0005	mg/L	ND	121	60-130			
1,1-Dichloroethylene	0.0441	0.0005	mg/L	ND	110	60-130			
cis-1,2-Dichloroethylene	0.0417	0.0005	mg/L	ND	104	60-130			
trans-1,2-Dichloroethylene	0.0408	0.0005	mg/L	ND	102	60-130			
1,2-Dichloropropane	0.0490	0.0005	mg/L	ND	122	60-130			
cis-1,3-Dichloropropylene	0.0468	0.0005	mg/L	ND	117	60-130			
trans-1,3-Dichloropropylene	0.0425	0.0005	mg/L	ND	106	60-130			
Ethylbenzene	0.0456	0.0005	mg/L	ND	114	60-130			
Hexane	0.0352	0.0010	mg/L	ND	88.0	60-130			
Methyl Ethyl Ketone (2-Butanone)	0.127	0.0050	mg/L	ND	127	50-140			
Methyl Isobutyl Ketone	0.116	0.0050	mg/L	ND	116	50-140			
Methyl tert-butyl ether	0.120	0.0020	mg/L	ND	120	50-140			
Methylene Chloride	0.0451	0.0050	mg/L	ND	113	60-130			
Styrene	0.0412	0.0005	mg/L	ND	103	60-130			
1,1,1,2-Tetrachloroethane	0.0450	0.0005	mg/L	ND	112	60-130			
1,1,2,2-Tetrachloroethane	0.0302	0.0005	mg/L	ND	75.4	60-130			
Tetrachloroethylene	0.0378	0.0005	mg/L	ND	94.6	60-130			
Toluene	0.0465	0.0005	mg/L	ND	116	60-130			
1,1,1-Trichloroethane	0.0456	0.0005	mg/L	ND	114	60-130			
1,1,2-Trichloroethane	0.0464	0.0005	mg/L	ND	116	60-130			
Trichloroethylene	0.0494	0.0005	mg/L	ND	123	60-130			
Trichlorofluoromethane	0.0486	0.0010	mg/L	ND	122	60-130			
Vinyl chloride	0.0493	0.0002	mg/L	ND	123	50-140			
m,p-Xylenes	0.0811	0.0005	mg/L	ND	101	60-130			
o-Xylene	0.0412	0.0005	mg/L	ND	103	60-130			
Surrogate: 4-Bromofluorobenzene	*0.0913*		*mg/L*		*114*	*50-140*			
Surrogate: Dibromofluoromethane	*0.0904*		*mg/L*		*113*	*50-140*			
Surrogate: Toluene-d8	*0.0838*		*mg/L*		*105*	*50-140*			

Qualifier Notes:

Sample Qualifiers :

QC Qualifiers :

QM-07 The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on other acceptable QC.

QR-05 Duplicate RPDs higher than normally accepted. Remaining batch QA\QC was acceptable. May be sample effect.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

PARAC LABORATORIE

Paracel ID: 2304338

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Paracel Order Number	Chain Of Custody Ontario Drinking Water Samples
2304338	№ 18572

Client Name:	LRL Associates	Project Ref:	210341	Waterworks Name:	Samples Taken By:
Contact Name:	Abdul Kader	Quote #:		Waterworks Number:	Name: Abdul Kader
Address:	5430 Canotek Rd	PO #:		Address:	Signature:
After Hours Contact:		E-mail:	akader@lrl.ca		Page 1 of 1
Telephone:	613 315 6602	Fax:		Public Health Unit:	Turn Around Time Required: ☐ 1 day ☐ 2 day ☐ 3 day ☒ 4 day

Samples Submitted Under: (Indicate **ONLY** one)
☐ ON REG 170/03 ☐ ON REG 319/08 ☐ Private Well
☐ ON REG 243/07 ☒ Other ODWS

Have LSN forms been submitted to MOE/MOHLTC?: ☐ Yes ☐ No ☐ N/A

Are these samples for human consumption?: ☐ Yes ☐ No

All information must be completed before samples will be processed.

Sample Type: R = Raw ; T = Treated ; D = Distribution; P = Plumbing
Source Type: G = Ground Water; S = Surface Water
Reportable: Requires AWQI reporting as per Regulation - Y = Yes; N = No

	LOCATION NAME	SAMPLE ID	Sample Type: R/T/D/P	Source Type: G / S	Reportable: Y / N	Resample	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	# of Containers	Free/Combined Chlorine Residual mg/L	Standing / Flushed: S / F (REG 243)	Required Analyses: Total Coliform/E. Coli	HPC	Lead	THM	Subdivision	VOC	Trace Metals
1	5969 Ottawa Street	-Supply well-4hrs	R	G	N		2023.01.25	12:05	10							X	X	X
2	5969 Ottawa Street	Supply well-8hrs	R	G	N		2023.01.25	4:0	10							X	X	X
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments:

Method of Delivery: Drop Box

Relinquished By (Sign): Abdul Kader	Received By Driver/Depot:	Received at Lab:	Verified By:
Relinquished By (Print): Abdul Kader	Date/Time:	Date/Time: Jan 26 2023 8:04	Date/Time: Jan 26 2023 8:17
Date/Time: 2023.01.25 / 6:15	Temperature: °C	Temperature: 7.4 °C	pH Verified: ☐ By:

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Abdul Kader Alhaj

Client PO:
Project: 210341
Custody: 18571

Report Date: 21-Mar-2023
Order Date: 15-Mar-2023

Order #: 2311339

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Paracel ID	Client ID
2311339-01	OW-1

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 21-Mar-2023

Order Date: 15-Mar-2023

Project Description: 210341

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total to pH 4.5	EPA 310.1 - Titration to pH 4.5	17-Mar-23	17-Mar-23
Ammonia, as N	EPA 351.2 - Auto Colour	20-Mar-23	20-Mar-23
Anions	EPA 300.1 - IC	20-Mar-23	20-Mar-23
Colour	SM2120 - Spectrophotometric	16-Mar-23	17-Mar-23
Conductivity	EPA 9050A- probe @25 °C	17-Mar-23	17-Mar-23
Dissolved Organic Carbon	EPA 415.2	20-Mar-23	20-Mar-23
E. coli	MOE E3407	16-Mar-23	16-Mar-23
Fecal Coliform	SM 9222D	16-Mar-23	16-Mar-23
Heterotrophic Plate Count	SM 9215C	16-Mar-23	16-Mar-23
Metals, ICP-MS	EPA 200.8 - ICP-MS	16-Mar-23	17-Mar-23
pH	EPA 150.1 - pH probe @25 °C	17-Mar-23	17-Mar-23
Phenolics	EPA 420.2 - Auto Colour, 4AAP	20-Mar-23	20-Mar-23
Hardness	Hardness as CaCO3	16-Mar-23	17-Mar-23
Sulphide	SM 4500SE - Colourimetric	20-Mar-23	20-Mar-23
Tannin/Lignin	SM 5550B - Colourimetric	21-Mar-23	21-Mar-23
Total Coliform	MOE E3407	16-Mar-23	16-Mar-23
Total Dissolved Solids	SM 2540C - gravimetric, filtration	16-Mar-23	17-Mar-23
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	17-Mar-23	20-Mar-23
Turbidity	SM 2130B - Turbidity meter	17-Mar-23	17-Mar-23

Certificate of Analysis

Report Date: 21-Mar-2023

Client: LRL Associates Ltd.

Order Date: 15-Mar-2023

Client PO:

Project Description: 210341

	Client ID:	OW-1	-	-	-
	Sample Date:	15-Mar-23 14:50	-	-	-
	Sample ID:	2311339-01	-	-	-
	MDL/Units	Drinking Water	-	-	-
Microbiological Parameters					
E. coli	1 CFU/100mL	ND	-	-	-
Fecal Coliforms	1 CFU/100mL	ND	-	-	-
Total Coliforms	1 CFU/100mL	ND	-	-	-
Heterotrophic Plate Count	10 CFU/mL	100	-	-	-
General Inorganics					
Alkalinity, total	5 mg/L	259	-	-	-
Ammonia as N	0.01 mg/L	0.16	-	-	-
Dissolved Organic Carbon	0.5 mg/L	<0.5 [6]	-	-	-
Colour	2 TCU	<2	-	-	-
Conductivity	5 uS/cm	1800	-	-	-
Hardness	mg/L	515	-	-	-
pH	0.1 pH Units	7.7	-	-	-
Phenolics	0.001 mg/L	<0.001	-	-	-
Total Dissolved Solids	10 mg/L	946	-	-	-
Sulphide	0.02 mg/L	<0.02	-	-	-
Tannin & Lignin	0.1 mg/L	<0.1	-	-	-
Total Kjeldahl Nitrogen	0.1 mg/L	0.2	-	-	-
Turbidity	0.1 NTU	7.0	-	-	-
Anions					
Chloride	1 mg/L	325	-	-	-
Fluoride	0.1 mg/L	0.3	-	-	-
Nitrate as N	0.1 mg/L	<0.1	-	-	-
Nitrite as N	0.05 mg/L	<0.05	-	-	-
Sulphate	1 mg/L	75	-	-	-
Metals					
Calcium	0.1 mg/L	127	-	-	-
Iron	0.1 mg/L	0.2	-	-	-
Magnesium	0.2 mg/L	47.8	-	-	-
Manganese	0.005 mg/L	0.016	-	-	-
Potassium	0.1 mg/L	8.5	-	-	-
Sodium	0.2 mg/L	129	-	-	-

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 21-Mar-2023

Order Date: 15-Mar-2023

Project Description: 210341

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Sulphate	ND	1	mg/L						
General Inorganics									
Alkalinity, total	ND	5	mg/L						
Ammonia as N	ND	0.01	mg/L						
Colour	ND	2	TCU						
Conductivity	ND	5	uS/cm						
Phenolics	ND	0.001	mg/L						
Total Dissolved Solids	ND	10	mg/L						
Sulphide	ND	0.02	mg/L						
Tannin & Lignin	ND	0.1	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
Turbidity	ND	0.1	NTU						
Metals									
Calcium	ND	0.1	mg/L						
Iron	ND	0.1	mg/L						
Magnesium	ND	0.2	mg/L						
Manganese	ND	0.005	mg/L						
Potassium	ND	0.1	mg/L						
Sodium	ND	0.2	mg/L						
Microbiological Parameters									
E. coli	ND	1	CFU/100mL						
Fecal Coliforms	ND	1	CFU/100mL						
Total Coliforms	ND	1	CFU/100mL						
Heterotrophic Plate Count	ND	10	CFU/mL						

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 21-Mar-2023

Order Date: 15-Mar-2023

Project Description: 210341

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	332	1	mg/L	325			2.2	20	
Fluoride	0.36	0.1	mg/L	0.33			9.8	20	
Nitrate as N	ND	0.1	mg/L	ND			NC	20	
Nitrite as N	ND	0.05	mg/L	ND			NC	20	
Sulphate	77.3	1	mg/L	75.5			2.3	20	
General Inorganics									
Alkalinity, total	257	5	mg/L	259			0.6	14	
Ammonia as N	0.164	0.01	mg/L	0.163			0.9	17.7	
Colour	ND	2	TCU	ND			NC	12	
Conductivity	1760	5	uS/cm	1800			1.9	5	
pH	7.8	0.1	pH Units	7.7			0.8	3.3	
Phenolics	ND	0.001	mg/L	ND			NC	10	
Total Dissolved Solids	2380	10	mg/L	2370			0.4	10	
Sulphide	ND	0.02	mg/L	ND			NC	10	
Tannin & Lignin	0.1	0.1	mg/L	0.1			NC	11	
Total Kjeldahl Nitrogen	0.25	0.1	mg/L	0.16			NC	16	
Turbidity	2.3	0.1	NTU	2.3			1.3	10	
Metals									
Calcium	452	4.3	mg/L	463			2.5	20	
Iron	1.7	0.1	mg/L	1.7			0.4	20	
Magnesium	100	0.2	mg/L	101			0.9	20	
Manganese	0.109	0.005	mg/L	0.110			1.0	20	
Potassium	12.9	0.1	mg/L	13.6			5.7	20	
Sodium	274	8.6	mg/L	283			3.4	20	
Microbiological Parameters									
E. coli	ND	1	CFU/100mL	ND			NC	30	
Fecal Coliforms	ND	1	CFU/100mL	ND			NC	30	
Total Coliforms	ND	1	CFU/100mL	ND			NC	30	
Heterotrophic Plate Count	40	10	CFU/mL	100			86.0	30	BAC04

Certificate of Analysis

Client: LRL Associates Ltd.

Client PO:

Report Date: 21-Mar-2023

Order Date: 15-Mar-2023

Project Description: 210341

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	333	1	mg/L	325	84.3	70-124			
Fluoride	1.28	0.1	mg/L	0.33	94.9	70-130			
Nitrate as N	1.01	0.1	mg/L	ND	101	77-126			
Nitrite as N	0.950	0.05	mg/L	ND	95.0	82-115			
Sulphate	84.5	1	mg/L	75.5	90.3	70-130			
General Inorganics									
Ammonia as N	1.21	0.01	mg/L	0.163	105	81-124			
Phenolics	0.026	0.001	mg/L	ND	104	67-133			
Total Dissolved Solids	102	10	mg/L	ND	102	75-125			
Sulphide	0.51	0.02	mg/L	ND	101	79-115			
Tannin & Lignin	1.1	0.1	mg/L	0.1	98.1	71-113			
Total Kjeldahl Nitrogen	0.99	0.1	mg/L	0.16	82.7	81-126			
Metals									
Calcium	10400	0.1	mg/L	ND	104	80-120			
Iron	4060	0.1	mg/L	1740	92.7	80-120			
Magnesium	9990	0.2	mg/L	ND	99.9	80-120			
Manganese	162	0.005	mg/L	110	103	80-120			
Potassium	24100	0.1	mg/L	13600	105	80-120			
Sodium	9600	0.2	mg/L	ND	96.0	80-120			

Certificate of Analysis
Client: LRL Associates Ltd.
Client PO:

Report Date: 21-Mar-2023
Order Date: 15-Mar-2023
Project Description: 210341

Qualifier Notes:

Login Qualifiers :

Container(s) - Labeled improperly/insufficient information - One general chemistry bottle is missing the time of collection.
Applies to samples: OW-1

Sample - Not submitted in the correct container - The sulphide bottle was decanted from an unpreserved plastic bottle. The phenols and DOC bottles were decanted from an unpreserved amber glass bottle.
Applies to samples: OW-1

Sample preserved upon receipt at the lab.
sulphide & phenols
Applies to samples: OW-1

Sample Qualifiers :

6 : Subcontracted analysis - Caduceon

QC Qualifiers :

BAC04 Duplicate QC data falls within method prescribed 95% confidence limits.

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

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Paracel ID: 2311339

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Paracel Order Number	Chain Of Custody Ontario Drinking Water Samples № 18571
2311339	

Client Name:	LRL Associates	Project Ref:	210341	Waterworks Name:		Samples Taken By:	
Contact Name:	Abdul Kader	Quote #:		Waterworks Number:		Name:	Abdul Kader
Address:	5430 Canotek Rd	PO #:		Address:		Signature:	
After Hours Contact:		E-mail:	akader@lrlca			Page 1 of 1	
Telephone:	613 315 6602	Fax:		Public Health Unit:		Turn Around Time Required: ☐ 1 day ☐ 2 day ☐ 3 day ☒ 4 day	

Samples Submitted Under: (Indicate **ONLY one**)
☐ ON REG 170/03 ☐ ON REG 319/08 ☐ Private Well
☐ ON REG 243/07 ☐ Other ODWS

Have LSN forms been submitted to MOE/MOHLTC?: ☐ Yes ☐ No ☐ N/A

Are these samples for human consumption?: ☐ Yes ☐ No

All information must be completed before samples will be processed.

Sample Type: R = Raw ; T = Treated ; D = Distribution; P = Plumbing
Source Type: G = Ground Water; S = Surface Water
Reportable: Requires AWQI reporting as per Regulation - Y = Yes; N = No

	LOCATION NAME	SAMPLE ID	Sample Type: R/T/D/P	Source Type: G / S	Reportable: Y / N	Resample	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	# of Containers	Free/Combined Chlorine Residual mg/L	Standing / Flushed: S / F (REG 243)	Required Analyses: Total Coliform/E. Coli	HPC	Lead	THM	Sub-division Package
1	5949 Ottawa street	OW-1	R	G			2023.03.15	2:50	9							X
2																
3																
4																
5																
6																
7																
8																
9																
10																

Comments:

Method of Delivery: Walk In

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: Ayars 15	Verified By:
Relinquished By (Print): Abdul Kader	Date/Time:	Date/Time: March 15, 2023	Date/Time: Mar 16, 2023
Date/Time: 2023.03.15 / 3:50	Temperature: °C	Temperature: 13.3 °C	pH Verified: ☐ By:

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Certificate of Analysis

LRL Associates Ltd.

5430 Canotek Road
Ottawa, ON K1J 9G2
Attn: Jessica Arthurs

Client PO:
Project: 210341
Custody: 19086

Report Date: 2-Jun-2023
Order Date: 29-May-2023

Order #: 2322119

This Certificate of Analysis contains analytical data applicable to the following samples as submitted :

Paracel ID	Client ID
2322119-01	5969 Ottawa St. - 3 HR
2322119-02	5969 Ottawa St. - 6 HR

Approved By:

Dale Robertson, BSc
Laboratory Director

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 02-Jun-2023
Order Date: 29-May-2023
Project Description: 210341

Analysis Summary Table

Analysis	Method Reference/Description	Extraction Date	Analysis Date
Alkalinity, total to pH 4.5	EPA 310.1 - Titration to pH 4.5	31-May-23	31-May-23
Ammonia, as N	EPA 351.2 - Auto Colour	30-May-23	30-May-23
Anions	EPA 300.1 - IC	31-May-23	31-May-23
Colour	SM2120 - Spectrophotometric	30-May-23	31-May-23
Conductivity	EPA 9050A- probe @25 °C	31-May-23	31-May-23
Dissolved Organic Carbon	MOE 3247B - Combustion IR	31-May-23	1-Jun-23
E. coli	MOE E3407	30-May-23	30-May-23
Fecal Coliform	SM 9222D	30-May-23	30-May-23
Heterotrophic Plate Count	SM 9215C	30-May-23	30-May-23
Metals, ICP-MS	EPA 200.8 - ICP-MS	30-May-23	30-May-23
pH	EPA 150.1 - pH probe @25 °C	31-May-23	31-May-23
Phenolics	EPA 420.2 - Auto Colour, 4AAP	30-May-23	30-May-23
Hardness	Hardness as CaCO3	30-May-23	30-May-23
Sulphide	SM 4500SE - Colourimetric	31-May-23	1-Jun-23
Tannin/Lignin	SM 5550B - Colourimetric	1-Jun-23	1-Jun-23
Total Coliform	MOE E3407	30-May-23	30-May-23
Total Dissolved Solids	SM 2540C - gravimetric, filtration	31-May-23	1-Jun-23
Total Kjeldahl Nitrogen	EPA 351.2 - Auto Colour, digestion	30-May-23	31-May-23
Turbidity	SM 2130B - Turbidity meter	30-May-23	31-May-23
VOCs by P&T GC-MS	EPA 624 - P&T GC-MS	1-Jun-23	1-Jun-23

PARACEL LABORATORIES LTD.

Order #: 2322119

Certificate of Analysis

Client: **LRL Associates Ltd.**

Client PO:

Report Date: 02-Jun-2023

Order Date: 29-May-2023

Project Description: 210341

	Client ID:	5969 Ottawa St. - 3 HR	5969 Ottawa St. - 6 HR	-	-
	Sample Date:	29-May-23 10:46	29-May-23 13:46	-	-
	Sample ID:	2322119-01	2322119-02	-	-
	MDL/Units	Drinking Water	Drinking Water	-	-
Microbiological Parameters					
E. coli	1 CFU/100mL	ND	ND	-	-
Total Coliforms	1 CFU/100mL	ND	ND	-	-
Fecal Coliforms	1 CFU/100mL	ND	ND	-	-
Heterotrophic Plate Count	10 CFU/mL	80	50	-	-
General Inorganics					
Alkalinity, total	5 mg/L	274	274	-	-
Ammonia as N	0.01 mg/L	0.10	0.10	-	-
Dissolved Organic Carbon	0.5 mg/L	1.6	1.8	-	-
Colour	2 TCU	<2	<2	-	-
Conductivity	5 uS/cm	1290	1290	-	-
Hardness	mg/L	409	478	-	-
pH	0.1 pH Units	7.8	7.7	-	-
Phenolics	0.001 mg/L	<0.001	<0.001	-	-
Total Dissolved Solids	10 mg/L	718	718	-	-
Sulphide	0.02 mg/L	<0.02	<0.02	-	-
Tannin & Lignin	0.1 mg/L	<0.1	<0.1	-	-
Total Kjeldahl Nitrogen	0.1 mg/L	0.2	0.1	-	-
Turbidity	0.1 NTU	8.1	9.0	-	-
Anions					
Chloride	1 mg/L	192	191	-	-
Fluoride	0.1 mg/L	0.4	0.4	-	-
Nitrate as N	0.1 mg/L	<0.1	<0.1	-	-
Nitrite as N	0.05 mg/L	<0.05	<0.05	-	-
Sulphate	1 mg/L	57	57	-	-
Metals					
Aluminum	0.001 mg/L	0.007	0.005	-	-
Antimony	0.0005 mg/L	<0.0005	<0.0005	-	-
Arsenic	0.001 mg/L	<0.001	<0.001	-	-
Barium	0.001 mg/L	0.119	0.137	-	-
Beryllium	0.0005 mg/L	<0.0005	<0.0005	-	-
Boron	0.01 mg/L	0.15	0.16	-	-
Cadmium	0.0001 mg/L	<0.0001	<0.0001	-	-
Calcium	0.1 mg/L	105	122	-	-
Chromium	0.001 mg/L	<0.001	<0.001	-	-

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 02-Jun-2023
Order Date: 29-May-2023
Project Description: 210341

	Client ID:	5969 Ottawa St. - 3 HR	5969 Ottawa St. - 6 HR	-	-
	Sample Date:	29-May-23 10:46	29-May-23 13:46	-	-
	Sample ID:	2322119-01	2322119-02	-	-
	MDL/Units	Drinking Water	Drinking Water	-	-
Cobalt	0.0005 mg/L	<0.0005	<0.0005	-	-
Copper	0.0005 mg/L	<0.0005	<0.0005	-	-
Iron	0.1 mg/L	0.5	0.6	-	-
Lead	0.0001 mg/L	<0.0001	<0.0001	-	-
Magnesium	0.2 mg/L	35.8	42.0	-	-
Manganese	0.005 mg/L	0.014	0.016	-	-
Molybdenum	0.0005 mg/L	0.0020	0.0022	-	-
Nickel	0.001 mg/L	<0.001	<0.001	-	-
Potassium	0.1 mg/L	6.1	6.9	-	-
Selenium	0.001 mg/L	<0.001	<0.001	-	-
Silver	0.0001 mg/L	<0.0001	<0.0001	-	-
Sodium	0.2 mg/L	61.6	70.7	-	-
Strontium	0.01 mg/L	4.03	4.09	-	-
Thallium	0.001 mg/L	<0.001	<0.001	-	-
Tin	0.01 mg/L	<0.01	<0.01	-	-
Titanium	0.005 mg/L	<0.005	<0.005	-	-
Tungsten	0.01 mg/L	<0.01	<0.01	-	-
Uranium	0.0001 mg/L	0.0005	0.0006	-	-
Vanadium	0.0005 mg/L	<0.0005	<0.0005	-	-
Zinc	0.005 mg/L	<0.005	<0.005	-	-
Volatiles					
Acetone	0.0050 mg/L	<0.0050	<0.0050	-	-
Benzene	0.0005 mg/L	<0.0005	<0.0005	-	-
Bromodichloromethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Bromoform	0.0005 mg/L	<0.0005	<0.0005	-	-
Bromomethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Carbon Tetrachloride	0.0002 mg/L	<0.0002	<0.0002	-	-
Chlorobenzene	0.0005 mg/L	<0.0005	<0.0005	-	-
Chloroethane	0.0010 mg/L	<0.0010	<0.0010	-	-
Chloroform	0.0005 mg/L	<0.0005	<0.0005	-	-
Dibromochloromethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Dichlorodifluoromethane	0.0010 mg/L	<0.0010	<0.0010	-	-
1,2-Dibromoethane	0.0002 mg/L	<0.0002	<0.0002	-	-
1,2-Dichlorobenzene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,3-Dichlorobenzene	0.0005 mg/L	<0.0005	<0.0005	-	-

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 02-Jun-2023
Order Date: 29-May-2023
Project Description: 210341

	Client ID:	5969 Ottawa St. - 3 HR	5969 Ottawa St. - 6 HR	-	-
	Sample Date:	29-May-23 10:46	29-May-23 13:46	-	-
	Sample ID:	2322119-01	2322119-02	-	-
	MDL/Units	Drinking Water	Drinking Water	-	-
1,4-Dichlorobenzene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1-Dichloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
1,2-Dichloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1-Dichloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
cis-1,2-Dichloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
trans-1,2-Dichloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,2-Dichloroethylene, total	0.0005 mg/L	<0.0005	<0.0005	-	-
1,2-Dichloropropane	0.0005 mg/L	<0.0005	<0.0005	-	-
cis-1,3-Dichloropropylene	0.0005 mg/L	<0.0005	<0.0005	-	-
trans-1,3-Dichloropropylene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,3-Dichloropropene, total	0.0005 mg/L	<0.0005	<0.0005	-	-
Ethylbenzene	0.0005 mg/L	<0.0005	<0.0005	-	-
Hexane	0.0010 mg/L	<0.0010	<0.0010	-	-
Methyl Ethyl Ketone (2-Butanone)	0.0050 mg/L	<0.0050	<0.0050	-	-
Methyl Isobutyl Ketone	0.0050 mg/L	<0.0050	<0.0050	-	-
Methyl tert-butyl ether	0.0020 mg/L	<0.0020	<0.0020	-	-
Methylene Chloride	0.0050 mg/L	<0.0050	<0.0050	-	-
Styrene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1,1,2-Tetrachloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1,2,2-Tetrachloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Tetrachloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
Toluene	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1,1-Trichloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
1,1,2-Trichloroethane	0.0005 mg/L	<0.0005	<0.0005	-	-
Trichloroethylene	0.0005 mg/L	<0.0005	<0.0005	-	-
Trichlorofluoromethane	0.0010 mg/L	<0.0010	<0.0010	-	-
Vinyl chloride	0.0002 mg/L	<0.0002	<0.0002	-	-
m,p-Xylenes	0.0005 mg/L	<0.0005	<0.0005	-	-
o-Xylene	0.0005 mg/L	<0.0005	<0.0005	-	-
Xylenes, total	0.0005 mg/L	<0.0005	<0.0005	-	-
4-Bromofluorobenzene	Surrogate	113%	112%	-	-
Dibromofluoromethane	Surrogate	102%	103%	-	-
Toluene-d8	Surrogate	102%	101%	-	-

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 02-Jun-2023
Order Date: 29-May-2023
Project Description: 210341

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	ND	1	mg/L						
Fluoride	ND	0.1	mg/L						
Nitrate as N	ND	0.1	mg/L						
Nitrite as N	ND	0.05	mg/L						
Sulphate	ND	1	mg/L						
General Inorganics									
Alkalinity, total	ND	5	mg/L						
Ammonia as N	ND	0.01	mg/L						
Dissolved Organic Carbon	ND	0.5	mg/L						
Colour	ND	2	TCU						
Conductivity	ND	5	uS/cm						
Phenolics	ND	0.001	mg/L						
Total Dissolved Solids	ND	10	mg/L						
Sulphide	ND	0.02	mg/L						
Tannin & Lignin	ND	0.1	mg/L						
Total Kjeldahl Nitrogen	ND	0.1	mg/L						
Turbidity	ND	0.1	NTU						
Metals									
Aluminum	ND	0.001	mg/L						
Antimony	ND	0.0005	mg/L						
Arsenic	ND	0.001	mg/L						
Barium	ND	0.001	mg/L						
Beryllium	ND	0.0005	mg/L						
Boron	ND	0.01	mg/L						
Cadmium	ND	0.0001	mg/L						
Calcium	ND	0.1	mg/L						
Chromium	ND	0.001	mg/L						
Cobalt	ND	0.0005	mg/L						
Copper	ND	0.0005	mg/L						
Iron	ND	0.1	mg/L						
Lead	ND	0.0001	mg/L						
Magnesium	ND	0.2	mg/L						
Manganese	ND	0.005	mg/L						
Molybdenum	ND	0.0005	mg/L						
Nickel	ND	0.001	mg/L						
Potassium	ND	0.1	mg/L						
Selenium	ND	0.001	mg/L						
Silver	ND	0.0001	mg/L						
Sodium	ND	0.2	mg/L						
Strontium	ND	0.01	mg/L						
Thallium	ND	0.001	mg/L						
Tin	ND	0.01	mg/L						
Titanium	ND	0.005	mg/L						
Tungsten	ND	0.01	mg/L						
Uranium	ND	0.0001	mg/L						
Vanadium	ND	0.0005	mg/L						
Zinc	ND	0.005	mg/L						
Microbiological Parameters									
E. coli	ND	1	CFU/100mL						
Total Coliforms	ND	1	CFU/100mL						
Fecal Coliforms	ND	1	CFU/100mL						
Heterotrophic Plate Count	ND	10	CFU/mL						
Volatiles									
Acetone	ND	0.0050	mg/L						
Benzene	ND	0.0005	mg/L						
Bromodichloromethane	ND	0.0005	mg/L						
Bromoform	ND	0.0005	mg/L						

Method Quality Control: Blank

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromomethane	ND	0.0005	mg/L						
Carbon Tetrachloride	ND	0.0002	mg/L						
Chlorobenzene	ND	0.0005	mg/L						
Chloroethane	ND	0.0010	mg/L						
Chloroform	ND	0.0005	mg/L						
Dibromochloromethane	ND	0.0005	mg/L						
Dichlorodifluoromethane	ND	0.0010	mg/L						
1,2-Dibromoethane	ND	0.0002	mg/L						
1,2-Dichlorobenzene	ND	0.0005	mg/L						
1,3-Dichlorobenzene	ND	0.0005	mg/L						
1,4-Dichlorobenzene	ND	0.0005	mg/L						
1,1-Dichloroethane	ND	0.0005	mg/L						
1,2-Dichloroethane	ND	0.0005	mg/L						
1,1-Dichloroethylene	ND	0.0005	mg/L						
cis-1,2-Dichloroethylene	ND	0.0005	mg/L						
trans-1,2-Dichloroethylene	ND	0.0005	mg/L						
1,2-Dichloroethylene, total	ND	0.0005	mg/L						
1,2-Dichloropropane	ND	0.0005	mg/L						
cis-1,3-Dichloropropylene	ND	0.0005	mg/L						
trans-1,3-Dichloropropylene	ND	0.0005	mg/L						
1,3-Dichloropropene, total	ND	0.0005	mg/L						
Ethylbenzene	ND	0.0005	mg/L						
Hexane	ND	0.0010	mg/L						
Methyl Ethyl Ketone (2-Butanone)	ND	0.0050	mg/L						
Methyl Isobutyl Ketone	ND	0.0050	mg/L						
Methyl tert-butyl ether	ND	0.0020	mg/L						
Methylene Chloride	ND	0.0050	mg/L						
Styrene	ND	0.0005	mg/L						
1,1,1,2-Tetrachloroethane	ND	0.0005	mg/L						
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L						
Tetrachloroethylene	ND	0.0005	mg/L						
Toluene	ND	0.0005	mg/L						
1,1,1-Trichloroethane	ND	0.0005	mg/L						
1,1,2-Trichloroethane	ND	0.0005	mg/L						
Trichloroethylene	ND	0.0005	mg/L						
Trichlorofluoromethane	ND	0.0010	mg/L						
Vinyl chloride	ND	0.0002	mg/L						
m,p-Xylenes	ND	0.0005	mg/L						
o-Xylene	ND	0.0005	mg/L						
Xylenes, total	ND	0.0005	mg/L						
Surrogate: 4-Bromofluorobenzene	*0.0888*		*mg/L*		*111*	*50-140*			
Surrogate: Dibromofluoromethane	*0.0841*		*mg/L*		*105*	*50-140*			
Surrogate: Toluene-d8	*0.0829*		*mg/L*		*104*	*50-140*			

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	192	1	mg/L	191			0.6	20	
Fluoride	0.36	0.1	mg/L	0.35			1.2	20	
Nitrate as N	ND	0.1	mg/L	ND			NC	20	
Nitrite as N	ND	0.05	mg/L	ND			NC	20	
Sulphate	57.5	1	mg/L	56.8			1.2	20	
General Inorganics									
Alkalinity, total	273	5	mg/L	274			0.1	14	
Ammonia as N	0.098	0.01	mg/L	0.098			0.6	17.7	
Dissolved Organic Carbon	1.4	0.5	mg/L	1.6			15.7	37	
Colour	ND	2	TCU	ND			NC	12	
Conductivity	1250	5	uS/cm	1290			2.7	5	
pH	7.8	0.1	pH Units	7.8			0.4	3.3	
Phenolics	ND	0.001	mg/L	ND			NC	10	
Total Dissolved Solids	82.0	10	mg/L	82.0			0.0	10	
Sulphide	ND	0.02	mg/L	ND			NC	10	
Tannin & Lignin	ND	0.1	mg/L	ND			NC	11	
Total Kjeldahl Nitrogen	0.17	0.1	mg/L	0.16			2.5	16	
Turbidity	ND	0.1	NTU	8.1			NC	10	
Metals									
Aluminum	0.022	0.001	mg/L	0.021			1.8	20	
Antimony	ND	0.0005	mg/L	ND			NC	20	
Arsenic	ND	0.001	mg/L	ND			NC	20	
Barium	0.019	0.001	mg/L	0.020			4.4	20	
Beryllium	ND	0.0005	mg/L	ND			NC	20	
Boron	0.02	0.01	mg/L	0.02			2.1	20	
Cadmium	ND	0.0001	mg/L	ND			NC	20	
Calcium	32.9	0.1	mg/L	32.5			1.3	20	
Chromium	ND	0.001	mg/L	ND			NC	20	
Cobalt	ND	0.0005	mg/L	ND			NC	20	
Copper	0.735	0.0005	mg/L	0.738			0.4	20	
Iron	0.2	0.1	mg/L	0.2			4.0	20	
Lead	0.0053	0.0001	mg/L	0.0053			0.1	20	
Magnesium	8.7	0.2	mg/L	8.6			1.1	20	
Manganese	0.005	0.005	mg/L	0.005			1.9	20	
Molybdenum	0.0010	0.0005	mg/L	0.0011			9.1	20	
Nickel	0.003	0.001	mg/L	0.003			4.7	20	
Potassium	1.8	0.1	mg/L	1.7			2.8	20	
Selenium	ND	0.001	mg/L	ND			NC	20	
Silver	ND	0.0001	mg/L	ND			NC	20	
Sodium	16.3	0.2	mg/L	16.0			2.3	20	
Thallium	ND	0.001	mg/L	ND			NC	20	
Tin	ND	0.01	mg/L	ND			NC	20	
Titanium	ND	0.005	mg/L	ND			NC	50	
Tungsten	ND	0.01	mg/L	ND			NC	20	
Uranium	0.0002	0.0001	mg/L	0.0002			2.1	20	
Vanadium	ND	0.0005	mg/L	ND			NC	20	
Zinc	0.196	0.005	mg/L	0.194			0.7	20	
Microbiological Parameters									
E. coli	ND	1	CFU/100mL	ND			NC	30	
Total Coliforms	ND	1	CFU/100mL	ND			NC	30	
Fecal Coliforms	ND	1	CFU/100mL	ND			NC	30	
Heterotrophic Plate Count	10	10	CFU/mL	80			NC	30	
Volatiles									
Acetone	ND	0.0050	mg/L	ND			NC	30	
Benzene	ND	0.0005	mg/L	ND			NC	30	
Bromodichloromethane	0.0023	0.0005	mg/L	0.0023			1.3	30	

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 02-Jun-2023
Order Date: 29-May-2023
Project Description: 210341

Method Quality Control: Duplicate

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Bromoform	ND	0.0005	mg/L	ND			NC	30	
Bromomethane	ND	0.0005	mg/L	ND			NC	30	
Carbon Tetrachloride	ND	0.0002	mg/L	ND			NC	30	
Chlorobenzene	ND	0.0005	mg/L	ND			NC	30	
Chloroethane	ND	0.0010	mg/L	ND			NC	30	
Chloroform	0.0227	0.0005	mg/L	0.0220			2.9	30	
Dibromochloromethane	ND	0.0005	mg/L	ND			NC	30	
Dichlorodifluoromethane	ND	0.0010	mg/L	ND			NC	30	
1,2-Dibromoethane	ND	0.0002	mg/L	ND			NC	30	
1,2-Dichlorobenzene	ND	0.0005	mg/L	ND			NC	30	
1,3-Dichlorobenzene	ND	0.0005	mg/L	ND			NC	30	
1,4-Dichlorobenzene	ND	0.0005	mg/L	ND			NC	30	
1,1-Dichloroethane	ND	0.0005	mg/L	ND			NC	30	
1,2-Dichloroethane	ND	0.0005	mg/L	ND			NC	30	
1,1-Dichloroethylene	ND	0.0005	mg/L	ND			NC	30	
cis-1,2-Dichloroethylene	ND	0.0005	mg/L	ND			NC	30	
trans-1,2-Dichloroethylene	ND	0.0005	mg/L	ND			NC	30	
1,2-Dichloropropane	ND	0.0005	mg/L	ND			NC	30	
cis-1,3-Dichloropropylene	ND	0.0005	mg/L	ND			NC	30	
trans-1,3-Dichloropropylene	ND	0.0005	mg/L	ND			NC	30	
Ethylbenzene	ND	0.0005	mg/L	ND			NC	30	
Hexane	ND	0.0010	mg/L	ND			NC	30	
Methyl Ethyl Ketone (2-Butanone)	ND	0.0050	mg/L	ND			NC	30	
Methyl Isobutyl Ketone	ND	0.0050	mg/L	ND			NC	30	
Methyl tert-butyl ether	ND	0.0020	mg/L	ND			NC	30	
Methylene Chloride	ND	0.0050	mg/L	ND			NC	30	
Styrene	ND	0.0005	mg/L	ND			NC	30	
1,1,1,2-Tetrachloroethane	ND	0.0005	mg/L	ND			NC	30	
1,1,2,2-Tetrachloroethane	ND	0.0005	mg/L	ND			NC	30	
Tetrachloroethylene	ND	0.0005	mg/L	ND			NC	30	
Toluene	ND	0.0005	mg/L	ND			NC	30	
1,1,1-Trichloroethane	ND	0.0005	mg/L	ND			NC	30	
1,1,2-Trichloroethane	ND	0.0005	mg/L	ND			NC	30	
Trichloroethylene	ND	0.0005	mg/L	ND			NC	30	
Trichlorofluoromethane	ND	0.0010	mg/L	ND			NC	30	
Vinyl chloride	ND	0.0002	mg/L	ND			NC	30	
m,p-Xylenes	ND	0.0005	mg/L	ND			NC	30	
o-Xylene	ND	0.0005	mg/L	ND			NC	30	
Surrogate: 4-Bromofluorobenzene	*0.0910*		*mg/L*		*114*	*50-140*			
Surrogate: Dibromofluoromethane	*0.0835*		*mg/L*		*104*	*50-140*			
Surrogate: Toluene-d8	*0.0820*		*mg/L*		*102*	*50-140*			

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 02-Jun-2023
Order Date: 29-May-2023
Project Description: 210341

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Anions									
Chloride	199	1	mg/L	191	86.5	70-124			
Fluoride	1.38	0.1	mg/L	0.35	103	70-130			
Nitrate as N	0.98	0.1	mg/L	ND	98.0	77-126			
Nitrite as N	0.855	0.05	mg/L	ND	85.5	82-115			
Sulphate	65.0	1	mg/L	56.8	82.6	70-130			
General Inorganics									
Ammonia as N	1.15	0.01	mg/L	0.098	106	81-124			
Dissolved Organic Carbon	11.1	0.5	mg/L	1.8	93.6	60-133			
Phenolics	0.028	0.001	mg/L	ND	110	67-133			
Total Dissolved Solids	96.0	10	mg/L	ND	96.0	75-125			
Sulphide	0.50	0.02	mg/L	ND	100	79-115			
Tannin & Lignin	1.1	0.1	mg/L	ND	110	71-113			
Total Kjeldahl Nitrogen	1.12	0.1	mg/L	0.16	95.7	81-126			
Metals									
Aluminum	61.7	0.001	mg/L	21.1	81.2	80-120			
Arsenic	49.3	0.001	mg/L	0.645	97.3	80-120			
Barium	64.9	0.001	mg/L	20.1	89.6	80-120			
Beryllium	53.0	0.0005	mg/L	0.0312	106	80-120			
Boron	68.3	0.01	mg/L	21.0	94.5	80-120			
Cadmium	45.8	0.0001	mg/L	0.0364	91.5	80-120			
Calcium	13400	0.1	mg/L	5160	82.6	80-120			
Chromium	50.1	0.001	mg/L	0.114	100	80-120			
Cobalt	49.6	0.0005	mg/L	0.0377	99.1	80-120			
Copper	51.8	0.0005	mg/L	0.944	102	80-120			
Iron	2410	0.1	mg/L	225	87.5	80-120			
Lead	41.6	0.0001	mg/L	ND	83.2	80-120			
Magnesium	32600	0.2	mg/L	24200	84.7	80-120			
Manganese	54.8	0.005	mg/L	5.22	99.1	80-120			
Molybdenum	46.8	0.0005	mg/L	1.05	91.4	80-120			
Nickel	50.8	0.001	mg/L	2.99	95.6	80-120			
Potassium	11100	0.1	mg/L	1720	94.2	80-120			
Selenium	47.6	0.001	mg/L	0.242	94.7	80-120			
Silver	46.7	0.0001	mg/L	0.0578	93.2	80-120			
Sodium	9500	0.2	mg/L	ND	95.0	80-120			
Thallium	42.1	0.001	mg/L	0.025	84.1	80-120			
Tin	46.4	0.01	mg/L	0.22	92.4	80-120			
Titanium	51.4	0.005	mg/L	ND	103	70-130			
Tungsten	41.7	0.01	mg/L	0.26	82.8	80-120			
Vanadium	49.8	0.0005	mg/L	0.192	99.2	80-120			
Zinc	47.7	0.005	mg/L	2.70	90.1	80-120			
Volatiles									
Acetone	0.121	0.0050	mg/L	ND	121	50-140			
Benzene	0.0396	0.0005	mg/L	ND	98.9	60-130			
Bromodichloromethane	0.0384	0.0005	mg/L	ND	96.0	60-130			
Bromoform	0.0355	0.0005	mg/L	ND	88.7	60-130			
Bromomethane	0.0431	0.0005	mg/L	ND	108	50-140			
Carbon Tetrachloride	0.0332	0.0002	mg/L	ND	83.0	60-130			
Chlorobenzene	0.0436	0.0005	mg/L	ND	109	60-130			

Method Quality Control: Spike

Analyte	Result	Reporting Limit	Units	Source Result	%REC	%REC Limit	RPD	RPD Limit	Notes
Chloroethane	0.0463	0.0010	mg/L	ND	116	50-140			
Chloroform	0.0414	0.0005	mg/L	ND	104	60-130			
Dibromochloromethane	0.0326	0.0005	mg/L	ND	81.4	60-130			
Dichlorodifluoromethane	0.0477	0.0010	mg/L	ND	119	50-140			
1,2-Dibromoethane	0.0444	0.0002	mg/L	ND	111	60-130			
1,2-Dichlorobenzene	0.0433	0.0005	mg/L	ND	108	60-130			
1,3-Dichlorobenzene	0.0432	0.0005	mg/L	ND	108	60-130			
1,4-Dichlorobenzene	0.0401	0.0005	mg/L	ND	100	60-130			
1,1-Dichloroethane	0.0443	0.0005	mg/L	ND	111	60-130			
1,2-Dichloroethane	0.0402	0.0005	mg/L	ND	101	60-130			
1,1-Dichloroethylene	0.0490	0.0005	mg/L	ND	123	60-130			
cis-1,2-Dichloroethylene	0.0413	0.0005	mg/L	ND	103	60-130			
trans-1,2-Dichloroethylene	0.0416	0.0005	mg/L	ND	104	60-130			
1,2-Dichloropropane	0.0385	0.0005	mg/L	ND	96.3	60-130			
cis-1,3-Dichloropropylene	0.0364	0.0005	mg/L	ND	90.9	60-130			
trans-1,3-Dichloropropylene	0.0402	0.0005	mg/L	ND	100	60-130			
Ethylbenzene	0.0420	0.0005	mg/L	ND	105	60-130			
Hexane	0.0435	0.0010	mg/L	ND	109	60-130			
Methyl Ethyl Ketone (2-Butanone)	0.112	0.0050	mg/L	ND	112	50-140			
Methyl Isobutyl Ketone	0.118	0.0050	mg/L	ND	118	50-140			
Methyl tert-butyl ether	0.136	0.0020	mg/L	ND	136	50-140			
Methylene Chloride	0.0435	0.0050	mg/L	ND	109	60-130			
Styrene	0.0412	0.0005	mg/L	ND	103	60-130			
1,1,1,2-Tetrachloroethane	0.0403	0.0005	mg/L	ND	101	60-130			
1,1,2,2-Tetrachloroethane	0.0499	0.0005	mg/L	ND	125	60-130			
Tetrachloroethylene	0.0462	0.0005	mg/L	ND	115	60-130			
Toluene	0.0432	0.0005	mg/L	ND	108	60-130			
1,1,1-Trichloroethane	0.0433	0.0005	mg/L	ND	108	60-130			
1,1,2-Trichloroethane	0.0394	0.0005	mg/L	ND	98.4	60-130			
Trichloroethylene	0.0395	0.0005	mg/L	ND	98.7	60-130			
Trichlorofluoromethane	0.0480	0.0010	mg/L	ND	120	60-130			
Vinyl chloride	0.0322	0.0002	mg/L	ND	80.4	50-140			
m,p-Xylenes	0.0845	0.0005	mg/L	ND	106	60-130			
o-Xylene	0.0420	0.0005	mg/L	ND	105	60-130			
Surrogate: 4-Bromofluorobenzene	*0.0878*		*mg/L*		*110*	*50-140*			
Surrogate: Dibromofluoromethane	*0.0917*		*mg/L*		*115*	*50-140*			
Surrogate: Toluene-d8	*0.0791*		*mg/L*		*98.9*	*50-140*			

Certificate of Analysis
Client: **LRL Associates Ltd.**
Client PO:

Report Date: 02-Jun-2023
Order Date: 29-May-2023
Project Description: 210341

Qualifier Notes:

Sample Qualifiers :

Sample Data Revisions

None

Work Order Revisions / Comments:

None

Other Report Notes:

n/a: not applicable
ND: Not Detected
MDL: Method Detection Limit
Source Result: Data used as source for matrix and duplicate samples
%REC: Percent recovery.
RPD: Relative percent difference.
NC: Not Calculated

PARACE LABORATORIES L

Paracel ID: 2322119

Blvd.
4J8
os.com

Paracel Order Number	Chain Of Custody Ontario Drinking Water Samples № 19086
2022119	

Client Name:	LRL	Project Ref:	210341	Waterworks Name:		Samples Taken By:	
Contact Name:	Jessica Arthurs	Quote #:	--	Waterworks Number:		Name:	Jessica Arthurs
Address:	5430 Canotek Rd ottawa, on K1J 9G2	PO #:		Address:		Signature:	
After Hours Contact:	Jessica Arthurs	E-mail:	jarthurs@lrl.ca			Page 1 of 1	
Telephone:	613 978 0658	Fax:		Public Health Unit:		Turn Around Time Required: ☐ 1 day ☐ 2 day ☐ 3 day ☒ 4 day	

Samples Submitted Under: (Indicate **ONLY one**)
☐ ON REG 170/03 ☐ ON REG 319/08 ☐ Private Well
☐ ON REG 243/07 ☒ Other ODWS

Have LSN forms been submitted to MOE/MOHLTC?: ☐ Yes ☐ No ☐ N/A

Are these samples for human consumption?: ☐ Yes ☐ No

All information must be completed before samples will be processed.

Sample Type: R = Raw ; T = Treated ; D = Distribution; P = Plumbing
Source Type: G = Ground Water; S = Surface Water
Reportable: Requires AWQI reporting as per Regulation - Y = Yes; N = No

	LOCATION NAME	SAMPLE ID	Sample Type: R/T/D/P	Source Type: G / S	Reportable: Y / N	Resample	SAMPLE COLLECTED DATE	SAMPLE COLLECTED TIME	# of Containers	Free/Combined Chlorine Residual mg/L	Standing / Flushed: S / F (REG 243)	Required Analyses: Total Coliform/E. Coli	HPC	Lead	THM	VOC	Trace Metals	Subdivision Reg
1	5969 Ottawa St. - Well	5969 Ottawa St. - 3HR	R	G	N		May 29, 2023	10:46	10	0.00	F					X	X	X
2	↓	5969 Ottawa St. - 6HR	R	G	N		↓	13:46	10	0.01	F					X	X	X
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		

Comments:

Method of Delivery: Walk In

Relinquished By (Sign):	Received By Driver/Depot:	Received at Lab: KB 15:48	Verified By:
Relinquished By (Print): Jessica Arthurs	Date/Time:	Date/Time: May 29/23	Date/Time: May 30/23 9:41
Date/Time: May 29, 2023 3:47 pm	Temperature: °C	Temperature: 10.1 °C	pH Verified: ☐ By:

ATTACHMENT IV

Test Pit Logs

TEST PIT LOG: TP21-1

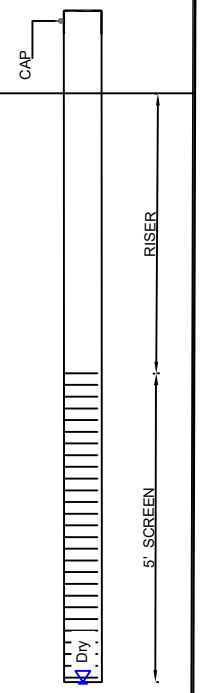
LRJ ENGINEERING | INGÉNIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

PROJECT NO.: 210341
PROJECT: Hydrogeological Assessment & Terrain Analysis
CLIENT: Al Roberts
LOCATION: 5969 OTTAWA STREET, RICHMOND, ONTARIO
DATE: July 20, 2021
FIELD PERSONNEL: DC
EXCAVATION METHOD: BACKHOE KX121-3
EXCAVATION CONTRACTOR: Landraulics Equipment

DEPTH (FT / M)	SOIL DESCRIPTION	ELEV./DEPTH (m)	LITHOLOGY	SAMPLE NUMBER	N OR RQD (%)	RECOVERY (%)	LABORATORY ANALYSIS
0.0 / 0.0		99.478					
0.0 – 1.0 / 0.0 – 0.30	**TOP SOIL:** Sandy silty loam, dry, brown.	0.0 – 99.178		S1			
1.0 – 3.0 / 0.30 – 0.90	**SANDY LOAM:** Fine grained, dry, brown	0.30 – 98.578		S2			
3.0 – 9.0 / 0.90 – 2.80	**SILTY LOAM:** Dry, brown/grey, some discolouration like oxidization between (0.9 - 2.8) m bgs. Presence of cobbles and boulders at 1.8 m bgs.	0.90 – 96.678		S3 (S6), S4			
9.0 / 2.80	End of Test Pit	2.80					

Combustible Soil Vapours (ppm): 10, 30, 50, 70, 90
ISOBUTYLENE (ppm): 200, 600, 1000, 1400, 1800

Water Level (Standpipe)



EASTING: 0435611
NORTHING: 5004477
SITE DATUM: Base of concrete hydro pole in SW corner of the Site (100.00 m).
GROUNDSURFACE ELEVATION: 99.478 m
TOP OF RISER ELEVATION: 99.867 m
EXCAVATION WIDTH : 1.65 m
EXCAVATION LENGTH: 0.9 m

NOTES:
bgs: Below Ground Surface
(SX): Duplicate Sample Collected

TEST PIT LOG: TP21-2

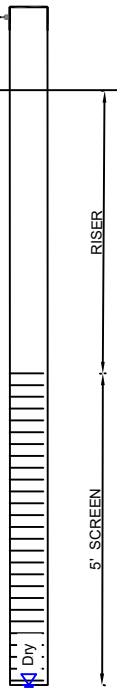
LRJ
ENGINEERING | INGÉNIERIE
5430 Canotek Road| Ottawa, ON, K1J 9G2
www.lrl.ca| (613) 842-3434

PROJECT NO.: 210341
PROJECT: Hydrogeological Assessment & Terrain Analysis
CLIENT: Al Roberts
LOCATION: 5969 OTTAWA STREET, RICHMOND, ONTARIO
DATE: July 20, 2021
FIELD PERSONNEL: DC
EXCAVATION METHOD: BACKHOE KX121-3
EXCAVATION CONTRACTOR: Landraulics Equipment

DEPTH (FT / M)	SOIL DESCRIPTION	ELEV./DEPTH (m)	LITHOLOGY	SAMPLE NUMBER	N OR RQD (%)	RECOVERY (%)	LABORATORY ANALYSIS
0.0 / 0.0		99.929					
0.0 – 1.0 / 0.0 – 1.0	**TOP SOIL:** Sandy loam, dry, fine grained, dark brown with light brown traces.	0.0 – 99.629		S1			
1.0 – 3.0 / 1.0 – 2.0	**SILTY LOAM:** Dry, brown, trace of oxidization.	0.30 – 99.029		S2 (S5)			
3.0 – 9.0 / 1.0 – 3.0	**LOAM:** Dry become moist at 2.1 m bgs , brown. Presence of cobbles and boulders at 1.8 m bgs.	0.90 – 97.129		S3, S4			
9.0 – 19.0 / 3.0 – 5.0	End of Test Pit	2.80					

Combustible Soil Vapours (ppm): 10, 30, 50, 70, 90
ISOBUTYLENE (ppm): 200, 600, 1000, 1400, 1800

Water Level (Standpipe)



EASTING: 0435644
NORTHING: 5004444
SITE DATUM: Base of concrete hydro pole in SW corner of the Site (100.00 m).
GROUNDSURFACE ELEVATION: 99.929 m
TOP OF RISER ELEVATION: 100.310 m
EXCAVATION WIDTH : 1.6 m
EXCAVATION LENGTH: 1.1 m

NOTES:
bgs: Below Ground Surface
(SX): Duplicate Sample Collected

TEST PIT LOG: TP21-3

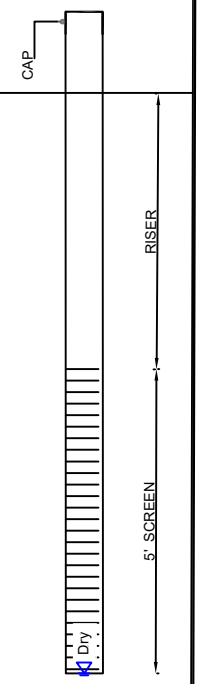
LRJ
ENGINEERING | INGÉNIERIE
5430 Canotek Road | Ottawa, ON, K1J 9G2
www.lrl.ca | (613) 842-3434

PROJECT NO.: 210341
PROJECT: Hydrogeological Assessment & Terrain Analysis
CLIENT: Al Roberts
LOCATION: 5969 OTTAWA STREET, RICHMOND, ONTARIO
DATE: July 20, 2021
FIELD PERSONNEL: DC
EXCAVATION METHOD: BACKHOE KX121-3
EXCAVATION CONTRACTOR: Landraulics Equipment

DEPTH (FT / M)	SOIL DESCRIPTION	ELEV./DEPTH (m)	LITHOLOGY	SAMPLE NUMBER	N OR RQD (%)	RECOVERY (%)	LABORATORY ANALYSIS
0.0 / 0.0		99.676					
	TOP SOIL: Sandy loam, dry, fine grained, dark brown with light brown traces.	0.0 / 99.376		S1			
1.0	**SILTY LOAM:** Dry, brown with some grey.	0.30 / 98.776		S2 (S5)			
3.0 / 1.0	**LOAM:** Dry, brown, presence of cobbles and boulders at 1.8 m bgs.	0.90		S3			
6.0 / 2.0							
8.0				S4			
9.0		96.876					
	End of Test Pit	2.80					
10.0 / 3.0							
13.0 / 4.0							
16.0 / 5.0							
19.0							

Combustible Soil Vapours (ppm): 10 30 50 70 90
ISOBUTYLENE (ppm): 200 600 1000 1400 1800

Water Level (Standpipe)



EASTING: 0435644
NORTHING: 5004444
SITE DATUM: Base of concrete hydro pole in SW corner of the Site (100.00 m).
GROUNDSURFACE ELEVATION: 99.929 m
TOP OF RISER ELEVATION: 100.310 m
EXCAVATION WIDTH : 1.6 m
EXCAVATION LENGTH: 1.1 m

NOTES:
bgs: Below Ground Surface
(SX): Duplicate Sample Collected

ATTACHMENT V

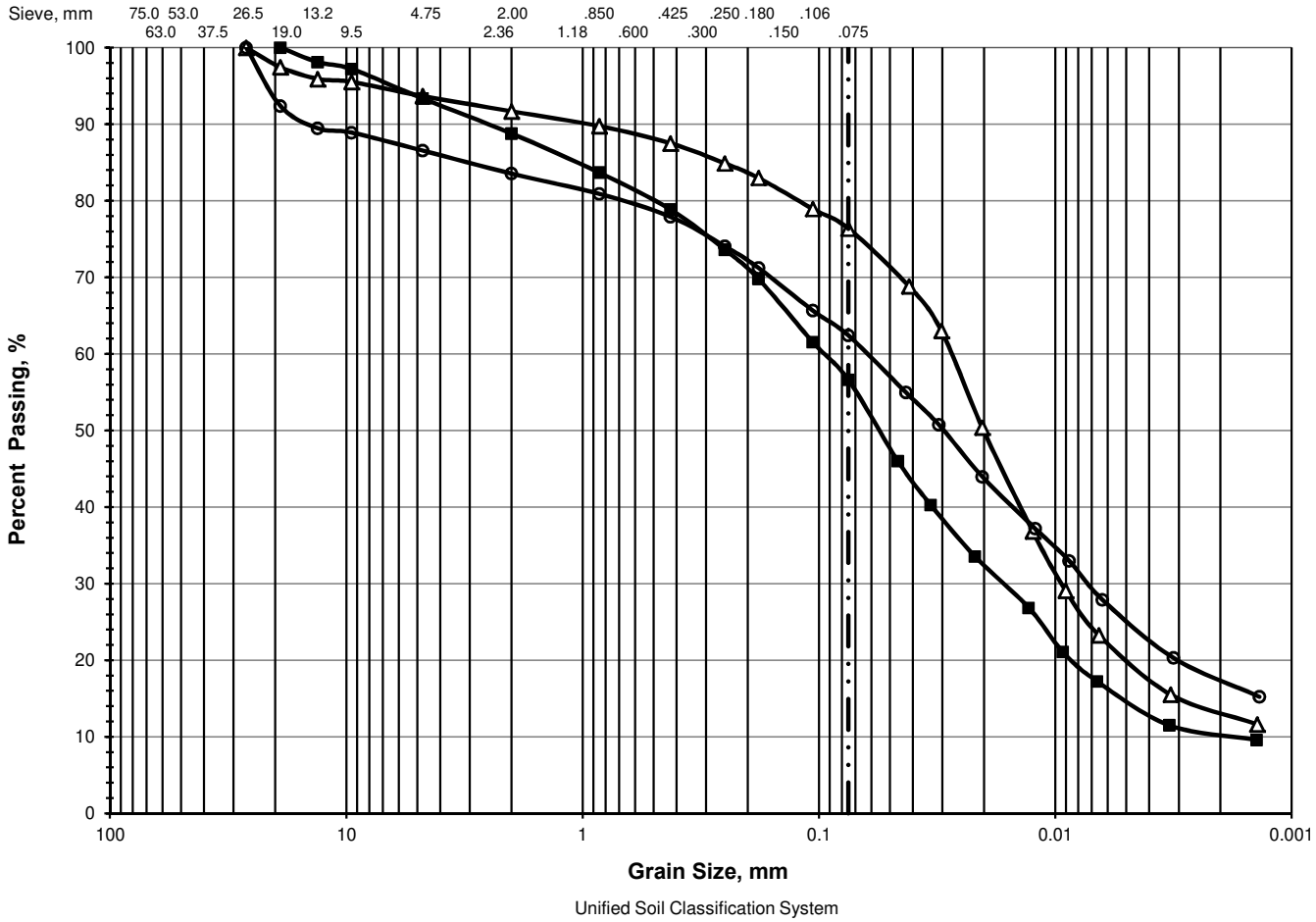
Laboratory Certificates of Analysis – Grain Size

LRL Associates Ltd.

PARTICLE SIZE ANALYSIS

ASTM D 422 / LS-702

Client:	Al Roberts	**File No.:**	210341
Project:	Hydrogeological Assessment	**Report No.:**	1
Location:	5969 Ottawa Street, Ottawa, ON	**Date:**	July 20, 2021



Unified Soil Classification System

	> 75 mm	% GRAVEL		% SAND			% FINES	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
△	0.0	2.2	4.1	2.0	4.2	11.1	63.5	12.9
■	0.0	0.0	6.7	4.6	9.9	22.2	46.4	10.2
○	0.0	6.6	6.8	3.0	5.6	15.5	45.5	17.0

	Location	Sample	Depth, m	D_{60}	D_{50}	D_{30}	D_{15}	D_{10}	C_c	C_u
△	TP 1	3	0.9 - 1.8	0.0279	0.0201	0.0094	0.0030			
■	TP 2	4	1.8 - 2.7	0.0964	0.0571	0.0171	0.0053	0.0018	1.7	53.6
○	TP 3	3	1.8 - 2.7	0.0646	0.0299	0.0073				

ATTACHMENT VI

Water Well Records

Ontario — Ministry of the Environment, Conservation and Parks

Tag#: A342311 (Print Below)

A342311

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: ☐ Metric ☒ Imperial

Page ____ of ____

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	Allan Wayne & Roberta Anne Roberts		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
61 Strachan Street Box 1305	Richmond	ON	K0A 2Z0	

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
5969 Ottawa Street	Goulbourn	PT Unit 10	PL 4D-26

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3	18	435611	5004467	4R-7050 PT 1 PCL10-3	Well #2

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
	Clay	& Gravel		0	22
Grey	Limestone			22	165
Grey	Limestone	w/White + Grey Sandstone	Mix	165	224
Grey	Limestone	w/White + Grey Sandstone	Mix	224	230

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
190	180	Neat cement	12.48
180	0	Bentonite slurry	25.2

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
6¼"	Steel	.188"	+2'	190'
6"	Open Hole		190'	230'

Status of Well

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

Construction Record - Screen

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

Water Details

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

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0'	190'	9¾"
190'	230'	6"

Well Contractor and Well Technician Information

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

Business Address (Street Number/Name)	Municipality
6650 Franktown Road	Richmond

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

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
6138382170	Hanna, Jeremy

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted (Y Y Y Y M M D D)
13632		2023 05 31

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): 220

Pumping rate (l/min/GPM): 20

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 77.4'

If flowing give rate (l/min/GPM)

Recommended pump depth (m/ft): 140 FT

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

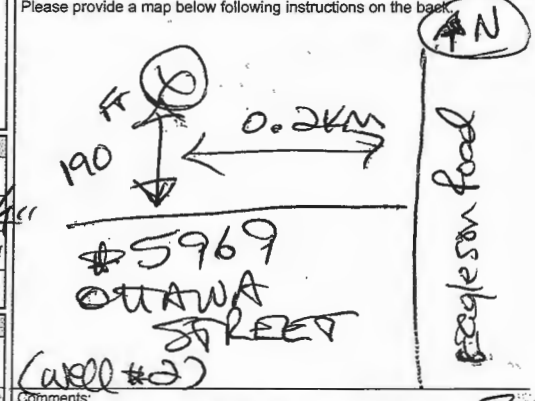
Well production (l/min/GPM): 20

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	81.3'		77.4'
1	17.5	1	61.4
2	23.8	2	50.7
3	29.3	3	41.4
4	34	4	33.2
5	38	5	26.3
10	52.3	10	9.8
15	61	15	8.3
20	66.2	20	8.3
25	69.6	25	8.3
30	72	30	8.3
40	75.3	40	8.3
50	76.8	50	8.3
60	77.4'	60	8.3

Map of Well Location

Please provide a map below following instructions on the back.



Comments: ½ HP-10GPM set @ 140 FT

Well owner's information package delivered	Date Package Delivered (Y Y Y Y M M D D)	Ministry Use Only
☒ Yes ☐ No	2023 05 31	Audit No. Z394568

Received

Ministry's Copy

Ontario — Ministry of the Environment, Conservation and Parks

Well Record

Regulation 903 Ontario Water Resources Act

We Tag#: A320977 (old Below) A320977

Page ____ of ____

Measurements recorded in: ☐ Metric ☒ Imperial

Well Owner's Information

First Name: — Last Name/Organization: Allan & Roberta Roberts — E-mail Address: — ☐ Well Constructed by Well Owner

Mailing Address (Street Number/Name): 5969 Ottawa Street — Municipality: Richmond — Province: ON — Postal Code: K0A 2Z0 — Telephone No. (inc. area code):

Well Location

Address of Well Location (Street Number/Name): 5969 Ottawa Street — Township: Gaulbourn — Lot: A-Unit 10 — Concession: Pl 9D-26

County/District/Municipality: Ottawa Carleton — City/Town/Village: Richmond — Province: Ontario — Postal Code:

UTM Coordinates: Zone: 18 — Easting: 435625 — Northing: 5004457 — Municipal Plan and Sublot Number: MR-1056 Part 1 — Other: PCL10-3

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

General Colour	Most Common Material	Other Materials	General Description	Depth (ft) From	Depth (ft) To
	Sand	& Clay	& Gravel	0	21
Grey	Limestone			21	48
Grey	Limestone			48	154
Grey	Limestone			154	160

Annular Space

Depth Set at (ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (lbs)
27	17	Neat cement	7.8
17	0	Bentonite slurry	8.4

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (ft) From	Depth (ft) To
6¼"	Steel	.188"	+2'	27'
6"	Open Hole		27'	160'

Status of Well

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

Construction Record - Screen

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

Results of Well Yield Testing

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

If pumping discontinued, give reason: X

Pump intake set at (ft): 150

Pumping rate (l/min/GPM): 20

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (ft): 57.7'

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

Recommended pump depth (ft): 100'

Recommended pump rate (l/min/GPM): 15

Well production (l/min/GPM): 20

Disinfected: ☐ Yes ☐ No

Time (min)	Draw Down Water Level (ft)	Time (min)	Recovery Water Level (ft)
Static Level	9.1'		57.7'
1	18.2	1	41.5
2	24.3	2	29.9
3	28.6	3	20.7
4	31.7	4	13.5
5	34.2	5	9.1
10	44.1	10	9.1
15	48.5	15	9.1
20	51.7	20	9.1
25	54.9	25	9.1
30	56.3	30	9.1
40	57.2	40	9.1
50	57.5	50	9.1
60	57.7'	60	9.1'

Water Details

Water found at Depth (ft)	Kind of Water	Hole Diameter From	To	Diameter (cm/in)
48	☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify	0'	27'	9¾"
154	☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify	27'	160'	6"
	☐ Fresh ☐ Untested ☐ Gas ☐ Other, specify			

Map of Well Location

Please provide a map below following instructions on the back of this form.

Comments: 3/4HP-15GPM Set@100'

Well Contractor and Well Technician Information

Business Name of Well Contractor: Air Rock Drilling Co. Ltd. — Well Contractor's Licence No.: 7891

Business Address (Street Number/Name): 6656 Frankdown Road — Municipality: Richmond

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

Bus. Telephone No. (inc. area code): 6138982170 — Name of Well Technician (Last Name, First Name): Hogan, Dan

Well Technician's Licence No.: T3058 — Signature of Technician and/or Contractor — Date: 2021 06 30

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

Date Package Delivered: 2021 06 10

Date Work Report Received: 2021 06 08

Ministry Use Only — Audit No.: Z355197 — Received

Ministry's Copy

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UTM 18 Z 4359 75 E JIG4f

15 R 5004385 N The Ontario Water Resources Commission Act

Elev. 4 R 0305

WATER WELL RECORD

WATER RESOURCES DIVISION
AUG 24 1965 No. 6372
ONTARIO WATER RESOURCES COMMISSION

Basin 25 County or District CARLETON Township, Village, Town or City NEPEAN

Con. 6 RF Lot 4 Date completed 5 (day) APRIL (month) 65 (year)

[redacted] dress

Casing and Screen Record

Inside diameter of casing 4
Total length of casing 38
Type of screen
Length of screen
Depth to top of screen
Diameter of finished hole 4

Pumping Test

Static level 20
Test-pumping rate 5 G.P.M.
Pumping level 35
Duration of test pumping 1 HR
Water clear or cloudy at end of test CLEAR
Recommended pumping rate 5 G.P.M.
with pump setting of 70 feet below ground surface

Well Log / Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
COARSE GRAVEL	0	20		
FINE "	20	30		
" RED SAND	30	38		
LIMESTONE	38	86	85	FRESH

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

Is well on upland, in valley, or on hillside? (upland circled)

Drilling or Boring Firm F P SPARKS

Address STITTSVILLE

Licence Number 1600

Name of Driller or Borer EH SPARKS

Address

Date AUG 12

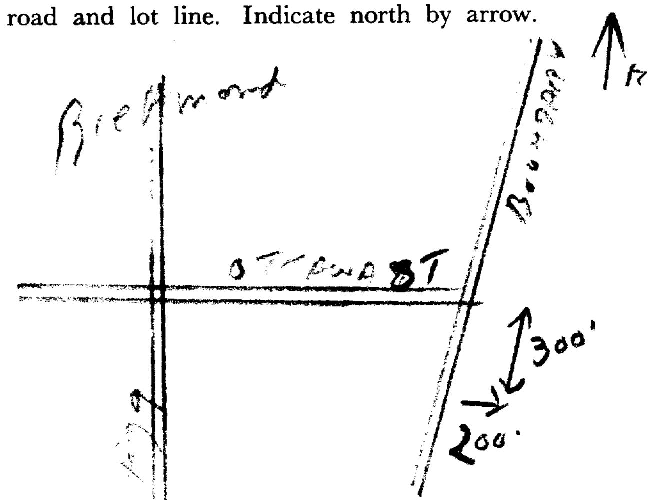
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



- 31G/4f "A"

UTM 1 | 6 | Z | 4 | 3 | 5 | 2 | 5 | 0 | E
| 5 | R | 5 | 0 | 0 | 3 | 9 | 0 | 1 | 5 | N

Elev. | 4 | R | 0 | 3 | 1 | 1 | 0 |

Basin | 2 | 5 |

ONTARIO

The Well Drillers Act

Department of Mines, Province of Ontario

RECEIVED
DEC 21 1949
GEOLOGICAL BRANCH
DEPARTMENT OF MINES

9093

Water Well Record

Village of RICHMOND.

[redacted] Con. ... Lot ~~2nd~~ ... Pt. Lot ...

Richmond ... Acres 1/4

Date Completed July 20/48 ... Cost of Well (not including pump) 160.00

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) of casing(s) 25'
Length of screen no screen
Type of screen
Type of pump no pump
Capacity of pump
Depth of pump setting

Pumping Test

Date July 20/48
Developed Capacity 250 G.P.H.
Duration of Test 1 hr.
Pumping Rate
Drawdown
Static level of completed well 20'
Is well a gravel-wall type? gravel

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? house
How far is well from possible source of contamination? 200
What is source of contamination? creek
Enclose a copy of any mineral analysis that has been made of water

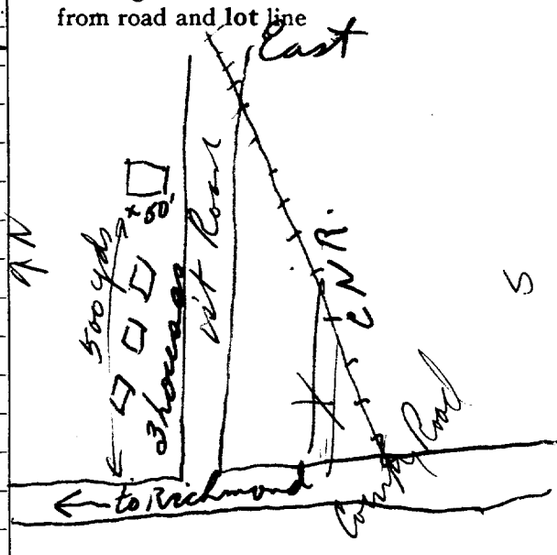
Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
60'		40'
73	good	53'

Well Log

Drift and Bedrock Record	From	To
gravel	0 ft.	25 ft.
limestone Rock	25	25

Location of Well

In diagram below show distances of well from road and lot line



Situation: Is well on upland, in valley, or on hillside? flat

Drilling Firm F. P. Sparks

Address Stittsville Ont

Recorded by F. P. Sparks ... Address Stittsville

Date Dec 8/49 ... Licence Number 133

6A — 31G/4F "A"

UTM 1 8 Z 4 3 4 9 5 5 E
5 R 5 0 0 3 8 0 5 N
Elev. 4 R 0 3 0 8
Basin 2 5

ONTARIO

The Well Drillers Act
Department of Mines, Province of Ontario

15 No 9100

RECEIVED JAN 1952 GEOLOGICAL BRANCH DEPARTMENT OF MINES

Water Well Record

County or Territorial District County Carleton ~~Township~~, Village, ~~Town or City~~ RICHMOND
Con Huntley Lot .... Street and Number (if in Village, Town or City) Richmond Ont.
Owner County Carleton High School Address Richmond Ont.
Date Completed Fri (day) Mar 20 (month) 1951 (year) Cost of Well (excluding pump) Well only $775.00

Pipe and Casing Record	Pumping Test
Casing diameter(s) 6"	Date
Length(s) of casing(s) 26'	Static level 0'
Type of screen	Pumping level 0'
Length of screen	Pumping rate 5300 g p h
Distance from top of screen to ground level	Duration of test 3 hrs.
Is well a gravel-wall type? clay 26'	Distance from cylinder or bowls to ground level

Water Record

Kind (fresh or mineral) fresh
Quality (hard, soft, contains iron, sulphur, etc.) No
Appearance (clear, cloudy, coloured) clear
For what purpose(s) is the water to be used? Furnished School
How far is well from possible source of contamination? 700 yd
What is the source of contamination? Septic tank
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
ground level	fresh	140'
120		120'

Well Log

Overburden and Bedrock Record	From	To
26 feet overburden	0 ft.	26 ft.
114 Bedrock Limestone	26	140

Location of Well

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

see over

Situation: Is well on upland, in valley, or on hillside? flat
Drilling Firm G. P. Sparks & Son
Address Stittsville Ont.
Name of Driller Same Address Same
Date .... Licence Number 396

G. H. Sparks
Signature of Licensee

FORM 5

316/4f. "A"

UTM 1 | 18 | Z | 4 | 3 | 5 | 2 | 2 | 5 | E
5 | R | 5 | 0 | 0 | 3 | 8 | 1 | 0 | N

Elev. 4 | R | 0 | 3 | 1 | 0

Basin 2 | 5

ONTARIO

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APR 17 1953
GEOLOGICAL BRANCH
DEPARTMENT OF MINES

15 No. 9111

The Well Drillers Act

Department of Mines, Province of Ontario

Water Well Record

[redacted]

p, Village, ~~Town or City~~ Richmond

Town or City)

Richmond

Date Completed 10 (day) Aug (month) 52 (year) Cost of Well (excluding pump)

Pipe and Casing Record

Casing diameter(s) 4"

Length(s) of casing(s) 25 ft.

Type of screen —

Length of screen

Distance from top of screen to ground level

Is well a gravel-wall type? —

Pumping Test

Date

Static level 10 ft.

Pumping level 130 ft.

Pumping rate 200 per hr.

Duration of test 1 hours

Distance from cylinder or bowls to ground level

Water Record

Kind (fresh or mineral) fresh

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

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? 50 ft.

What is the source of contamination? privy

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

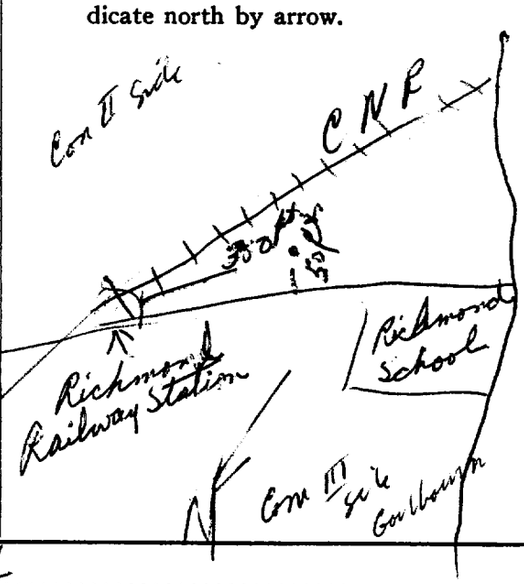
Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
75	fresh	65
148	fresh	

Well Log

Overburden and Bedrock Record	From	To
	0 ft.	....ft.
till	0	21
limestone	21	152

Location of Well

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



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

Drilling Firm K Sparks — F. E. Johnston Valley Drilling

Address South March

Name of Driller K Sparks Address

Date Mar. 24/53 Licence Number 490

K Sparks
Signature of Licensee

FORM 5

(A7) — 31G/4f. "A"

UTM 18 | 4315216 | 5 E
5 | 5010319210 N
Elev. 4 | 0317 C
Basin 215 | | |

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GEOLOGICAL BRANCH
DEPARTMENT OF MINES

15 No. X9113

ONTARIO

The Well Drillers Act

Department of Mines, Province of Ontario

Water Well Record

[redacted]

p, Village, ~~Town or City~~ Richmond
Town or City) Richmond
s Richmond

Date Completed 30 (day) Aug (month) 52 (year) Cost of Well (excluding pump)

Pipe and Casing Record

Casing diameter(s) 4
Length(s) of casing(s) 22 ft.
Type of screen —
Length of screen —
Distance from top of screen to ground level —
Is well a gravel-wall type? —

Pumping Test

Date Aug 30
Static level 8 ft.
Pumping level ft.
Pumping rate 2 to per hr.
Duration of test 20 minutes
Distance from cylinder or bowls to ground level

Water Record

Kind (fresh or mineral) fresh
Quality (hard, soft, contains iron, sulphur, etc.) unknown
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? 60 ft.
What is the source of contamination? septic tank
Enclose a copy of any mineral analysis that has been made of water

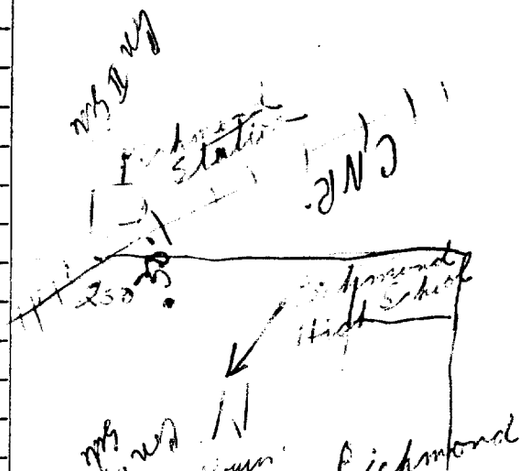
Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
70		60
115		2

Well Log

Overburden and Bedrock Record	From	To
	0 ft.	....ft.
Till		19
Limestone	19	120

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? upland
Drilling Firm E. Sparks E.E. Johnston Valley Drilling
Address South March
Name of Driller E. Sparks Address
Date Nov 26/53 Licence Number 490
E. Sparks
Signature of Licensee

FORM 5

31G/4F "A"

UTM 18 Z 4 3 5 1 0 5 E
5 R 5 0 1 0 3 7 0 1 0 N

Elev. 4 R 0 3 1 0

Basin 2 5

ONTARIO

The Well Drillers Act

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APR 17 1953
GEOLOGICAL BRANCH
DEPARTMENT OF MINES

15 No. 9115

Department of Mines, Province of Ontario

Water Well Record

[redacted] Village of Richmond

[redacted], ~~Village, Town or City~~ Richmond

[redacted] Richmond

Date Completed 15 (day) Sept (month) 52 (year) Cost of Well (excluding pump)

Pipe and Casing Record

Casing diameter(s) 4"

Length(s) of casing(s) 26'

Type of screen

Length of screen

Distance from top of screen to ground level

Is well a gravel-wall type?

Pumping Test

Date Sept 15/52

Static level 12

Pumping level 80

Pumping rate 100 gr hr

Duration of test 2 hrs

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? household

How far is well from possible source of contamination? 200 ft

What is the source of contamination? toilet

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

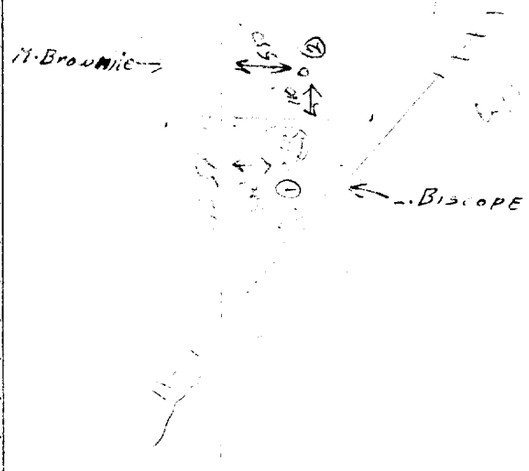
Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
140	fresh	128

Well Log

Overburden and Bedrock Record	From	To
Clay & Boulders	0 ft.	25 ft.
& Blue Limestone	25	151

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? upland

Drilling Firm Valley Drilling Co.

Address 393 Cambridge St

Name of Driller Ken Sparks Address

Date April 8/53 Licence Number 62

Signature of Licensee

FORM 5

316/4f "A"

UTM 18 Z 435012 5 E
5 R 5010371 10 N
Elev. 4 R 01308
Basin 25

ONTARIO

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GEOLOGICAL BRANCH
DEPARTMENT of MINES

No 9123

The Well Drillers Act
Department of Mines, Province of Ontario

Water Well Record

Richmond.

County or Territorial District Carleton, Township, Village, ~~Town or City~~ Goulbourn
(Town or City) ...
Address ... Richmond Ont.
Date Completed 3 Dec 53 (day) (month) (year) Cost of Well (excluding pump) ...

Pipe and Casing Record

Casing diameter(s) 4 inch
Length(s) of casing(s) 30 feet
Type of screen W.O. Screen
Length of screen 1 1
Distance from top of screen to ground level ...
Is well a gravel-wall type? ...

Pumping Test

Date Dec. 3 1953
Static level 8 feet
Pumping level 12 ft
Pumping rate 150 g.p.h.
Duration of test 20 minutes
Distance from cylinder or bowls to ground level ...

Water Record

Kind (fresh or mineral) fresh
Quality (hard, soft, contains iron, sulphur, etc.) soft
Appearance (clear, cloudy, coloured) clear
For what purpose(s) is the water to be used? private home
How far is well from possible source of contamination? 50 feet
What is the source of contamination? out door closit
Enclose a copy of any mineral analysis that has been made of water

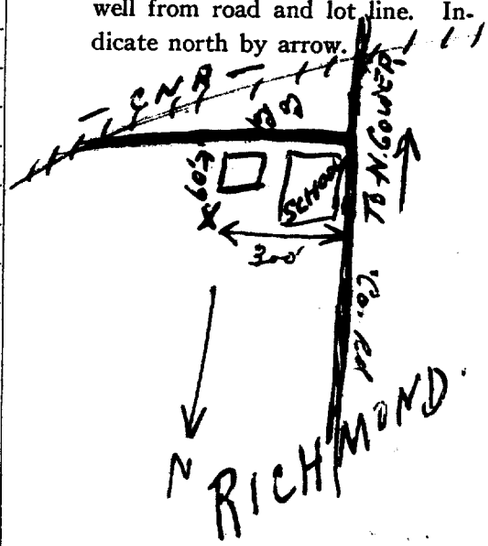
Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
45	fresh	37'

Well Log

Overburden and Bedrock Record	From	To
blue clay	0 ft.	30 ft.
grey limestone	30	60

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? valley
Drilling Firm C. K. Sparks
Address Stittsville Ont.
Name of Driller Clayton Sparks Address Stittsville Ont.
Date Dec. 3 1953 Licence Number 396
C. K. Sparks
Signature of Licensee

FORM 5

31G/4f "A"

UTM 18 Z 435216 E
15 R 5104105 N
Elev. 4 R 03110
Basin 215

ONTARIO

15 No 9128

The Well Drillers Act

Department of Mines, Province of Ontario

Water Well Record

[redacted] Village of RICHMOND
Village, Town or City ~~Hepburn~~
Township, Town or City) Ottawa
Owner T. F. Milton Address Richmond Ont.
Date Completed 8th (day) July (month) 1954 (year) Cost of Well (excluding pump)

Pipe and Casing Record

Casing diameter(s) 4 inch
Length(s) of casing(s) 17 feet
Type of screen
Length of screen
Distance from top of screen to ground level 15 feet
Is well a gravel-wall type? Rock

Pumping Test

Date 8 July 1954
Static level 3 feet
Pumping level 15 feet
Pumping rate 240 gal per hr
Duration of test 2 hrs
Distance from cylinder or bowls to ground level

Water Record

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

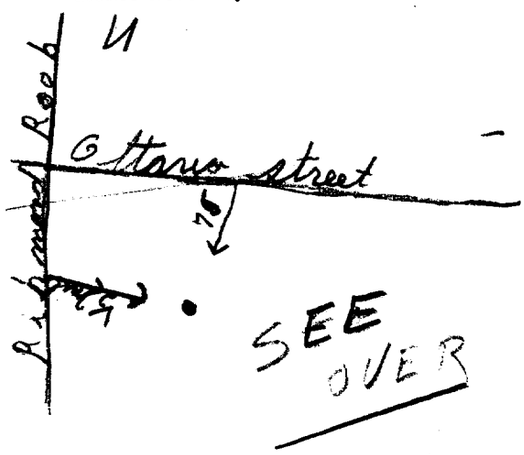
Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
185 feet	fresh	182 feet

Well Log

Overburden and Bedrock Record	From	To
	0 ft.	[illegible] ft.
CLAY	0	7
Boulders	7	12
BLUISH LIMESTONE	12	190

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? upland
Drilling Firm D. D. Supreme
Address 1870 Carling Ottawa
Name of Driller W. Ray Address 232 St Joseph blvd Hull
Date 8 July 1954 Licence Number 394
W. Willie Ray
Signature of Licensee

FORM 5

31G/4f. "A"

UTM 18 Z 435110 E
9 R 5010378 N
Elev. 9 R 0311 0
Basin 25

ONTARIO

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APR - 3 1956
GEOLOGICAL BRANCH
DEPARTMENT of MINES

15 No. 9139

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Carleton Township, Village, ~~Town or City~~ Richmond

[redacted] n Village, Town or City) Richmond

Address Richmond

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 28'
Type of screen
Length of screen

Pumping Test

Static level 3'
Pumping rate 200 GPH
Pumping level 8'
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'	26'	~~46~~ 51'	46.	fresh
& Limestone	26	51'			

For what purpose(s) is the water to be used?
Home
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? valley

Drilling firm M. McVeagh
Address 639 Rowanwood Ave. Ottawa
Name of Driller M. McVeagh
Address

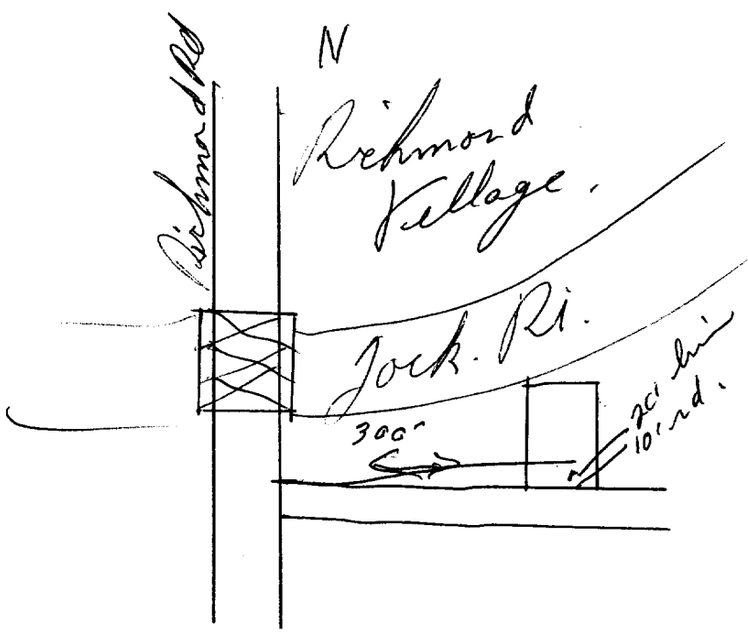
Licence Number 171

I certify that the foregoing statements of fact are true.

Date Mar. 2 56 M. McVeagh
Signature of Licensee

Location of Well

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



Form 5

31G/4f "A"

UTM 18 Z 434812 O E
5 R 5010410 C N

Elev. 4 R 01015

Basin 25

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City Goulbourn
Con 3 Lot 24 Street and Number (if in Village, Town or City) Richmond
Owner Cedar Home Bldrs Ltd Address Richmond
Date completed Aug 12. 57.
(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 28'
Type of screen None
Length of screen

Pumping Test

Static level 11'
Pumping rate 230 G.P.H.
Pumping level 12'
Duration of test 1 hr.

Well Log

Overburden and Bedrock Record	From ft.	To ft.
Clay	1'	27'
Limestone	27'	30'

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
30'	39'	fresh

For what purpose(s) is the water to be used?
Home
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? valley

Drilling firm M Meagher
Address 639 Lauderwood Ave Ottawa
Name of Driller M Meagher
Address

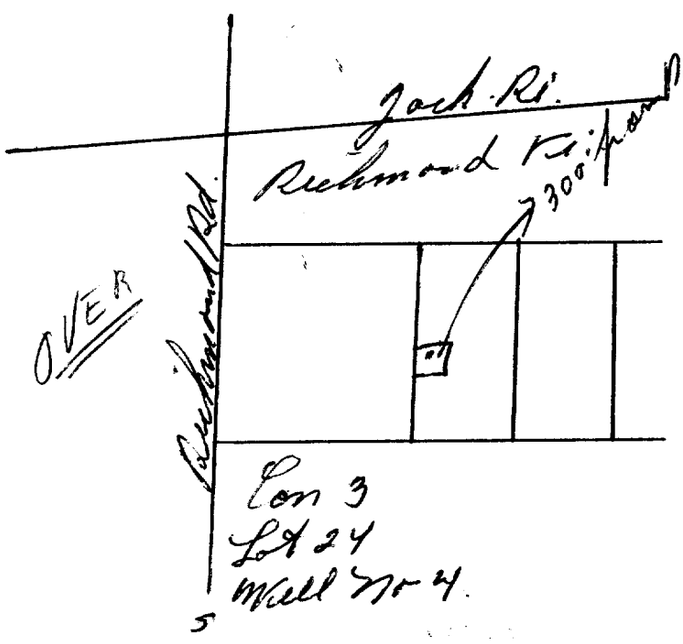
Licence Number 171

I certify that the foregoing statements of fact are true.

Date Aug 17 M Meagher
Signature of Licensee

Location of Well

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



OVER

Form 5

31G/4f "A"

UTM 18 Z 434840 E
5 R 500415 N

Elev. 4 R 0305

Basin 25

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

GROUND WATER BRANCH
NOV 26 1957
ONTARIO WATER RESOURCES COMMISSION

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City Goulbourn
Con. 3 Lot 24 Street and Number (if in Village, Town or City) Richmond
Owner Cedar Home Builders Ltd. Address Richmond
Date completed Aug 17 57
(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 28'
Type of screen None
Length of screen

Pumping Test

Static level 11'
Pumping rate 230 G.P.H.
Pumping level 12'
Duration of test 1 hr.

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)
Clay	1'	27'			
Limestone	27'	51'	51'	40'	fresh

Water Record

For what purpose(s) is the water to be used? Home
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? valley

Drilling firm J.J. Meagher
Address 639 Hawthorne Ave Ottawa
Name of Driller J.J. Meagher
Address

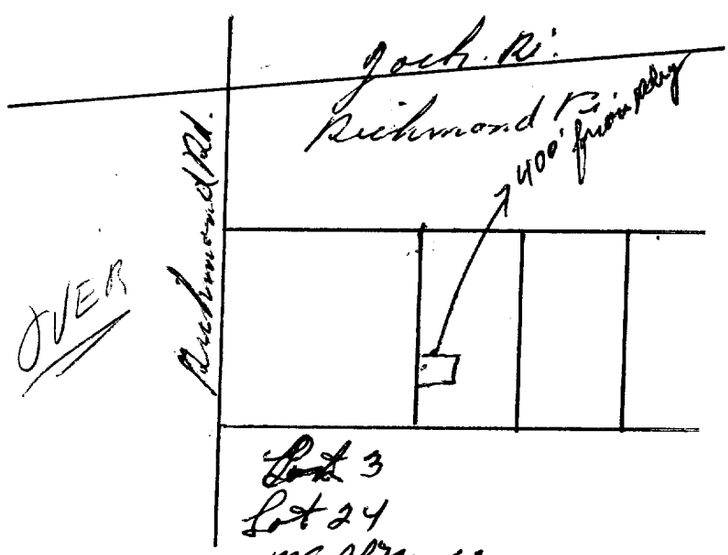
Licence Number 171

I certify that the foregoing statements of fact are true.

Date Aug 17 J.J. Meagher
Signature of Licensee

Location of Well

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



OVER

Form 5

5

31G/4f. A"

UTM 18 Z 431486 E

5 R 5010410 N

Elev. 4 R 0303

Basin 25

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

GROUND WATER BRANCH
NOV 26 1957
ONTARIO WATER RESOURCES COMMISSION

15 No. 9155

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City Goulbourn

Con. Front Lot 24 Street and Number (if in Village, Town or City) Richmond Rd

Owner Cedar Dome Bldrs Ltd. Address Richmond Rd

Date completed Aug 26 57
(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"

Length(s) 28'

Type of screen None

Length of screen

Pumping Test

Static level 10'

Pumping rate 260 G.P.H.

Pumping level 44'

Duration of test 1 hr

Well Log

Overburden and Bedrock Record	From ft.	To ft.
Clay	1'	28'
Limestone	28'	30'

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
30'	40'	fresh

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

Home

Is water clear or cloudy? clear

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

Drilling firm J.J. Meagher

Address 639 Lewiswood Ave.
Ottawa

Name of Driller J. Meagher

Address

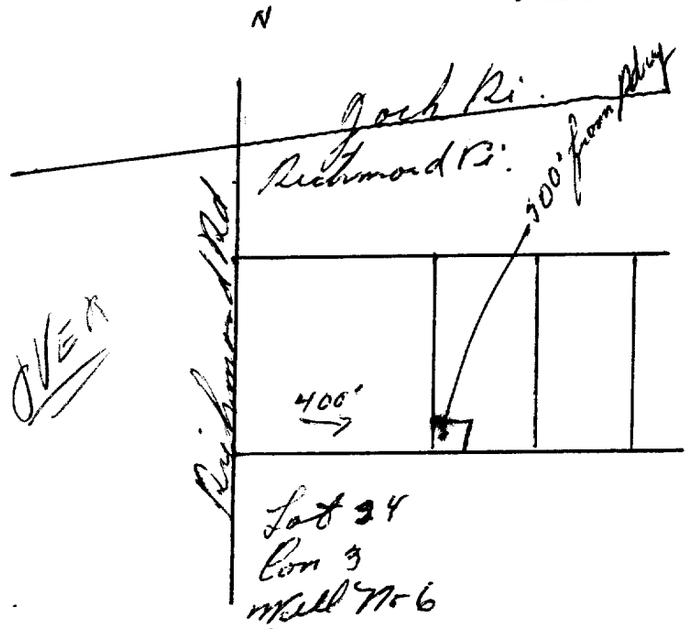
Licence Number 171

I certify that the foregoing statements of fact are true.

Date Aug 26 J. Meagher
Signature of Licensee

Location of Well

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



OVER

Form 5

31G/4f. "A"

UTM 18 Z 4 3 4 9 2 0 E
5 R 5 0 1 0 4 0 4 5 N
Elev. 4 R 0 3 0 8
Basin 2 5

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

15 No. 8150 BRA

GROUND WATER BRANCH
NOV 20 1957
ONTARIO WATER RESOURCES COMMISSION

Water-Well Record

RICHMOND

County or Territorial District Carleton Township, Village, Town or City Goulbourn
Con 3 Lot 24 Street and Number (if in Village, Town or City) Richmond
Owner Cedar Home Bldg. Ltd. Address Richmond
Date completed Sept 14 57
(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 28'
Type of screen NONE
Length of screen

Pumping Test

Static level 12'
Pumping rate 240 gph 2 hr
Pumping level 12'
Duration of test 1 hr

Well Log

Overburden and Bedrock Record	From ft.	To ft.
Clay	1	28'
Limestone	28'	32'

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
32'	20'	fresh

For what purpose(s) is the water to be used?
home
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? valley

Drilling firm M. Meagher
Address 639 Rowanwood Ave. Ottawa
Name of Driller M. Meagher
Address

Licence Number 171

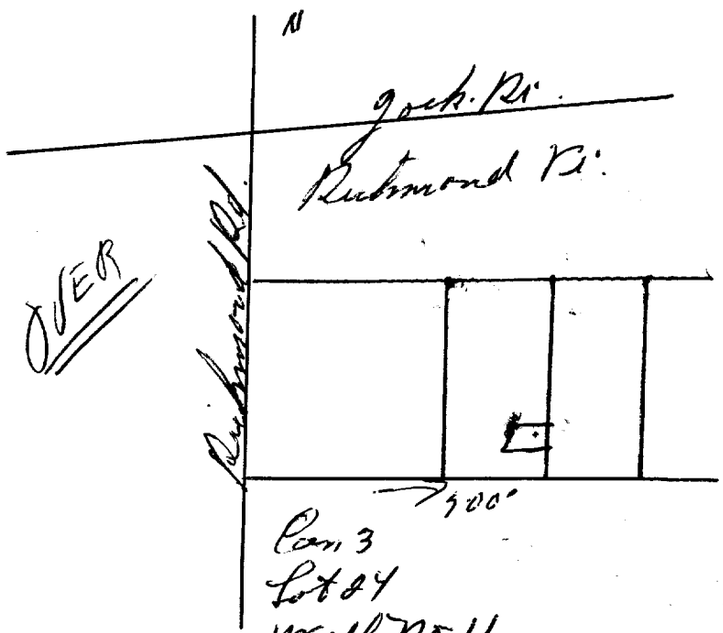
I certify that the foregoing statements of fact are true.

Date Sept 14 M. Meagher
Signature of Licensee

Form 5

Location of Well

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



5

UTM 18 Z 413491315 E
5 R 5101410310 N
Elev. 4 R 013018
Basin 25

ONTARIO

31G/4f "A"

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City Goulbourn
Con 3 Lot 24 Street and Number (if in Village, Town or City) Richmond
Owner Cedar Home Bldrs Ltd Address Richmond
Date completed Sept 15 (day) (month) 57 (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 28'
Type of screen NONE
Length of screen

Pumping Test

Static level 11'
Pumping rate 250 G.P.H.
Pumping level 17'
Duration of test 1 hr.

Well Log

Overburden and Bedrock Record	From ft.	To ft.
Clay	1'	28'
Limestone	28'	51'

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
51'	40'	fresh

For what purpose(s) is the water to be used?
Home
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? valley

Drilling firm J McGahan
Address 639 Bayswood Ave
Ottawa
Name of Driller J McGahan
Address

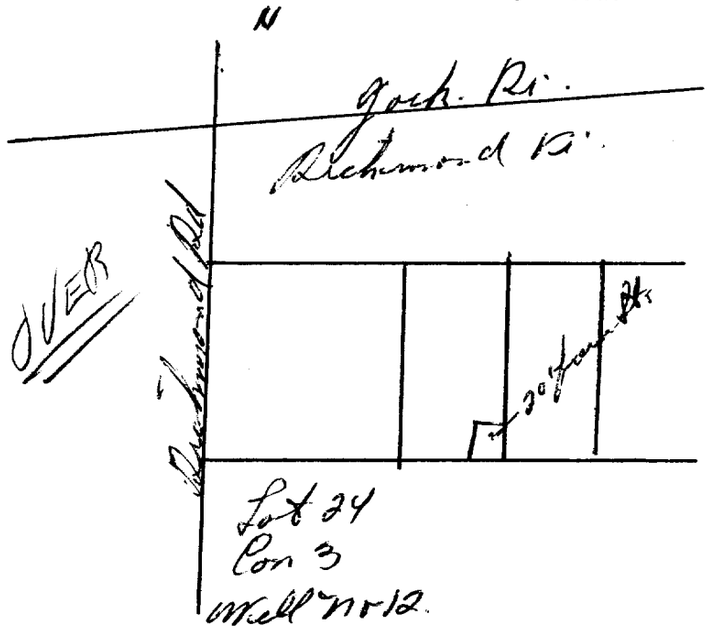
Licence Number 171

I certify that the foregoing statements of fact are true.

Date Sept 15 J McGahan
Signature of Licensee

Location of Well

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



OVER

Form 5

5

316/4 F. "A"

UTM Z 18 | 413|4|916|5 E
5 R | 5|0|0|4|1|0|5 N

Elev. 4 R | 0|3|0|8

Basin 25

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

GROUND WATER BRANCH
NOV 26 1957
No. 2162
ONTARIO WATER RESOURCES COMMISSION

Water-Well Record

RICH

County or Territorial District Preston Township, Village, Town or City Woodbourn
Con 3 Lot 24 Street and Number (if in Village, Town or City) Richmond
Owner Cedar Valley Blocks Ltd Address Richmond
Date completed Sept 16 57
(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 28'
Type of screen NONE
Length of screen

Pumping Test

Static level 12'
Pumping rate 250 G.P.H.
Pumping level 13'
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'	28'			
Limestone	28	52'	52'	40'	Fresh

For what purpose(s) is the water to be used?
Home
Is water clear or cloudy? Clear
Is well on upland, in valley, or on hillside? Valley

Drilling firm M. McLaughlin
Address 139 Lynnwood Ave
Toronto
Name of Driller M. McLaughlin
Address

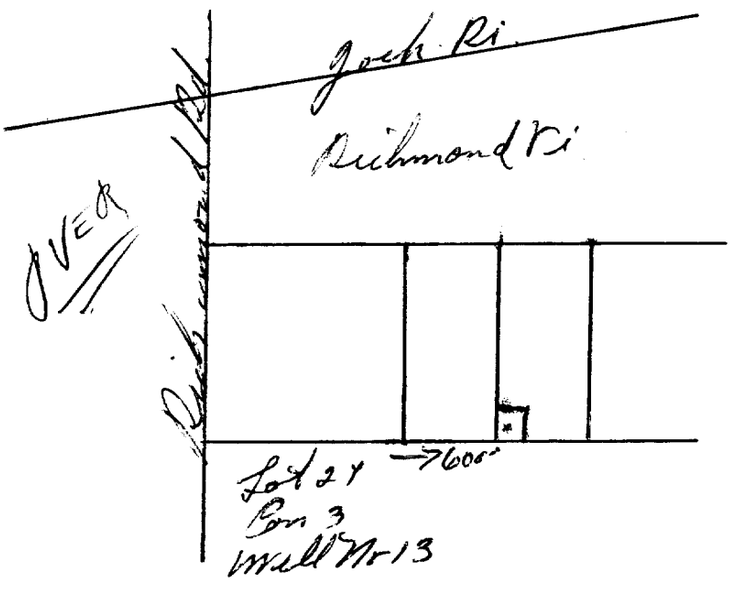
Licence Number 176

I certify that the foregoing statements of fact are true.

Date Sept 26 M. McLaughlin
Signature of Licensee

Location of Well

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



Form 5

31G/4f. "A"

UTM 18 Z 413510 5010 E
18 R 5010418 5 N
Elev. 4 R 0308
Basin 25

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

Water-Well Record

County or Territorial District Carleton Township, Village, Town or City Goulbourn
Con. 3 Lot 24 Street and Number (if in Village, Town or City) Richmond Rd
Owner Cedar Home Builders Ltd Address Richmond Rd
Date completed Sept 18 57
(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 28'
Type of screen NONE
Length of screen

Pumping Test

Static level 12'
Pumping rate 240 gal. P.H.
Pumping level 12'
Duration of test 1 hr.

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)
Clay	1'	28'			
Lime stone	28	58'	58'	40'	fresh.

Water Record

For what purpose(s) is the water to be used?
Home
Is water clear or cloudy? clear
Is well on upland, in valley, or on hillside? valley

Drilling firm M. Meaghan
Address 639 Roosevelt Ave
Ottawa
Name of Driller M. Meaghan
Address

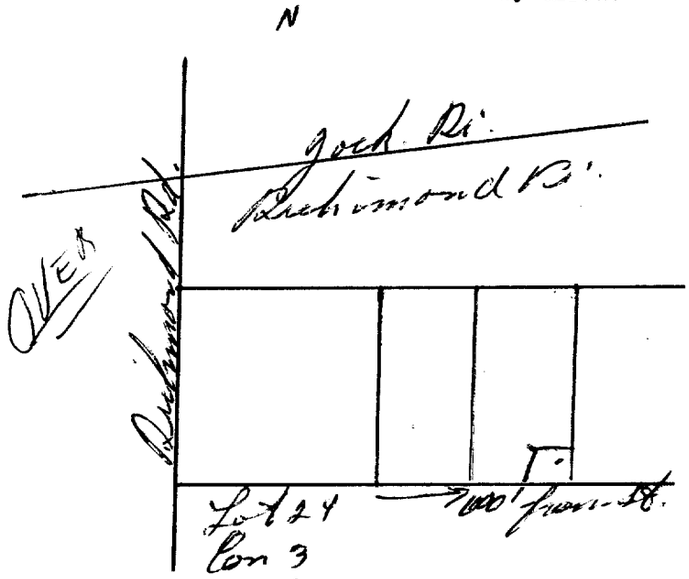
Licence Number 171

I certify that the foregoing statements of fact are true.

Date Sept 18 M. Meaghan
Signature of Licensee

Location of Well

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



Form 5

5

31G/4f. "A"

WAM

UTM | 18 Z | 435145 E
| 5 R | 5003800 N

Elev. | 4 R | 0308

Basin | 25 |

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

15 No. 9169

GROUND WATER BRANCH
MAY 20 1958
ONTARIO WATER RESOURCES COMMISSION

Water-Well Record

County or Territorial District. CARLETON Township, Village, Town or City. ~~GOULBOURN~~ RICHMOND

[redacted] Village, Town or City) BRITANNIA

Address RICHMOND

(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 4"
Length(s) 30'
Type of screen METAL
Length of screen

Pumping Test

Static level FLOW 0"
Pumping rate 5-10 G.P.M.
Pumping level 2'
Duration of test 1/2 hr.

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)
CLAY & BOULDERS	0	25			
HARD PAN	25	30			
SHALE & LIME	30	42	35.45	4'	FRESH

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?

Drilling firm [illegible]
Address

Name of Driller
Address

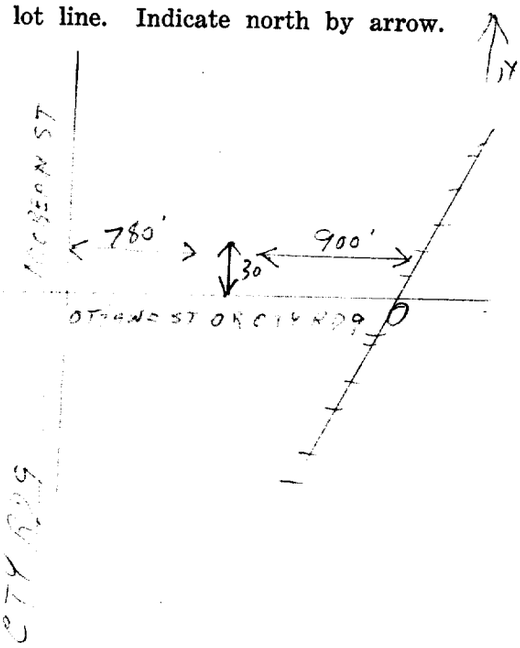
Licence Number

I certify that the foregoing statements of fact are true.

Date 12-5-58 [illegible]
Signature of Licensee

Location of Well

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



Form 5

CSS.S8

31G/4f. 'A'

UTM | 1 | 8 | Z | 4 | 3 | 4 | 9 | 5 | 5 |
| 5 | R | 5 | 0 | 0 | 4 | 1 | 2 | 0 | N |

Elev. | 4 | R | 0 | 3 | 0 | 8 |

Basin | 2 | 5 |

ONTARIO

The Water-well Drillers Act, 1954
Department of Mines

GROUND WATER BRANCH
OCT 28 1958
ONTARIO WATER RESOURCES COMMISSION

15 No. 9179

Water-Well Record

County or Territorial District Carleton ..... Township, Village, Town or City ~~Goulbourn~~ RICHMOND

Con ~~III~~ ..... Lot ~~25~~ ..... Street and Number (if in Village, Town or City) Richmond Ont.

Owner Coady Construction ..... Address 2I2 Ellendale Crescent

Date completed Sept. I7, I958
(day) (month) (year)

Pipe and Casing Record

Casing diameter(s) 5"
Length(s) 2I ft.
Type of screen none
Length of screen

Pumping Test

Static level I4 ft.
Pumping rate 300 gph
Pumping level 2I ft.
Duration of test I hr

Well Log

Overburden and Bedrock Record	From ft.	To ft.
Clay	0	I6
limestone	I6	~~&~~ 7I

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, or sulphur)
7I	57	fresh

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 F.A. McLean & Son

Address

Name of Driller W. Kavanagh

Address

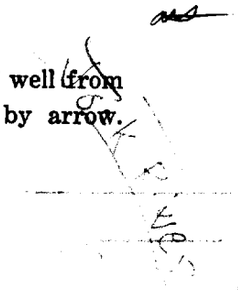
Licence Number

I certify that the foregoing statements of fact are true.

Date Sept 30 ..... F.A. McLean
Signature of Licensee

Location of Well

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



Form 5

C88.88

UTM 1 | 8 | Z | 4 | 3 | 4 | 8 | 9 | 0 | E
5 | R | 5 | 0 | 0 | 3 | 9 | 4 | 5 | N
Elev. 4 | R | 0 | 3 | 0 | 8
Basin 2 | 5 | | | |

15 NO. 9189

GROUND WATER BRANCH
AUG 10 1959
ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act, 1957

WATER WELL RECORD

County or District CARLETON Township, Village, Town or City Gloucester

[redacted] completed 3 - 7 - 59
(day) (month) (year)

[redacted]ess ALONA Ave

Casing and Screen Record

Inside diameter of casing 2 inches
Total length of casing 26 feet
Type of screen none
Length of screen none
Depth to top of screen none
Diameter of finished hole 2 inches

Pumping Test

Static level 5 feet
Test-pumping rate 4 G.P.M.
Pumping level 10 feet
Duration of test pumping 1/2 hr.
Water clear or cloudy at end of test clear
Recommended pumping rate 2 G.P.M.
with pumping level of 18 feet

Well Log

Overburden and Bedrock Record	From ft.	To ft.
CLAY	0	25
Grey Lime ROCK	25	44

Water Record

Depth(s) at which water(s) found	No. of feet water rises	Kind of water (fresh, salty, sulphur)
44	39	fresh

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

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

Drilling Firm Marcel Carrette

Address [redacted]
EASTVIEW, Ont.

Licence Number 257

Name of Driller [redacted]

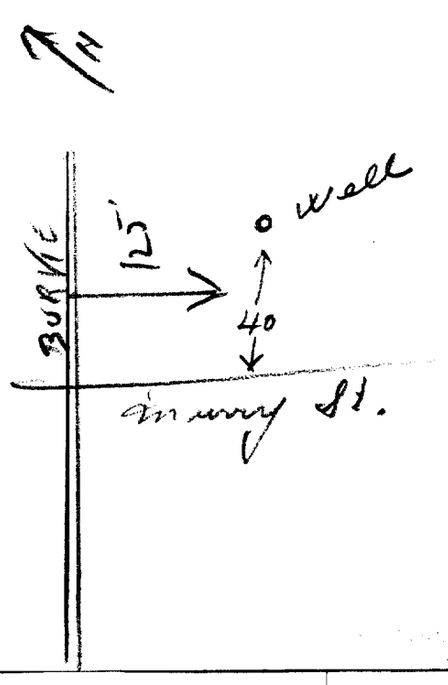
Address [redacted]

Date 20/8/59

M. Carrette
(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
15M-58-4149

3164f. A

C

UTM 1 8 Z 4 3 5 5 3 5 E
5 R 5 0 0 4 1 0 0 N

Elev. 4 R 0 3 0 0

Basin 2 5

15 No. 9235

GROUND WATER BRANCH
SEP 7 1960
RESOURCES COMMISSION

The Ontario Water Resources Commission Act, 1957

WATER WELL RECORD

County or District Carleton — Township, Village, ~~Town or City~~ Richmond

Con. [redacted] Lot [redacted] — Date completed 5 (day) Aug (month) 60 (year)

[redacted] ress Richmond

Casing and Screen Record

Inside diameter of casing 4"
Total length of casing 26'
Type of screen —
Length of screen —
Depth to top of screen —
Diameter of finished hole 4"

Pumping Test

Static level 5'
Test-pumping rate 6 G.P.M.
Pumping level 6 ft.
Duration of test pumping 1/2 hr.
Water clear or cloudy at end of test clear
Recommended pumping rate 5 G.P.M.
with pumping level of Set pump at 30 ft.

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, sulphur)
clay	0	13			
broken limestone	13	20			
limestone	20	59	55	50	fresh

Water Record

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

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

Drilling Firm

Address

Licence Number 483

Name of Driller Ben E. Sparks

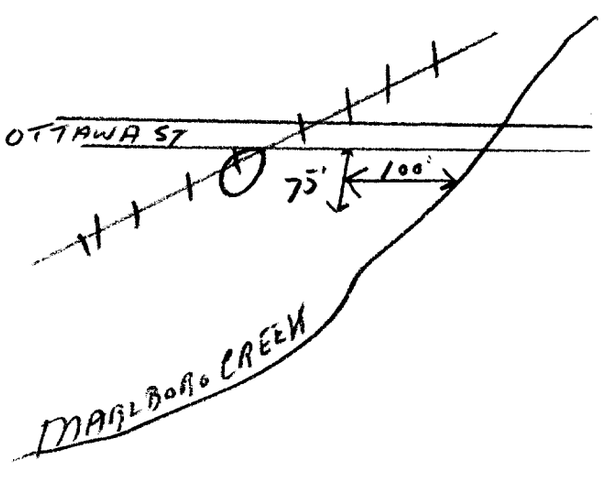
Address

Date Aug 23/60

Ben E. Sparks
(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
15M-58-4149

316/4f. 7A"

UTM 18 Z 435315 E
5 R 5003918 N
Elev. 4 R 0309

GROUND WATER BRANCH
JUN 1 1962
15 No. 9257
ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

WATER WELL RECORD

Basin 25
County or District [redacted]
Con. South half of Part of Lot 20
Township, Village, Town or City Richmond Goulburn
Date completed 29 (day) Mar (month) 62 (year)
Address Richmond Ont

Casing and Screen Record

Inside diameter of casing 5"
Total length of casing 28.5'
Type of screen
Length of screen
Depth to top of screen
Diameter of finished hole 4 15/16"

Pumping Test

Static level 8'
Test-pumping rate 10 G.P.M.
Pumping level 17'
Duration of test pumping ½ hr
Water clear or cloudy at end of test clear
Recommended pumping rate 10 G.P.M.
with pump setting of 50" 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)
sandy clay with boulders	0	23'	60'	fresh
blue limestone	23	80	76'	"
			78'	"

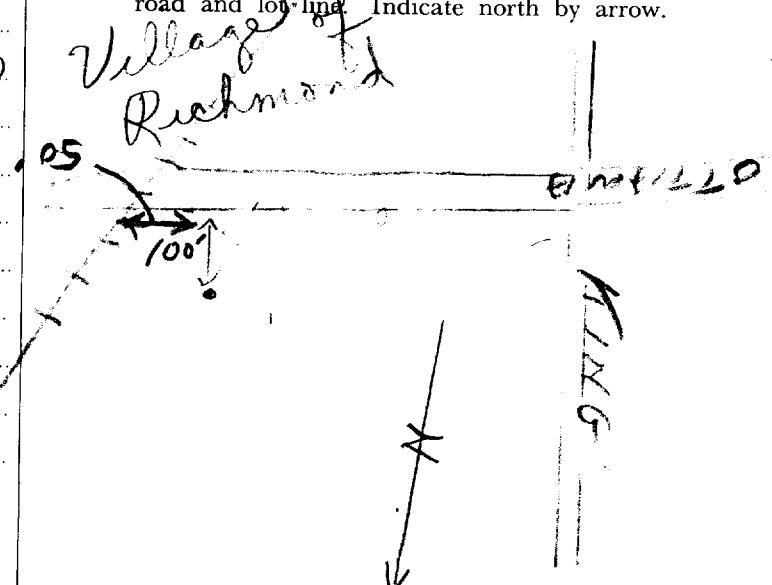
For what purpose(s) is the water to be used? household
Is well on upland, in valley, or on hillside? upland
Drilling or Boring Firm Capital Water Supply
Address 1243 Bekon Rd Ottawa Ont
Licence Number 482
Name of Driller or Borer A Kavanagh
Address Kittsville Ont
Date May 29 1962
Walter Kavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 5M-61-3852

OWRC COPY

Location of Well

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



CSS.S8

3 16/4f. "A"

UTM 1 | 8 | Z | 4 3 4 9 0 5 | E
5 | R | 5 0 0 4 1 7 5 | N

Elev. 4 | R | 0 3 0 5

Basin 2 5 | 1 | Carl

GROUND WATER BRANCH
15 No.
ONTARIO WATER RESOURCES COMMISSION

9271

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carl

Township, Village, Town or City Richmond

Con. III Lot —

Date completed 14 (day) June (month) 63 (year)

[redacted] dress Richmond Ont

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 19'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 5"

Pumping Test

Static level 5'

Test-pumping rate 10 G.P.M.

Pumping level 7

Duration of test pumping 1 hr

Water clear or cloudy at end of test cloudy

Recommended pumping rate 5 G.P.M.

with pump setting of 50 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	16	40	fresh
Blue limestone	16	64	62	"

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

New household

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

Drilling or Boring Firm Capital Water Supply

Address 1243 Heron Rd Ottawa

Licence Number 976

Name of Driller or Borer M Kavanagh

Address

Date 14 June 63

Walter Kavanagh

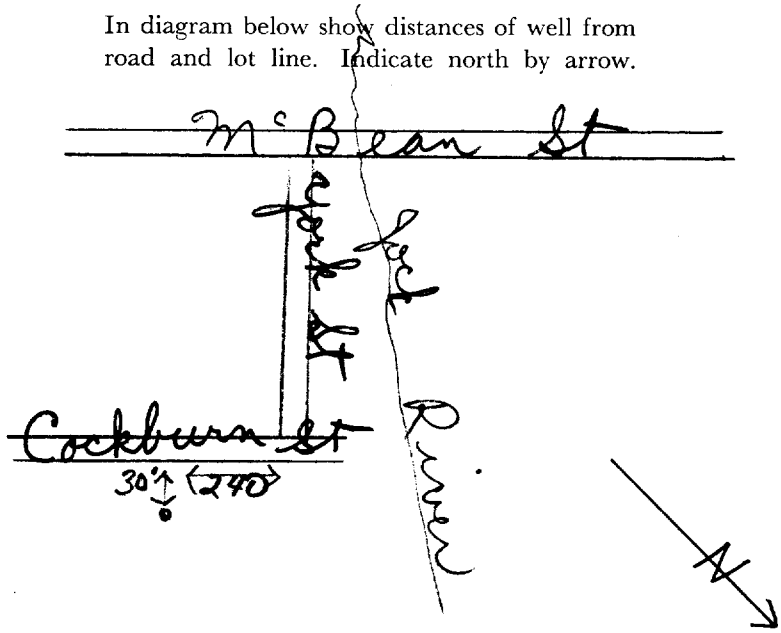
(Signature of Licensed Drilling or Boring Contractor)

Form 7 10M-62-1152

OWRC COPY

Location of Well

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



3 16/4f. 7A"

UTM 18 Z 4 3 5 0 2 0 E

5 R 5 0 4 1 3 0 N

Elev. 4 R 0 3 0 9

Basin 2 5 Carl

WATER RESOURCES DIVISION
15 No. 9291
JAN 19 1965
ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carl Township, Village, Town or City Richmond

Con Lot Date completed 16 (day) Nov. (month) 1964 (year)

[redacted] ess Metcalfe Ontario

Casing and Screen Record

Inside diameter of casing	5"
Total length of casing	23'
Type of screen	
Length of screen	
Depth to top of screen	
Diameter of finished hole	5"

Pumping Test

Static level	18
Test-pumping rate	5 G.P.M.
Pumping level	30
Duration of test pumping	1hr.
Water clear or cloudy at end of test	cloudy
Recommended pumping rate	5 G.P.M.
with pump setting of	50 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	12	66	fresh
limestone	12	68		

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

new house

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

Drilling or Boring Firm CAPITAL WATER SUPPLY

Address 1245 Heron Rd.,

Ottawa 733-0600

Licence Number 1223

Name of Driller or Borer M Kavanagh

Address

Date Nov 17 1964

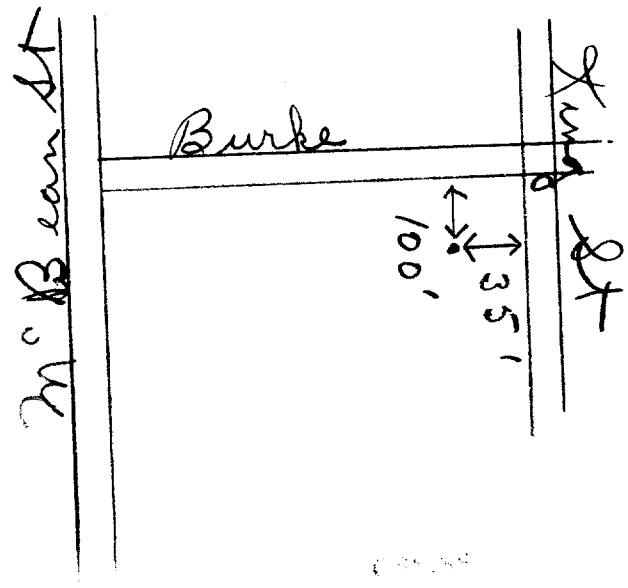
Walter Kavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



3 16/4f. 7A"

UTM 18 Z 4 3 5 0 2 0 E

5 R 5 0 4 1 3 0 N

Elev. 4 R 0 3 0 9

Basin 2 5 Carl

WATER RESOURCES DIVISION
15 No. 9291
JAN 19 1965
ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carl Township, Village, Town or City Richmond

Con Lot Date completed 16 (day) Nov. (month) 1964 (year)

[redacted] ess Metcalfe Ontario

Casing and Screen Record

Inside diameter of casing	5"
Total length of casing	23'
Type of screen	
Length of screen	
Depth to top of screen	
Diameter of finished hole	5"

Pumping Test

Static level	18
Test-pumping rate	5 G.P.M.
Pumping level	30
Duration of test pumping	1hr.
Water clear or cloudy at end of test	cloudy
Recommended pumping rate	5 G.P.M.
with pump setting of	50 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	12	66	fresh
limestone	12	68		

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

new house

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

Drilling or Boring Firm CAPITAL WATER SUPPLY

Address 1245 Heron Rd.,

Ottawa 733-0600

Licence Number 1223

Name of Driller or Borer M Kavanagh

Address

Date Nov 17 1964

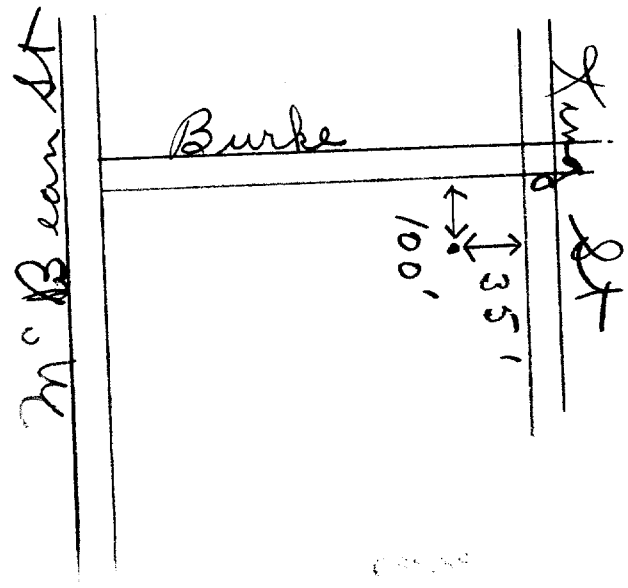
Walter Kavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



316/4f "A"

UTM 1/8 Z 4/3/5/2/1/0 E

5 R 5/0/0/4/0/5/5 N

Elev. 4 R 0/3/1/0

Basin 2/5 | Carl

15 № 9303

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District .... Township, Village, Town or City Richmond

Date completed 21 (day) Oct month 1966 year)

Con .... Lot ....

[redacted] ess Richmond Ont.

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 30'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 5"

Pumping Test

Static level 18'

Test-pumping rate 10 G.P.M.

Pumping level 24'

Duration of test pumping 1 hr

Water clear or cloudy at end of test cloudy

Recommended pumping rate 5 G.P.M.

with pump setting of 60' feet below ground surface

Well Log / Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
clay	0'	8'	73'	fresh
hardpan & boulders	8'	23'		
limestone	23'	75'		

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

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

Drilling or Boring Firm Capital Water Supply

Address 14 Ashford Dr. Ottawa 6

Licence Number 2158

Name of Driller or Borer H Scott

Address

Date Oct 21 1966

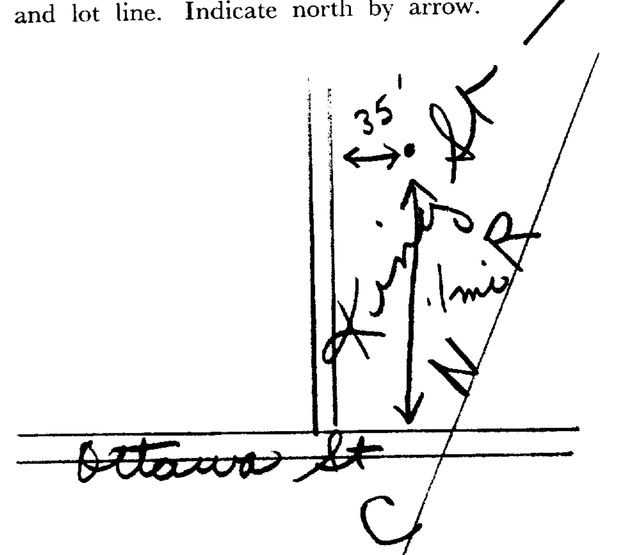
Walter Kavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



31G/4f. 7A"

UTM 18 Z 414910 E
5 R 5010418 N

Elev. 4 R 0305

Basin 25

The Ontario Water Resources Commission Act

WATER WELL RECORD

WATER RESOURCES DIVISION
SEP 19 1967
ONTARIO WATER RESOURCES COMMISSION

15 No 9311

County or District Carleton

Township, Village, Town or City Richmond

Con. Lot

Date completed 21 (day) June (month) 1967 (year)

[redacted] ress Richmond Ont.

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 22'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 5"

Pumping Test

Static level 5'

Test-pumping rate 10 G.P.M.

Pumping level 15'

Duration of test pumping 1 hr

Water clear or cloudy at end of test cloudy

Recommended pumping rate 5 G.P.M.

with pump setting of 30 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'	14'	53	fresh
Boulders & gravel	14	18		
limestone	18	55-		

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

new house

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

Drilling or Boring Firm Capital Water Supply Ltd

Address 14 Ashford Dr Ottawa 6

Licence Number 2381

Name of Driller or Borer M Kavanagh

Address

Date June 21 1967

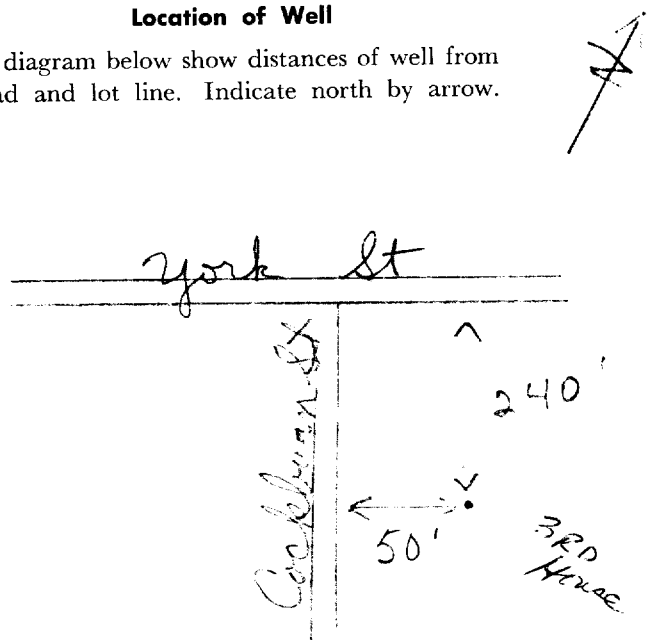
Walter Kavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



31G/4f. "A"

UTM 18 Z 435651 E

5 R 5010413 10 N

Elev. 4 R 0131 10

Basin 25

County or District Carleton

Con. Lot

[redacted]

ress Richmond Ont

WATER RESOURCES DIRECTOR
15 SEP 1967
ONTARIO WATER RESOURCES COMMISSION

B

15 No 9315

The Ontario Water Resources Commission Act

WATER WELL RECORD

Township, Village, Town or City Richmond

Date completed 25 (day) Aug (month) 1967 (year)

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 26'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 5"

Pumping Test

Static level 10'

Test-pumping rate 10 G.P.M.

Pumping level 12'

Duration of test pumping 1 hr

Water clear or cloudy at end of test cloudy

Recommended pumping rate 5 G.P.M.

with pump setting of 35 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'	15'	58'	fresh
gravel	15'	22'		
limestone	21	60		

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

new house

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

Drilling or Boring Firm Capital Water Supply Ltd

Address 14 Ashford Dr Ottawa 6

Licence Number 2381

Name of Driller or Borer M Kavanagh

Address

Date Aug 25 1967

Walter Kavanagh

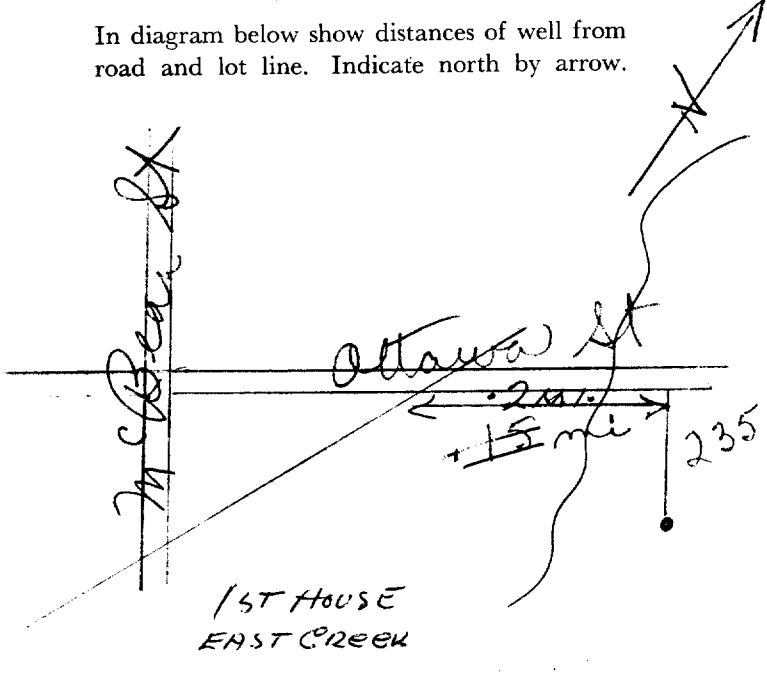
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



118 4 35110 CODED

14 150 04110

Elev. 4 10309

Basin 2U

1509776

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carleton Township, Village, Town or City Richmond

Con. III Lot 23 Date completed 15 (day) Oct (month) 1968 (year)

[redacted]ress Almonte Ont.

Casing and Screen Record	
Inside diameter of casing	5"
Total length of casing	29'
Type of screen	
Length of screen	
Depth to top of screen	
Diameter of finished hole	5"

Pumping Test	
Static level	9'
Test-pumping rate	10 G.P.M.
Pumping level	35
Duration of test pumping	1 hr
Water clear or cloudy at end of test	cloudy (underlined)
Recommended pumping rate	5 G.P.M.
with pump setting of	60 feet below ground surface

Well Log: Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
clay	0'	13'	83	fresh
limestone	13'	85'		

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

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

Drilling or Boring Firm Capital Water Supply Ltd.

Address 14 Ashford Dr Ottawa 6

Licence Number 2857

Name of Driller or Borer H Mains

Address

Date 15 Oct 1968

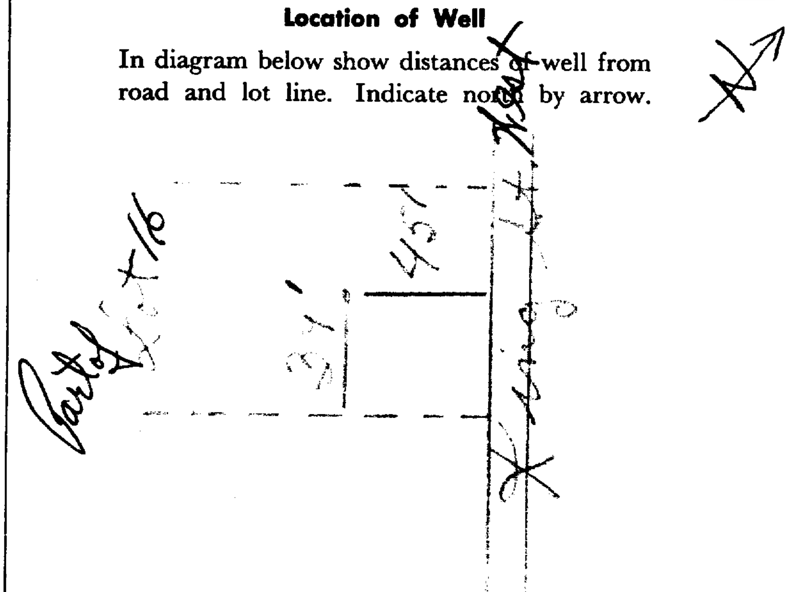
Walter Kavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 5M 60-20912

OWRC COPY

Location of Well

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



CSS.S8

Tsn 18 435 985
14 50 04 30'
Elev. 84 03 08
Con 25T

CODE 1509799

B

MAY 8 1968

ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carleton

Township, Village, Town or City Richmond

Con. III Lot 24

Date completed 24 (day) Apr (month) 1968 (year)

[redacted] ress Richmond Ont

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 23'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 5"

Pumping Test

Static level 5'

Test-pumping rate 10 G.P.M.

Pumping level 5'

Duration of test pumping 1 hr

Water clear or cloudy at end of test cloudy

Recommended pumping rate 5 G.P.M.

with pump setting of 50 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'	14'	69'	fresh
sand & boulders	14'	19'		
limestone	19'	70'		

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

new house

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

Drilling or Boring Firm Capital Water Supply Ltd

Address 14 Ashford Dr Ottawa 6

Licence Number 2857

Name of Driller or Borer B. Acres

Address

Date Apr 26 1968

Walter Lavanagh

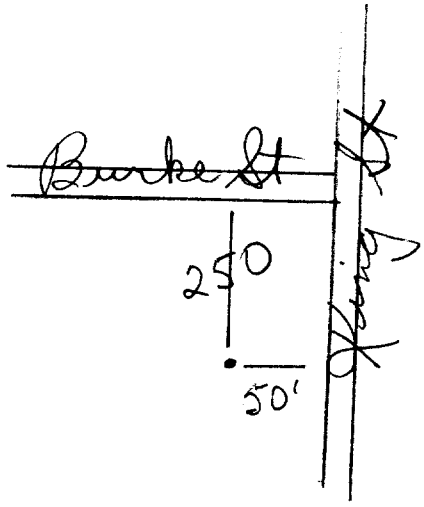
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



CSS.S3

UTM 18 435 015
46 50 04 215
Elev. 306
25

CODED

1509800

WATER RESOURCES DIVISION
MAY 8 1968
ONTARIO WATER RESOURCES COMMISSION

B

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carleton
Township, Village, Town or City Richmond
Con. III Lot 24
Date completed 29 (day) Apr (month) 1968 (year)
[redacted] dress Richmond Ont.

Casing and Screen Record

Inside diameter of casing 5"
Total length of casing 22'
Type of screen
Length of screen
Depth to top of screen
Diameter of finished hole 5"

Pumping Test

Static level 6'
Test-pumping rate 10 G.P.M.
Pumping level 14'
Duration of test pumping 1 hr
Water clear or cloudy at end of test cloudy
Recommended pumping rate 5 G.P.M.
with pump setting of 30 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'	15'	58'	fresh
sand & boulders	15'	17'		
limestone	17	60		

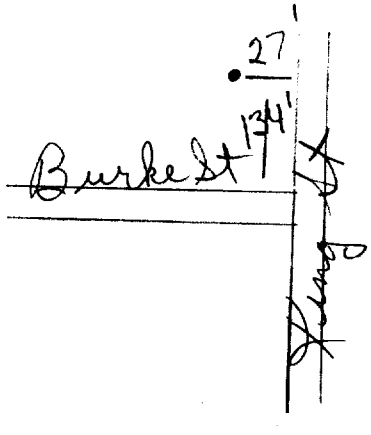
For what purpose(s) is the water to be used?
new house
Is well on upland, in valley, or on hillside?
Drilling or Boring Firm Capital Water Supply Ltd
Address 14 Ashford Dr Ottawa 6
Licence Number 2857
Name of Driller or Borer B Acres
Address
Date Apr 29 1968
Walter Kavanagh
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



18 - 4 3 4 1 9 8 0
4 5 0 0 4 2 6 0
4 0 3 0 5
2 5

1510028 316/4f

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District .... Township, Village, Town or City ....

Con. 7/11 Lot 23 Date completed 3 (day) 10 month 68 year)

[redacted] dress Richmond Ont.

Casing and Screen Record		Pumping Test	
Inside diameter of casing	4"	Static level	10
Total length of casing	17'	Test-pumping rate	5 G.P.M.
Type of screen	none	Pumping level	12
Length of screen	—	Duration of test pumping	2 hrs
Depth to top of screen	—	Water clear or cloudy at end of test	clear
Diameter of finished hole	4"	Recommended pumping rate	5 G.P.M.
		with pump setting of	25 feet below ground surface

Well Log: Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
Blue clay	0	15		
gravel	15	17		
grey limestone rock	17	60	40-60	fresh

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

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

Drilling or Boring Firm C. H. Sparks
100 Main St.

Address Stittsville Ont.

Licence Number 3140

Name of Driller or Borer Clayton H. Sparks

Address 100 Main St. Stittsville

Date Oct. 3 1968

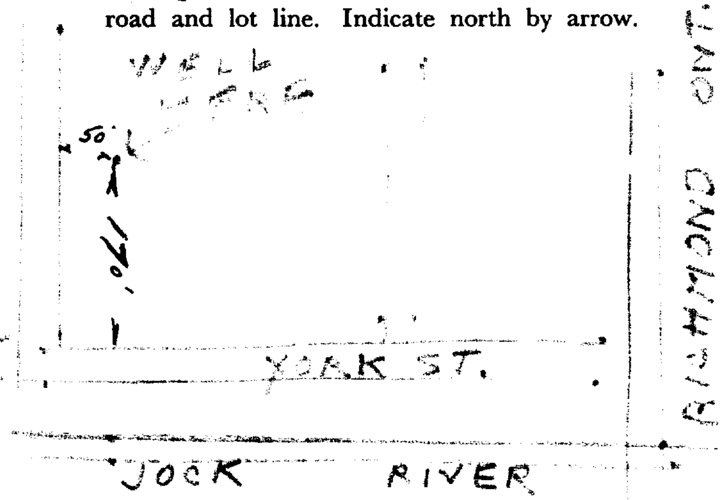
Clayton H. Sparks
(Signature of Licensed Drilling or Boring Contractor)

Form 7 5M 60-20912

OWRC COPY

Location of Well

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



CSS.S8

TWP 1 8 E 4 1 4 8 3 0

4 R 5 0 2 9 4 1 0

ev. 5 R 0 3 1 6 5

con 2 5

1510026

3 31F/8E 9

DIVISION OF WATER RESOURCES
MAY 5 1969
ONTARIO WATER RESOURCES COMMISSION

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Carleton Township, Village, Town or City Nepean

Con. 12 Lot 5 ~~6~~ Date completed ~~23~~ 23 JAN 1969 (day month year)

[redacted] Address 255 Metcalfe St. Ogdn 5/69

SB

Casing and Screen Record

Inside diameter of casing 2"

Total length of casing 22'

Type of screen —

Length of screen —

Depth to top of screen —

Diameter of finished hole 2"

Pumping Test

Static level 8'

Test-pumping rate 300 GAL PER HR. G.P.M.

Pumping level 22'

Duration of test pumping 2 HRS.

Water clear or cloudy at end of test CLEAR

Recommended pumping rate 300 GAL PER HR G.P.M.

with pump setting of 22' 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)
SAND.	0	11		
BLACK GRANITE	11	88'	88'	FRESH

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

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

Drilling or Boring Firm W. A. DEEVY

Address 2898 HAUGHTON ST. OTTAWA 14 ONT

Licence Number

Name of Driller or Borer W. A. DEEVY.

Address 2898 HAUGHTON ST

Date JANUARY 23 1969

W. A. Deevy

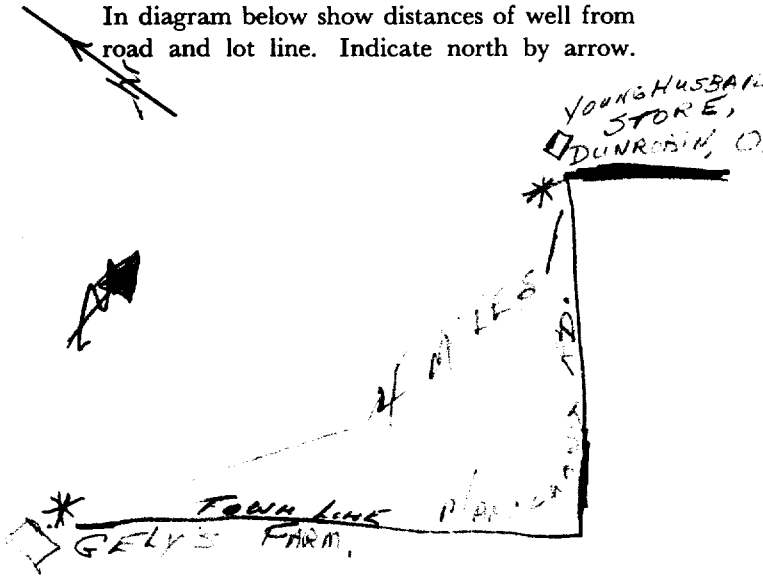
(Signature of Licensed Drilling or Boring Contractor)

Form 7 5M 60-20912

OWRC COPY

Location of Well

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



UTM 18 - 435140

4 5 0 0 4 0 4 0

ev 5 0 3 1 5

316/4f

1510064

Water management in Ontario

The Ontario Water Resources Commission Act

WATER WELL RECORD

DIVISION OF WATER RESOURCES ONTARIO WATER RESOURCES COMMISSION

County or District Carl

Township, Village, Town or City Richmond

Con. 11 Lot 34

Date completed 14 (day) Apr. (month) 1969 (year)

[redacted]

Address 218 Monterey Dr Ottawa

Casing and Screen Record

Inside diameter of casing 5"

Total length of casing 38'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 5"

Pumping Test

Static level 15'

Test-pumping rate 10 G.P.M.

Pumping level 20'

Duration of test pumping 1 hr

Water clear or cloudy at end of test

Recommended pumping rate 5 G.P.M.

with pump setting of 50 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	15'	84'	
sandy gravel with boulders	15'	29'		
limestone	29'	85'		

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

new house

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

Drilling or Boring Firm Capital Water Supply Ltd.

Address 14 Ashford Dr Ottawa 6

Licence Number 3216

Name of Driller or Borer M Kavanagh

Address

Date Apr 14 1969

Walter Kavanagh

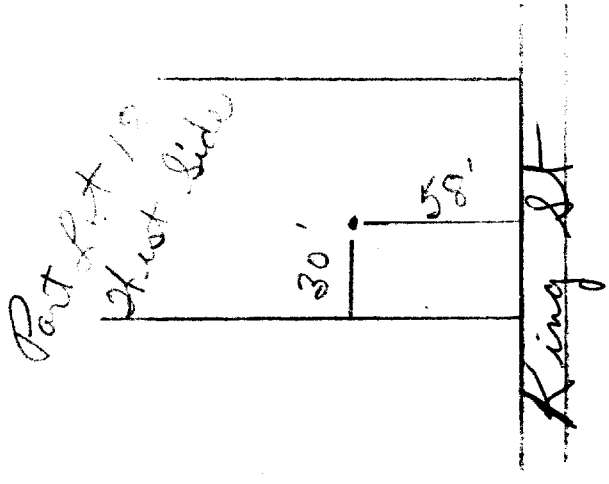
(Signature of Licensed Drilling or Boring Contractor)

Form 7

OWRC COPY

Location of Well

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



C55.53

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 | 1510301 | MUNICIP. 151701 | CON.

COUNTY OR DISTRICT: Carleton | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Richmond | CON., BLOCK, TRACT, SURVEY, ETC.: Ottawa St | LOT: 24

[redacted] 689 Don St Ottawa 14 | DATE COMPLETED: DAY 14 MO. Oct YR. 69

UTM ZONE | RC. 4 | ELEVATION 0308 | RC. 4 | BASIN CODE 25

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
brown	clay	stones		0	21
grey	limestone			21	71

31: 0021 | 0071

32:

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0070	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
05	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.244	0	0024
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0071
	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: 0004 GPM. | DURATION OF PUMPING: 01 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
009 FEET	030 FEET	030 FEET	030 FEET	030 FEET	030 FEET

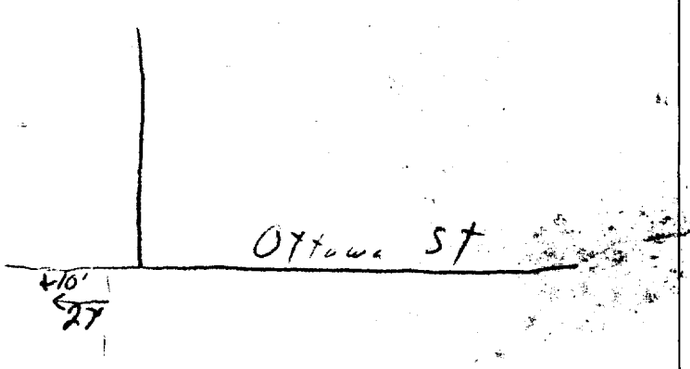
IF FLOWING, GIVE RATE: GPM. | PUMP INTAKE SET AT: FEET | WATER AT END OF TEST: 1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP | RECOMMENDED PUMP SETTING: 065 FEET | RECOMMENDED PUMPING RATE: 0004 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: Henry Mains Well Drilling | LICENCE NUMBER: 3520

ADDRESS: Box 326, Richmond Ont

NAME OF DRILLER OR BORER: Henry Mains | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Henry Mains | SUBMISSION DATE: DAY 27 MO. Oct YR. 69

OFFICE USE ONLY

DATA SOURCE (58): 1 | CONTRACTOR (59-62): 3644 | DATE RECEIVED (63-68): 101269

DATE OF INSPECTION | INSPECTOR: [illegible] P.P.

REMARKS:

OWRC COPY

The Ontario Water Resources Commission Act

WATER WELL RECORD

316/14C

Water management in Ontario

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

11 | 1510409 | MUNICIP. 15701 | CON.

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carl	Richmond		

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Star Quality Homes	Stittsville Ont.	DAY 13 MO. 10 YR. 69

21 | UTM ZONE 18 | EASTING 435020 | NORTHING 5004180 | RC 4 | ELEVATION 0315 | RC 5 | BASIN CODE 25

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
brown	clay	boulders	packed	0'	18'
grey	limestone		hard	18	60

31 | 09 18 05 13 | 09 06 02 15

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0058	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
~~6~~ 8	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ ~~OPEN HOLE~~	.214	0	~~20~~ 0020
06			20	~~60~~
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0060
	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	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☒ BAILER	0010 GPM.	01 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
011 FEET	013 FEET	013 FEET	013 FEET	013 FEET	013 FEET

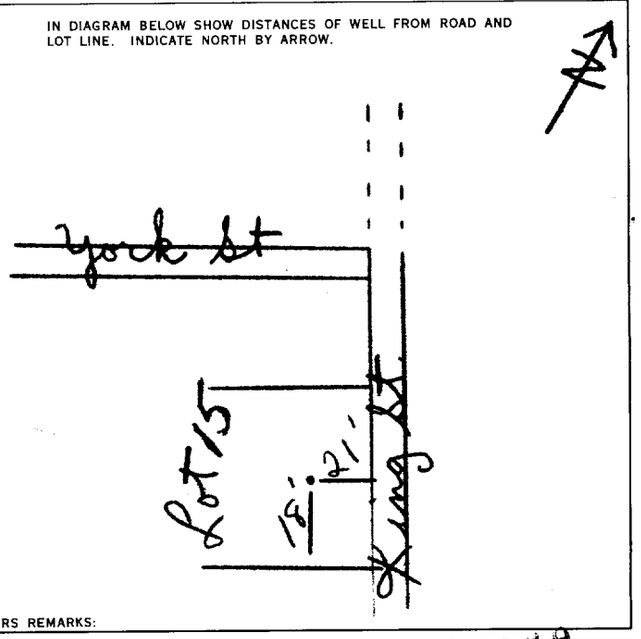
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM.	FEET	1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☒ SHALLOW ☐ DEEP	030 FEET	0005 GPM.

00510 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: Capital Water Supply — LICENCE NUMBER: 3216
ADDRESS: 14 Ashford Dr Ottawa
NAME OF DRILLER OR BORER: H Cavanagh — LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: Walter Cavanagh — SUBMISSION DATE: DAY ____ MO. ____ YR. ____

OWRC COPY

OFFICE USE ONLY

DATA SOURCE (58) / — CONTRACTOR (59-62) 1503 — DATE RECEIVED (63-68) 2291269 2.9.12.69
DATE OF INSPECTION — INSPECTOR
REMARKS:

The Ontario Water Resources Commission Act

WATER WELL RECORD

3161/4 f

Water management in Ontario

1. PRINT ONLY IN SPACES PROVIDED
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1510471

11

MUNICIP. 15701

CON.

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carl	Richmond		

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Star Quality Homes	Stittsville Ont	DAY 15 MO. 10 YR. 69

21

UTM ZONE 18 EASTING 435030 NORTHING 5004178 RC. 4 ELEVATION 0315 RC. 5 BASIN CODE 25

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
brown	clay	boulders	packed	0	17'
grey	limestone		hard	17	58

31 00176 05 13 | 00582 15

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0058	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
5~~8~~	1 ☒ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☐ ~~OPEN HOLE~~	188	0	0021
05			21	~~58~~
	1 ☐ STEEL; 2 ☐ GALVANIZED; 3 ☐ CONCRETE; 4 ☒ OPEN HOLE			0058
	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	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☒ BAILER	0010 GPM.	01 HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
008 FEET	012 FEET	1 ☒ PUMPING 2 ☐ RECOVERY	012 FEET	012 FEET	012 FEET	012 FEET

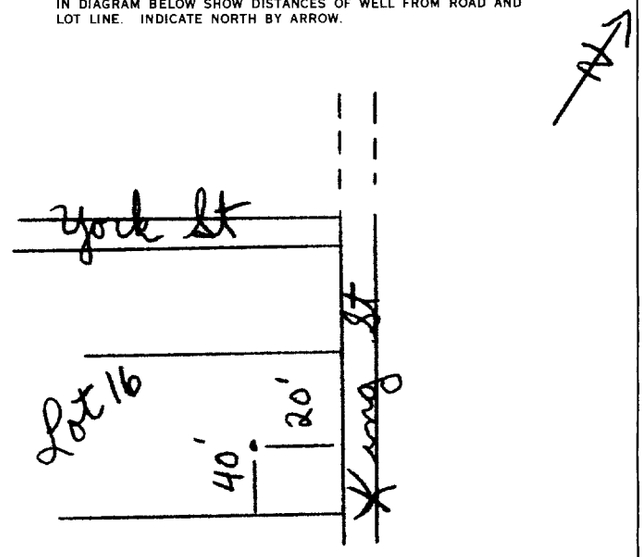
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM.	FEET	1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☒ SHALLOW ☐ DEEP	030 FEET	0005 GPM.

50-53 0025 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; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; ☐ OTHER; 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	LICENCE NUMBER
Capital Water Supply	3216
ADDRESS 14 Ashford Dr Ottawa	
NAME OF DRILLER OR BORER G Maurice	LICENCE NUMBER
SIGNATURE OF CONTRACTOR Walter Kavanagh	SUBMISSION DATE DAY MO. YR.

OFFICE USE ONLY

DATA SOURCE 58	CONTRACTOR 59-62	DATE RECEIVED 63-68
1	1503	291269
DATE OF INSPECTION	INSPECTOR	
REMARKS:		

OWRC COPY

CODED

The Ontario Water Resources Commission Act

WATER WELL RECORD

3164 f.

Water management in Ontario

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CODED 1510783 | MUNICIP. | CON.

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
CARLETON	Richmond		

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Julia Constr Ltd.	Richmond Ont	DAY 9 MO. 10 YR. 70

21 | UTM ZONE 18 | EASTING 434985 | NORTHING 5043310 | RC. 4 | ELEVATION 0308 | RC. 4 | BASIN CODE 25

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
BROWN	CLAY	SAND + STONES	PACKED	0	8
GREY	CLAY	BOULDERS	PACKED	8	12
GREY	LIMESTONE		HARD	12	55
BLACK	LIMESTON		HARD	55	65
grey	limestone		hard	65	207
grey	sandstone		hard	207	217

31

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
120	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
216	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
8 5/4	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0	65
8	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		65	217
	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: GPM. | DURATION OF PUMPING: HOURS MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☐ PUMPING 2 ☐ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
7 FEET	Pumping lost FEET	Water below FEET	to FEET	FEET	FEET

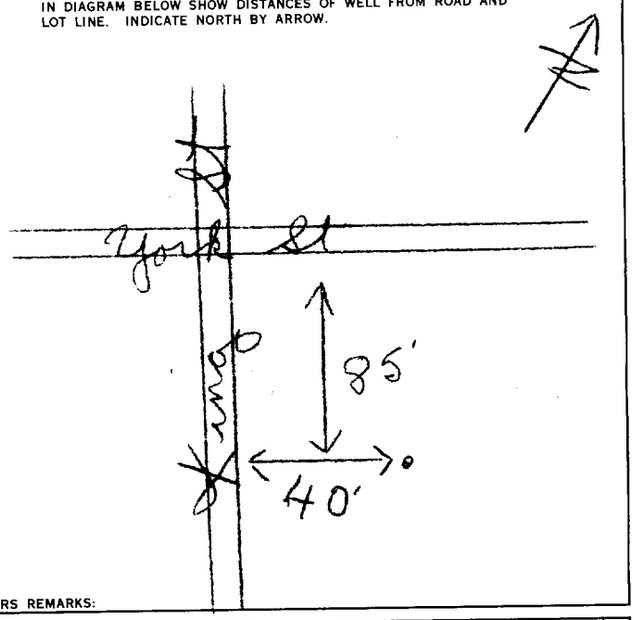
IF FLOWING, GIVE RATE: GPM. | PUMP INTAKE SET AT: FEET | WATER AT END OF TEST: 1 ☐ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP | RECOMMENDED PUMP SETTING: 200 FEET | RECOMMENDED PUMPING RATE: GPM.

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

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

WATER USE

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

METHOD OF DRILLING

1 ☐ CABLE TOOL 0-65 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☒ AIR PERCUSSION 65-217 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Capital Water Supply | LICENCE NUMBER: 1558

ADDRESS: 14 Ashford Dr Ottawa

NAME OF DRILLER OR BORER: Moore H Kavanagh | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Walter Kavanagh | SUBMISSION DATE: DAY MO. YR.

OWRC COPY

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR | DATE RECEIVED: 23 02 71

DATE OF INSPECTION | INSPECTOR

REMARKS:

P

WI

The Ontario Water Resources Commission Act

WATER WELL RECORD

3 / G4 /

Water management in Ontario

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11 | 1510923 | MUNICIP. 15701 | CON.

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Richmond	King St	6

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
Julia Construction	Richmond Ont.	DAY 20 MO. 10 YR. 70

21	ZONE	EASTING	NORTHING	RC.	ELEVATION	RC.	BASIN CODE
	18	434945	5004290	4	0305	4	25

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	TO
brown	clay	stones		0	14
grey	limestone			14	55

31	0014 0051 2	0055 2 15
32		

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0055	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH – FEET FROM	TO
05	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	~~20~~ 0020
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0055
	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	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☒ BAILER	0010 GPM.	01 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
006 FEET	020 FEET	006 FEET	006 FEET	006 FEET	006 FEET

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

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☒ SHALLOW ☐ DEEP	025 FEET	0010 GPM.

000.7 GPM./FT. SPECIFIC CAPACITY

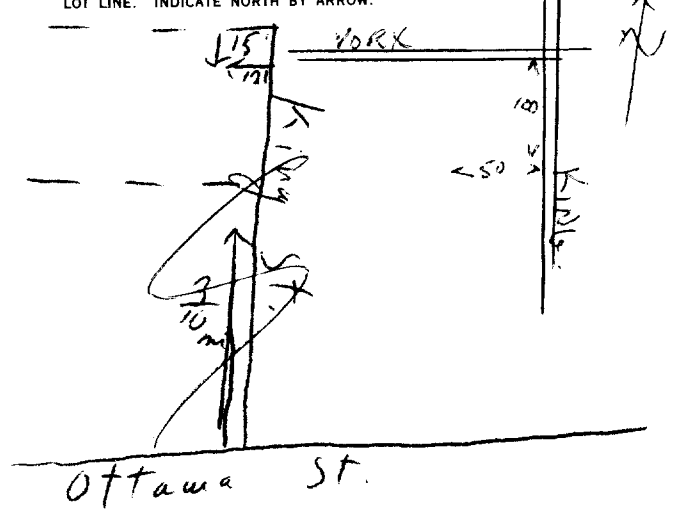
FINAL STATUS OF WELL
1 ☒ WATER SUPPLY
2 ☐ OBSERVATION WELL
3 ☐ TEST HOLE
4 ☐ RECHARGE WELL
5 ☐ ABANDONED, INSUFFICIENT SUPPLY
6 ☐ ABANDONED, POOR QUALITY
7 ☐ UNFINISHED

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

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

LOCATION OF WELL

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



DRILLERS REMARKS:

CONTRACTOR

NAME OF WELL CONTRACTOR	LICENCE NUMBER
Henry Mains Well Drilling	3644
ADDRESS: Box 326, Richmond Ont.	
NAME OF DRILLER OR BORER: Barry Acres	LICENCE NUMBER
SIGNATURE OF CONTRACTOR: Henry Mains	SUBMISSION DATE DAY 30 MO. Oct YR. 70

OFFICE USE ONLY

DATA SOURCE	CONTRACTOR	DATE RECEIVED
1	3644	201170
DATE OF INSPECTION	INSPECTOR	
REMARKS:		

OWRC COPY

AM 1.8 4 3 5 2 2 0

4 R 5 0 0 3 8 5 0

SV. SB 0 3 0 5

Sin 2 5

1510997 31G/4f B

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Grenville CARLETON Township, Village, Town or City ~~Oxford~~ Richmond

Con. III Lot ~~7~~ 34 Date completed 14th (day) June (month) 1968 (year)

[redacted] Address Kemptville, Ont.

Casing and Screen Record

Inside diameter of casing 6 3/16

Total length of casing 29

Type of screen -

Length of screen -

Depth to top of screen -

Diameter of finished hole 6

Pumping Test

Static level 4

Test-pumping rate 200 GPH ~~GPM~~

Pumping level 24

Duration of test pumping 1/2 hr.

Water clear or cloudy at end of test clear

Recommended pumping rate 3 G.P.M.

with pump setting of 100 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, sand, gravel mix	0	26	100	fresh
limestone	26	104		

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

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

Drilling or Boring Firm J.B. DUFRESNE & CO. LIMITED

Address 1014 Maitland Ave., Ottawa 5, Ont.

Licence Number 2999

Name of Driller or Borer R. Laniel

Address 6 Bellevue Cr. - Lucerne, Que.

Date June 14th 1968

R. Laniel

(Signature of Licensed Drilling or Boring Contractor)

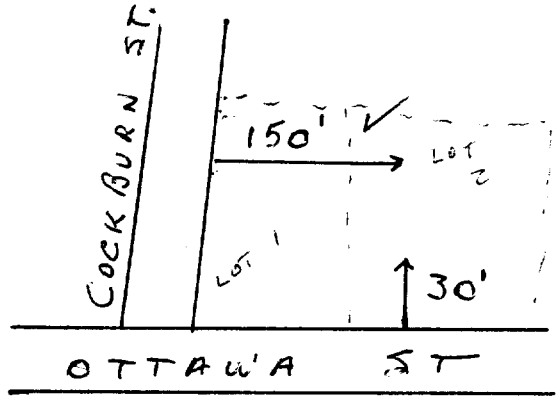
for: J.B. Dufresne & Co. Limited

Form 7 5M 60-20912

OWRC COPY

Location of Well

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



VILLAGE OF RICHMOND

P/Km

LC/Km

CS8.S8

1.8 Z 4 3 5 1 9 0

4 5 0 0 3 8 4 0

5 R 0 3 0 5

2 5

2401870

3164f

511083

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District ~~Grenville~~ CARLETON Township, Village, Town or City ~~Oxford~~ Richmond

Con. III Lot + 24 Date completed 14th (day) June (month) 1968 (year)

[redacted] dress Kemptville, Ont.

Casing and Screen Record

Inside diameter of casing 6 3/16

Total length of casing 29

Type of screen -

Length of screen -

Depth to top of screen -

Diameter of finished hole 6

Pumping Test

Static level 10

Test-pumping rate 150 GPH ~~XXXMX~~

Pumping level 35

Duration of test pumping 1/2 hr.

Water clear or cloudy at end of test clear

Recommended pumping rate 2 G.P.M.

with pump setting of 78 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, sand, gravel mix	0	26	35-68	fresh
limestone	26	80		

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

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

Drilling or Boring Firm J.B. DUFRESNE & CO. LIMITED

Address 1014 Maitland Ave.,
Ottawa 5, Ont.

Licence Number 2999

Name of Driller or Borer R. Laniel

Address 6 Bellevue Cr. - Lucerne, Que.

Date June 14th 1968

(Signature of Licensed Drilling or Boring Contractor)

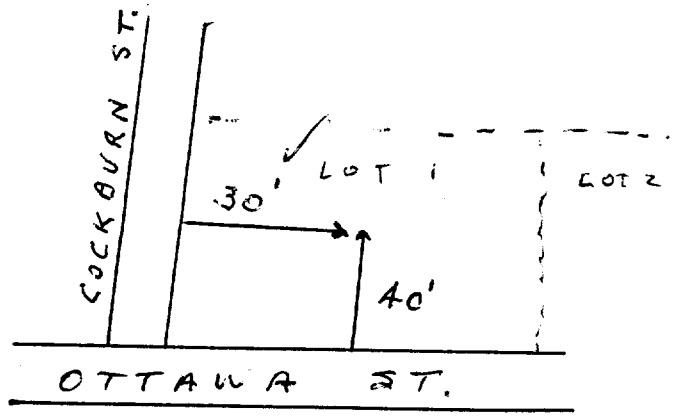
for: J.B. Dufresne & Co. Limited

Form 7 5M 60-20912

OWRC COPY

Location of Well

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



VILLAGE OF RICHMOND

CSS.S8

P/Ku

Lc/Ku

The Ontario Water Resources Commission Act

WATER WELL RECORD

31G-4F

Water management in Ontario

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11 | 1511103 | MUNICIP. 15701 | CON.

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
CARLETON	Richmond		

OWNER (SURNAME FIRST)	ADDRESS	DATE COMPLETED
JULIA CONST. LTD.	Richmond Ont.	DAY 15 MO. 03 YR. 71

21 | UTM ZONE 18 | EASTING 435225 | NORTHING 5004520 | RC. | ELEVATION 0302 | RC. 5 | BASIN CODE 25

JULIA CONSTR LTD

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
BROWN	CLAY	SAND & STONES	LOOSE	0	8
GREY	CLAY	SAND & BOULDERS	PACKED	8	12
GREY	LIMESTONE		HARD	12	164
GREY	SANDSTONE		HARD	164	190
WHITE	SANDSTONE		HARD	190	200

APL

31 | 0098 0ast 0912 | 0012 2ast 0913 | 0164 2 15T | 0190 2/8 | 0200 118

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0080	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0105	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0165	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0189	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
~~10~~ 10 ~~8~~	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		0 64	~~64~~ 0064 ~~200~~
10	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0200
	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: 0270 GPM. DURATION OF PUMPING: 16 HOURS 00 MINS.

WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY

STATIC LEVEL	WATER LEVEL END OF PUMPING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
005 47' FEET	117 FEET	110 FEET	115 FEET	114 FEET	117 FEET

Pumping test abandoned

IF FLOWING, GIVE RATE: GPM.

PUMP INTAKE SET AT: FEET

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

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

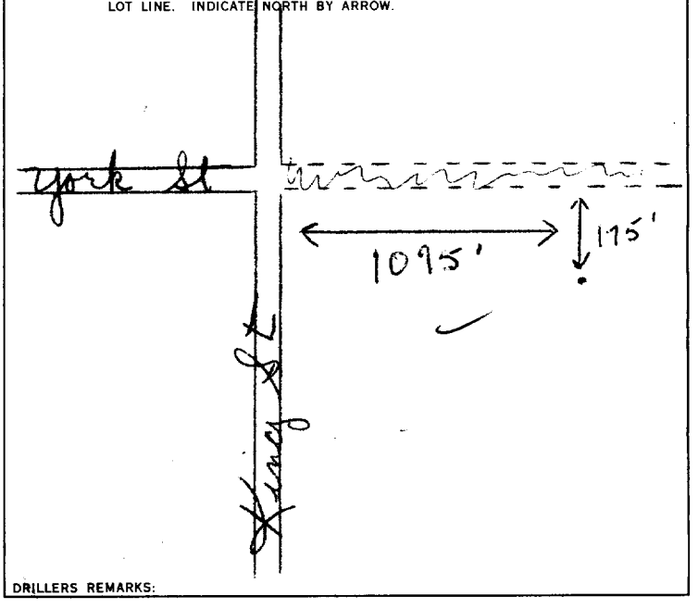
RECOMMENDED PUMP SETTING: 180 FEET

RECOMMENDED PUMPING RATE: ~~270~~ 265 GPM.

002.4 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

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

WATER USE 06

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

METHOD OF DRILLING

1 ☒ 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: Capital Water Supply | LICENCE NUMBER: 1558

ADDRESS: 14 Ashford Dr Ottawa

NAME OF DRILLER OR BORER: E. Moore | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Walter Kavanagh | SUBMISSION DATE: MO. YR.

OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 1558 | DATE RECEIVED: 140471

DATE OF INSPECTION: | INSPECTOR: Kh

REMARKS: P ✓ WI

OWRC COPY

The Ontario Water Resources Commission Act

WATER WELL RECORD

51648

Water management in Ontario

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

11 (1 2) — 1511257 — 3 1511257 9

MUNICIP. 15791 (10 14) — CON. (15 22 23 24)

COUNTY OR DISTRICT: Carleton — TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Richmond — CON., BLOCK, TRACT, SURVEY, ETC.: Ottawa St. — LOT: 5 (25-27)

[redacted] Richmond Ont

DATE COMPLETED (48-53): DAY 09 — MO. 06 — YR. 71 (II III IV)

G 03188 (24) — RC. 4 (25) — ELEVATION 93/10 (26) — RC. 4 (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
grey	clay			0	15
grey	hardpan	stones		15	20
grey	limestone			20	100

31: 0915205 | 0020214/12 | 0/092/15

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

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0/100 (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
05 (10-11)	1 ☒ STEEL (12) 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	0022 (13-16) ~~22~~
(17-18)	1 ☐ STEEL (19) 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			(20-23)
(24-25)	1 ☐ STEEL (26) 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			(27-30)

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)	(14-17)	
(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 (15-17): 01 HOURS 00 (18) MINS.

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)
004 FEET	080 FEET	025 FEET	050 FEET	070 FEET	080 FEET

☒ PUMPING ☐ RECOVERY

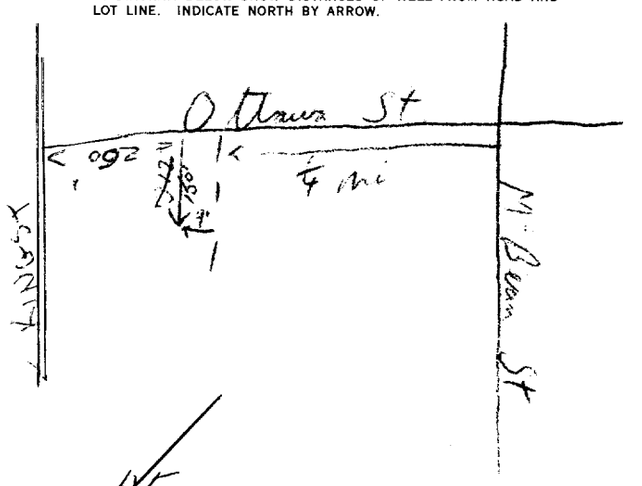
IF FLOWING, GIVE RATE (38-41) GPM. — PUMP INTAKE SET AT FEET — WATER AT END OF TEST (42): 1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP — RECOMMENDED PUMP SETTING (43-45): 080 FEET — RECOMMENDED PUMPING RATE (46-49): 0005 GPM.

(50-53) 0.001 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 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING ☐ OTHER 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 Maino Well Drilling — LICENCE NUMBER: 3644

ADDRESS: Box 326, Richmond Ont.

NAME OF DRILLER OR BORER: Henry Maino — LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Henry Maino — SUBMISSION DATE: DAY 10 — MO. June — YR. 71

OFFICE USE ONLY

DATA SOURCE (58): 1 — CONTRACTOR (59-62): 3644 — DATE RECEIVED (63-68): 080771 (80)

DATE OF INSPECTION — INSPECTOR

REMARKS:

P

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OWRC COPY

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

31 6/48

Ontario

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

11 | 11514676 | MUNICIP. 15003 | CON. CON | 03

COUNTY OR DISTRICT: [redacted]

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Dalhousie Richmond

CON., BLOCK, TRACT, SURVEY, ETC.: Con 3

LOT: 026

DATE COMPLETED: DAY 17 MO. 03 YR. 25

Richmond Ont.

ING | RC. 4 | ELEVATION 306 | RC. 4 | BASIN CODE 26 | II AUG 04, 1977 | III 303

1514676 18 [redacted] 004435

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
grey	clay		loomy	0	4
brown	sand			4	10
grey	clay	stones		10	45
grey	limestone			45	95

31 00042050 2 | 00010628 | 00452012 | 00952 15

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0060	1 ☑ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
0094	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	0048
	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	PUMPING RATE	DURATION OF PUMPING
1 ☑ PUMP 2 ☐ BAILER	0010 GPM	01 HOURS 00 MINS

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

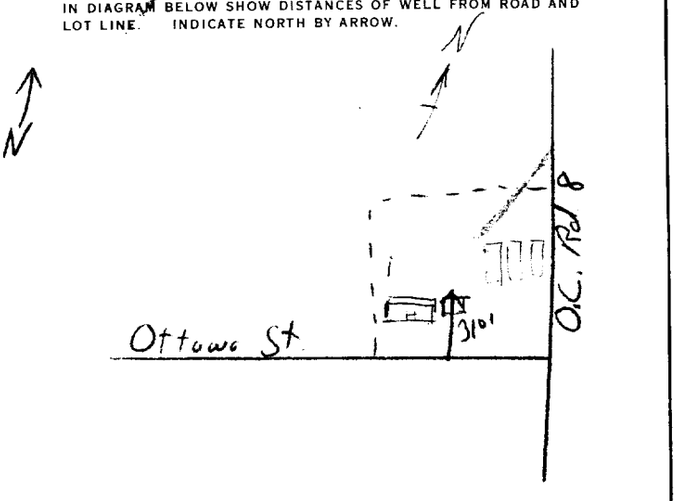
IF FLOWING, GIVE RATE: GPM | PUMP INTAKE SET AT: FEET | WATER AT END OF TEST: 1 ☑ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☑ DEEP | RECOMMENDED PUMP SETTING: 050 FEET | RECOMMENDED PUMPING RATE: 0010 GPM

GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 3504

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 15
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 5
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: Hey Mains | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: | SUBMISSION DATE: DAY 29 MO. 3 YR. 25

OFFICE USE ONLY

DATA SOURCE 1 | CONTRACTOR 3644 | DATE RECEIVED 290575

DATE OF INSPECTION 26 Apr 76 | INSPECTOR P/R Dogl

REMARKS:

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CSS 68

FORM 7 MOE 07-091

MINISTRY OF THE ENVIRONMENT COPY

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

316/4F

Ontario

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

11 — 1514856 — MUNICIP. 15701 — CON.

COUNTY OR DISTRICT: West Carleton

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: ~~Richmond~~ Richmond

CON., BLOCK, TRACT, SURVEY, ETC.: ~~Mc Bean St.~~

LOT: ~~25~~

[redacted] Richmond Ont.

DATE COMPLETED: DAY 31 MO 07 YR 75

RING	RC	ELEVATION	RC	BASIN CODE		
004324	4	306	4	26	JUN 28, 1977	300

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
grey	clay			0	15
grey	limestone			15	55

31 — 0015205 — 0055215

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0053	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	~~25~~ 0025
	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: 0004 GPM — DURATION OF PUMPING: 01 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
006 FEET	030 FEET	030 FEET	030 FEET	030 FEET	030 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

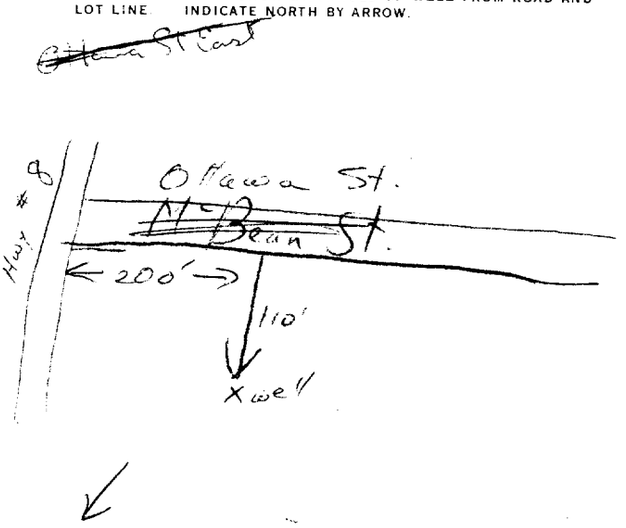
RECOMMENDED PUMP SETTING: 030 FEET

RECOMMENDED PUMPING RATE: 0003 GPM

GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 3504

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



DRILLERS REMARKS: ~~Suburb of [illegible]~~

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; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; ☐ OTHER; 9 ☐ NOT USED

METHOD OF DRILLING 57: 5 — 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 Mans Well Drilling — LICENCE NUMBER: 3644

ADDRESS: Box 326 Richmond Ont.

NAME OF DRILLER OR BORER: [redacted] — LICENCE NUMBER:

SIGNATURE OF CONTRACTOR:

SUBMISSION DATE: DAY 27 MO 7 YR 75

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 3644 — DATE RECEIVED 63-68: 150875

DATE OF INSPECTION: June 16/1976 — INSPECTOR: [redacted] O'Penney

REMARKS: Con. III Lot 25

P QP

WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 MOE 07-091

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

Ontario

31 G/4 F

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

11 | 1515324 | MUNICIP. 15701 | CON.

COUNTY OR DISTRICT: Carleton | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Richmond | CON., BLOCK, TRACT, SURVEY, ETC.: Ottawa

[redacted] Richmond Ont | 65 Ottawa St | DATE COMPLETED: DAY 14 MO 04 YR 76

NG | RC | ELEVATION | RC | BASIN CODE | II | III | IV

003852 4 308 4 26 JUN 28, 1977 300

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
grey	clay			0	28
grey	limestone			28	45

31 0028205 0045215

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0043	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	031
	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: 0008 GPM | DURATION OF PUMPING: 01 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
008 FEET	030 FEET		030 FEET	030 FEET	030 FEET	030 FEET

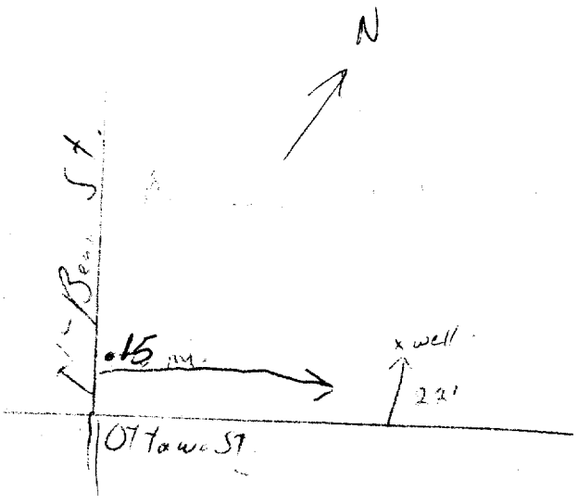
IF FLOWING, GIVE RATE: GPM | PUMP INTAKE SET AT: FEET | WATER AT END OF TEST: 1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP | RECOMMENDED PUMP SETTING: 030 FEET | RECOMMENDED PUMPING RATE: 0005 GPM

GPM. / FT. SPECIFIC CAPACITY

LOCATION OF WELL 3504

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: 5 — 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: | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: | SUBMISSION DATE: DAY 18 MO. 7 YR. 76

OFFICE USE ONLY

DATA SOURCE 58: 1 | CONTRACTOR 59-62: 3644 | DATE RECEIVED: 06 05 76 80

DATE OF INSPECTION: June 16, 1977 | INSPECTOR: A E Pentney

REMARKS: Con III Lot 23

P WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 MOE 07-091

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 1516664

MUNICIP CON

COUNTY OR DISTRICT: Carleton

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Gloucester

CON., BLOCK, TRACT, SURVEY, ETC.: Village Richmond

LOT

DATE COMPLETED: DAY 15 MO 8 YR 78

[redacted] 58 Kehoe Ottawa, Ont

RC ELEVATION RC BASIN CODE

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	hardpan	sand + boulders		0	15
grey	hardpan	boulders		15	29
grey	limestone		broken	29	35

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
30	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
6 1/4	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	29
6	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		29	35
	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

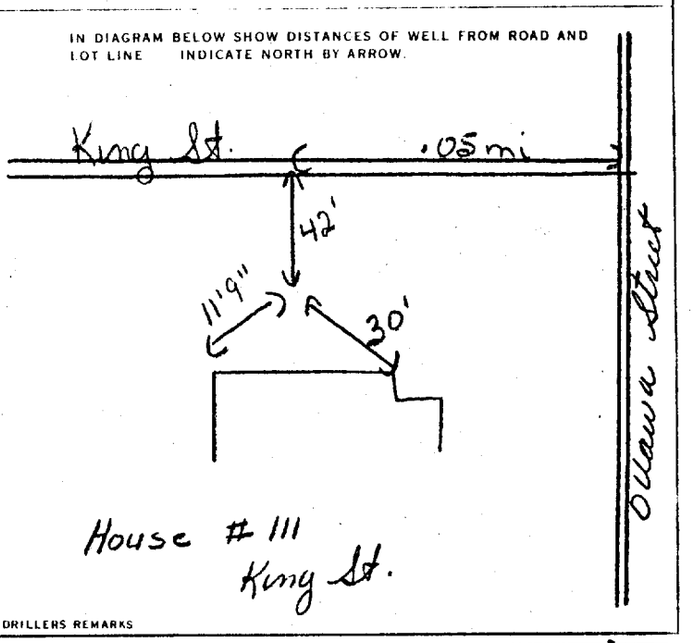
DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER	PUMPING RATE: 25 GPM	DURATION OF PUMPING: 1 HOURS ___ MINS	
STATIC LEVEL: 10 FEET	WATER LEVEL END OF PUMPING: 25 FEET	WATER LEVELS DURING: 1 ☐ PUMPING 2 ☐ RECOVERY	
15 MINUTES: 25 FEET	30 MINUTES: 25 FEET	45 MINUTES: 25 FEET	60 MINUTES: 25 FEET
IF FLOWING GIVE RATE: GPM	PUMP INTAKE SET AT: FEET	WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY	
RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP	RECOMMENDED PUMP SETTING: 25 FEET	RECOMMENDED PUMPING RATE: 5 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 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE

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

METHOD OF DRILLING

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

CONTRACTOR

NAME OF WELL CONTRACTOR: CAPITAL WATER SUPPLY LTD | LICENCE NUMBER: 1558

ADDRESS: Box 490, STITTSVILLE

NAME OF DRILLER OR BORER: S. Miller | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: W Kinnaird | SUBMISSION DATE: DAY 16 MO 8 YR 78

OFFICE USE ONLY

DATA SOURCE | CONTRACTOR | DATE RECEIVED: 08097 8

DATE OF INSPECTION | INSPECTOR

REMARKS

FORM 7 0506 4 7

Ministry of the Environment

Ontario

The Ontario Water Resources Act

31G4F

WATER WELL RECORD

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

11 1516664 MUNICIP 15701 CON.

COUNTY OR DISTRICT: Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Goulbourn
CON., BLOCK, TRACT, SURVEY, ETC.: Village Richmond ~~III~~
LOT: ~~19~~
OWNER (SURNAME FIRST): OSTENDORFER ~~Geo. Ltd.~~
ADDRESS: 208 Kehoe Ottawa, Ont
DATE COMPLETED: DAY 15 MO. 08 YR. 78

21 ZONE M 18 EASTING 435220 NORTHING 5003960 RC 4 ELEVATION 0310 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
Brown	hardpan	sand + boulders		0	15
grey	hardpan	boulders		15	29
grey	limestone		broken	29	35

31 00156 14 28 13 00292 14 13 00352 15 71

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
030	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
6¼	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	29
06				0029
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0035
06			29	35
	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

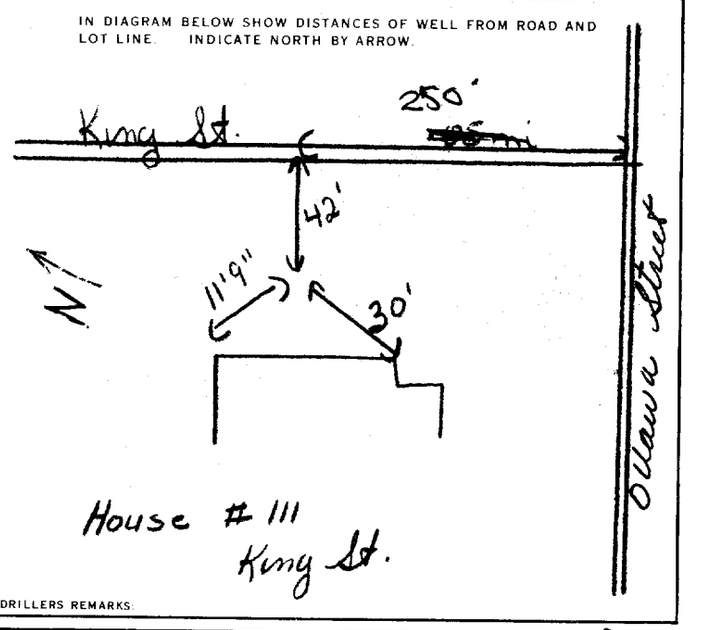
PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER
PUMPING RATE: 0025 GPM
DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
010 FEET	025 FEET	025 FEET	025 FEET	025 FEET	025 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: 025 FEET
RECOMMENDED PUMPING RATE: 0005 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 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: 5 — 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: CAPITAL WATER SUPPLY LTD — LICENCE NUMBER: 1558
ADDRESS: Box 490 STITTSVILLE
NAME OF DRILLER OR BORER: S. Miller — LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: W. Kawcaack — SUBMISSION DATE: DAY 16 MO 8 YR 78

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 1558 — DATE RECEIVED 63-68: 08097 8 — 80
DATE OF INSPECTION: 14/5/79 — INSPECTOR: Km J. P.
REMARKS:

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506—4—77

The Ontario Water Resources Commission

WATER WELL RECORD

1516764

1 PRINT ONLY IN SPACES PROVIDED
2 CHECK (✓) CORRECT BOX WHERE APPLICABLE

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN OR VILLAGE	CONCESSION	STREET, ETC.	LOT
Carleton	Richmond		King St.	113

[redacted] 7 Dell Acres Area Richmond Ont.

DATE COMPLETED: DAY 4 MO 8 YR 78

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
grey	clay	hardpan		0	28
grey	limestone			28	64

31
32

31 WATER RECORD

WATER FOUND AT FEET	KIND OF WATER
60	✓ FRESH

CASING & OPEN HOLE RECORD

CASING NO.	DIAMETER INCHES	DEPTH - FEET FROM	TO
6	.188	0	31

SCREEN

SCREEN NO.	DIAMETER INCHES	SLOT NO.	LENGTH FEET

MATERIAL AND TYPE | DEPTH SET AT FEET

31 PLUGGING & SEALING RECORD

DEPTH SET AT FEET | MATERIAL AND TYPE | AMOUNT (CEMENT GROUT, CLAY, CUTTINGS, ETC.)

PUMPING TEST

1 ✓ PUMP 2 BAILER — 15 GPM — 1 — 0

STATIC LEVEL	PUMPING LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
15 FEET	25 FEET	5 MINUTES	25 FEET	10 MINUTES	25 FEET	20 MINUTES	25 FEET

If flowing give rate: GPM

Water at end of test: 1 CLEAR 2 ✓ CLOUDY

Suction pump: 1 ✓ SHALLOW 2 DEEP

Recommended pump setting: 30 FEET

Recommended pumping rate: 5 GPM

FINAL STATUS OF WELL

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

WATER USE

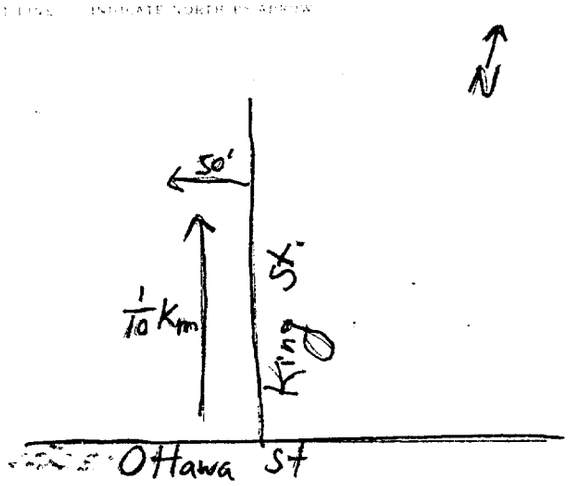
1 ✓ DOMESTIC
2 STOCK
3 IRRIGATION
4 INDUSTRIAL
5 COMMERCIAL
6 MUNICIPAL
7 PUBLIC SUPPLY
8 COOLING OR AIR CONDITIONING
9 NOT USED
10 OTHER

METHOD OF DRILLING

1 CABLE TOOL
2 ROTARY (CONVENTIONAL)
3 ROTARY (REVERSE)
4 BORING
5 DIAMOND
6 JETTING
7 DRIVING
8 ✓ DIGGING

LOCATION OF WELL

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



CONTRACTOR

NAME OF WELL CONTRACTOR: Henry Mains Well Drilling 3644
ADDRESS: Box 326 Richmond Ont
NAME OF DRILLER OR BORING MACHINE OPERATOR: Henry Mains
SIGNATURE OF CONTRACTOR: DATE 10 8 78

OFFICE USE ONLY

3644 271178

Ministry of the Environment

Ontario

The Ontario Water Resources Act

WATER WELL RECORD

31G4F

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

11 1516764 MUNICIP. 15701 CON.

COUNTY OR DISTRICT: Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Richmond
CON., BLOCK, TRACT, SURVEY, ETC.: ~~Con~~ (King St.)
LOT: ~~#~~ 19
[redacted] 7 Dell Air Cres Richmond
DATE COMPLETED: DAY 04 MO. 08 YR. 78
UTM ZONE 18 FC 03980 4 ELEVATION 0310 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
grey	clay	hardpan		0	28
grey	limestone			28	64

31 0028205|14 0064215

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0060	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	0031
	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

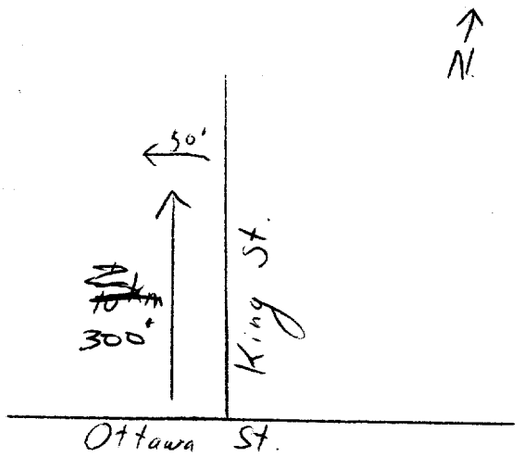
PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER
PUMPING RATE: 0015 GPM
DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
015 FEET	025 FEET	025 FEET	025 FEET	025 FEET	025 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: 030 FEET
RECOMMENDED PUMPING RATE: 0005 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 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: 5 — 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: Henry Mains — LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: Henry Mains
SUBMISSION DATE: DAY 10 MO. 8 YR. 78

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 3644 — DATE RECEIVED 63-68: 27 11 78
DATE OF INSPECTION: 14/5/79 — INSPECTOR: K.M. J.B.P.
REMARKS:

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506—4—77

The Ontario Water Resources Commission

WATER WELL RECORD

1516764

1 PRINT ONLY IN SPACES PROVIDED
2 CHECK (✓) CORRECT BOX WHERE APPLICABLE

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN OR VILLAGE	CONCESSION	STREET, ETC.	LOT
Carleton	Richmond		King St.	113

[redacted] 7 Dell Acres Area Richmond Ont.

DATE COMPLETED: DAY 4 MO 8 YR 78

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	TO
grey	clay	hardpan		0	28
grey	limestone			28	64

31
32

31 WATER RECORD

WATER FOUND AT FEET	KIND OF WATER
60	✓ FRESH

CASING & OPEN HOLE RECORD

CASING NO.	DIAMETER INCHES	DEPTH - FEET FROM	TO
6	.188	0	31

SCREEN

SCREEN NO.	DIAMETER INCHES	SLOT NO.	LENGTH FEET

MATERIAL AND TYPE | DEPTH SET AT FEET

31 PLUGGING & SEALING RECORD

DEPTH SET AT FEET | MATERIAL AND TYPE | AMOUNT (CEMENT GROUT, CLAY, CUTTINGS, ETC.)

PUMPING TEST

1 ✓ PUMP 2 BAILER — 15 GPM — 1 — 0

STATIC LEVEL	PUMPING LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL	TIME	WATER LEVEL
15 FEET	25 FEET	5 MINUTES	25 FEET	10 MINUTES	25 FEET	20 MINUTES	25 FEET

If flowing give rate: GPM

Water at end of test: 1 CLEAR 2 ✓ CLOUDY

Suction pump: 1 ✓ SHALLOW 2 DEEP

Recommended pump setting: 30 FEET

Recommended pumping rate: 5 GPM

FINAL STATUS OF WELL

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

WATER USE

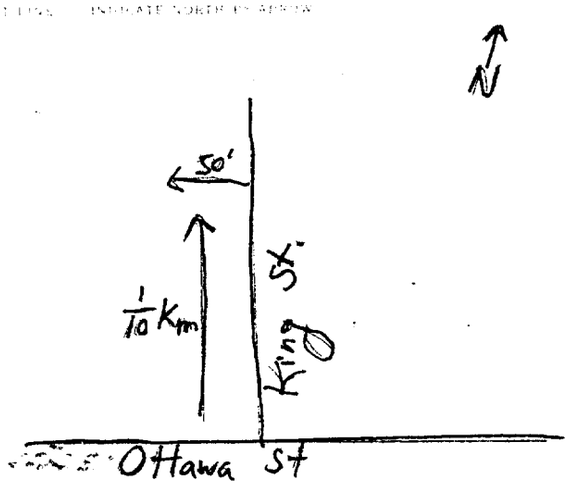
1 ✓ DOMESTIC
2 STOCK
3 IRRIGATION
4 INDUSTRIAL
5 COMMERCIAL
6 MUNICIPAL
7 PUBLIC SUPPLY
8 COOLING OR AIR CONDITIONING
9 NOT USED
10 OTHER

METHOD OF DRILLING

1 CABLE TOOL
2 ROTARY (CONVENTIONAL)
3 ROTARY (REVERSE)
4 BORING
5 DIAMOND
6 JETTING
7 DRIVING
8 ✓ DIGGING

LOCATION OF WELL

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



CONTRACTOR

NAME OF WELL CONTRACTOR: Henry Mains Well Drilling 3644
ADDRESS: Box 326 Richmond Ont
NAME OF DRILLER OR BORING MACHINE OPERATOR: Henry Mains
SIGNATURE OF CONTRACTOR: DATE 10 8 78

OFFICE USE ONLY

3644 271178

Ministry of the Environment

Ontario

The Ontario Water Resources Act

WATER WELL RECORD

31G4F

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

11 1516764 MUNICIP. 15701 CON.

COUNTY OR DISTRICT: Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Richmond
CON., BLOCK, TRACT, SURVEY, ETC.: ~~Con~~ (King St.)
LOT: ~~#~~ 19
[redacted] 7 Dell Air Cres Richmond
DATE COMPLETED: DAY 04 MO. 08 YR. 78
UTM ZONE 18 FC 03980 4 ELEVATION 0310 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
grey	clay	hardpan		0	28
grey	limestone			28	64

31 0028205|14 0064215

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0060	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	0031
	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

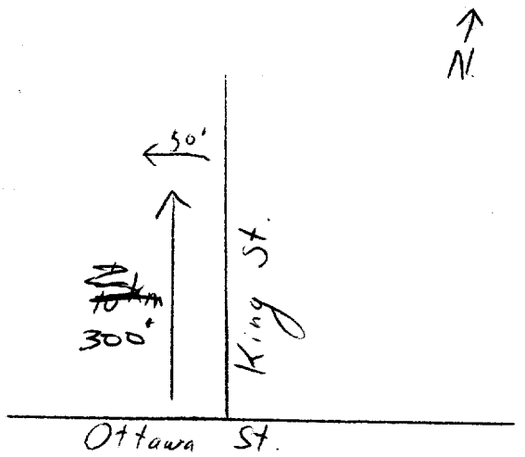
PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER
PUMPING RATE: 0015 GPM
DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
015 FEET	025 FEET	025 FEET	025 FEET	025 FEET	025 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: 030 FEET
RECOMMENDED PUMPING RATE: 0005 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 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: 5 — 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: Henry Mains — LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: Henry Mains
SUBMISSION DATE: DAY 10 MO. 8 YR. 78

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 3644 — DATE RECEIVED 63-68: 27 11 78
DATE OF INSPECTION: 14/5/79 — INSPECTOR: K.M. J.B.P.
REMARKS:

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506—4—77

31648

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 1517199 MUNICIP. 5701 CON. CON 03

COUNTY OR DISTRICT: Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Goulbourn
CON. BLOCK, TRACT, SURVEY ETC.: 65 Ottawa St. 3
LOT: 024
ADDRESS OF WELL LOCATION: [redacted] Ottawa St., Richmond, Ont.
DATE COMPLETED: DAY 18 MO 10 YR 79

OVERBURDEN THICKNESS: 003999 RC: 4 ELEVATION: 0310 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	Sand & Gravel		0	23
	Limestone			23	50

31 0023 0528 1 1 0050 1 5

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0043	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	0025
	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

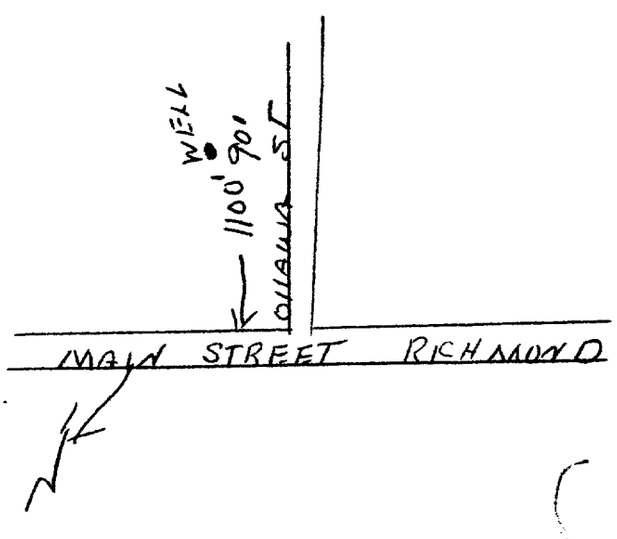
PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER
PUMPING RATE: 0010 GPM
DURATION OF PUMPING: 00 HOURS 30 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING (1 ☐ PUMPING 2 ☒ RECOVERY)	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
008 FEET	045 FEET		FEET	008 FEET	008 FEET	008 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: 035 FEET
RECOMMENDED PUMPING RATE: 0005 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; ☐ OTHER; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED

METHOD OF DRILLING 4
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, Ont.
NAME OF DRILLER OR BORER: A. Scharf LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: A. Scharf SUBMISSION DATE: DAY 19 MO 10 YR 79

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 3504 DATE RECEIVED: 15 01 80
DATE OF INSPECTION: INSPECTOR:
REMARKS:

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506—4—77

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

3164

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

(11) 1517200 MUNICIP. 1570 CON. CON 02

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Carleton	Goulbourn	2	024

[redacted]

5 Bentley Ave. Nepean, Ont. K2E 6T7

DATE COMPLETED: DAY 10 MO 07 YR 79

003699 | RC 4 | ELEVATION 0310 | 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			0	7
	Limestone			7	180
	Sandstone	Limestone		180	200

(31) 0007 05 | 0180 15 | 0200 1815

32

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0180	1 ☒ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
~~200~~	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	0021
	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: 0010 GPM | DURATION OF PUMPING: 00 HOURS 30 MINS

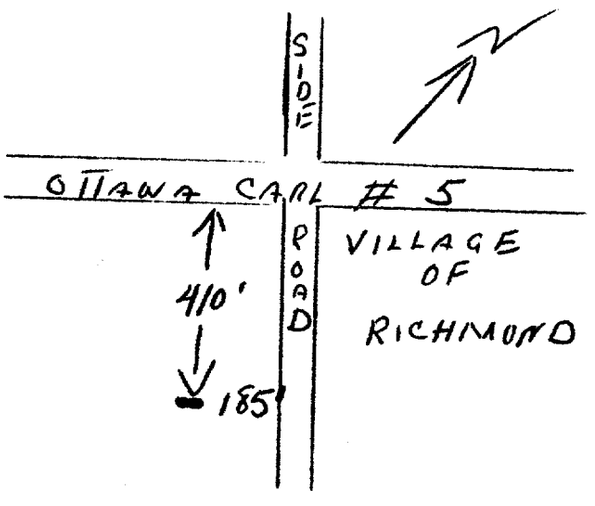
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☐ PUMPING 2 ☒ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
010 FEET	195 FEET	FEET	115 FEET	110 FEET	110 FEET

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: 160 FEET | RECOMMENDED PUMPING RATE: 0010 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 (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; 5 ☐ COMMERCIAL; 6 ☐ MUNICIPAL; 7 ☐ PUBLIC SUPPLY; 8 ☐ COOLING OR AIR CONDITIONING; 9 ☐ NOT USED; ☐ OTHER
METHOD OF DRILLING (57) 4	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 Riven Ave., Ottawa, Ont.

NAME OF DRILLER OR BORER: A. Scharf | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: A. Scharf | SUBMISSION DATE: DAY 11 MO 7 YR 79

MINISTRY OF THE ENVIRONMENT COPY

OFFICE USE ONLY

DATA SOURCE (58): 1 | CONTRACTOR (59-62): 3504 | DATE RECEIVED (63-68): 150180

DATE OF INSPECTION: | INSPECTOR:

REMARKS:

FORM NO. 0506-4-77

Ministry of the Environment
Ontario

The Ontario Water Resources Act 31 G4f

WATER WELL RECORD

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

11 — 1517577 — MUNICIP. 1.5008 — CON. RF — 106

COUNTY OR DISTRICT: [redacted] | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Nepean | CON., BLOCK, TRACT, SURVEY, ETC.: Con 6 | LOT: 003

[redacted] RR# | Richmond K0A 2Z0 | DATE COMPLETED: DAY 25 MO 08 YR 81

UTM ZONE | NORTHING 0041999 | RC 4 | ELEVATION 0310 | 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
grey	clay			0	20
grey	hardpan	stones		20	41
grey	limestone			41	125

MOE VF-18

31 — 00 20 20 5 | 00 41 21 4 | 01 25 21 5

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0/20	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	43
	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.)
10-13	14-17	
18-21	22-25	
26-29	30-33	

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☑ PUMP 2 ☐ BAILER | PUMPING RATE: 060 GPM | DURATION OF PUMPING: 01 HOURS 00 MINS

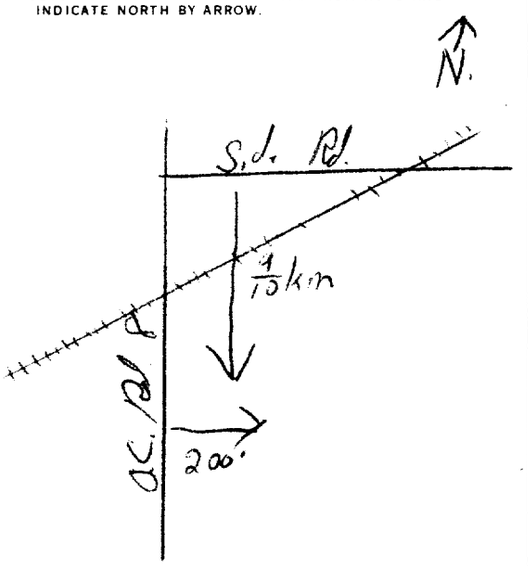
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
015 FEET	060 FEET		060 FEET	060 FEET	060 FEET	060 FEET

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: FEET | RECOMMENDED PUMPING RATE: 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 12: 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 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: Henry Mairs Well Drilling | LICENCE NUMBER: 3644

ADDRESS: RR 3 26, Richmond Ont.

NAME OF DRILLER OR BORER: Henry Mairs | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR | SUBMISSION DATE: DAY 7 MO. 8 YR. 81

OFFICE USE ONLY

DATA SOURCE 1 | CONTRACTOR 3644 | DATE RECEIVED 21081

DATE OF INSPECTION | INSPECTOR

REMARKS:

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506—4—77 FORM 7

316 47

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 1517853 MUNICIP 15701 CON. CON 03

COUNTY OR DISTRICT: Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Richmond
CON. BLOCK, TRACT, SURVEY, ETC.: Burke St.
LOT: 024
OWNER (SURNAME FIRST): Rea J. E Construction
ADDRESS: Richmond Ont. K0A 2Z0
DATE COMPLETED: DAY 27 MO 05 YR 82

21 UTM ZONE 18 EASTING 435099 NORTHING 5004099 RC 4 ELEVATION 0310 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
grey	clay			0	18
grey	limestone			18	105

31 0018205 0105215

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0100	1 ☒ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR; 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0	20
	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

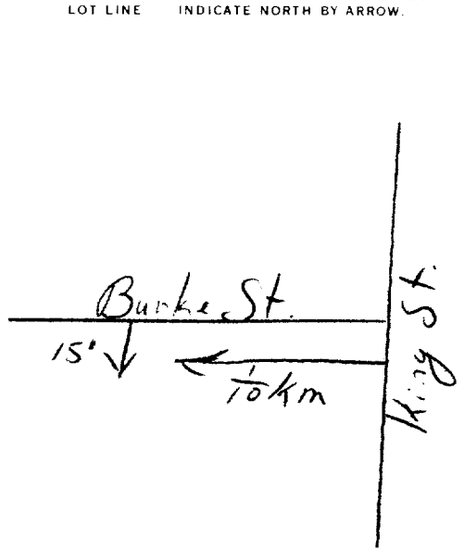
PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER
PUMPING RATE: 0006 GPM
DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
012 FEET	080 FEET	1 ☒ PUMPING 2 ☐ RECOVERY	080 FEET	080 FEET	080 FEET	080 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: 0006 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 ☐ OTHER 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING 9 ☐ NOT USED

METHOD OF DRILLING 5
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: Henry Mains — LICENCE NUMBER:
SIGNATURE OF CONTRACTOR:
SUBMISSION DATE: DAY 27 MO 5 YR 82

OFFICE USE ONLY

DATA SOURCE 1 | CONTRACTOR 3644 | DATE RECEIVED 0907 82
DATE OF INSPECTION | INSPECTOR
REMARKS

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506—4—77 FORM 7

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

3164 6

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

11 — 1518220 — MUNICIP 1,5,7,0,1 — CON. C,O,N — 0,2

COUNTY OR DISTRICT: Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Richmond
CON., BLOCK, TRACT, SURVEY, ETC.: Ottawa St.
LOT: 66 024
[redacted] RR#3, Richmond Ont.
DATE COMPLETED: DAY 19 MO 04 YR 83
UTM NORTHING: 0,0,3,8,9,9 — RC 4 — ELEVATION: 0,3,1,0 — RC 4 — BASIN CODE: 2,6

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
grey	clay			0	3
grey	hardpan	stones		3	18
grey	limestone			18	63

MOE VF-18

31 — 0003205 — 0018214/2 — 0063215

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
045	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
060	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 04	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0 00	22 00
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		22 00	63
	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.)
0	22	cement grouted

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE GPM	DURATION OF PUMPING HOURS / MINS
1 ☒ PUMP 2 ☐ BAILER	0006	01 HOURS 00 MINS

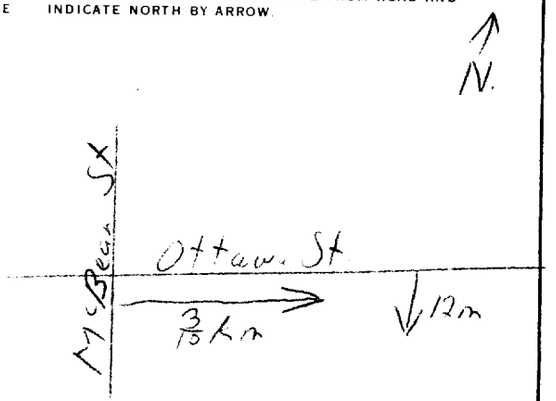
STATIC LEVEL FEET	WATER LEVEL END OF PUMPING FEET	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY
006	030	15 MINUTES: 030 FEET — 30 MINUTES: 030 FEET — 45 MINUTES: 030 FEET — 60 MINUTES: 030 FEET

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

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING FEET	RECOMMENDED PUMPING RATE GPM
☒ SHALLOW ☐ DEEP	030	0005

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 5: 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: Henry Mains — LICENCE NUMBER:
SIGNATURE OF CONTRACTOR:
SUBMISSION DATE: DAY 14 MO 4 YR 83

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 59-62: 3644 — DATE RECEIVED: 06 05 83 — 80
DATE OF INSPECTION: — INSPECTOR:
REMARKS:

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FORM NO. 0506—4—77 FORM 7

Ministry of the Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

3164f

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

(11) 1518579 MUNICIP 1570 | CON. CON 02

COUNTY OR DISTRICT: Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Richmond
CON., BLOCK, TRACT, SURVEY, ETC: Ottawa St.
LOT: 024
OWNER (SURNAME FIRST): D.C. Construction
ADDRESS: Richmond Ont
DATE COMPLETED: DAY 21 MO 09 YR 83

(27) UTM ZONE 18 | EASTING 435199 | NORTHING 5037999 | RC 4 | ELEVATION 0310 | 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
grey	clay			0	22
grey	limestone			22	205
white	sandstone			205	225

(31) 0022205 | 0205225 | 0225118

(32)

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0222	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 ~~07~~	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0	024
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		24	0225
	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.)

PUMPING TEST

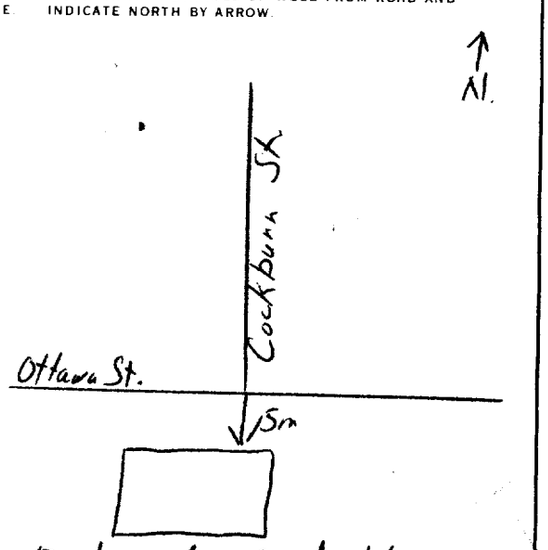
(71) PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER
PUMPING RATE: 0030 GPM
DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY			
010 FEET	060 FEET	15 MINUTES 060 FEET	30 MINUTES 060 FEET	45 MINUTES 060 FEET	60 MINUTES 060 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: 060 FEET
RECOMMENDED PUMPING RATE: 0010 GPM

LOCATION OF WELL

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



DRILLERS REMARKS: East side of double

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) 5: 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: Henry Mains — LICENCE NUMBER:
SIGNATURE OF CONTRACTOR:
SUBMISSION DATE: DAY 22 MO. 9 YR. 83

OFFICE USE ONLY

DATA SOURCE (58): 1 — CONTRACTOR (59-62): 3644 — DATE RECEIVED: 13 10 83
DATE OF INSPECTION — INSPECTOR
REMARKS

MINISTRY OF THE ENVIRONMENT COPY

FORM NO. 0506—4—77 FORM 7

The Ontario Water Resources Commission Act

WATER WELL RECORD

31689

Water management in Ontario

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

11 | 1513579 | MUNICIP. 1500ST | CON. GRN | 05

COUNTY OR DISTRICT: Carleton | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Huntley | CON., BLOCK, TRACT, SURVEY, ETC.: Con V | LOT: 014

OWNER: [redacted] | ADDRESS: RR#3, Carp. | DATE COMPLETED: DAY 07 MO Dec YR 71

21 | UTM ZONE: 18 | EASTING: 418280 | NORTHING: 5017730 | RC: 4 | ELEVATION: 0385 | RC: 4 | BASIN CODE: 25

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
grey	clay			0	89
grey	hardpan			89	104
grey	limestone			104	128

31 | 0089205 | 0194214 | 0282115

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0128	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
05	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	188	0	0107 ~~107~~
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0128
	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	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☒ BAILER	0015 GPM.	01 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
009 FEET	045 FEET	030 FEET	039 FEET	045 FEET	045 FEET

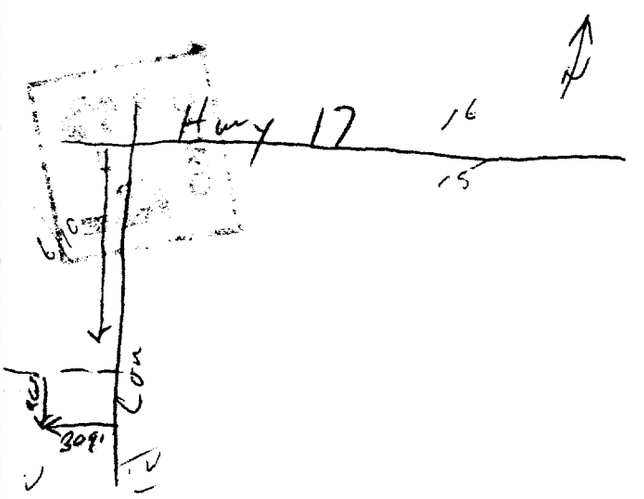
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM.	FEET	1 ☐ CLEAR 2 ☒ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	050 FEET	0010 GPM.

000.4 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: Henry Mains Well Drilling | LICENCE NUMBER: 3644

ADDRESS: RR 3 26 Richmond Ont.

NAME OF DRILLER OR BORER: Jim Pocock | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Henry Mains | SUBMISSION DATE: DAY 7 MO Dec YR 71

OFFICE USE ONLY

DATA SOURCE (58): 1 | CONTRACTOR (59-62): 3644 | DATE RECEIVED (63-68): 120172

DATE OF INSPECTION | INSPECTOR: K

REMARKS:

P L

WI

OWRC COPY

31646

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) 1518580 MUNICIP 15701 CON. CON 02

COUNTY OR DISTRICT: Carleton
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Richmond
CON., BLOCK, TRACT, SURVEY, ETC.: Ottawa St.
LOT: 024
OWNER (SURNAME FIRST): D.C. Construction
ADDRESS: Richmond Ont.
DATE COMPLETED: DAY 21 MO 09 YR 83

(21) UTM ZONE 18 EASTING 435199 NORTHING 5037999 RC 4 ELEVATION 0310 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
grey	clay			0	23
grey	limestone			23	160

(31) 00232205 01602215

(32)

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
055	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	025
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		25	0160
	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

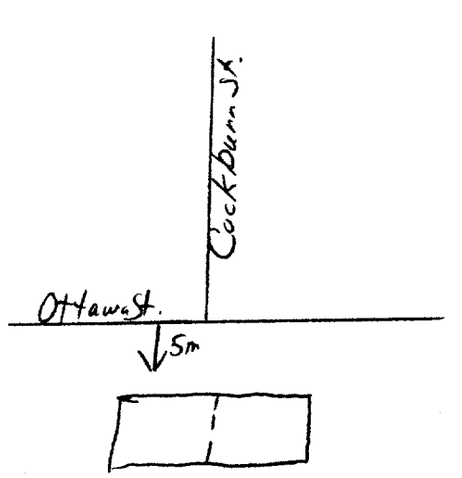
PUMPING TEST METHOD: 1 ☒ PUMP
PUMPING RATE: 000 GPM
DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY			
		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
010 FEET	080 FEET	080 FEET	080 FEET	080 FEET	080 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: 0006 GPM

LOCATION OF WELL

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



DRILLERS REMARKS: West side of double

FINAL STATUS OF WELL (54): 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 (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

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: Bx 326, Richmond Ont.
NAME OF DRILLER OR BORER: Henry Mains
LICENCE NUMBER:
SIGNATURE OF CONTRACTOR:
SUBMISSION DATE: DAY 22 MO. 9 YR. 83

OFFICE USE ONLY

DATA SOURCE (58): 1
CONTRACTOR (59-62): 3644
DATE RECEIVED (63-68): 13 10 83
DATE OF INSPECTION:
INSPECTOR:
REMARKS:

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FORM NO. 0506—4—77 FORM 7

Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

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

11 1531665 Municipality 15003 Con. CON 03

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot
Ottawa Carleton	Goulbourn	3	25

Address: [redacted] c/o Tage Construction 3326 Limebank Rd, Gloucester, Ontario K1G 2N3

Date completed: 15 day 12 month 00 year

21 UTM Northing RC Elevation RC Basin Code

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
Brown	Clay	Stones	Packed	0	10
Gray	Limestone		Medium Hard	10	73

31

32

41 WATER RECORD

Water found at - feet	Kind of water
55	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
NOT TESTED	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6 1/4	1 ☒ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	0	22.5
6	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic		22.5	73
	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			

SCREEN

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

Material and type | Depth at top of screen feet

61 PLUGGING & SEALING RECORD

☒ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
21	0	Grouted - Cement (3)

71 PUMPING TEST

Pumping test method: 1 ☒ Pump 2 ☐ Bailer

Pumping rate: 15 GPM

Duration of pumping: 1 Hours ... Mins

Static level	Water level end of pumping	Water levels during: 1 ☒ Pumping 2 ☐ Recovery			
		15 minutes	30 minutes	45 minutes	60 minutes
10'3" feet	35 feet	70 feet	50 feet	35 feet	35 feet

If flowing give rate: GPM

Pump intake set at: feet

Water at end of test: ☐ Clear ☒ Cloudy

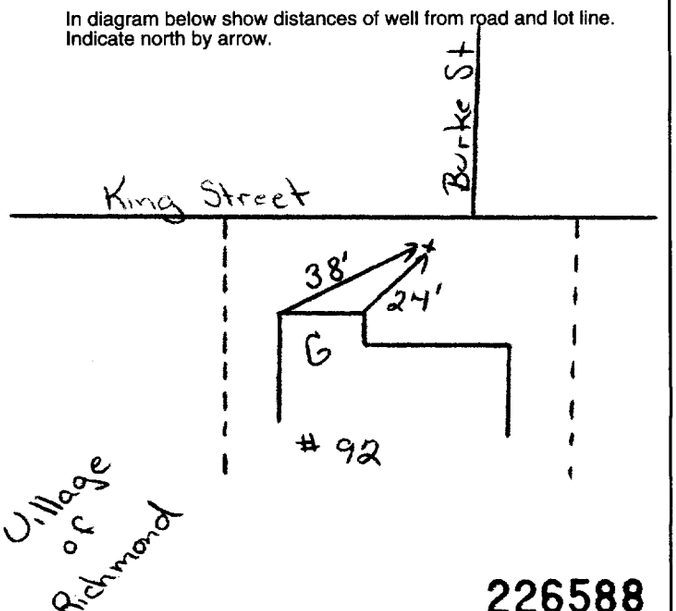
Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump setting: 50 feet

Recommended pump rate: 5 GPM

LOCATION OF WELL

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



226588

FINAL STATUS OF WELL

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

WATER USE

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

METHOD OF CONSTRUCTION

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

Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558
Address: Box 490 Stittsville, Ontario K2S 1A6	
Name of Well Technician: S. Miller	Well Technician's Licence No.: T0097
Signature of Technician/Contractor	Submission date: day 20 mo 12 yr 00

MINISTRY USE ONLY

Data source	Contractor	Date received
	1558	JAN 29 2001
Date of inspection	Inspector	
Remarks: CSS.ES1		

0506 (07/00) Front Form 9

2 - MINISTRY OF THE ENVIRONMENT COPY

Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

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

11 (1 2) 1531778 Municipality 15003 (10 14) Con. CON (15 22 23 24) 03

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot (25-27)
Ottawa Carleton	Goulbourn	3	26

[redacted]

Address: Box # 35 KOA 2Z0, 6180 Ottawa, Street, Richmond ON.

Date completed (48-53): 16 day 03 month 01 year

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

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
Brown	Hardpan	Boulders		0	11
Grey	Limestone		hard	11	75

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

41 WATER RECORD

Water found at - feet	Kind of water
69 (10-13)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas (14) NOT TESTED
(15-18)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas (19)
(20-23)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas (24)
(25-28)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas (29)
(30-33)	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas (34) (60)

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6 1/4" (9-12)	1 ☒ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic (12)	.188	0	21 (13-16)
6" (17-18)	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic (19)		21	75 (20-23)
(24-25)	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic (26)			(27-30)

SCREEN

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

61 PLUGGING & SEALING RECORD

☒ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
21 (10-13)	0 (14-17)	Grouted (3)
(18-21)	(22-25)	
(26-29)	(30-33) (80)	

71 PUMPING TEST

Pumping test method (10)	Pumping rate (11-14)	Duration of pumping (15-16 Hours, 17-18 Mins)
1 ☒ Pump 2 ☐ Bailer	8 GPM	1 Hours

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)
9'6" feet	25 feet	1 ☒ Pumping 2 ☐ Recovery	73 feet	30 feet	25 feet	25 feet

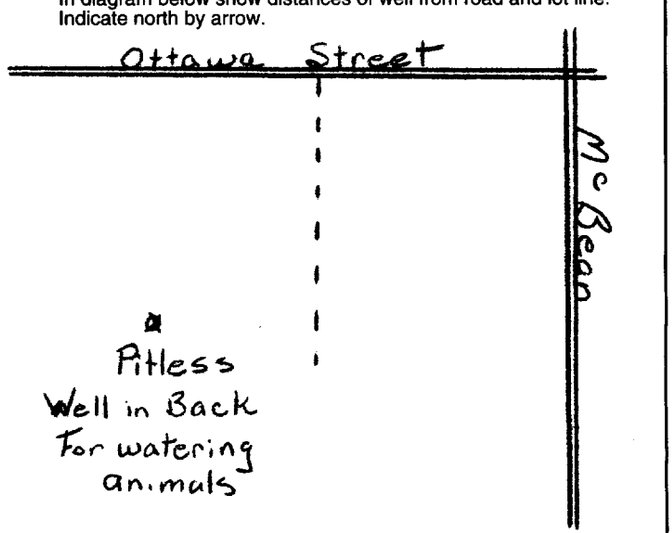
If flowing give rate (38-41)	Pump intake set at	Water at end of test (42)
GPM	feet	☐ Clear ☒ Cloudy

Recommended pump type	Recommended pump setting (43-45)	Recommended pump rate (46-49)
☐ Shallow ☒ Deep	30 feet	5 GPM

(50-53)

LOCATION OF WELL

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



230041

FINAL STATUS OF WELL (54)

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

WATER USE (55-56)

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

METHOD OF CONSTRUCTION (57)

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

Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558
Address: Box 490, Stittsville, ON. K2s 1A6	
Name of Well Technician	Well Technician's Licence No.
S. Miller	T0097
Signature of Technician/Contractor	Submission date: day 16 mo 3 yr 01

MINISTRY USE ONLY

Data source (58)	Contractor (59-62)	Date received (63-68) (80)
	1558	APR 26 2001
Date of inspection	Inspector	
Remarks		CSS.ES1

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Ontario — Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

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

11 — 1533079 — Municipality 15003 — Con. CON 03

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot
Ottawa Carleton	Goulbourn	3	23

Owner's surname	First Name	Address	Date completed
Maple Mountain Homes		P.O. Box 730 Richmond,Ontario K0A 2Z0	21 day 8 month 02 year

21 — UTM Zone — Easting — Northing — RC — Elevation — RC — Basin Code — ii — iii — iv

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
Brown	Clay	Stones		0	12
Gray	Clay	Stones		12	26
Gray	Limestone			26	180
Gray & White	SAndstone			180	240
	Note	Casing was left 1 foot	above ground level		
		at time of drilling			

31

32

41 WATER RECORD

Water found at - feet	Kind of water
236	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
not tested	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6 1/4	1 ☒ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	0	29
5 7/8	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic		29	240
	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			

SCREEN

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

Material and type — Depth at top of screen feet

61 PLUGGING & SEALING RECORD

☒ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
29	0	Grouted - Cement (4)

71 PUMPING TEST

Pumping test method: 1 ☒ Pump 2 ☐ Bailer

Pumping rate: 20 GPM

Duration of pumping: 1 Hours ... Mins

25 Water levels during: 1 ☒ Pumping 2 ☐ Recovery

Static level	Water level end of pumping	15 minutes	30 minutes	45 minutes	60 minutes
14'3" feet	75 feet	225 feet	150 feet	100 feet	75 feet

If flowing give rate: GPM

Pump intake set at: feet

Water at end of test: ☐ Clear ☒ Cloudy

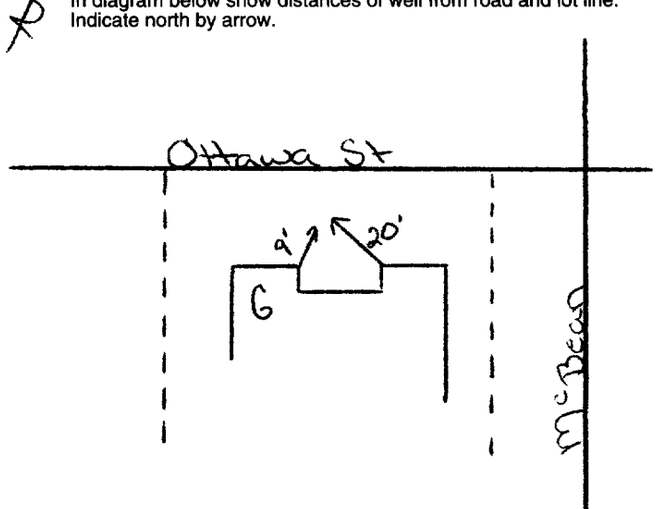
Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump setting: 100 feet

Recommended pump rate: 5 GPM

LOCATION OF WELL

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



250384

FINAL STATUS OF WELL 54

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

WATER USE 55-56

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

METHOD OF CONSTRUCTION 57

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

Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558
Address: P.O. Box 490 Stittsville, Ontario K2S 1A6	
Name of Well Technician: S. Miller	Well Technician's Licence No.: T0097
Signature of Technician/Contractor	Submission date: day 23 mo 8 yr 02

MINISTRY USE ONLY

Data source 58	Contractor 59-62	Date received 63-68
	1558	SEP 16 2002
Date of inspection	Inspector	
Remarks		CSS.ES2

2 - MINISTRY OF THE ENVIRONMENT COPY

Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

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

11 1533080 Municipality 15003 Con. CON 02

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot
Ottawa Carleton	Goulbourn	2	222

Owner's surname	First Name	Address	Date completed
C$N Electric Ltd.		5640 Manotick Main St. Manotick, Ontario	20 day 08 month 2 year

21 UTM Zone Easting Northing RC Elevation K4M 1B5 Code

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
brown cl	clay	stones	packed	0	8
grey	limestone		medium	8	125
	Note: Casing was left 1 foot above ground level at time of drilling.				

31
32

41 WATER RECORD

Water found at - feet	Kind of water
111	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
not tested	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas
	1 ☐ Fresh 2 ☐ Salty 3 ☐ Sulphur 4 ☐ Minerals 6 ☐ Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6 1/4	1 ☒ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	.188	0	21'6
5 7/8	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic		21'6	125
	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic			

SCREEN

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

Material and type | Depth at top of screen feet

61 PLUGGING & SEALING RECORD

☐ Annular space ☐ Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
21'6	0	grouted cement (3)

71 PUMPING TEST

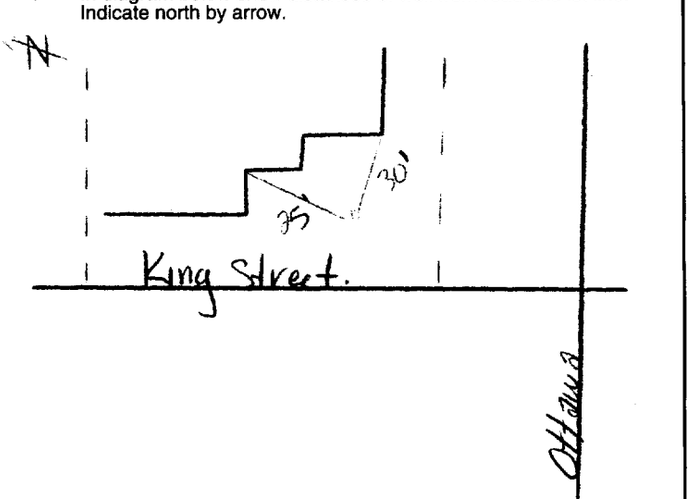
Pumping test method: 1 ☒ Pump 2 ☐ Bailer
Pumping rate: 12 GPM
Duration of pumping: 1 Hours Mins
25 Water levels during: 1 ☒ Pumping 2 ☐ Recovery

Static level	Water level end of pumping	15 minutes	30 minutes	45 minutes	60 minutes
12'5 feet	50 feet	120 feet	180 feet	75 feet	50 feet

If flowing give rate: GPM
Pump intake set at: feet
Water at end of test: ☐ Clear ☒ Cloudy
Recommended pump type: ☐ Shallow ☒ Deep
Recommended pump setting: 95 feet
Recommended pump rate: 5 GPM

LOCATION OF WELL

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



250380

FINAL STATUS OF WELL 54

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

WATER USE 55-56

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

METHOD OF CONSTRUCTION 57

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

Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558
Address: Box 490 Stittsville, Ontario K2S 1A6	
Name of Well Technician: S. Millet	Well Technician's Licence No.: T0097
Signature of Technician/Contractor	Submission date: day 22 mo 08 yr 02

MINISTRY USE ONLY: Data source 58 | Contractor 1558 59-62 | Date received SEP 16 2002 63-68 80
Date of inspection | Inspector
Remarks: CSS.ES2

2 - MINISTRY OF THE ENVIRONMENT COPY

0506 (07/00) Front Form 9

Ontario — Ministry of the Environment

Well Tag Number (Place sticker and print number below): A013675 / A013675

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

MUN | CON | LOT

Well Owner's Information and Location of Well Information

First Name	Last Name	Mailing Address (Street Number/Name, RR,Lot,Concession)
Hank DeKemp & Vanson	Construction	2069 Woodroffe Ave

County/District/Municipality	Township/City/Town/Village	Province	Postal Code	Telephone Number (include area code)
Ottawa Carleton	Ottawa	Ontario	K2C 3H1	613 226 6729

Address of Well Location (County/District/Municipality)	Township	Lot	Concession
Ottawa Carleton	Goulbourn	24/25	3

RR#/Street Number/Name	City/Town/Village	Site/Compartment/Block/Tract etc.
Test Well 3, King Street	Richmond	

GPS Reading	NAD	Zone	Easting	Northing	Unit Make/Model	Mode of Operation
	83	18	435457	5004602	Garmin	☐ 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)
brown	clay			0	2.43
brown	hardpan	layered	hard & layered	2.43	4.26
grey	limestone	layered	hard	4.26	18.59
grey	limestone			18.59	22.25

Hole Diameter

Depth From	Metres To	Diameter Centimetres
0	6.40	22.75
6.40	22.24	15.39

Water Record

Water found at ___ Metres	Kind of Water
8.53	☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
12.49	☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
16.15-18.59	☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
NOT TESTED	☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

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

Chlorinated ☒ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.86	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	0.48	+.45	6.40
	☐ 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		6.40	22.24

Test of Well Yield

Pumping test method	Draw Down Time min	Draw Down Water Level Metres	Recovery Time min	Recovery Water Level Metres
Pump intake set at - (metres)	Static Level			
Pumping rate - (litres/min)	1		1	
Duration of pumping ____hrs +____ min	2		2	
Final water level end of pumping ____metres	3		3	
Recommended pump type. ☐ Shallow ☐ Deep	4		4	
Recommended pump depth. ____metres	5		5	
Recommended pump rate. (litres/min)	10		10	
	15		15	
If flowing give rate - (litres/min)	20		20	
	25		25	
If pumping discontinued, give reason.	30		30	
	40		40	
	50		50	
	60		60	

Plugging and Sealing Record

☒ Annular space ☐ Abandonment

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
6.40	0	grouted: bentonite slurry	.198m3

Method of Construction

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

Water Use

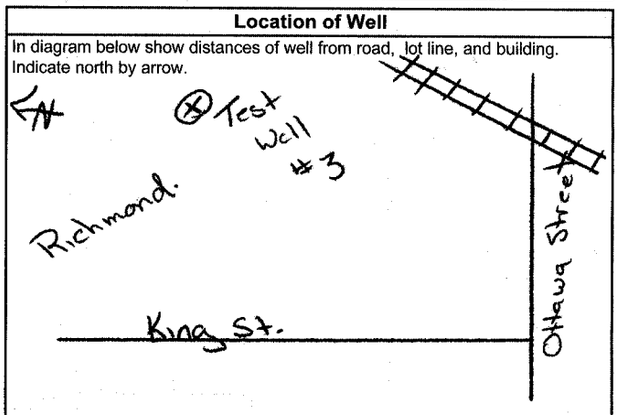
☒ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

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

Location of Well

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



Audit No. Z 13768

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

Date Well Completed: YYYY 2005 | MM 3 | DD 16

Date Delivered: YYYY 2005 | MM 3 | DD 22

Well Contractor/Technician Information

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

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

Name of Well Technician (last name, first name)	Well Technician's Licence No.
Miller, Stephen	T0097

Signature of Technician/Contractor: X

Date Submitted: YYYY 2005 | MM 3 | DD 22

Ministry Use Only

Data Source	Contractor
	1558
Date Received: YYYY MM DD — MAY 18 2005	Date of Inspection: YYYY MM DD
Remarks	Well Record Number

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

Ontario Ministry of the Environment

Well Tag Number (Place sticker and print number below)
A013673
A013673

Well Record
Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

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

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Well Owner's Information and Location of Well Information

[redacted]

Ottawa Carleton
RR#/Street Number/Name
Test Well 1, King Street

Goulbourn
City/Town/Village
Richmond

Lot: 24/25 Concession: 3
Site/Compartment/Block/Tract etc.

GPS Reading: NAD 83 | Zone 18 | Easting 435246 | Northing 5004428
Unit Make/Model: Garmin
Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To
brown	clay	stones	packed	0	3.65
grey	limestone		medium hard	3.65	45.11

Hole Diameter

Depth From	Depth To	Diameter Centimetres
0	6.40	22.75
6.40	45.18	15.39

Water Record

Water found at ___ Metres / Kind of Water

43.58 m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
NOT TESTED m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:
___ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

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

Chlorinated ☒ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To
Casing				
15.86	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	0.48	+.45	6.40
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized			
Screen				
Outside diam	☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	Slot No.		
No Casing or Screen				
15.39	☒ Open hole		6.40	45.18

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			
Pumping rate - (litres/min)	1		1	
Duration of pumping ___hrs +___ min	2		2	
Final water level end of pumping ___metres	3		3	
Recommended pump type. ☐ Shallow ☐ Deep	4		4	
Recommended pump depth. ___metres	5		5	
Recommended pump rate. (litres/min)	10		10	
	15		15	
If flowing give rate - (litres/min)	20		20	
	25		25	
If pumping discontinued, give reason.	30		30	
	40		40	
	50		50	
	60		60	

Plugging and Sealing Record

☒ Annular space ☐ Abandonment

Depth set at - Metres From	Depth set at - Metres To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
6.40	0	grouted: bentonite slurry	.154m3

Method of Construction

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

Water Use

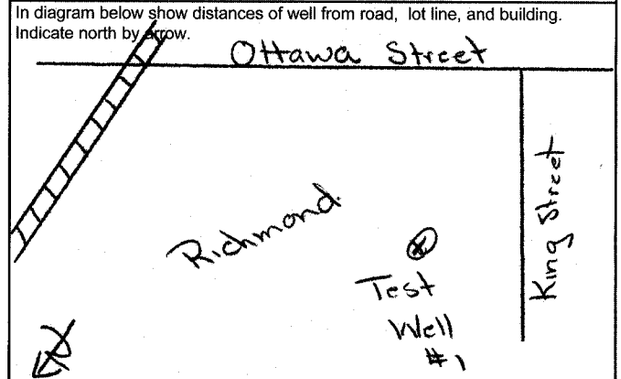
☒ Domestic ☐ Industrial ☐ Public Supply ☐ Other
☐ Stock ☐ Commercial ☐ Not used
☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well

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

Location of Well

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



Audit No. Z 13770

Date Well Completed: YYYY 2005 | MM 3 | DD 17

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

Date Delivered: YYYY 2005 | MM 3 | DD 22

Well Contractor/Technician Information

Name of Well Contractor: Capital Water Supply Ltd.
Well Contractor's Licence No.: 1558
Business Address (street name, number, city etc.): Box 490 Stittsville, Ontario K2S 1A6
Name of Well Technician (last name, first name): Miller, Stephen
Well Technician's Licence No.: T0097
Signature of Technician/Contractor: X [signature]
Date Submitted: YYYY 2005 | MM 3 | DD 22

Ministry Use Only

Data Source
Contractor: 1558
Date Received: YYYY MAY 18 2005 | MM | DD
Date of Inspection: YYYY | MM | DD
Remarks
Well Record Number

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

Ontario Ministry of the Environment

Well Tag No. (below) A043411

A043411

Well Record

Regulation 903 Ontario Water Resources Act

page ___ of ___

Instructions for Completing Form

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

Ministry Use Only

MUN ___ CON ___ LOT ___

[redacted]

Address of Well Location (County/District/Municipality): Ottawa-Carleton | Township: Goulbourn | Lot: Plan 4R-18509 | Concession:

RR#/Street Number/Name: * 67 Burke Street | City/Town/Village: Richmond | Site/Compartment/Block/Tract etc.: Plan D20427 Part 2

GPS Reading: NAD 8 3 | Zone: 18 | Easting: 434923 | Northing: 5004238 | Unit Make/Model: Magellan | Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To (Metres)
	Clay			0	4.57
	Grey limestone			4.57	24.38

Hole Diameter

Depth From	Depth To (Metres)	Diameter (Centimetres)
0	24.38	14.91

Water Record

Water found at ___ Metres	Kind of Water
17.68 m	☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: NSW
20.5 m	☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☒ Other: TESTED
___ m	☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other:

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

Chlorinated: ☒ Yes ☐ No

Construction Record

Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Depth To (Metres)
Casing				
15.88	☒ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized	.48	0	6.71
	☐ 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		6.10	24.38

Test of Well Yield

Pumping test method: Sub Pump

	Draw Down Time (min)	Draw Down Water Level (Metres)	Recovery Time (min)	Recovery Water Level (Metres)
Static Level		1.70		16.48
1	1	4.82	1	11.80
2	2	6.92	2	8.90
3	3	8.16	3	6.32
4	4	9.40	4	4.53
5	5	10.24	5	3.40
10	10	12.57	10	1.70
15	15	13.07	15	
20	20	13.56	20	
25	25	14.45	25	
30	30	15.35	30	
40	40	15.76	40	
50	50	16.12	50	
60	60	16.48	60	

Pump intake set at (metres): 21.33

Pumping rate - (litres/min): 91

Duration of pumping ___ hrs + 0 min

Final water level end of pumping: 16.48 metres

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 21.33 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)
6.10	3.05	Neat Cement Slurry	.1816
3.05	0	Bentonite Slurry	.245

Method of Construction

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

Water Use

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

Final Status of Well

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

Well Contractor/Technician Information

Name of Well Contractor: HIR Rock Drilling Co LTD | Well Contractor's Licence No.: 1119

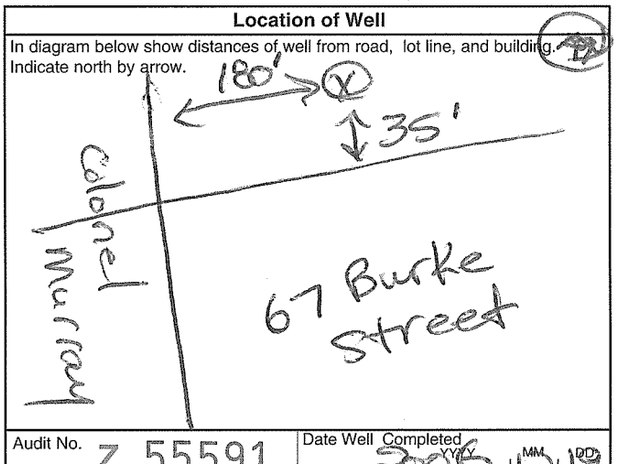
Business Address (street name, number, city etc.): RR#1 Richmond Ont K0A 2Z0

Name of Well Technician (last name, first name): Hogan Dan | Well Technician's Licence No.: T3058

Signature of Technician/Contractor: X [signature] | Date Submitted: 2007 01 22

Location of Well

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



Audit No.: Z 55591 | Date Well Completed: 2006 12 19

Was the well owner's information package delivered? ☒ Yes ☐ No | Date Delivered: 2006 12 20

Ministry Use Only

Data Source | Contractor: 1119

Date Received: FEB 12 2007 | Date of Inspection

Remarks | Well Record Number

0506E (08/2006) Ministry's Copy

Cette formule est disponible en français

Ontario Ministry of the Environment

Well Ta A043482 nt Below)

A043482

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

[redacted]

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
#108 King Street	Goulbourn		

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

UTM Coordinates NAD 8 3	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation
	18	435268	5004249	Magellan	200	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
	Sandy Clay Gravel			0	6.10
	Grey Limestone			6.10	24.99

★ Plan 4R-10642 Part 1-2-3-8-9-12 ★

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	To	Type of Sealant Used (Material and Type)	Volume Placed (Cubic Metres)
7.77	0	Neat Cement Slurry	.1816

Results of Well Yield Testing

Check box if after test of well yield, water was:
☐ Clear and sand free ☐ Not Tested
☐ Cannot develop to sand-free state ☐ Not Tested

If pumping discontinued, give reason: /

Pumping test method: SUB Pump

Pump intake set at (Metres): 18.29

Pumping rate (Litres/min): 56.78

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (Metres): 5.84

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 18.29 Metres

Recommended pump rate (Litres/min): 56.75

If flowing give rate (Litres/min): /

Draw Down Time (Min)	Draw Down Water Level (Metres)	Recovery Time (Min)	Recovery Water Level (Metres)
Static Level	4.87	Static Level	5.84
1	5.50	1	4.94
2	5.63	2	4.87
3	5.66	3	
4	5.69	4	
5	5.71	5	
10	5.76	10	
15	5.79	15	
20	5.82	20	
25	5.82	25	
30	5.82	30	
40	5.83	40	
50	5.83	50	
60	5.84	60	

Method of Construction

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

Water Use

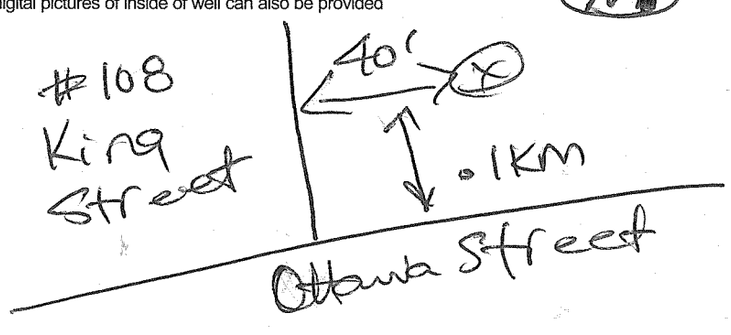
☐ Public ☐ Commercial ☐ Not used
☒ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, *specify* _____

Status of Well

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

Location of Well

Please provide a map below showing:
- all property boundaries, and measurements sufficient to locate the well in relation to fixed points,
- an arrow indicating the North direction
- detailed drawings can be provided as attachments no larger than legal size (8.5" by 14")
- vidigital pictures of inside of well can also be provided



Water Details

Water found at Depth	Kind of Water
15.54 Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
19.20 Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
22.86 Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

NOT TESTED

Casing Used

☐ Galvanized
☒ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

Screen Used

☐ Galvanized
☐ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

Casing and Well Details

Diameter of the Hole *(Centimetres)*: 14.9
Depth of the Hole *(Metres)*: 24.99
Wall Thickness *(Metres)*: .48cm
Inside Diameter of the Casing *(Metres)*: .1588
Depth of the Casing *(Metres)*: 8.38

No Casing and Screen Used

☒ Open Hole 7.77-24.99

Disinfected? ☒ Yes ☐ No

Date Well Completed (yyyy/mm/dd)	Was the well owner's information package delivered?	Date the Well Record and Package Delivered to Well Owner (yyyy/mm/dd)
2007-08-20	☒ Yes ☐ No	2007-08-21

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 No./Name, number, RR)	Municipality
RR#1	Richmond

Province	Postal Code	Business E-mail Address
ONT	K0A2Z0	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
6138382176	PURCELL SHANNON

Well Technician's Licence No.	Signature of Technician	Date Submitted (yyyy/mm/dd)
1202		2007-10-10

Ministry Use Only

Audit No.	Well Contractor No.
Z60179	
Date Received (yyyy/mm/dd)	**Date of Inspection (yyyy/mm/dd)**
OCT 15 2007	
Remarks	

Ontario Ministry of the Environment

Well Tag No. (Pl) A 068479

A-068479

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

[redacted]

604 OTTAWA STREET | COULBURN | 24 | 3

County/District/Municipality: OTTAWA/CARLETON | City/Town/Village: RICHMOND | Province: Ontario | Postal Code: K0A2Z0

UTM Coordinates NAD 83 | Zone | Easting 18435297 | Northing 5004160 | GPS Unit Make MAGELLAN | Model | Mode of Operation: ☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	To
GREY	CLAY.			0.00	3.05
"	TILL	STONES		3.05	5.18
GREY	LIMESTONE			5.18	46.36

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	To	Type of Sealant Used (Material and Type)	Volume Placed (Cubic Metres)
0.00	6.00	GROUT.	0.14

Method of Construction

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

Water Use

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

Status of Well

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

Location of Well

Please provide a map below showing:
- all property boundaries, and measurements sufficient to locate the well in relation to fixed points
- an arrow indicating the North direction
- detailed drawings can be provided as attachments no larger than legal size (8.5" by 14")
- vidigital pictures of inside of well can also be provided

Date Well Completed (yyyy/mm/dd): 2008/06/13 | Was the well owner's information package delivered? ☒ Yes ☐ No | Date the Well Record and Package Delivered to Well Owner (yyyy/mm/dd): 2008/06/13

Well Contractor and Well Technician Information

Business Name of Well Contractor: STANTON DRILLING INC | Well Contractor's Licence No.: 4875

Business Address (Street No./Name, number, RR): BOX 29 | Municipality: PAKENHAM

Province: ON | Postal Code: K0A2X0 | Business E-mail Address: stanton-drill@cyberus.ca

Bus. Telephone No. (inc. area code): (613)624-5622 | Name of Well Technician (Last Name, First Name): STANTON, PETER

Well Technician's Licence No.: 0086 | Signature of Technician | Date Submitted (yyyy/mm/dd): 2008/06/25.

Results of Well Yield Testing

Check box if after test of well yield, water was:
☒ Clear and sand free
☐ Cannot develop to sand-free state

If pumping discontinued, give reason: N/A.

Pumping test method: PUMP.

Pump intake set at (Metres): 43m (140').

Pumping rate (Litres/min): 23 lpm (5gpm).

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (Metres): 9.08.

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 43 Metres (140')

Recommended pump rate (Litres/min): 23 lpm (5gpm).

If flowing give rate (Litres/min): N/A.

Draw Down Time (Min)	Water Level (Metres)	Recovery Time (Min)	Water Level (Metres)
Static Level	2.77	Static Level	
1	4.10	1	17.78
2	4.91	2	16.88
3	5.80	3	16.12
4	6.91	4	15.29
5	7.72	5	14.67
10	9.61	10	12.32
15	11.82	15	10.12
20	13.58	20	8.37.
25	14.56	25	7.41
30	15.44	30	6.48
40	17.12	40	4.93
50	18.28	50	3.77
60	19.08.	60	3.09

Water Details

Water found at Depth		Kind of Water	
12	Metres ☐ Gas	☒ Fresh	☐ Salty ☐ Sulphur ☐ Minerals
23	Metres ☐ Gas	☒ Fresh	☐ Salty ☐ Sulphur ☐ Minerals
36	Metres ☐ Gas	☒ Fresh	☐ Salty ☐ Sulphur ☐ Minerals

Casing Used

☐ Galvanized
☒ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

Screen Used

☐ Galvanized
☐ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

N/A.

No Casing and Screen Used

☒ Open Hole 6.55 - 46.36

Disinfected?: ☒ Yes ☐ No

Casing and Well Details

Diameter of Well Hole (Centimetres): 14.61 (5¾")

Depth of the Hole (Metres): (152')

Wall Thickness (Metres): (.088")

Inside Diameter of the Casing (Metres): (6¼")

Depth of the Casing (Metres): 7.63m (25')

Ministry Use Only

Audit No.: z 77591 | Well Contractor No.:

Date Received (yyyy/mm/dd): AUG 28 2008 | Date of Inspection (yyyy/mm/dd):

Remarks:

05D6E (11/2006)

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Ontario — Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)*: A065692 **A 065692**

Page _____ of _____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Rd, Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 3 - Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435243	5004413		

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 Clay	Boulders	Packed	0	6.70
Gray	Limestone		Medium	6.70	37.48

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used *(Material and Type)*	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.21m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (Reverse) [ ] Driving
[ ] Boring [ ] Digging
[X] Air percussion Air
[ ] 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	+	8.83

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)	Kind of Water	
28.0	[ ] Fresh [X] Untested	[ ] Gas [ ] Other, *specify*
35.3	[ ] Fresh [X] Untested	[ ] Gas [ ] Other, *specify*
	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*

Hole Diameter

Depth (m/ft) From	To	Diameter *(cm/in)*
0	8.83	15.86
8.83	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)*: 22.85

Pumping rate *(l/min / GPM)*: 54.6

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping *(m/ft)*: 8.30

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

Recommended pump depth *(m/ft)*: 22.85

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

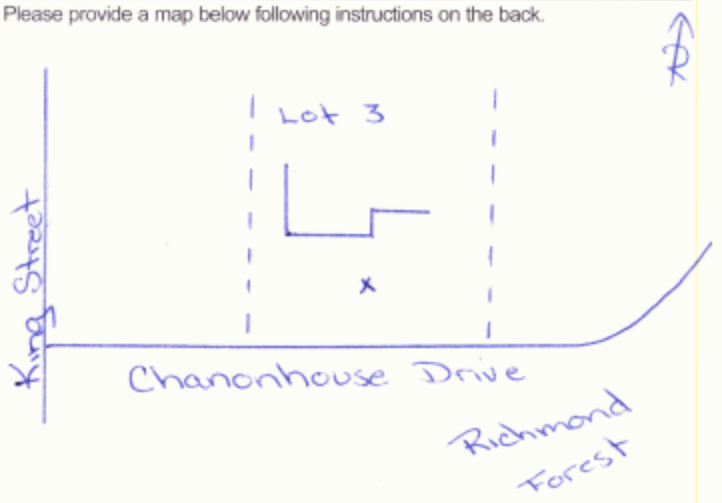
Well production *(l/min / GPM)*:

Disinfected? [X] Yes [ ] No

Draw Down Time *(min)*	Draw Down Water Level *(m/ft)*	Recovery Time *(min)*	Recovery Water Level *(m/ft)*
Static Level	4.40		
1	5.80	1	6.28
2	6.51	2	5.19
3	6.99	3	4.74
4	7.31	4	4.62
5	7.53	5	4.59
10	7.95	10	4.53
15	8.13	15	4.50
20	8.20	20	4.48
25	8.22	25	4.47
30	8.24	30	4.46
40	8.25	40	4.45
50	8.27	50	4.44
60	8.30	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
613 836 1766	Miller, Stephen	0097		2008 08 22

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2008 08 19	2008 08 11

Ministry Use Only

Audit No. Z 84379

OCT 14 2008

Received

0506E (12/2007)

Ministry's Copy

Ontario Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A051482 A 051482

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

Well Owner's Information

First Name	Last Name	E-mail Address	☐ Well Constructed by Well Owner
Talos Custom Homes			

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Rd. Unit 1	Ottawa	Ontario	K1J 9S8	6137473993

Part A Construction and/or Major Alteration of a Well

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
Lot 33 Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation
NAD 83	18	435430	5004623		Garmin	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	To
Brown	Clay	Stone	Packed	0	6.09
Gray	Limestone		Broken	6.09	8.22
Gray	Limestone		Medium	8.22	29.86

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	To	Type of Sealant Used (Material and Type)	Volume Placed (Cubic Metres)
9.14	0	Grouted Bentonite Slurry	2.52m3

Method of Construction

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

Water Use

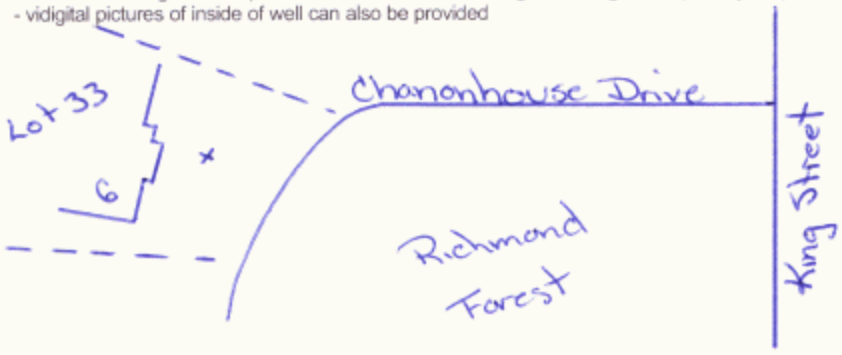
☐ Public ☐ Commercial ☐ Not used
☒ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify _____

Status of Well

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

Location of Well

Please provide a map below showing:
- all property boundaries, and measurements sufficient to locate the well in relation to fixed points,
- an arrow indicating the North direction
- detailed drawings can be provided as attachments no larger than legal size (8.5" by 14")
- vidigital pictures of inside of well can also be provided



Date Well Completed (yyyy/mm/dd)	Was the well owner's information package delivered?	Date the Well Record and Package Delivered to Well Owner (yyyy/mm/dd)
2008/7/22	☒ Yes ☐ No	2008/7/23

Well Contractor and Well Technician Information

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

Business Address (Street No./Name, number, RR)	Municipality	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician	Date Submitted (yyyy/mm/dd)
6138361766	Miller, Stephen	0097		2008/7/30

Results of Well Yield Testing

Check box if after test of well yield, water was:
☒ Clear and sand free
☐ Cannot develop to sand-free state

If pumping discontinued, give reason:

Pumping test method: Submersible

Pump intake set at *(Metres)*: 18.28

Pumping rate *(Litres/min)*: 54.6

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping *(Metres)*: 6.09

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 15.23 Metres

Recommended pump rate *(Litres/min)*: 45.5

If flowing give rate *(Litres/min)*:

Draw Down Time (Min)	Water Level (Metres)	Recovery Time (Min)	Water Level (Metres)
Static Level	3.87	Static Level	
1	5.13	1	4.42
2	5.54	2	4.15
3	5.71	3	4.09
4	5.81	4	4.05
5	5.86	5	4.02
10	5.96	10	3.96
15	6.01	15	3.94
20	6.03	20	3.93
25	6.05	25	3.92
30	6.07	30	3.91
40	6.08	40	3.90
50	6.09	50	3.90
60	6.09	60	3.89

Water Details

Water found at Depth	Kind of Water	Water found at Depth	Kind of Water	Water found at Depth	Kind of Water
27.73 Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals Not Tested	Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals	Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Casing Used

☐ Galvanized
☒ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

Screen Used

☐ Galvanized
☐ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

No Casing and Screen Used

☐ Open Hole

Disinfected? ☒ Yes ☐ No

Casing and Well Details

Diameter of the Hole *(Centimetres)*: 15.39

Depth of the Hole *(Metres)*: 29.86

Wall Thickness *(Metres)*: 0.48

Inside Diameter of the Casing *(Metres)*: 15.86

Depth of the Casing *(Metres)*: +.45 to 9.14

Ministry Use Only

Audit No.	Well Contractor No.
z77400	
Date Received (yyyy/mm/dd) OCT 14 2008	Date of Inspection (yyyy/mm/dd)
Remarks	

0506E (11/2006)

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Ontario — Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)* A068276 A 068276

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road - Unit 1	Ottawa	Ontario	K 1 J 9 J 8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 9 - Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3	1 8	4 3 5 3 3 3	5 0 0 4 5 0 8		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones	Sticky	0	5.48
Grat	Limestone			5.48	37.48

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.53	0	Grouted Bentonite Slurry	.42m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary ~~(Reverse)~~ Air [ ] Driving
[ ] Boring [ ] Digging
[ ] 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	8.53

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)	Kind of Water	Gas	Other, specify
35.65	[ ] Fresh [X] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	8.53	15.86
8.63	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): 22.85

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 5.69

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

Recommended pump depth (m/ft): 18.28

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

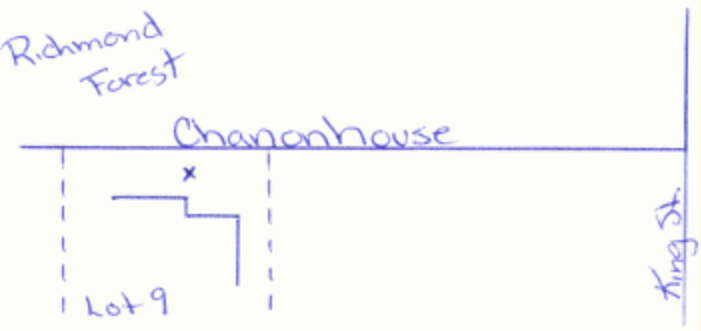
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.48		
1	5.23	1	4.86
2	5.39	2	4.70
3	5.46	3	
4	5.50	4	4.62
5	5.53	5	4.61
10	5.55	10	4.57
15	5.60	15	4.54
20	5.62	20	4.52
25	5.64	25	4.52
30	5.56	30	4.52
40	5.67	40	4.52
50	5.68	50	4.52
60	5.69	60	4.52

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.	1 5 5 8

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

Province	Postal Code	Business E-mail Address
Ontario	K 2 S 1 A 6	office @ capitalwater.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
6 1 3 8 3 6 1 7 6 6	Miller, Stephen

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
0 0 9 7		2 0 0 8 0 9 2 2

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2 0 0 8 0 9 1 7	2 0 0 8 0 9 1 6

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Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)* A068281 A 068281

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road - Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 2 - Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435250	5004396		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones	Packed	0	4.87
Gray	Limestone	Brown Layers	Medium	4.87	37.48

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
7.61	0	Grouted Bentonite Slurry	.547m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (Reverse) Air [ ] 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	7.61

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	
18.28 (m/ft)	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*
36.26 (m/ft)	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*
(m/ft)	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	7.61	15.86
7.61	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): 22.85

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 10.57

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

Recommended pump depth (m/ft): 22.85

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

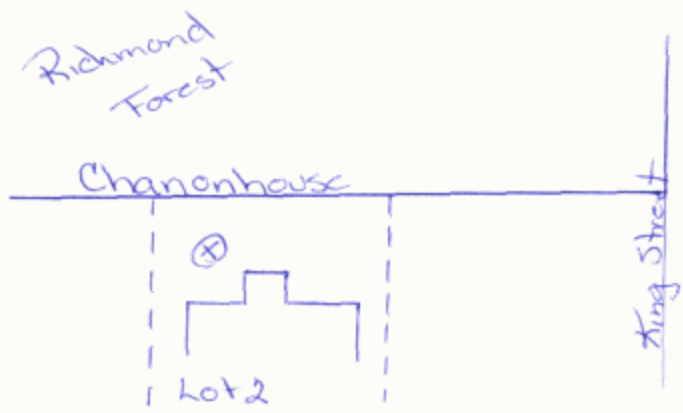
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level		4.76		
1		6.41	1	8.11
2		7.15	2	6.45
3		7.76	3	5.50
4		8.35	4	5.11
5		8.57	5	4.99
10		9.63	10	4.89
15		10.08	15	4.85
20		10.26	20	4.82
25		10.34	25	4.80
30		10.40	30	4.79
40		10.50	40	4.77
50		10.54	50	
60		10.57	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)
6138361766	Miller, Stephen

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
0097		20080922

Well owner's information package delivered: [X] Yes [ ] No

Date Package Delivered: 20080917

Date Work Completed: 20080916

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Audit No: Z 84401

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Well Tag No. *(Place Sticker and/or Print Below)* A051476 A 051476

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

Well Owner's Information

First Name	Last Name	E-mail Address	Well Constructed by Well Owner
Talos Custom Homes			☐

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Rd, Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Part A Construction and/or Major Alteration of a Well

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
Lot 8 Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation
NAD 83	18	435321	5004487		Garmin	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	To
Brown	Sandy Clay	Stones	Packed	0	4.57
Gray	Limestone		Medium Hard	4.57	29.86

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	To	Type of Sealant Used (Material and Type)	Volume Placed (Cubic Metres)
7.77	0	Grouted Bentonite Slurry	.315m^3

Method of Construction

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

Water Use

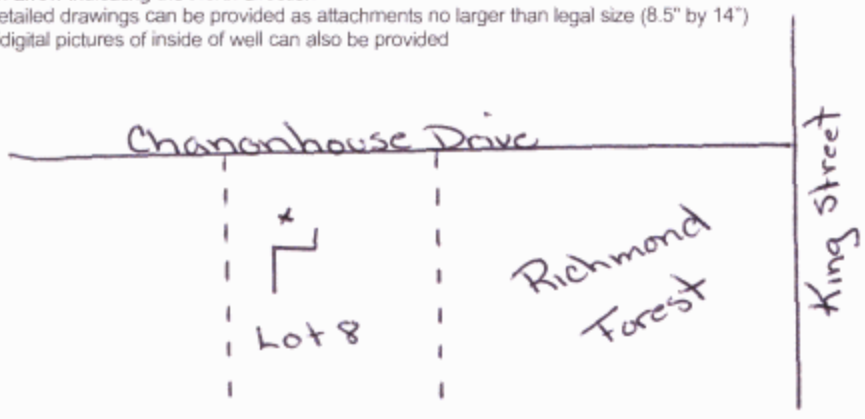
☐ Public ☐ Commercial ☐ Not used
☒ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, *specify* _____

Status of Well

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

Location of Well

Please provide a map below showing:
- all property boundaries, and measurements sufficient to locate the well in relation to fixed points.
- an arrow indicating the North direction
- detailed drawings can be provided as attachments no larger than legal size (8.5" by 14")
- vidigital pictures of inside of well can also be provided



Date Well Completed (yyyy/mm/dd)	Was the well owner's information package delivered?	Date the Well Record and Package Delivered to Well Owner (yyyy/mm/dd)
2008/7/8	☒ Yes ☐ No	2008/7/9

Well Contractor and Well Technician Information

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

Business Address (Street No./Name, number, RR)	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	Date Submitted (yyyy/mm/dd)
0097		2008/7/11

Results of Well Yield Testing

Check box if after test of well yield, water was:
☒ Clear and sand free
☐ Cannot develop to sand-free state

If pumping discontinued, give reason:

Pumping test method: Submersible

Pump intake set at *(Metres)*: 22.85

Pumping rate *(Litres/min)*: 54.6

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping *(Metres)*: 5.58

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: 22.85 Metres

Recommended pump rate *(Litres/min)*: 45.5

If flowing give rate *(Litres/min)*:

Draw Down Time (Min)	Draw Down Water Level (Metres)	Recovery Time (Min)	Recovery Water Level (Metres)
Static Level	3.95	Static Level	
1	4.94	1	4.36
2	5.22	2	4.17
3	5.35	3	4.11
4	5.39	4	4.08
5	5.43	5	4.06
10	5.50	10	4.01
15	5.51	15	3.99
20	5.53	20	3.98
25	5.54	25	3.97
30	5.54	30	3.97
40	5.55	40	
50	5.56	50	
60	5.58	60	

Water Details

Water found at Depth		Kind of Water	
12.19	Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals	Not Tested
27.43	Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals	
	Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals	

Casing Used

☐ Galvanized
☒ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

Screen Used

☐ Galvanized
☐ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

No Casing and Screen Used

☐ Open Hole

Disinfected? ☒ Yes ☐ No

Casing and Well Details

Diameter of the Hole *(Centimetres)*: 15.39

Depth of the Hole *(Metres)*: 29.86

Wall Thickness *(Metres)*: 0.48

Inside Diameter of the Casing *(Metres)*: 15.86

Depth of the Casing *(Metres)*: +.45 to 7.77

Ministry Use Only

Audit No.	Well Contractor No.
Z 77389	
Date Received (yyyy/mm/dd) OCT 14 2008	Date of Inspection (yyyy/mm/dd)
Remarks	

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Ontario Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A051473 A 051473

Well Record

...ulation 903 Ontario Water Resources Act

Page _____ of _____

Well Owner's Information

First Name	Last Name	E-mail Address	Well Constructed by Well Owner
Talos Custom Homes			☐

Mailing Address (Street Number/Name, RR)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Rd.	Ottawa	Ontario	K1J 9J8	613 747 3993

Part A Construction and/or Major Alteration of a Well

Address of Well Location (Street Number/Name, RR)	Township	Lot	Concession
Lot 6, Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	GPS Unit Make	Model	Mode of Operation
NAD 83	18	435285	5004463		Garmin	☐ Undifferentiated ☒ Averaged ☐ Differentiated, specify

Overburden and Bedrock Materials *(see instructions on the back of this form)*

General Colour	Most Common Material	Other Materials	General Description	Depth (Metres) From	Depth (Metres) To
Brown	Sandy Clay	Stones	Packed	0	4.57
Gray	Limestone		Medium Hard	4.57	33.52

Annular Space/Abandonment Sealing Record

Depth Set at (Metres) From	To	Type of Sealant Used (Material and Type)	Volume Placed (Cubic Metres)
7.77	0	Grouted Bentonite	.42m³

Method of Construction

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

Water Use

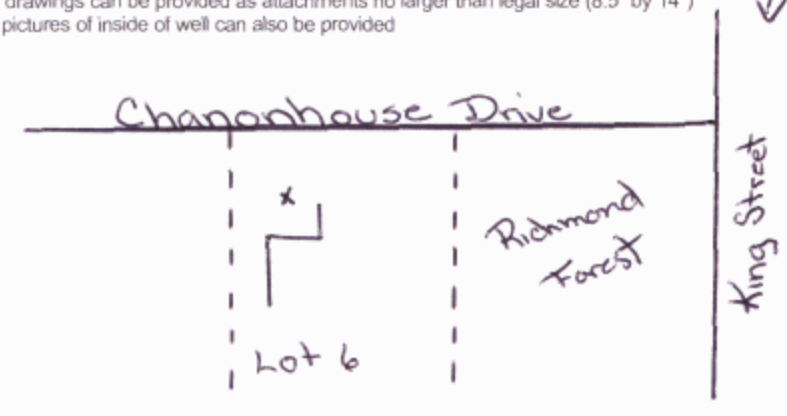
☐ Public ☐ Commercial ☐ Not used
☒ Domestic ☐ Municipal ☐ Dewatering
☐ Livestock ☐ Test Hole ☐ Monitoring
☐ Irrigation ☐ Cooling & Air Conditioning
☐ Industrial
☐ Other, specify _____

Status of Well

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

Location of Well

Please provide a map below showing:
- all property boundaries, and measurements sufficient to locate the well in relation to fixed points;
- an arrow indicating the North direction
- detailed drawings can be provided as attachments no larger than legal size (8.5" by 14")
- vidigital pictures of inside of well can also be provided



Date Well Completed (yyyy/mm/dd)	Was the well owner's information package delivered?	Date the Well Record and Package Delivered to Well Owner (yyyy/mm/dd)
2008/7/8	☒ Yes ☐ No	2008/7/9

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	0093

Business Address (Street No./Name, number, RR)	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	Date Submitted (yyyy/mm/dd)
0097		2008/7/11

Results of Well Yield Testing

Check box if after test of well yield, water was:
☒ Clear and sand free
☐ Cannot develop to sand-free state

If pumping discontinued, give reason:

Pumping test method: Submersible

Pump intake set at *(Metres)*: 22.85

Pumping rate *(Litres/min)*: 54.6

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping *(Metres)*: 7.72

Recommended pump type: ☐ Shallow ☒ Deep

Recommended pump depth: _____ Metres

Recommended pump rate *(Litres/min)*:

If flowing give rate *(Litres/min)*:

Draw Down Time (Min)	Draw Down Water Level (Metres)	Recovery Time (Min)	Recovery Water Level (Metres)
Static Level	3.88	Static Level	
1	5.58	1	5.60
2	6.31	2	4.66
3	6.66	3	4.28
4	6.93	4	4.17
5	7.11	5	4.11
10	7.47	10	4.03
15	7.56	15	3.98
20	7.61	20	3.96
25	7.67	25	3.94
30	7.69	30	3.92
40	7.70	40	3.89
50	7.70	50	3.88
60	7.72	60	

Water Details

Water found at Depth	Kind of Water
31.08 Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals — Not Tested
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals
Metres ☐ Gas	☐ Fresh ☐ Salty ☐ Sulphur ☐ Minerals

Casing Used

☐ Galvanized
☒ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

Screen Used

☐ Galvanized
☐ Steel
☐ Fibreglass
☐ Plastic
☐ Concrete

No Casing and Screen Used

☐ Open Hole

Disinfected? ☒ Yes ☐ No

Casing and Well Details

Diameter of the Hole *(Centimetres)*: 15.39

Depth of the Hole *(Metres)*: 33.52

Wall Thickness *(Metres)*: 0.48

Inside Diameter of the Casing *(Metres)*: 15.86

Depth of the Casing *(Metres)*: +.40 to 7.77

Ministry Use Only

Audit No.	Well Contractor No.
z 77390	
Date Received (yyyy/mm/dd) OCT 14 2008	Date of Inspection (yyyy/mm/dd)
Remarks	

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Ontario — Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)*: A068282 A 068282

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Measurements recorded in: [X] Metric [ ] Imperial

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road - Unit 1	Ottawa	Ontario	K 1 J 9 J 8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 25 - Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435371	5004501		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones		0	3.04
Gray	Clay	Sand	Loose	3.04	6.09
Gray	Limestone	Badly Broken	Fault in Rock	6.09	10.97
Gray	Limestone		Medium	10.97	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
13.10	0	Grouted Bentonite Slurry	1.05m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary ~~(Reverse)~~ Air [ ] 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	13.10

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: Fresh	Untested	Other, specify
41.75	[ ]	[ ]	[X]	
	[ ]	[ ]	[ ]	
	[ ]	[ ]	[ ]	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	13.10	15.86
13.10	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): 22.85

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 10.56

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

Recommended pump depth (m/ft): 22.85

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

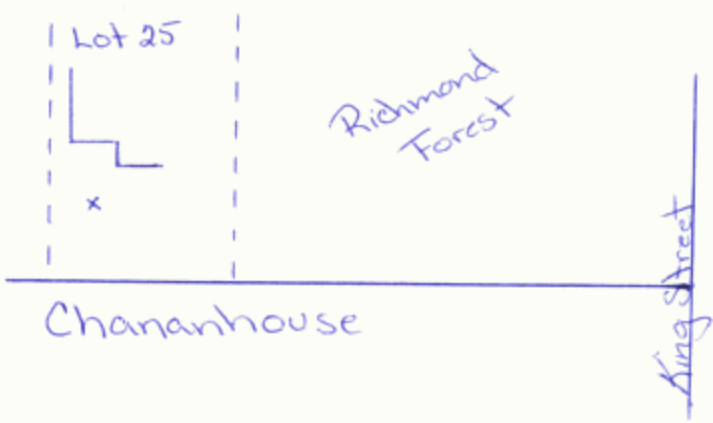
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.52		
1	6.30	1	8.23
2	7.38	2	6.70
3	8.14	3	5.67
4	8.67	4	5.05
5	9.09	5	4.80
10	10.	10	4.55
15	10.27	15	
20	10.41	20	
25	10.47	25	
30	10.50	30	
40	10.53	40	
50	10.55	50	
60	10.56	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	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		2008 09 22

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2008091 7	20080916

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Audit No. Z 84399

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Well Record

...lation 903 Ontario Water Resources Act

Well Tag No. *(Place Sticker and/or Print Below)*: A051455 A 051455

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
Talos Custom Homes			

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road - Unit 1	Ottawa	Ontario	K 1 J 9 J 8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 5 - Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435267	5004446		

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 Clay	Stones	Packed	0	5.79
Gray	Limestone		Medium	5.79	37.48

Annular Space

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
7.61	0	Grouted Bentonite Slurry	.42m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (Reverse) Air [ ] 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	7.61

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)	Kind of Water	Gas	Other, specify
36.26	[ ] Fresh [X] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	7.61	15.86
7.61	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): 10.18

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

Recommended pump depth (m/ft): 22.85

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

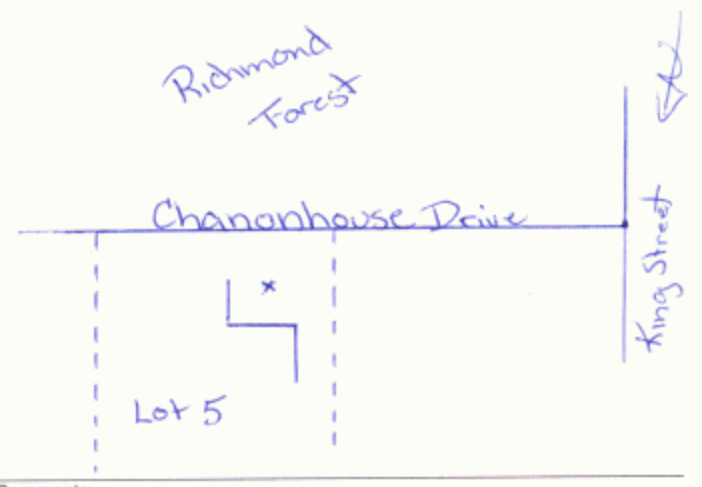
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.59		
1	6.20	1	7.64
2	6.97	2	6.17
3	7.52	3	5.32
4	7.89	4	4.96
5	8.21	5	4.86
10	9.15	10	4.59
15	9.56	15	
20	9.79	20	
25	9.83	25	
30	9.95	30	
40	10.01	40	
50	10.10	50	
60	10.18	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
6138361766	Miller, Stephen	0097		2008 09 10

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2008 09 08	2008 09 04

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Audit No. Z 84390

Received

0506E (12/2007)

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Ontario — Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)*: A068310 **A 068310**

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road - Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 14 Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435404	5004631		

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	Stones	Packed	0	5.48
Gray	Limestone			5.48	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used *(Material and Type)*	Volume Placed (m^3/ft^3)
7.77	0	Grouted Bentonite Slurry	.69m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[X] Rotary (Conventional) [ ] Jetting — All
[ ] Rotary (Reverse) [ ] Driving
[ ] Boring [ ] Digging
[ ] 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	7.77

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
42.36	[ ]	[ ] Fresh [X] Untested	
	[ ]	[ ] Fresh [ ] Untested	
	[ ]	[ ] Fresh [ ] Untested	

Hole Diameter

Depth (m/ft) From	To	Diameter *(cm/in)*
0	7.77	15.86
7.77	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)*: 30.47

Pumping rate *(l/min / GPM)*: 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping *(m/ft)*: 11.64

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

Recommended pump depth *(m/ft)*: 22.85

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

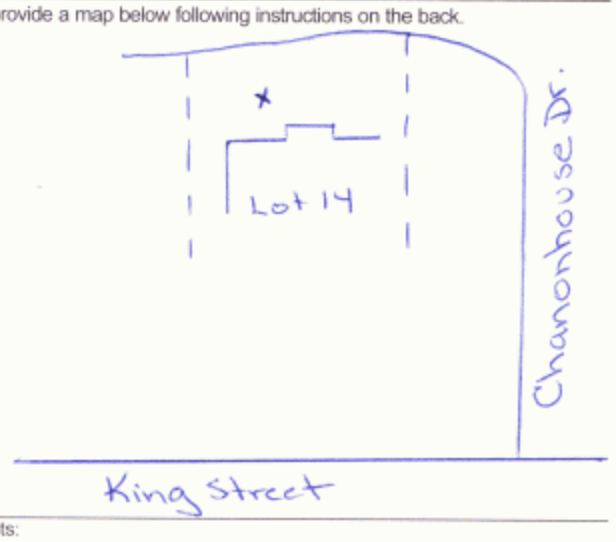
Well production *(l/min / GPM)*:

Disinfected? [X] Yes [ ] No

Draw Down Time *(min)*	Draw Down Water Level *(m/ft)*	Recovery Time *(min)*	Recovery Water Level *(m/ft)*
Static Level	3.63		
1	5.18	1	8.37
2	6.13	2	5,67
3	6.82	3	5.03
4	7.40	4	4.30
5	8.60	5	3.45
10	9.40	10	3.65
15	10.17	15	
20	10.79	20	
25	11.05	25	
30	11.18	30	
40	11.47	40	
50	11.57	50	
60	11.64	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)
6138361766	Miller, Stephen

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
0097		20081110

Well owner's information package delivered: [X] Yes [ ] No

Date Package Delivered: 20081107

Date Work Completed: 20081106

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Audit No. Z 84444

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Well Tag No. *(Place Sticker and/or Print Below)* A068354 **A 068354**

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Measurements recorded in: [X] Metric [ ] Imperial

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 29 - Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435428	5004553		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones	Packed	0	3.65
Gray	Clay	Stones	Sticky	3.65	6.09
Gray	Limestone		Medium	6.09	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used *(Material and Type)*	Volume Placed (m^3/ft^3)
8.53	0	Grouted Bentonite Slurry	.69m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary ~~(Reverse)~~ Air [ ] 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	+.60	8.53

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	
42.36 (m/ft) [ ] Gas	[ ] Fresh [X] Untested	[ ] Other, *specify*
(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	8.53	15.86
8.53	45.10	15.07

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): 15.23

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

Recommended pump depth (m/ft): 22.85

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

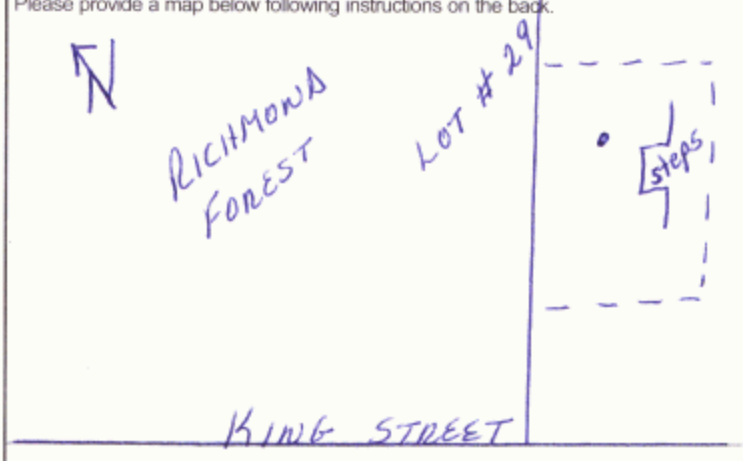
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.16		
1	6.03	1	12.05
2	7.44	2	10.35
3	8.49	3	8.73
4	9.50	4	7.38
5	9.99	5	6.10
10	12.29	10	4.25
15	13.38	15	4.16
20		20	
25	14.40	25	
30	14.62	30	
40	14.95	40	
50	15.09	50	
60	15.23	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	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		2008 11 17

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2008 11 13	2008 11 12

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Well Record

...tion 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below) A076812 **A076812**

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road - Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 1 - Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435216	5004384		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones	Packed	0	4.26
Gray	Limestone		Medium	4.26	47.24

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
7.31	0	Grouted Bentonite Slurry	.46m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (~~Reverse~~) Air [ ] 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	To
15.86	Steel	.48	+.45	7.31

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	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	
45.41 (m/ft) [ ] Gas	[ ] Fresh [X] Untested [ ] Other, *specify*	
(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	7.31	15.86
7.31	47.24	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): 30.47

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 5.25

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

Recommended pump depth (m/ft): 19.81

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

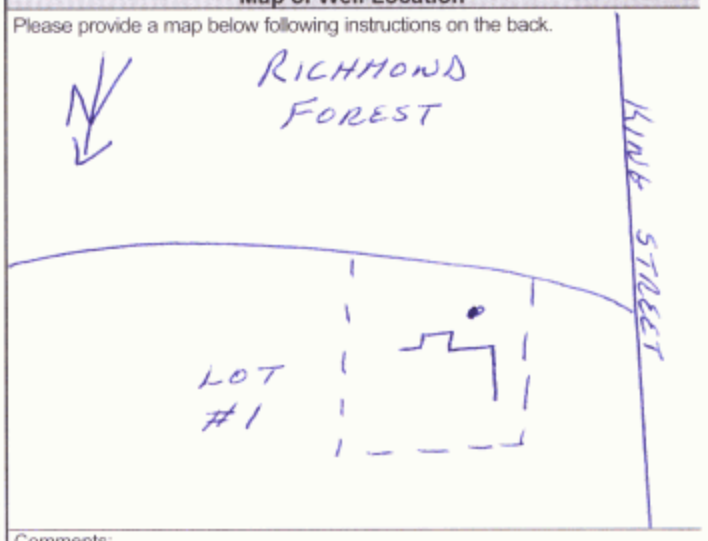
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.75		
1	4.58	1	3.99
2	4.84	2	3.98
3	4.93	3	3.83
4	4.98	4	3.80
5	5.01	5	3.79
10	5.10	10	3.76
15	5.19	15	
20	5.21	20	
25	5.22	25	
30	5.23	30	
40	5.29	40	
50	5.26	50	
60	5.25	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	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		2008 12 03

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2008 12 03	2008 12 02

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Audit No. Z 84460

FEB 12 2009 Received

0506E (12/2007)

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Ontario — Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A076813 **A076813**

Well Record

tion 903 Ontario Water Resources Act

Page ____ of ____

Measurements recorded in: [X] Metric [ ] Imperial

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road - Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 10 Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435356	5004513		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones	Packed	0	5.79
Gray	Limestone		Medium	5.79	48.76

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.43m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (~~Reverse~~) Air [ ] 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	To
15.86	Steel	.48	+.45	8.83

Construction Record - Screen

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	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)	Kind of Water	Gas	Other, specify
46.63	[ ] Fresh [X] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	8.83	15.86
8.83	48.76	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): 45.71

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 6.98

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

Recommended pump depth (m/ft): 22.85

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

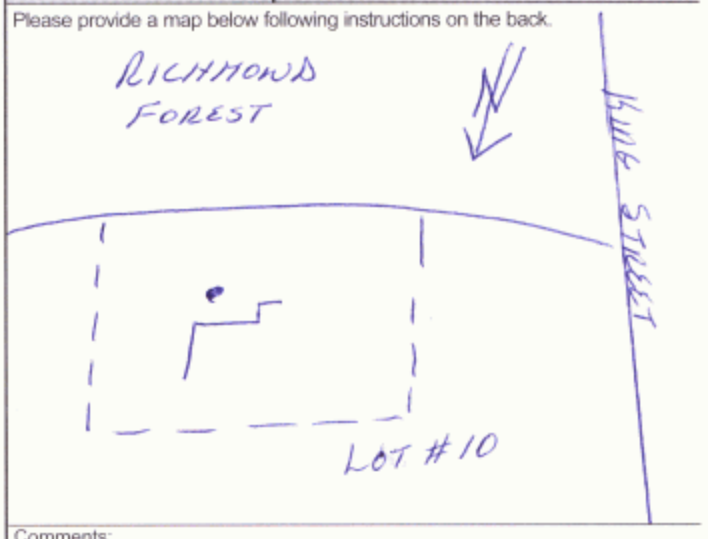
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.90		
1	5.10	1	5.18
2	5.67	2	4.29
3	5.99	3	3.98
4	6.24	4	3.94
5	6.47	5	3.92
10	6.85	10	
15	6.94	15	
20	7	20	
25	7.04	25	
30	6.97	30	
40	6.97	40	
50	6.97	50	
60	6.98	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
6138361766	Miller, Stephen	0097		20081203

Well owner's information package delivered: [X] Yes [ ] No

Date Package Delivered: 20081203

Date Work Completed: 20081202

Ministry Use Only

Audit No. Z 84461

FEB 12 2009 Received

0506E (12/2007) **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)*: A051492 A 051492

Measurements recorded in: XX Metric ☐ Imperial

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Rd. Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 18 Richmond Forest	Goulbourn	25	3

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

UTM Coordinates: Zone | Easting | Northing — NAD 83 | 18 | 435254 | 5004394

Municipal Plan and Sublot Number:

Other:

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Soil	Stones	Packed	0	5.48
Gray	Limestone		Medium	5.48	29.86

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used *(Material and Type)*	Volume Placed (m^3/ft^3)
8.53	0	Grouted Bentonite Slurry	.42m^3

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter *(cm/in)*	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness *(cm/in)*	Depth (m/ft) From	Depth (m/ft) To
15.86	Steel	.48	+.45	8.53

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	Gas	Other, specify
27.73	☐ Fresh ☒ Untested	☐	
	☐ Fresh ☐ Untested	☐	
	☐ Fresh ☐ Untested	☐	

Hole Diameter

Depth (m/ft) From	To	Diameter *(cm/in)*
0	8.53	15.86
8.53	29.86	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): 16.76

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 4.34

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

Recommended pump depth (m/ft): 16.78

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

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	3.90		
1	4.06	1	4.15
2	4.09	2	4.10
3	4.13	3	4.07
4	4.16	4	4.05
5	4.19	5	4.01
10	4.25	10	3.92
15	4.27	15	
20	4.29	20	
25	4.32	25	
30	4.31	30	
40	4.32	40	
50	4.33	50	
60	4.34	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*: 6138361766

Name of Well Technician (Last Name, First Name): Miller, Stephen

Well Technician's Licence No.: 0097

Signature of Technician and/or Contractor:

Date Submitted: 2008 12 16

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

Date Package Delivered: 2008 12 11

Date Work Completed: 2008 12 09

Ministry Use Only

Audit No. Z 84464

Received FEB 12 2009

0506E (12/2007)

Ministry's Copy

Ontario — Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)*: A051593 A 051593

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road - Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 22 - Richmond Forest	Goulbourn	25	3

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

UTM Coordinates: NAD 83 Zone 18 Easting 435315 Northing 5004443

Municipal Plan and Sublot Number:

Other:

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Sandy Clay	Stones	Packed	0	4.57
Gray	Limestone		Medium	4.57	47.24

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
7.92	0	Grouted Bentonite Slurry	.52m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary ~~(Reverse)~~ Air [ ] 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	7.92

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
44.80	[ ]	[ ] Fresh [X] Untested	
	[ ]	[ ] Fresh [ ] Untested	
	[ ]	[ ] Fresh [ ] Untested	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	7.92	15.86
7.92	47.24	15.39

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): 45.71

Pumping rate (l/min / GPM): 36.40

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 16.39

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

Recommended pump depth (m/ft): 30.47

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	4.06		
1	5.78	1	13.10
2	7.03	2	10.78
3	7.83	3	9.02
4	8.60	4	7.84
5	9.02	5	6.88
10	12	10	4.38
15	12.98	15	4.06
20	14.11	20	
25	14.64	25	
30	15.20	30	
40	15.73	40	
50	16.14	50	
60	16.39	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
6138361766	Miller, Stephen	0097		20090120

Well owner's information package delivered: [X] Yes [ ] No

Date Package Delivered: 20090121

Date Work Completed: 20090120

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Audit No. Z 84473

FEB 12 2009

Received

0506E (12/2007)

Ministry's Copy

Ontario — Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)*: A068287 **A 068287**

Page _____ of _____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Rd. Unit 1	Ottawa	Ontario	K 1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 30, Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435437	5004548		

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	Stones		0	4.26
Gray	Hardpan	Boulders	Packed	4.26	8.83
Gray	Limestone		Medium	8.83	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.84m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (Reverse) Air [ ] 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	8.83

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)	Kind of Water	Gas	Other, specify
43.27	[ ] Fresh [X] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	8.83	15.86
8.83	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): 30.47

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping (m/ft): 5.14

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

Recommended pump depth (m/ft): 22.85

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

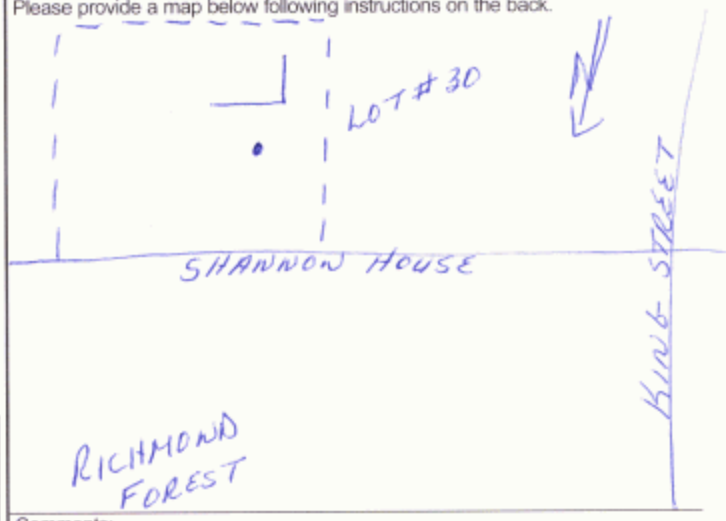
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.99		
1	4.74	1	4.27
2	4.90	2	4.11
3	4.94	3	4.04
4	4.98	4	4
5	5.	5	
10	5.08	10	
15	5.09	15	
20	5.11	20	
25	5.12	25	
30	5.12	30	
40	5.13	40	
50	5.13	50	
60	5.14	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
6138361766	Miller, Stephen	0097		2009 03 06

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009 03 06	2009 03 05

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Audit No. Z095337

APR 06 2009 Received

0506E (12/2007)

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Ontario — Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A068288 **A 068288**

Well Record

...lation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Rd. Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 31, Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435452	5004599		

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	Stones		0	4.26
Gray	Hardpan	Boulders	Packed	4.26	7.01
Gray	Limestone		Medium	7.01	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.84m^3

Method of Construction

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

Well Use

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

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	8.83

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
43.27	[ ]	[ ] Fresh [X] Untested	
	[ ]	[ ] Fresh [ ] Untested	
	[ ]	[ ] Fresh [ ] Untested	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	8.83	15.86
8.83	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): 30.47

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 7.78

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

Recommended pump depth (m/ft): 22.85

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

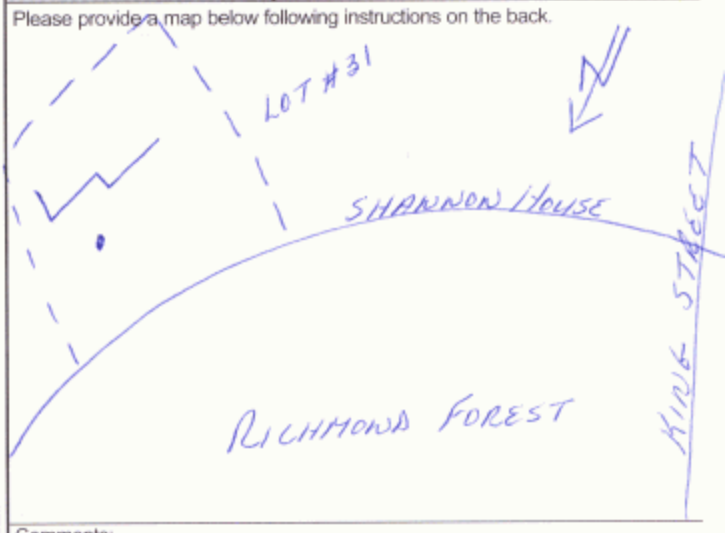
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.95		
1	5.30	1	5.62
2	5.84	2	4.50
3	6.24	3	4.04
4	6.53	4	3.93
5	6.77	5	
10	7.17	10	
15	7.37	15	
20	7.49	20	
25	7.58	25	
30	7.64	30	
40	7.68	40	
50	7.73	50	
60	7.78	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	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		2009030 6

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009030 6	2009030 5

Ministry Use Only

Audit No. Z 095338

Received APR 0 6 2009

0506E (12/2007)

Ministry's Copy

Ontario — Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A068288 **A 068288**

Well Record

...lation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Rd. Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 31, Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435452	5004599		

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	Stones		0	4.26
Gray	Hardpan	Boulders	Packed	4.26	7.01
Gray	Limestone		Medium	7.01	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.84m^3

Method of Construction

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

Well Use

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

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	8.83

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
43.27	[ ]	[ ] Fresh [X] Untested	
	[ ]	[ ] Fresh [ ] Untested	
	[ ]	[ ] Fresh [ ] Untested	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	8.83	15.86
8.83	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): 30.47

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 7.78

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

Recommended pump depth (m/ft): 22.85

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

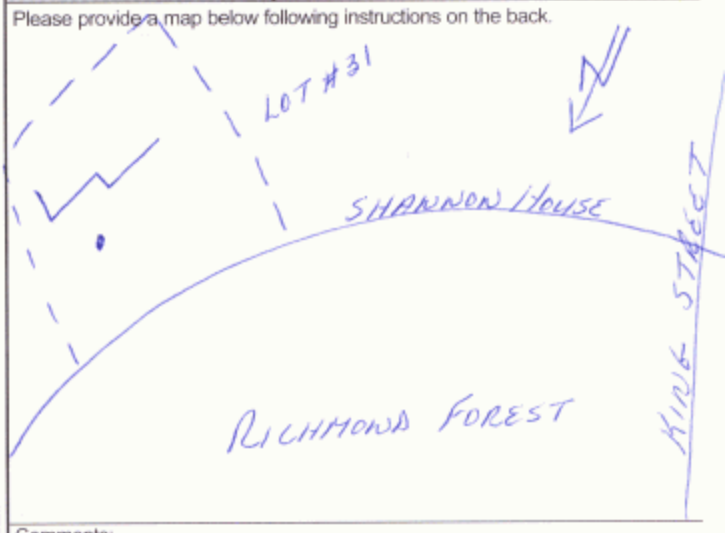
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.95		
1	5.30	1	5.62
2	5.84	2	4.50
3	6.24	3	4.04
4	6.53	4	3.93
5	6.77	5	
10	7.17	10	
15	7.37	15	
20	7.49	20	
25	7.58	25	
30	7.64	30	
40	7.68	40	
50	7.73	50	
60	7.78	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	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		2009030 6

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009030 6	2009030 5

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Audit No. Z 095338

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Ministry's Copy

Ontario — Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A068296 A 068296

Well Record

ulation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road - Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 26 Richmond Forest	Goulbourn	3	25

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435371	5004517		

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	Stones	Packed	0	3.35
Gray	Sandy Soil	Stones	Packed	3.35	5.79
Gray	Limestone		Medium	5.79	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.42m3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (~~Reverse~~) Air [ ] 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	8.83

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)	Kind of Water	
43.88-44.19	[ ] Gas	[ ] Fresh [X] Untested [ ] Other, *specify*
	[ ] Gas	[ ] Fresh [ ] Untested [ ] Other, *specify*
	[ ] Gas	[ ] Fresh [ ] Untested [ ] Other, *specify*

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	8.83	15.86
8.83	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): 30.48

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 6.46

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

Recommended pump depth (m/ft): 22.85

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

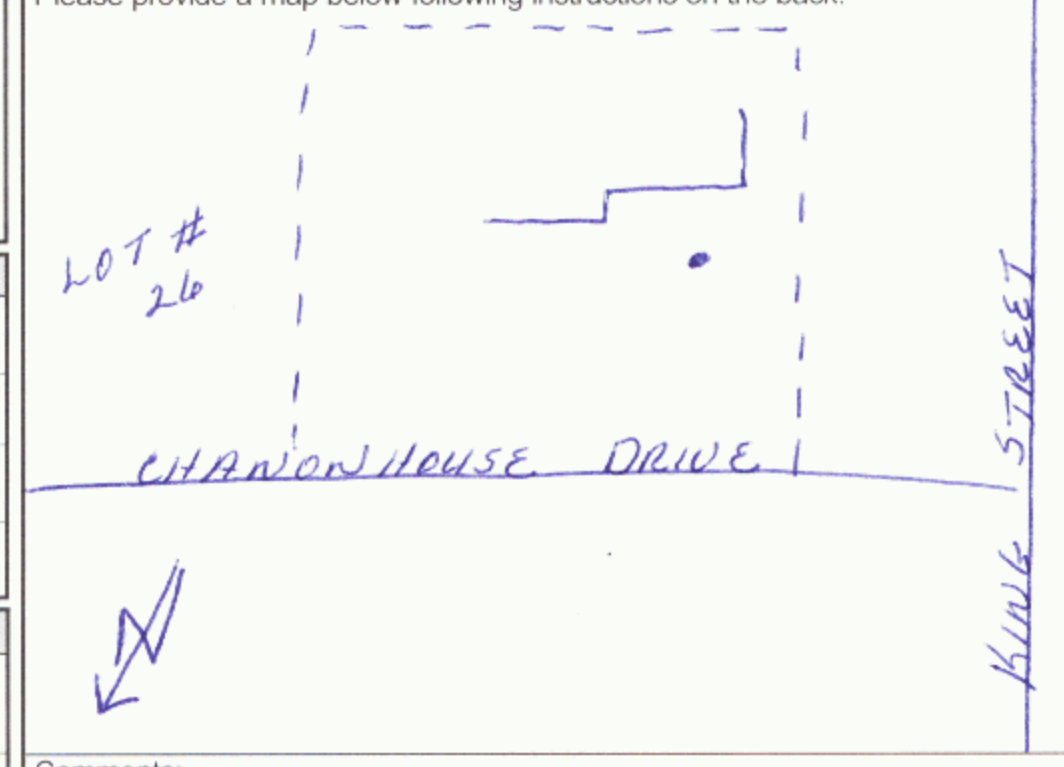
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.32		
1	4.79	1	4.26
2	5.30	2	3.91
3	5.64	3	3.46
4	5.88	4	3.41
5	5.98	5	3.39
10	6.24	10	3.33
15		15	
20	6.37	20	
25		25	
30		30	
40	6.43	40	
50	6.44	50	
60	6.46	60	

Map of Well Location

Please provide a map below following instructions on the back.



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		20090330

Comments:

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	20090330	20090324

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Measurements recorded in: [X] Metric [ ] Imperial

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

A068297 A 068297

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 27 Chanonhouse Drive	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435407	5004510		

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 Clay	Stones	Packed	0	3.65
Gray	Sandy Clay	Stones	Packed	3.65	5.48
Gray	Limestone		Medium	5.48	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.53	0	Grouted Bentonite Slurry	.63m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary ~~(Reverse)~~ Air [ ] 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	8.53

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

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	8.53	15.86
8.53	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): 22.85

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping (m/ft): 7.73

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

Recommended pump depth (m/ft): 22.85

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

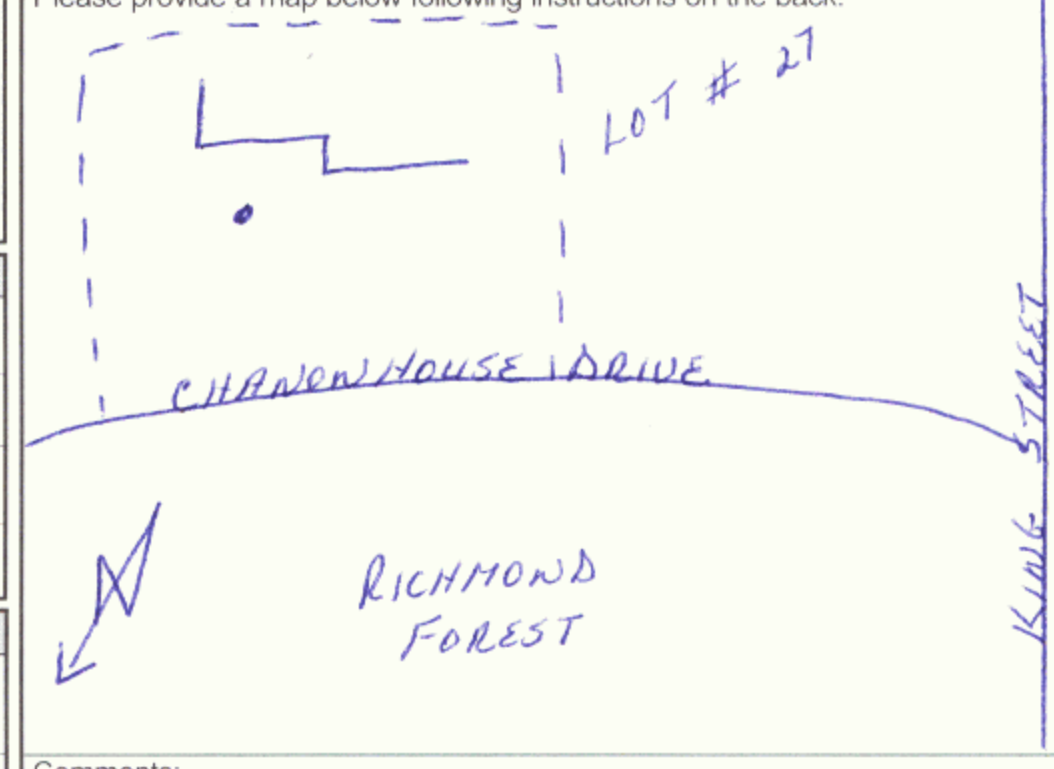
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.22		
1	4.72	1	5.09
2	5.55	2	3.92
3	6.15	3	3.47
4	6.53	4	3.32
5	6.82	5	3.27
10	7.47	10	
15	7.63	15	
20	7.66	20	
25	7.66	25	
30	7.67	30	
40	7.72	40	
50	7.72	50	
60	7.73	60	

Map of Well Location

Please provide a map below following instructions on the back.



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		2009033 0

Comments:

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009033 0	2009032 4

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Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)* A076798 **A076798**

Well Record

...tion 903 Ontario Water Resources Act

Page ____ of ____

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 28 Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435398	5004532		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones		0	4.26
Gray	Clay	Stones		4.26	5.79
Gray	Limestone			5.79	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.42m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (~~Reverse~~) Air [ ] 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	8.83

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)	Kind of Water	
42.66	[ ] Fresh [X] Untested	[ ] Gas [ ] Other, *specify*
	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*
	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	8.83	15.86
8.83	45.10	15.07

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): 4.81

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

Recommended pump depth (m/ft): 22.85

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

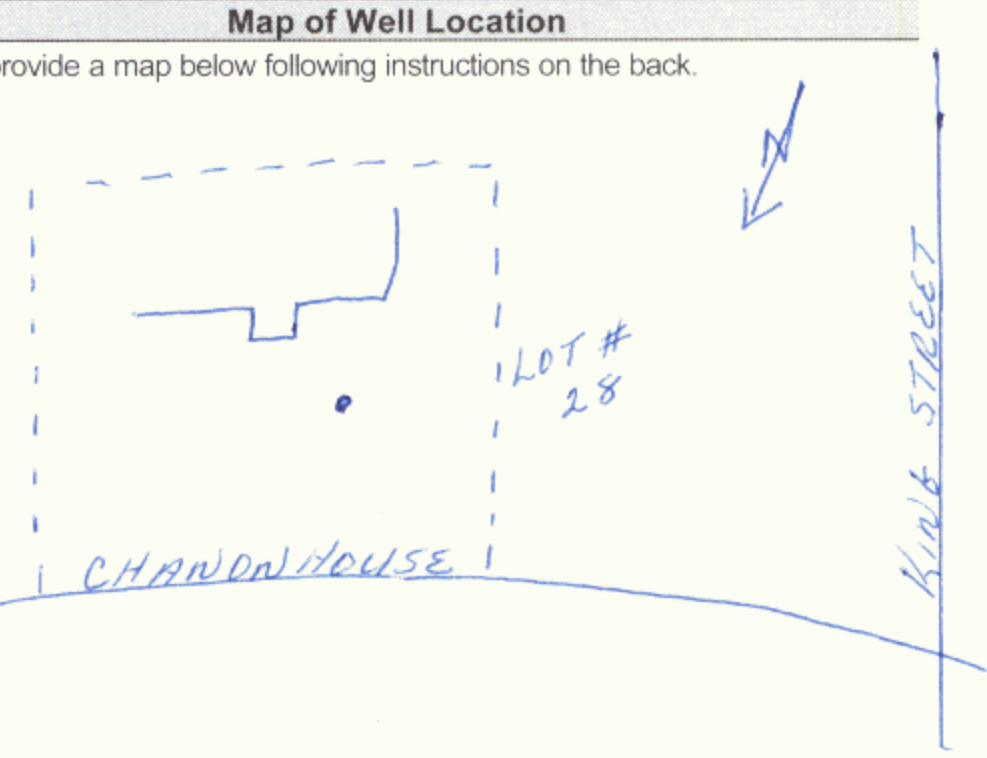
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.57		
1	4.49	1	3.67
2	4.65	2	3.58
3	4.70	3	
4	4.72	4	
5	4.73	5	
10	4.75	10	
15	4.77	15	
20	4.80	20	
25	4.80	25	
30	4.80	30	
40	4.80	40	
50	4.80	50	
60	4.81	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	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		20090325

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	20090324	20090323

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Ontario — Ministry of the Environment

Measurements recorded in: ☐ Metric ☒ Imperial

Well T A 066513 (rint Below)

A066513

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

[redacted]

Address of Well Location (Street Number/Name): (NO CIVIC) Huntley Road | Township: Goulbourn | Lot: 24 | Concession: 4

County/District/Municipality: Ottawa-Carleton | City/Town/Village: Richmond | Province: Ontario | Postal Code:

UTM Coordinates: NAD 83 | Zone: 18 | Easting: 435521 | Northing: 5004251 | Municipal Plan and Sublot Number: | Other:

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
	- Grey Clay			0	56'
	- Grey Limestone			56'	176'
	- Grey Sandstone + Limestone Mix			176'	240'

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
62'	52'	Neat Cement Slurry	9.36
52'	0	Bentonite Slurry	16.8

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	Depth (m/ft) To
6"	Steel	.188"	+2'	62'
6"	Open Hole		62'	240'

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	Gas	Other, specify
58	☐ Fresh ☒ Untested	☐	
89	☐ Fresh ☒ Untested	☐	
232	☐ Fresh ☒ Untested	☐	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0'	240'	5 15/16.

Results of Well Yield Testing

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

If pumping discontinued, give reason: X

Pump intake set at (m/ft): 220

Pumping rate (l/min / GPM): 20

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 16'8"

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

Recommended pump depth (m/ft): (1/2HP) 100'

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

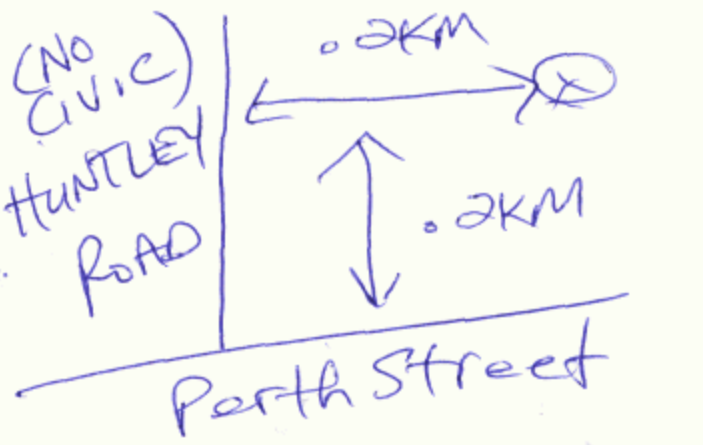
Well production (l/min / GPM): 60

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	23"		16'8"
1	9'6"	1	7'
2	12'	2	5'
3	13'2"	3	4'
4	14'2"	4	3'
5	148"	5	2'
10	16'	10	1
15	16'2"	15	
20	16'8"	20	
25	16'8"	25	
30	16'8"	30	
40		40	
50		50	
60		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: AIR ROCK DRILLING CO LTD | Well Contractor's Licence No.: 1119

Business Address (Street Number/Name): RR#1 | Municipality: RICHMOND

Province: ONT | Postal Code: K0A2Z0 | Business E-mail Address:

Bus. Telephone No. (inc. area code): 6138382170 | Name of Well Technician (Last Name, First Name): GRAHAM RYAN

Well Technician's Licence No.: T3484 | Signature of Technician and/or Contractor: [signature] | Date Submitted: 20060603

Well owner's information package delivered: ☒ Yes ☐ No | Date Package Delivered: 20090519 | Date Work Completed: 20090515

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Audit No. Z 094582

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Well Record

lation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)*: A068291 **A 068291**

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Rd. - Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 19, Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435282	5004405		

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	6.4
Gray	Limestone			6.4	23.46

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.52m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (~~Reverse~~) Air [ ] 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	8.83

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
22.85	[ ]	[ ] Fresh [X] Untested	
	[ ]	[ ] Fresh [ ] Untested	
	[ ]	[ ] Fresh [ ] Untested	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	8.83	15.86
8.83	23.46	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): 16.76

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + 30 min

Final water level end of pumping (m/ft): 4.35

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

Recommended pump depth (m/ft): 16.76

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

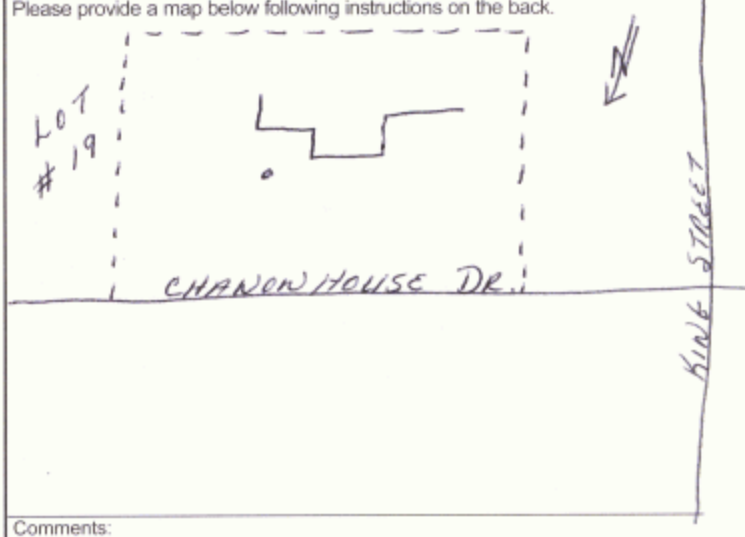
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.93		
1	4.13	1	4.16
2	4.18	2	4.08
3	4.20	3	4.05
4	4.22	4	4.03
5	4.23	5	4
10	4.28	10	3.96
15	4.31	15	3.93
20	4.31	20	
25	4.32	25	
30	4.34	30	
40	4.33	40	
50	4.34	50	
60	4.34	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
613 836 1766	Miller, Stephen	0097		20090506

Well owner's information package delivered: [X] Yes [ ] No

Date Package Delivered: 20090506

Date Work Completed: 20090506

Ministry Use Only

Audit No. Z095305

Received JUN 23 2009

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Ministry's Copy

Ontario — Ministry of the Environment

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)*: A068290 — A 068290

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road, Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 20, Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435287	5004427		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones	Packed	0	6.70
Grey	Limestone	Dark Layers	Medium	6.70	25.90

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used *(Material and Type)*	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.42m^3

Method of Construction

[ ] Cable Tool
[ ] Rotary (Conventional)
[X] Rotary (~~Reverse~~) Air
[ ] Boring
[X] Air percussion
[ ] Other, *specify*

[ ] Diamond
[ ] Jetting
[ ] Driving
[ ] Digging

Well Use

[ ] Public
[X] Domestic
[ ] Livestock
[ ] Irrigation
[ ] Industrial
[ ] Other, *specify*

[ ] Commercial
[ ] Municipal
[ ] Test Hole
[ ] Cooling & Air Conditioning

[ ] Not used
[ ] Dewatering
[ ] Monitoring

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	+.60	8.83

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	
18.28 *(m/ft)* [ ] Gas	[ ] Fresh [X] Untested	[ ] Other, *specify*
21.33 *(m/ft)* [ ] Gas	[ ] Fresh [X] Untested	[ ] Other, *specify*
24.99 *(m/ft)* [ ] Gas	[ ] Fresh [X] Untested	[ ] Other, *specify*

Hole Diameter

Depth (m/ft) From	To	Diameter *(cm/in)*
0	8.83	15.86
8.83	25.90	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)*: 18.28

Pumping rate *(l/min / GPM)*: 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping *(m/ft)*: 4.35

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

Recommended pump depth *(m/ft)*: 18.28

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

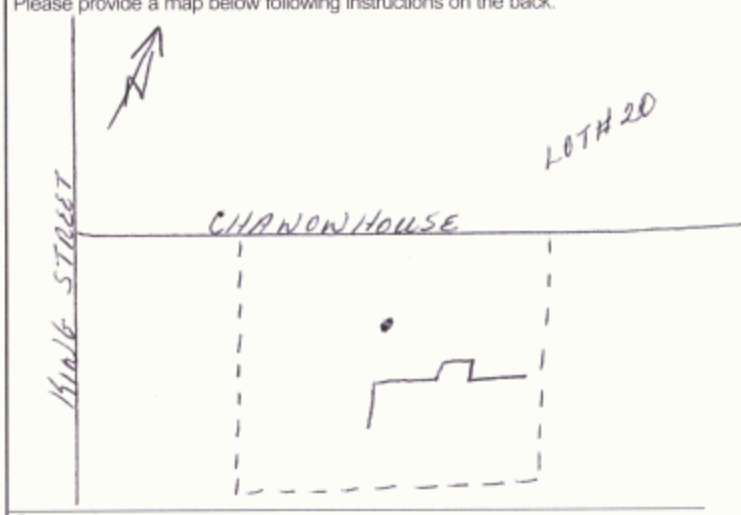
Well production *(l/min / GPM)*:

Disinfected? [X] Yes [ ] No

Draw Down Time *(min)*	Draw Down Water Level *(m/ft)*	Recovery Time *(min)*	Recovery Water Level *(m/ft)*
Static Level	3.96		
1	4.10	1	4.16
2	4.15	2	4.11
3	4.18	3	4.08
4	4.21	4	4.06
5	4.24	5	4.04
10	4.26	10	4.
15	4.32	15	3.97
20	4.33	20	3.96
25	4.34	25	
30	4.35	30	
40	4.35	40	
50	4.36	50	
60	4.35	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		2009 05 06

Ministry's Copy

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009 05 06	2009 05 05

Ministry Use Only

Audit No. Z 095310

Received JUN 23 2009

0506E (12/2007)

Ontario — Ministry of the Environment

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below): A076823 **A076823**

Well Record

...tion 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road, Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 17, Chanonhouse	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3	1 8	435238	5004404		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones		0	4.87
Gray	Limestone			4.87	29.86

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
.92	0	Grouted Bentonite Slurry	.42m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (~~Reverse~~) Air [ ] 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
5.86	Steel	.48	+.45	7.92

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	
7.73 (m/ft) [ ] Gas	[ ] Fresh [X] Untested	[ ] Other, specify ____
(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	7.92	15.86
7.92	29.86	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): 4.51

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

Recommended pump depth (m/ft): 15.23

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

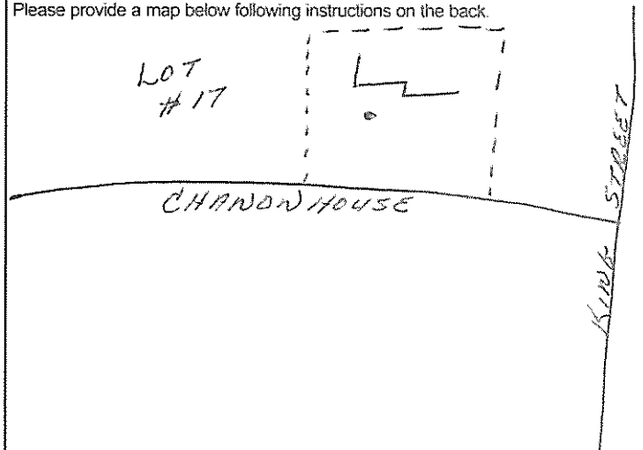
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.08		
1	4.27	1	4.20
2	4.31	2	4.07
3	4.34	3	
4	4.35	4	
5	4.37	5	
10	4.41	10	
15	4.45	15	
20	4.45	20	
25	4.46	25	
30	4.48	30	
40	4.49	40	
50	4.50	50	
60	4.51	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
613 836 1766	Miller, Stephen	0097		2009 06 19

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009 06 18	2009 06 17

Ministry Use Only

Audit No. Z 095262

AUG 19 2009 Received

506E (12/2007) Ministry's Copy

Ontario — Ministry of the Environment

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below): A076822 **A076822**

Well Record

tion 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road, Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 12, Chanonhouse	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3	1 8	435390	5004542		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones		0	6.09
Gray	Limestone		Medium	6.09	42.97
Gray & White	Sandstone			42.97	51.81

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
9.14	0	Grouted Bentonite Slurry	.63m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (~~Reverse~~) Air [ ] 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	9.14

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)	Kind of Water	
50.59	[ ] Fresh [X] Untested	[ ] Gas [ ] Other, *specify* ____
____	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify* ____
____	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify* ____

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	9.14	15.86
9.14	51.81	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): 15.90

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

Recommended pump depth (m/ft): 22.85

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

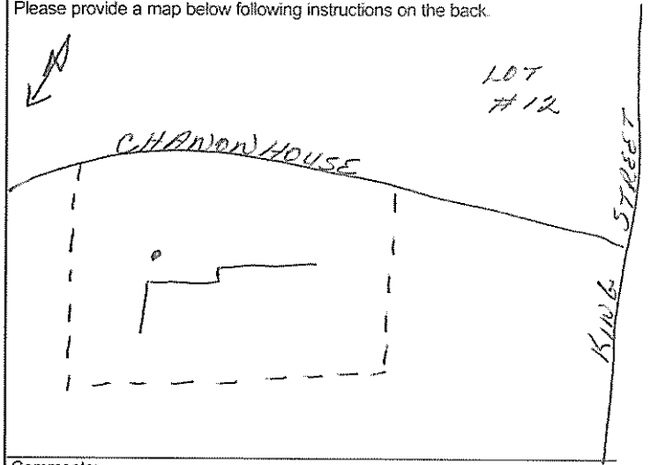
Well production (l/min / GPM): ____

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.32		
1	6.03	1	13.08
2	7.12	2	11.04
3	8.20	3	9.35
4	8.83	4	7.70
5	9.48	5	6.70
10	11.80	10	4.31
15	13.20	15	
20	14.19	20	
25	14.87	25	
30	15.23	30	
40	15.66	40	
50	15.83	50	
60	15.90	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
613 836 1766	Miller, Stephen	0097		2009 06 19

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009 06 18	2009 06 17

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Audit No. Z095261

Received AUG 10 2009

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Ontario — Ministry of the Environment

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print) A076818 **A076818**

Well Record

tion 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road, Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 24, Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD	18	435348	5004486		

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	Packed	0	6.09
Gray	Limestone		Layered & Broken	6.09	7.61
Gray	Limestone		Medium	7.61	25.90
Gray	Limestone		Broken Layers	25.90	29.86

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)
9.14	0	Grouted Bentonite Slurry	.52m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (Reverse) Air [ ] 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	9.14

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)	Kind of Water	Gas	Other, specify
25.90 (m/ft)	[ ] Fresh [X] Untested	[ ] Gas	[ ] Other, specify
(m/ft)	[ ] Fresh [ ] 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	9.14	15.86
9.14	29.86	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): 22.85

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 6.60

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

Recommended pump depth (m/ft): 22.85

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

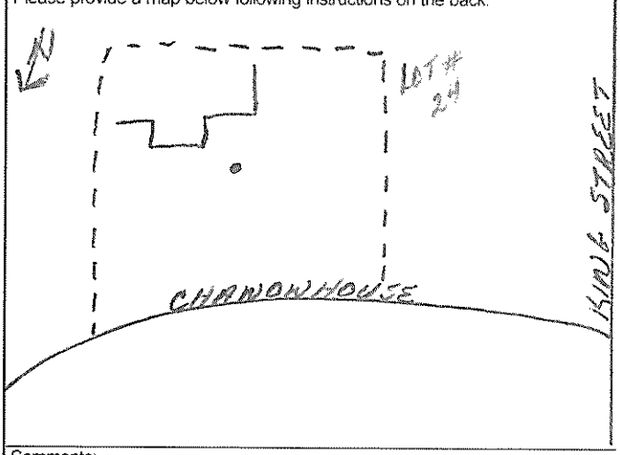
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.09		
1	5.33	1	5.06
2	5.80	2	4.53
3	5.93	3	4.34
4	6.19	4	4.25
5	6.27	5	4.19
10	6.47	10	4.10
15	6.52	15	
20	6.54	20	
25	6.55	25	
30	6.57	30	
40	6.59	40	
50	6.60	50	
60	6.60	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		2009061 2

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009061 2	2009061 0

Ministry Use Only

Audit No. Z095268

AUG 1 0 2009 Received

506E (12/2007) Ministry's Copy

Ontario — Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A076819 **A076819**

Well Record

...ation 903 Ontario Water Resources Act

Measurements recorded in: [X] Metric [ ] Imperial

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road, Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 23, Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435344	5004478		

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	Packed	0	6.40
Gray	Limestone		Layered & Broken	6.40	7.90
Gray	Limestone		Medium	7.90	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
9.44	0	Grouted Bentonite Slurry	.63m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (Reverse) Air [ ] 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	9.44

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

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	9.44	15.86
9.44	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): 30.47

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 20.91

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

Recommended pump depth (m/ft): 30.47

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

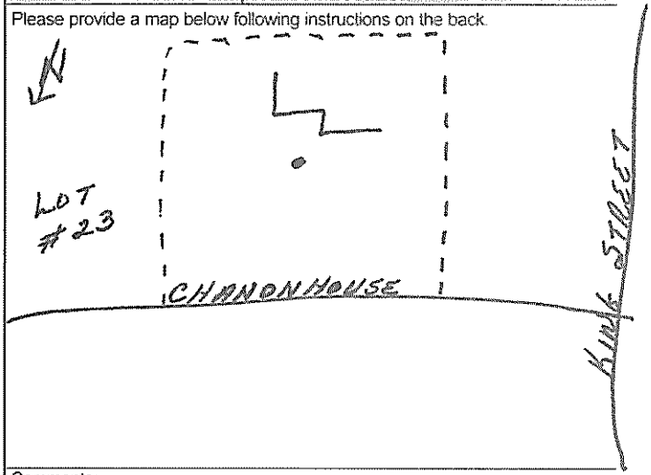
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level		4.08		
1		5.93	1	18.15
2		7.38	2	16.05
3		8.68	3	14.34
4		9.77	4	12.59
5		10.50	5	11.07
10		14.17	10	6.07
15		16.24	15	4.31
20		17.47	20	4.07
25		18.53	25	
30		19.27	30	
40		20.25	40	
50		20.55	50	
60		20.91	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. *(inc. area code)*	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
613 836 1766	Miller, Stephen	0097		2009 06 15

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009 06 12	2009 06 10

Ministry Use Only

Audit No. Z095266

AUG 19 2009

Received

506E (12/2007) — Ministry's Copy

Ontario — Ministry of the Environment

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below): A082857 **A 082857**

Well Record

on 903 Ontario Water Resources Act

Page _____ of _____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 34 Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435406	5004642		

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 Clay		Loose	0	2.43
Brown	Clay	Stones		2.43	6.40
Gray	Limestone		Medium	6.40	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
9.44	0	Grouted Bentonite Slurry	1.15m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (Reverse) Air [ ] 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	9.44

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	
43.58 (m/ft) [ ] Gas	[ ] Fresh [X] Untested	[ ] Other, specify
(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	9.44	15.86
9.44	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): 30.47

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping (m/ft): 4.60

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

Recommended pump depth (m/ft): 22.85

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

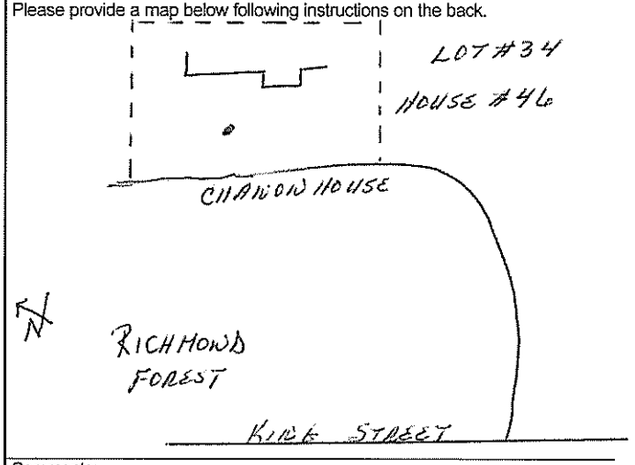
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.05		
1	4.47	1	4.15
2	4.51	2	4.13
3	4.52	3	4.12
4	4.54	4	4.11
5	4.55	5	4.10
10	4.58	10	4.09
15	4.60	15	4.07
20	4.60	20	
25	4.59	25	
30	4.59	30	
40	4.60	40	
50	4.60	50	
60	4.60	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		2009/11/30

Well owner's information package delivered	Date Package Delivered	Date Work Completed
[X] Yes [ ] No	2009/11/26	2009/12/5

Ministry Use Only

Audit No. Z 101774

Received FEB 16 2010

Ontario — Ministry of the Environment

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below): A082913 **A 082913**

Well Record

...on 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road, unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 16 Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435239	5004376		

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	Stones		0	1.21
Brown	Clay	Stones	Packed	1.21	4.87
Gray	Limestone		Layered	4.87	7.61
Gray	Limestone			7.61	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
8.83	0	Grouted Bentonite Slurry	.42m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (Reverse) Air [ ] 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	8.83

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	
24.38 (m/ft) [ ] Gas	[ ] Fresh [X] Untested	[ ] Other, specify
43.27 (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	8.83	15.86
8.83	45.10	15.07

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): 4.54

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

Recommended pump depth (m/ft): 22.85

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

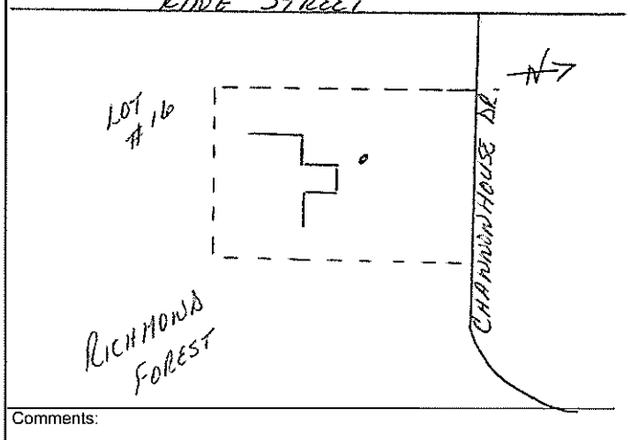
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.99		
1	4.37	1	4.12
2	4.41	2	4.10
3	4.43	3	4.10
4	4.46	4	4.10
5	4.47	5	4.08
10	4.51	10	4.05
15	4.52	15	4.03
20	4.54	20	4.01
25	4.56	25	3.99
30	4.52	30	
40	4.53	40	
50	4.56	50	
60	4.54	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
613 836 1766	Miller, Stephen	009		2009/10/30

Well owner's information package delivered: [X] Yes [ ] No

Date Package Delivered: 2009/10/30

Date Work Completed: 2009/10/27

Ministry Use Only

Audit No. Z 101752

Received FEB 16 2010

Ontario — Ministry of the Environment

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below): A082914 A 082914

Well Record

...tion 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road, Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 15 - Richmond Forest	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435389	5004607		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones		0	4.26
Gray	Limestone		Layered	4.26	6.09
Gray	Limestone		Medium	6.09	45.10

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)
7.31	0	Grouted Bentonite Slurry	.63m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary (Reverse) Air [ ] 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	7.31

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	
43.58 (m/ft)	[ ] Fresh [X] Untested	[ ] Gas [ ] Other, specify
(m/ft)	[ ] Fresh [ ] 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	7.31	15.86
7.31	45.10	15.07

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): 4.25

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

Recommended pump depth (m/ft): 22.85

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

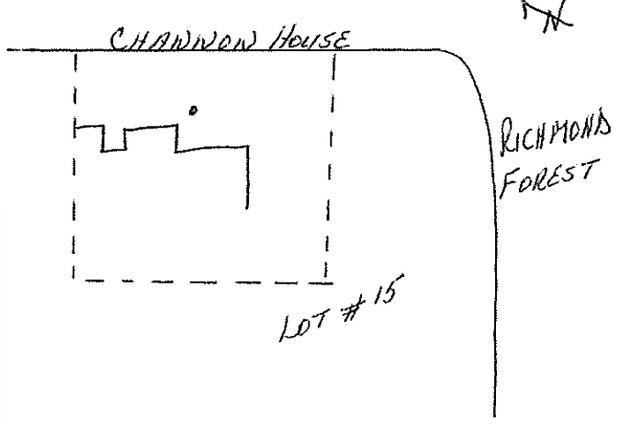
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.80		
1	4.14	1	3.86
2	4.18	2	3.82
3	4.19	3	
4	4.20	4	
5	4.21	5	
10	4.24	10	
15	4.24	15	
20	4.24	20	
25	4.23	25	
30	4.24	30	
40	4.24	40	
50	4.23	50	
60	4.24	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
613 836 1766	Miller, Stephen	0097		2009 10 30

Well owner's information package delivered: [X] Yes [ ] No

Date Package Delivered: 2009 10 30

Date Work Completed: 2009 10 28

Ministry Use Only

Audit No. Z101753

Received FEB 16 2010

Ontario Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A076840

Well Record

...ition 903 Ontario Water Resources Act

A076840

Measurements recorded in: [X] Metric [ ] Imperial

Page _____ of _____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. *(inc. area code)*
5509 Canotek Road, unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 13 - Chanonhouse Dr.	Goulbourn	25	3

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435427	5004590		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
Brown	Clay	Stones		0	4.26
Gray	Limestone		Layered & Broken	4.26	5.48
Gray	Limestone		Medium	5.48	37.48

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used *(Material and Type)*	Volume Placed (m^3/ft^3)
7.31	0	Grouted Bentonite Slurry	.84m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary ~~(Reverse)~~ Air [ ] Driving
[ ] Boring [ ] Digging
[ ] 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	7.31

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	
34.44 (m/ft)	[ ] Fresh [X] Untested	[ ] Gas [ ] Other, *specify*
(m/ft)	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*
(m/ft)	[ ] Fresh [ ] Untested	[ ] Gas [ ] Other, *specify*

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
0	7.31	15.86
7.31	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): 18.28

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + _____ min

Final water level end of pumping (m/ft): 4.72

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

Recommended pump depth (m/ft): 18.28

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

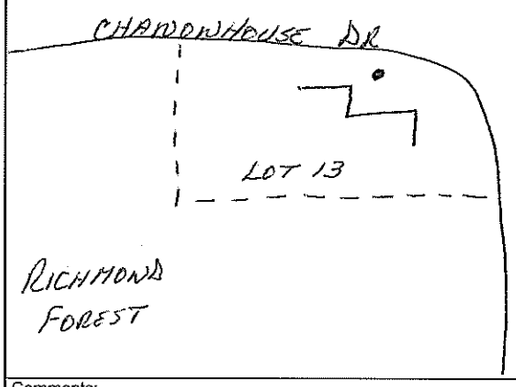
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.17		
1	3.91	1	3.93
2	4.17	2	3.66
3	4.31	3	3.51
4	4.41	4	3.47
5	4.45	5	3.41
10	4.59	10	3.30
15	4.64	15	3.27
20	4.66	20	3.24
25	4.68	25	3.21
30	4.69	30	3.19
40	4.73	40	3.17
50	4.73	50	
60	4.72	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		2009/08/12

Well owner's information package delivered: [X] Yes [ ] No

Date Package Delivered: 2009/08/07

Date Work Completed: 2009 Y 08 M 04 D

Ministry Use Only

Audit No. Z 101702

Received FEB 16 2010

Ontario — Ministry of the Environment

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. (Place Sticker and/or Print Below) A076861 **A076861**

Well Record

ation 903 Ontario Water Resources Act

Page _____ of _____

Well Owner's Information

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

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
5509 Canotek Road, Unit 1	Ottawa	Ontario	K1J 9J8	613 747 3993

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
Lot 21, Chanonhouse Drive	Goulbourn	3	25

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

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435312	5004439		

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	Packed	0	4.87
Gray	Limestone		Medium	4.87	45.10

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
7.92	0	Grouted Bentonite Slurry	.63m^3

Method of Construction

[ ] Cable Tool [ ] Diamond
[ ] Rotary (Conventional) [ ] Jetting
[X] Rotary ~~(Reverse)~~ Air [ ] 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	7.92

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*	
43.27 (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	7.92	15.86
7.92	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): 24.38

Pumping rate (l/min / GPM): 54.6

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 7.66

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

Recommended pump depth (m/ft): 24.38

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

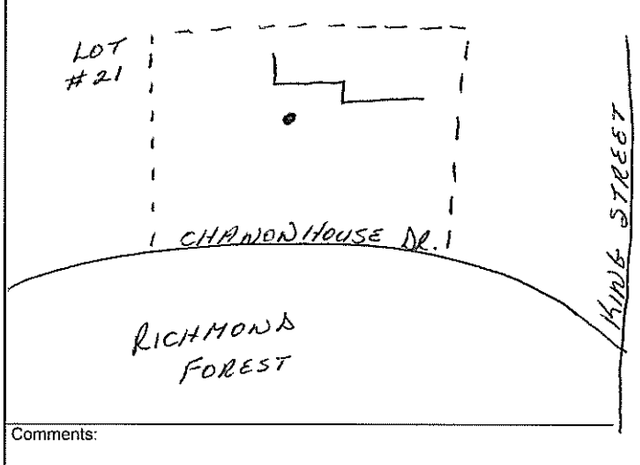
Well production (l/min / GPM):

Disinfected? [X] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	3.90		
1	5.23	1	5.55
2	6.	2	4.60
3	6.38	3	4.16
4	6.68	4	4.11
5	6.90	5	4.05
10	7.33	10	3.96
15	7.46	15	3.93
20	7.53	20	3.91
25	7.55	25	
30	7.57	30	
40	7.60	40	
50	7.64	50	
60	7.66	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	Province	Postal Code	Business E-mail Address
Box 490	Stittsville	Ontario	K2S 1A6	office@capitalwater.ca

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
613 836 1766	Miller, Stephen	0097		2009 06 10

Well owner's information package delivered: [X] Yes [ ] No

Date Package Delivered: 2009 06 09

Date Work Completed: 2009 06 08

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Audit No. Z095270

Received FEB 16 2010

Ontario — Ministry of the Environment

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)*: **A108946**

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

[redacted]

Address of Well Location (Street Number/Name): 3617 McBEAN ST

Township: GOULBOURN

Lot:

Concession:

County/District/Municipality: OTTAWA CARLETON

City/Town/Village: RICHMOND

Province: Ontario

Postal Code: K0A2Z0

UTM Coordinates: NAD 83 Zone 18 Easting 434743 Northing 5004180

Municipal Plan and Sublot Number:

Other:

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
GREY	CLAY	STONES	PACKED	0	1.5

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
.05	1.45	BENTONITE	.36 m3

Method of Construction

[ ] Cable Tool [ ] Diamond [ ] Rotary (Conventional) [ ] Jetting [ ] Rotary (Reverse) [ ] Driving [ ] Boring [ ] Digging [ ] 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	+1.3	1.4
10.0	STEEL	.48	1.4	UNKNO

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
[X] 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	Gas	Other, specify
	[ ] Fresh [ ] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	
	[ ] Fresh [ ] Untested	[ ]	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)

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)

Pumping rate (l/min / GPM)

Duration of pumping ____ hrs + ____ min

Final water level end of pumping (m/ft)

If flowing give rate (l/min / GPM)

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

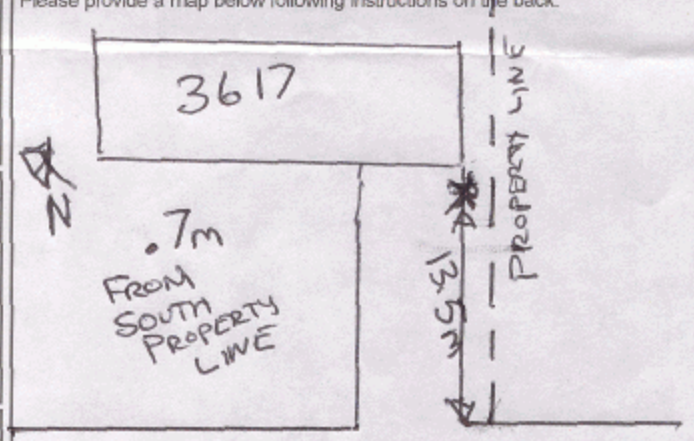
Well production (l/min / GPM)

Disinfected? [X] Yes [ ] No

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

Map of Well Location

Please provide a map below following instructions on the back.



Comments: WELL EXTENSION TO ABOVE GRADE

Well Contractor and Well Technician Information

Business Name of Well Contractor: H.O. WRIGHT & SONS LTD

Well Contractor's Licence No.: 6357

Business Address (Street Number/Name): 2383 CHURCH ST NORTH

Municipality: GOWER

Province: ON

Postal Code: K0A2T0

Business E-mail Address:

Bus. Telephone No. (inc. area code): 6134893372

Name of Well Technician (Last Name, First Name): WILSON, SCOTT

Well Technician's Licence No.: 1444

Signature of Technician and/or Contractor: Scott Wilson

Date Submitted: 2010/11/29

Well owner's information package delivered: [ ] Yes [ ] No

Date Package Delivered: YYYY MM DD

Date Work Completed: 2010/11/29

Ministry Use Only

Audit No.: z123102

Received: DEC 08 2010

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Ontario — Ministry of the Environment

Measurements recorded in: [X] Metric [ ] Imperial

Well Tag No. *(Place Sticker and/or Print Below)* **A108947**

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

Well Owner's Information

[redacted]

Address of Well Location (Street Number/Name): 3619 McBEAN ST

Township: GOULBOURN

Lot:

Concession:

County/District/Municipality: OTTAWA CARLETON

City/Town/Village: RICHMOND

Province: Ontario

Postal Code: K0A 2Z0

UTM Coordinates: NAD 83 Zone 18 Easting 434745 Northing 5004177

Municipal Plan and Sublot Number:

Other:

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
GREY	CLAY	STONES	PACKED	0	1.3

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
.05	1.3	BENTONITE	.25 m^3

Method of Construction

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

Well Use

[ ] Public [ ] Commercial [ ] Not used [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	1.3
12.7	STEEL	.48	1.3	UNKNOWN

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

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)

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)*

Pumping rate *(l/min / GPM)*

Duration of pumping ____ hrs + ____ min

Final water level end of pumping *(m/ft)*

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

Recommended pump depth *(m/ft)*

Recommended pump rate *(l/min / GPM)*

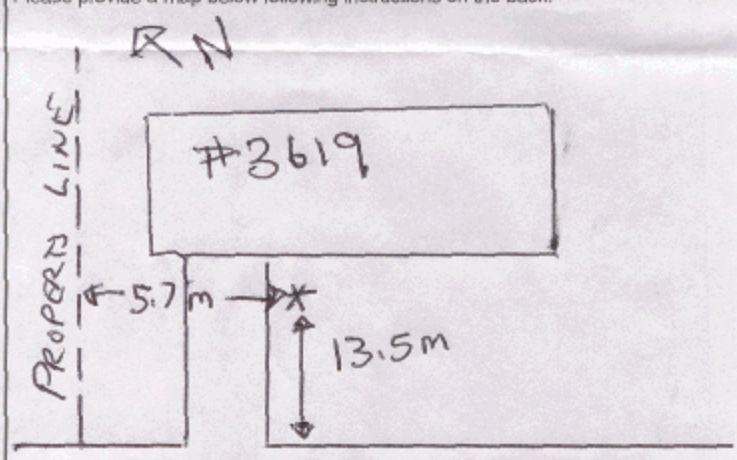
Well production *(l/min / GPM)*

Disinfected? [X] Yes [ ] No

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

Map of Well Location

Please provide a map below following instructions on the back.



Comments: WELL CASING EXTENSION TO ABOVE GRADE

Well Contractor and Well Technician Information

Business Name of Well Contractor: H.O. WRIGHT & SONS LTD

Well Contractor's Licence No.: 6357

Business Address (Street Number/Name): 2383 CHURCH ST

Municipality: NORTH GOWER

Province: ON

Postal Code: K0A 2T0

Business E-mail Address:

Bus. Telephone No. *(inc. area code)*: 613 489 3372

Name of Well Technician (Last Name, First Name): PRATT GEORGE

Well Technician's Licence No.: 1445

Signature of Technician and/or Contractor: Gregg Pratt

Date Submitted: 2010/11/29

Well owner's information package delivered: [ ] Yes [ ] No

Date Package Delivered:

Date Work Completed: 2010/11/29

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Audit No. Z123103

DEC 08 2010

Received

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Ontario — Ministry of the Environment

Measurements recorded in: ☐ Metric ☑ Imperial

Well [illegible] Below)

A 094191

Well Record

Regulation 903 Ontario Water Resources Act

Page 1 of 1

[redacted]

Address of Well Location (Street Number/Name): 86 Cockburn St

Township:

Lot:

Concession:

County/District/Municipality: OTTAWA

City/Town/Village: RICHMOND

Province: Ontario

Postal Code: K0A 2Z0

UTM Coordinates — NAD 83 — Zone: 18 — Easting: 434995 — Northing: 5004334

Municipal Plan and Sublot Number:

Other:

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
			* RAISE WELL CASING ABOVE GROUND, AS PER CODE REQUIREMENTS, WHILE DOING PUMP WORK AND INSTALL VERMON PROOF WELL CAP.		
			* PUMP TEST NOT PERFORMED DURING REPAIR. REFER TO ORIGINAL WELL RECORD FOR THIS INFORMATION		

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
		N/A	

Method of Construction

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

N/A

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
	N/A			

Construction Record - Screen

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

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
	☐	☑ Fresh ☐ Untested	
	☐	☑ Fresh ☐ Untested	
	☐	☑ Fresh ☐ Untested	

Hole Diameter

Depth (m/ft) From	To	Diameter (cm/in)
	N/A	

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)

Pumping rate (l/min / GPM)

Duration of pumping ___ hrs + ___ min

Final water level end of pumping (m/ft) N/A

If flowing give rate (l/min / GPM) N/A

Recommended pump depth (m/ft)

Recommended pump rate (l/min / GPM)

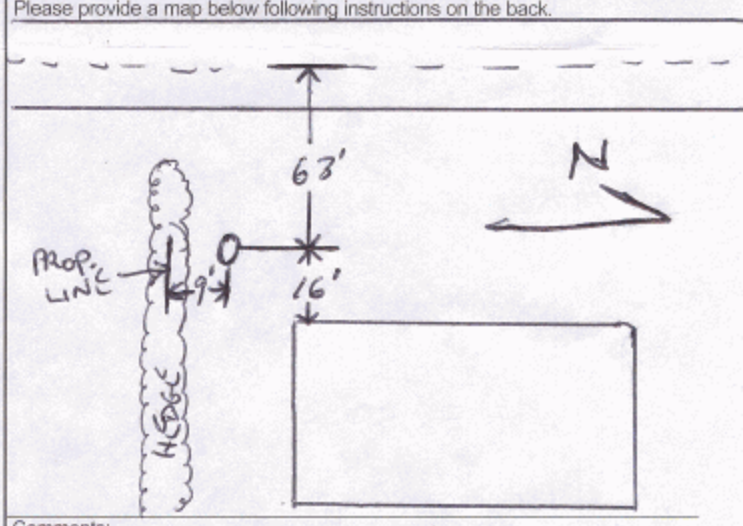
Well production (l/min / GPM)

Disinfected? ☑ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
50		50	
60		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: C+N ELECTRIC LTD

Well Contractor's Licence No.: 6364

Business Address (Street Number/Name): 5640 MANOTICK MAIN ST.

Municipality: OTTAWA

Province: ON

Postal Code: K4M1B3

Business E-mail Address:

Bus. Telephone No. (inc. area code): 6136923284

Name of Well Technician (Last Name, First Name): FORREST, LESLIE

Well Technician's Licence No.: 2876

Signature of Technician and/or Contractor:

Date Submitted: 2011 02 04

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

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

Date Work Completed: 2011 01 24

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Audit No. Z 109048

Received FEB 07 2011

0506E (12/2007)

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Ontario — Ministry of the Environment

Measurements recorded in: ☐ Metric ☐ Imperial

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

Tag#: A133691

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
91 King St			

County/District/Municipality	City/Town/Village	Province	Postal Code
Ottawa carlton	Richmond	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	435132	5045047		

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
*	Raise well casing above ground, as per Code requirements, while doing pump work and installing Vernon Proof well cap.				

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)
		N/A	

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
	N/A	N/A		

Construction Record - Screen

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

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	Other, specify
☐ Gas	☐ Fresh ☑ Untested	
☐ Gas	☐ Fresh ☑ Untested	
☐ Gas	☐ Fresh ☑ Untested	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
N/A		

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)*

Pumping rate *(l/min / GPM)*

Duration of pumping _____ hrs + _____ min

Final water level end of pumping *(m/ft)*

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

Recommended pump depth *(m/ft)*

Recommended pump rate *(l/min / GPM)*

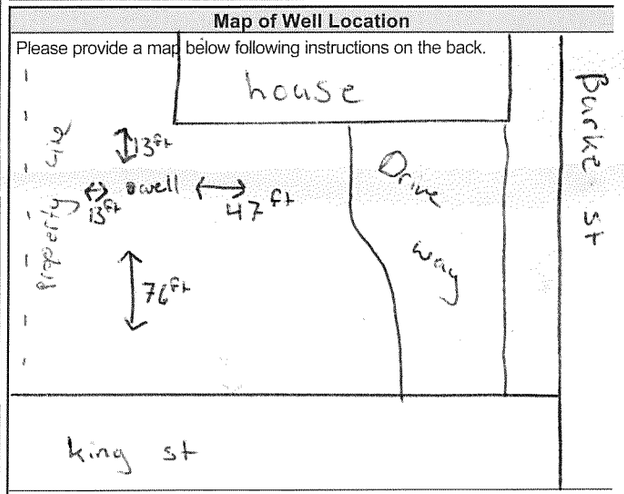
Well production *(l/min / GPM)*

Disinfected? ☑ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level			
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
50		50	
60		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.
	6364

Business Address (Street Number/Name)	Municipality
5640 Manotick Main st	Ottawa

Province	Postal Code	Business E-mail Address
Ont	K4M1B3	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
6136923284	Sadler Ron

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
T637	Ron Sadler	

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☑ No		2012 12 13

Ministry Use Only

Audit No. Z109063

Received JAN 04 2013

0506E (12/2007) — **Ministry's Copy**

Ontario — Ministry of the Environment and Climate Change

Measurements recorded in: ☐ Metric ☒ Imperial

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

Tag#: A 236124

Well Record

Regulation 903 Ontario Water Resources Act

Page _____ of _____

[redacted]

Address of Well Location (Street Number/Name)	Township	Lot	Concession
102 KWG STREET			

County/District/Municipality	City/Town/Village	Province	Postal Code
	RICHMOND	Ontario	K0A2Z0

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	0435213	5004323		

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
			MAINTENANCE ONLY, NO EXISTING TAG		

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)

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	3/16"	+1'	

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*
	☐	☐ Fresh ☐ Untested	
	☐	☐ Fresh ☐ Untested	
	☐	☐ Fresh ☐ Untested	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)

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)*: 15'

Pumping rate *(l/min / GPM)*

Duration of pumping _____ hrs + _____ min

Final water level end of pumping *(m/ft)*

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

Recommended pump depth *(m/ft)*

Recommended pump rate *(l/min / GPM)*

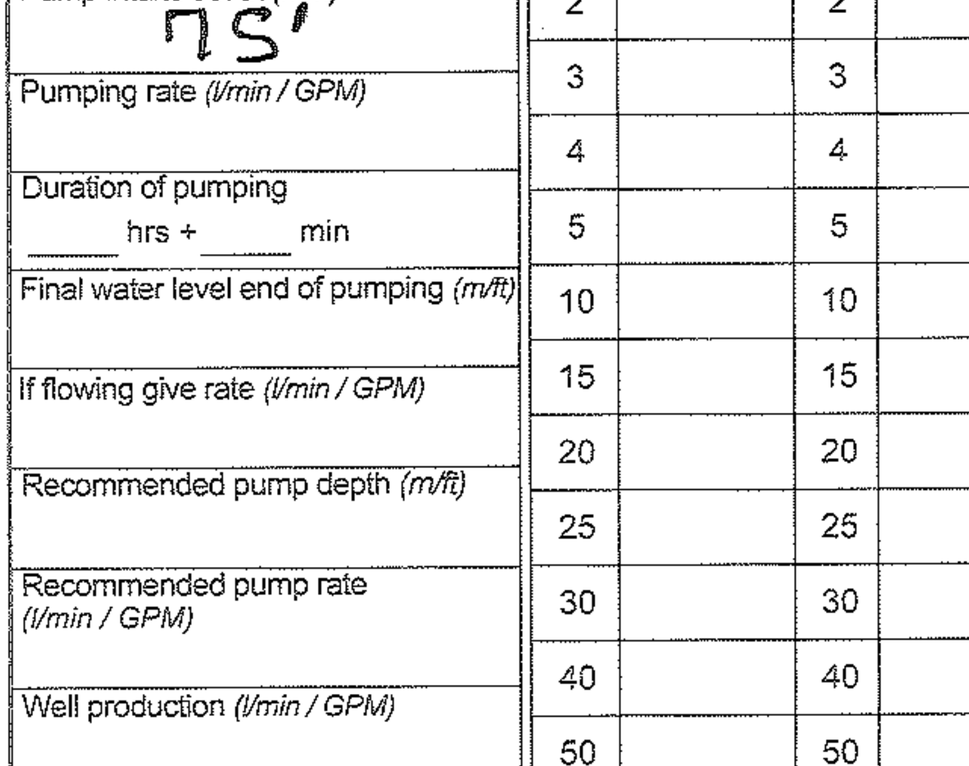
Well production *(l/min / GPM)*

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	11'		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
50		50	
60		60	

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

DEPTH 105' TOC

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☒ Yes ☐ No	20180605	20180605

Ministry Use Only

Audit No. Z271821

Received JUN 14 2018

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
THE PUMP HOUSE	6378

Business Address (Street Number/Name)	Municipality
838 CLYDE AVENUE	OTTAWA

Province	Postal Code	Business E-mail Address
ONT	K1Z5A2	INFO@THEPUMPHOUSE.CA

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
6137224226	MACINTYRE, DJ

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
3853		20180605

Ministry's Copy

ATTACHMENT VI

Survey Plan

METRIC

DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE CONVERTED TO FEET BY DIVIDING BY 0.3048

NOTES

BEARINGS HEREON ARE GRID, DERIVED FROM THE BEARING OF N47°26'E AS SHOWN FOR THE NORTHWESTERLY LIMIT OF OTTAWA STREET ON PLAN 4R–7050.

S.I.B.	DENOTES 0.025 SQ., 1.2 LONG, STANDARD IRON BAR
S.S.I.B.	DENOTES 0.025 SQ., 0.6 LONG, SHORT STANDARD IRON BAR
I.B.	DENOTES 0.016 SQ., 0.6 LONG, IRON BAR
R.I.B.	DENOTES ROUND IRON BAR
■	DENOTES SURVEY MONUMENT FOUND
□	DENOTES SURVEY MONUMENT PLANTED
WIT.	DENOTES WITNESS
S.U.	DENOTES SOURCE UNKNOWN
725	DENOTES ARNETT, KENNEDY, RIDDELL & JASON SURVEYING LTD.
1050	DENOTES D.R. BARCHAM, O.L.S.
P1	DENOTES PLAN 4R–7050
M	DENOTES MEASURED
S	DENOTES SET
E.O.A.	DENOTES EDGE OF ASPHALT
E.O.G.	DENOTES EDGE OF GRAVEL
T.O.B.	DENOTES TOP OF BANK
C.S.P.	DENOTES CORRUGATED STEEL PIPE
N.T.S.	DENOTES NOT TO SCALE

ELEVATION NOTES

1. ELEVATIONS ARE IN METRES AND ARE GEODETIC, DERIVED FROM GSC BENCHMARK 68–U–124, HAVING A PUBLISHED ELEVATION OF 95.186m. (CGVD 28:78)
2. IT IS THE RESPONSIBILITY OF THE USER OF THIS INFORMATION TO VERIFY THAT THE JOB BENCHMARK HAS NOT BEEN ALTERED OR DISTURBED AND THAT ITS RELATIVE ELEVATION AND DESCRIPTION AGREE WITH THE INFORMATION SHOWN ON THIS DRAWING.

UTILITIES NOTES

1. THIS DRAWING CANNOT BE ACCEPTED AS ACKNOWLEDGING ALL OF THE UTILITIES AND IT WILL BE THE RESPONSIBILITY OF THE USER TO CONTACT THE RESPECTIVE UTILITY AUTHORITIES FOR CONFIRMATION.
2. A FIELD LOCATION OF UNDERGROUND PLANT BY THE PERTINENT UTILITY AUTHORITY IS MANDATORY BEFORE ANY WORK INVOLVING BREAKING GROUND, PROBING, EXCAVATING ETC.

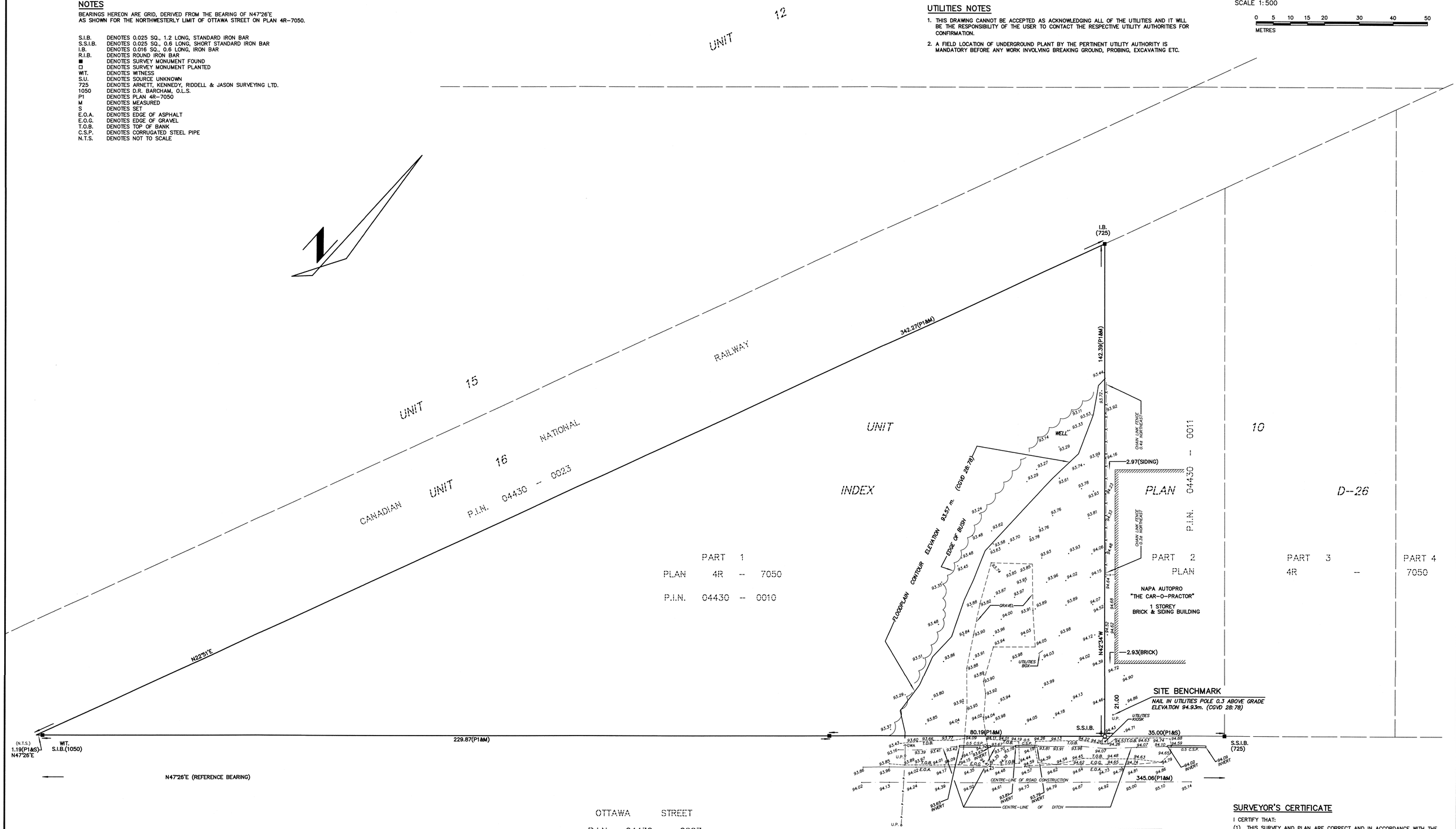
PLAN OF SURVEY OF:

PART OF UNIT 10
INDEX PLAN D–26

CITY OF OTTAWA

SCALE 1:500

0 5 10 15 20 30 40 50
METRES



SURVEYOR'S CERTIFICATE

I CERTIFY THAT:

(1) THIS SURVEY AND PLAN ARE CORRECT AND IN ACCORDANCE WITH THE SURVEYS ACT, THE SURVEYORS ACT AND THE LAND TITLES ACT AND THE REGULATIONS MADE UNDER THEM;

(2) THE SURVEY WAS COMPLETED ON THE 5th DAY OF JULY, 2021.

JULY 19, 2021
DATE

J.P. SHIPMAN
ONTARIO LAND SURVEYOR

ASSOCIATION OF ONTARIO LAND SURVEYORS
PLAN SUBMISSION FORM
217512

THIS PLAN IS NOT VALID UNLESS IT IS AN EMBOSSED ORIGINAL COPY ISSUED BY THE SURVEYOR In accordance with Regulation 1026, Section 29(3)

H.A.KEN SHIPMAN SURVEYING LTD.
P.O. BOX 53, NORTH GOWER, ONT. K0A 2T0

REF No. : GLB.–549
FILE No. : 20–12471 B

ATTACHMENT VIII

Aquifer Test Analysis – Printout

LRL Assocaites Ltd.
5430 Canotek Road
Ottawa, ON

Pumping Test - Water Level Data

Project: 5969 Ottawa Street Hydrogeological Assessment

Number: 210341

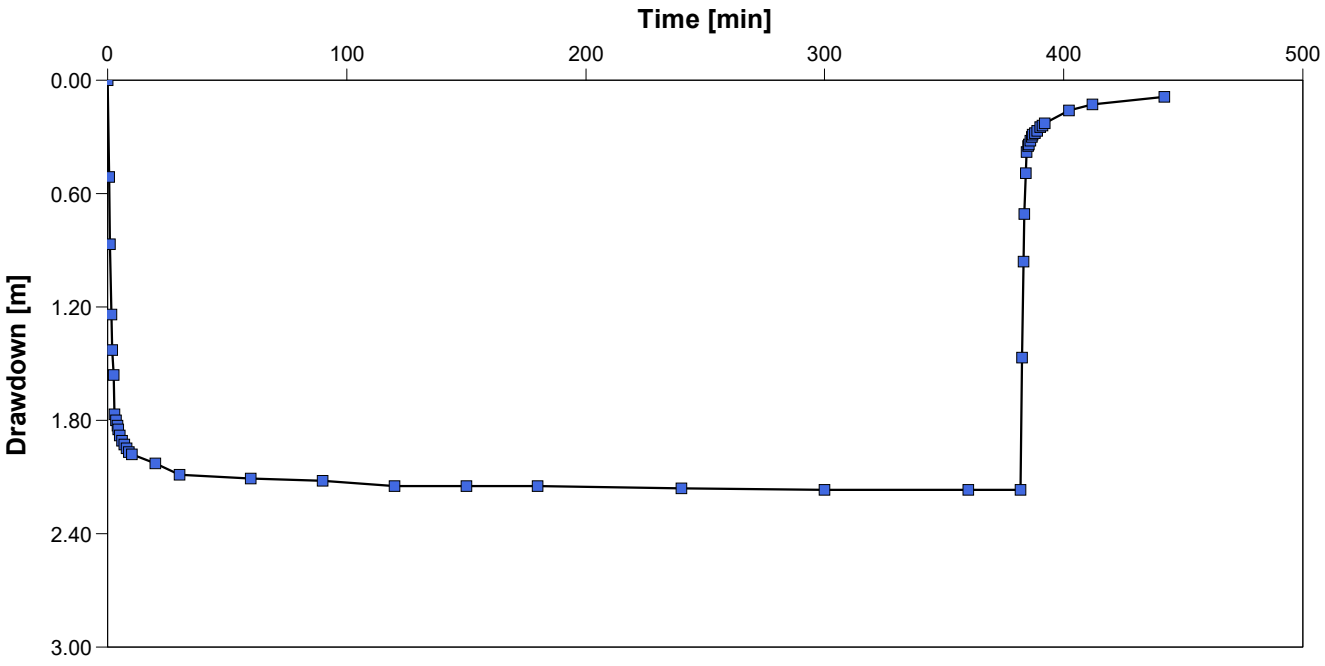
Client: Al Roberts

Location: 5969 Ottawa Street, Richmond, O	Pumping Test: 6-Hr Pump Test	Pumping Well: Well 1
Test Conducted by: AK	Test Date: 2021-08-11	Discharge: variable, average rate 0.666 [l/s]
Observation Well: Well 1	Static Water Level [m]: 2.96	Radial Distance to PW [m]: -

	Time [min]	Water Level [m]	Drawdown [m]
1	0	2.96	0.00
2	0.5	3.47	0.51
3	1	3.83	0.87
4	1.5	4.20	1.24
5	2	4.39	1.43
6	2.5	4.52	1.56
7	3	4.73	1.77
8	3.5	4.76	1.80
9	4	4.79	1.83
10	4.5	4.81	1.85
11	5	4.84	1.88
12	6	4.87	1.91
13	7	4.89	1.93
14	8	4.91	1.95
15	9	4.93	1.97
16	10	4.94	1.98
17	20	4.99	2.03
18	30	5.05	2.09
19	60	5.07	2.11
20	90	5.08	2.12
21	120	5.11	2.15
22	150	5.11	2.15
23	180	5.11	2.15
24	240	5.12	2.16
25	300	5.13	2.17
26	360	5.13	2.17
27	382	5.13	2.17
28	382.5	4.43	1.47
29	383	3.92	0.96
30	383.5	3.67	0.71
31	384	3.45	0.49
32	384.5	3.34	0.38
33	385	3.31	0.35
34	385.5	3.30	0.34
35	386	3.28	0.32
36	386.5	3.26	0.30
37	387	3.25	0.29
38	388	3.24	0.28
39	389	3.23	0.27
40	390	3.21	0.25
41	391	3.20	0.24
42	392	3.19	0.23
43	402	3.12	0.16
44	412	3.09	0.13
45	442	3.05	0.09

LRL Assocaites Ltd. 5430 Canotek Road Ottawa, ON	**Pumping Test Analysis Report**
	Project: 5969 Ottawa Street Hydrogeological Assessment
	Number: 210341
	Client: Al Roberts

Location: 5969 Ottawa Street, Richmond, ON	Pumping Test: 6-Hr Pump Test	Pumping Well: Well 1
Test Conducted by: AK		Test Date: 2021-08-11
Analysis Performed by: AW	Time-Drawdown	Analysis Date: 2021-09-13
Aquifer Thickness:	Discharge: variable, average rate 0.666 [l/s]	



LRL Assocaites Ltd.
5430 Canotek Road
Ottawa, ON

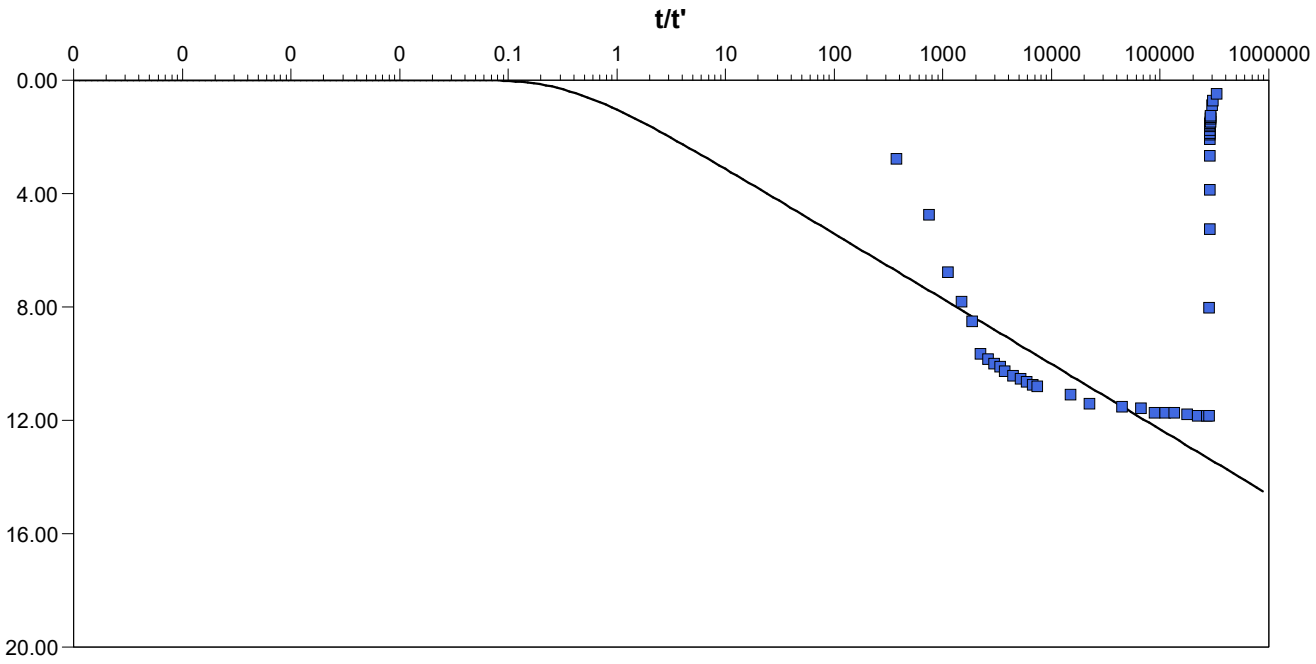
Pumping Test Analysis Report

Project: 5969 Ottawa Street Hydrogeological Assessment

Number: 210341

Client: Al Roberts

Location: 5969 Ottawa Street, Richmond, ON	Pumping Test: 6-Hr Pump Test	Pumping Well: Well 1
Test Conducted by: AK		Test Date: 2021-08-11
Analysis Performed by: AW	Theis	Analysis Date: 2021-09-13
Aquifer Thickness:	Discharge: variable, average rate 0.666 [l/s]	



Calculation using Theis

Observation Well	Transmissivity [m²/d]	Storage coefficient	Radial Distance to PW [m]	
Well 1	2.50×10^{1}	4.39×10^{-3}	0.07	

LRL Assocaites Ltd.
5430 Canotek Road
Ottawa, ON

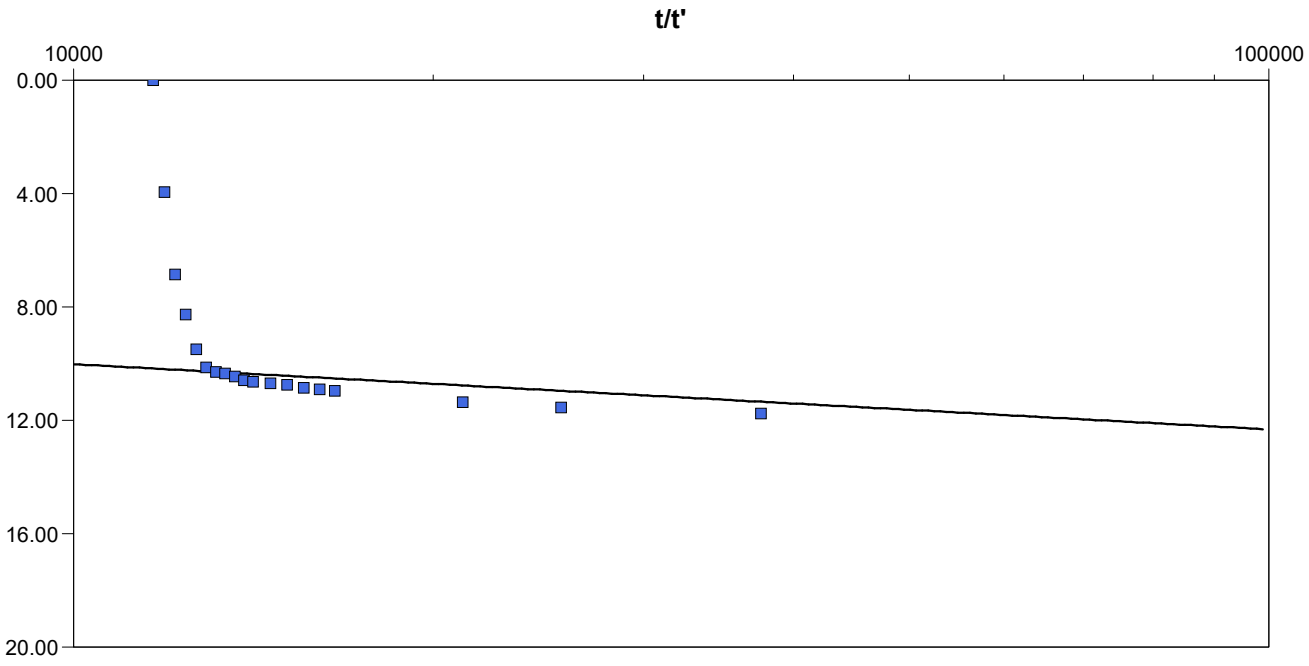
Pumping Test Analysis Report

Project: 5969 Ottawa Street Hydrogeological Assessment

Number: 210341

Client: Al Roberts

Location: 5969 Ottawa Street, Richmond, ON	Pumping Test: 6-Hr Pump Test	Pumping Well: Well 1
Test Conducted by: AK		Test Date: 2021-08-11
Analysis Performed by:	Agarwal + Theis	Analysis Date: 2021-09-13
Aquifer Thickness:	Discharge: variable, average rate 0.666 [l/s]	



Calculation using AGARWAL + Theis

Observation Well	Transmissivity [m²/d]	Storage coefficient	Radial Distance to PW [m]	
Well 1	2.59×10^{1}	6.00×10^{-3}	0.07	

LRL Assocaites Ltd.
5430 Canotek Road
Ottawa, ON

Pumping Test Analysis Report

Project: 5969 Ottawa Street Hydrogeological Assessment

Number: 210341

Client: Al Roberts

Location: 5969 Ottawa Street, Richmond, ON	Pumping Test: 6-Hr Pump Test	Pumping Well: Well 1
Test Conducted by: AK		Test Date: 2021-08-11
Aquifer Thickness:	Discharge: variable, average rate 0.666 [l/s]	

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m²/d]	S
1	Theis	AW	2021-09-13	Theis	Well 1	2.50×10^{1}	4.39×10^{-3}
2	Agarwal + Theis		2021-09-13	AGARWAL + Theis	Well 1	2.59×10^{1}	6.00×10^{-3}

LRL Associates Ltd.
5430 Canotek Road
Ottawa, Ontario

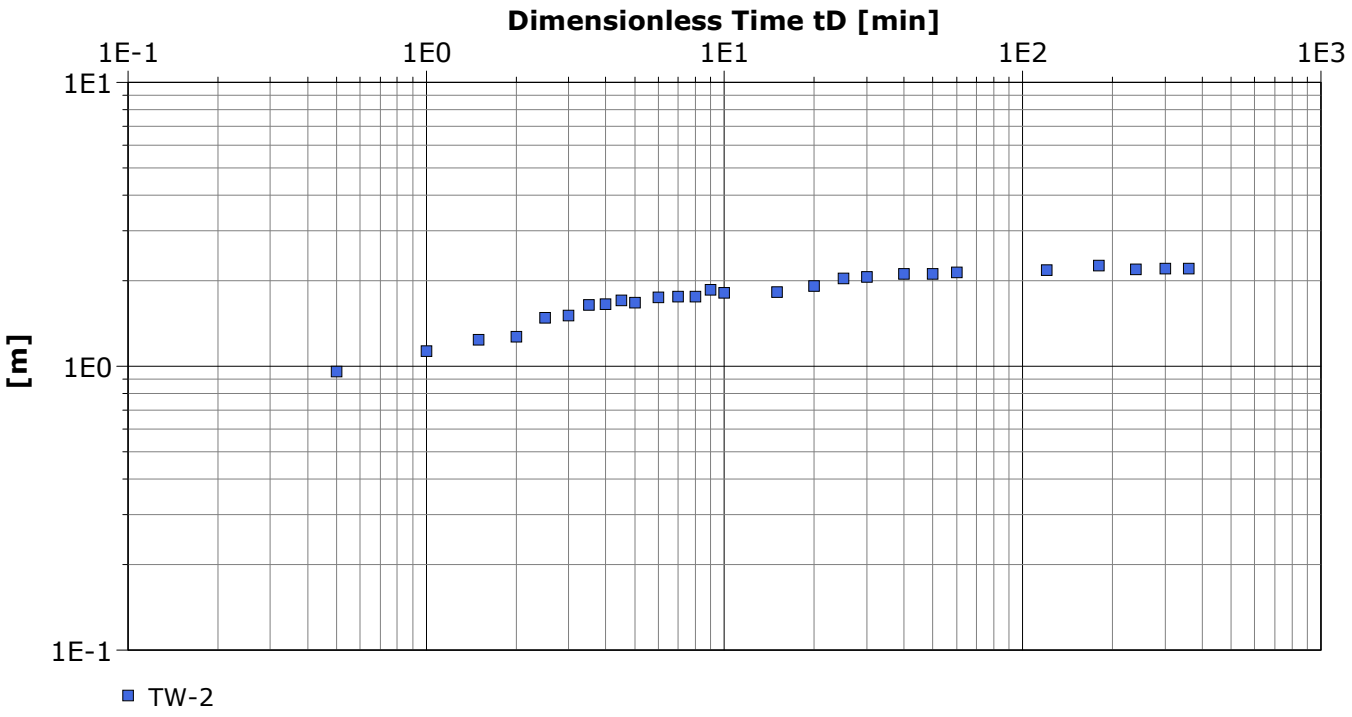
Pumping Test Analysis Report

Project: Hydrogeological Assessment

Number: 210341

Client: A. Roberts

Location: 5969 Ottawa Street, Richmond	Pumping Test: TW-2	Pumping Well: TW-2, TW-2R
Test Conducted by: LRL		Test Date: 2023-07-27
Analysis Performed by:	Drawdown New 1	Analysis Date: 2023-07-27
Aquifer Thickness: 1.80 m		



Calculation using Theis with Jacob Correction

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Storage coefficient	
TW-2	1.41×10^{4}	7.86×10^{3}	1.00×10^{-4}	

LRL Associates Ltd.
5430 Canotek Road
Ottawa, Ontario

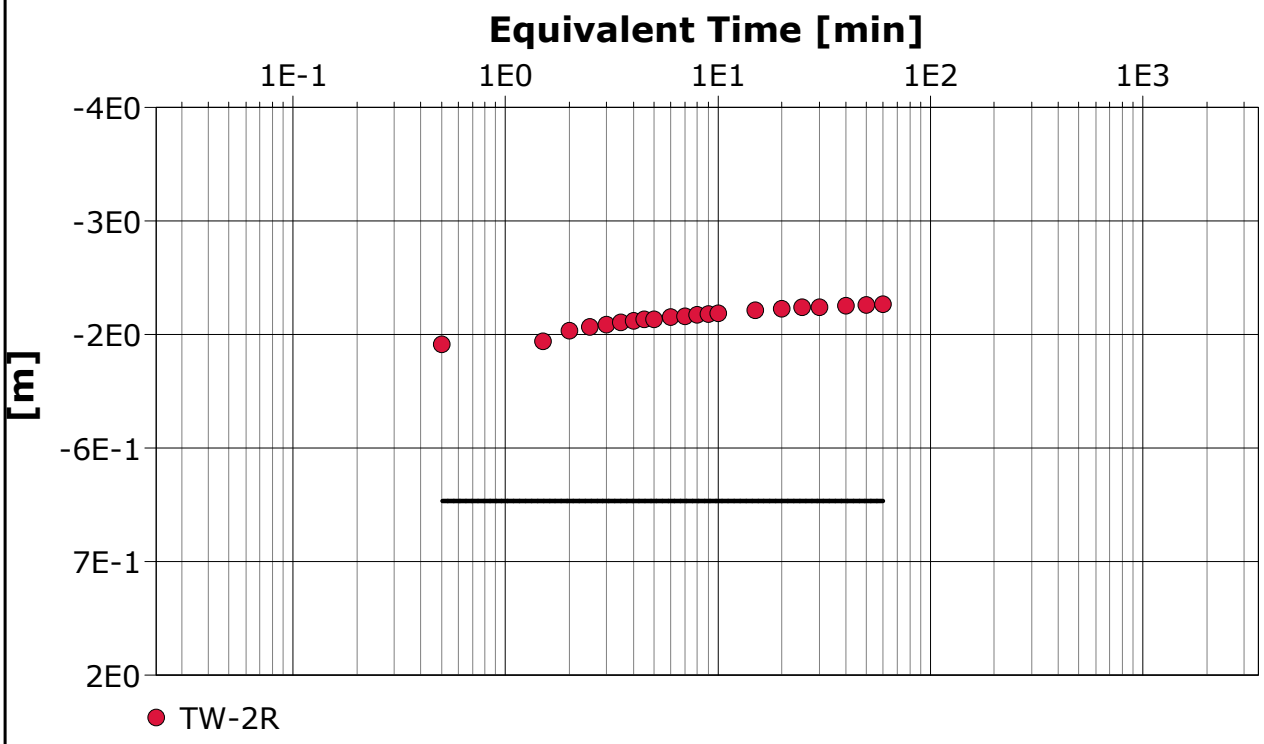
Pumping Test Analysis Report

Project: Hydrogeological Assessment

Number: 210341

Client: A. Roberts

Location: 5969 Ottawa Street, Richmond	Pumping Test: TW-2	Pumping Well: TW-2, TW-2R
Test Conducted by: LRL		Test Date: 2023-07-27
Analysis Performed by:	Recovery New 1	Analysis Date: 2023-07-27
Aquifer Thickness: 1.80 m		



Calculation using Agarwal skin

Observation Well	Transmissivity [m²/d]	Hydraulic Conductivity [m/d]	Skin factor	
TW-2R	8.64×10^{5}	4.80×10^{5}	-5.00×10^{0}	

ATTACHMENT IX

Moisture Surplus – Ottawa

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY... 50 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE..... 30 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	27	83	50	299
28- 2	-8.8	57	12	18	1	1	0	29	110	50	356
31- 3	-2.7	66	32	80	5	5	0	107	64	50	422
30- 4	5.9	72	67	69	32	32	0	104	0	50	494
31- 5	13.0	74	74	0	80	79	-1	13	0	32	568
30- 6	18.3	82	82	0	116	97	-19	4	0	14	651
31- 7	20.8	89	89	0	135	94	-41	3	0	5	740
31- 8	19.5	87	87	0	117	83	-34	1	0	9	827
30- 9	14.6	84	84	0	75	66	-9	7	0	20	912
31-10	8.1	77	76	0	36	35	-1	24	0	37	77
30-11	1.3	80	63	8	10	10	0	50	9	49	157
31-12	-7.0	78	26	15	1	1	0	38	47	50	236
AVE	5.9 TTL	911	705	205	608	503	-105	407			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	31	43	0	55
28- 2	2.6	29	15	27	1	1	0	37	59	0	59
31- 3	2.3	28	22	47	4	4	0	53	83	0	65
30- 4	1.7	31	31	84	8	8	0	84	0	2	74
31- 5	1.9	32	32	0	12	11	5	21	0	19	85
30- 6	1.2	38	38	0	9	26	26	17	0	19	93
31- 7	1.2	42	42	0	8	30	31	12	0	14	93
31- 8	1.3	39	39	0	8	30	32	5	0	16	107
30- 9	1.5	38	38	0	8	14	13	20	0	21	110
31-10	1.4	37	37	2	7	7	3	27	0	19	37
30-11	1.7	27	28	9	4	4	0	30	13	6	45
31-12	3.0	30	22	14	1	1	0	29	34	0	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY... 75 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE..... 45 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	27	83	75	299
28- 2	-8.8	57	12	18	1	1	0	29	110	75	356
31- 3	-2.7	66	32	80	5	5	0	107	64	75	422
30- 4	5.9	72	67	69	32	32	0	104	0	75	494
31- 5	13.0	74	74	0	80	80	0	13	0	56	568
30- 6	18.3	82	82	0	116	107	-10	4	0	28	651
31- 7	20.8	89	89	0	135	104	-32	2	0	10	740
31- 8	19.5	87	87	0	117	85	-32	1	0	12	827
30- 9	14.6	84	84	0	75	66	-9	4	0	26	912
31-10	8.1	77	76	0	36	35	-1	15	0	52	77
30-11	1.3	80	63	8	10	10	0	42	9	71	157
31-12	-7.0	78	26	15	1	1	0	36	47	75	236
AVE	5.9 TTL	911	705	205	608	526	-84	384			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	30	43	0	55
28- 2	2.6	29	15	27	1	1	0	37	59	0	59
31- 3	2.3	28	22	47	4	4	0	53	83	0	65
30- 4	1.7	31	31	84	8	8	0	84	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	19	19	17	0	28	93
31- 7	1.2	42	42	0	8	28	30	11	0	22	93
31- 8	1.3	39	39	0	8	29	31	5	0	23	107
30- 9	1.5	38	38	0	8	14	14	17	0	29	110
31-10	1.4	37	37	2	7	7	2	23	0	28	37
30-11	1.7	27	28	9	4	4	0	33	13	11	45
31-12	3.0	30	22	14	1	1	0	30	34	3	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...100 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE..... 60 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	25	83	99	299
28- 2	-8.8	57	12	18	1	1	0	28	110	99	356
31- 3	-2.7	66	32	80	5	5	0	106	64	100	422
30- 4	5.9	72	67	69	32	32	0	104	0	100	494
31- 5	13.0	74	74	0	80	80	0	13	0	81	568
30- 6	18.3	82	82	0	116	112	-4	4	0	47	651
31- 7	20.8	89	89	0	135	115	-21	2	0	19	740
31- 8	19.5	87	87	0	117	88	-29	1	0	18	827
30- 9	14.6	84	84	0	75	66	-8	3	0	32	912
31-10	8.1	77	76	0	36	35	-1	10	0	63	77
30-11	1.3	80	63	8	10	10	0	34	9	91	157
31-12	-7.0	78	26	15	1	1	0	33	47	97	236
AVE	5.9 TTL	911	705	205	608	545	-63	363			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	30	43	5	55
28- 2	2.6	29	15	27	1	1	0	37	59	3	59
31- 3	2.3	28	22	47	4	4	0	53	83	0	65
30- 4	1.7	31	31	84	8	8	0	84	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	12	11	17	0	34	93
31- 7	1.2	42	42	0	8	25	26	11	0	30	93
31- 8	1.3	39	39	0	8	29	30	5	0	30	107
30- 9	1.5	38	38	0	8	14	13	15	0	35	110
31-10	1.4	37	37	2	7	6	2	21	0	36	37
30-11	1.7	27	28	9	4	4	0	34	13	19	45
31-12	3.0	30	22	14	1	1	0	30	34	8	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...125 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE..... 75 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	24	83	122	299
28- 2	-8.8	57	12	18	1	1	0	28	110	123	356
31- 3	-2.7	66	32	80	5	5	0	105	64	125	422
30- 4	5.9	72	67	69	32	32	0	104	0	125	494
31- 5	13.0	74	74	0	80	80	0	13	0	106	568
30- 6	18.3	82	82	0	116	115	-1	4	0	69	651
31- 7	20.8	89	89	0	135	122	-13	2	0	33	740
31- 8	19.5	87	87	0	117	92	-25	1	0	28	827
30- 9	14.6	84	84	0	75	67	-7	3	0	41	912
31-10	8.1	77	76	0	36	35	-1	9	0	74	77
30-11	1.3	80	63	8	10	10	0	27	9	108	157
31-12	-7.0	78	26	15	1	1	0	29	47	119	236
AVE	5.9 TTL	911	705	205	608	560	-47	349			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	31	43	10	55
28- 2	2.6	29	15	27	1	1	0	37	59	8	59
31- 3	2.3	28	22	47	4	4	0	54	83	0	65
30- 4	1.7	31	31	84	8	8	0	84	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	9	4	17	0	39	93
31- 7	1.2	42	42	0	8	21	23	11	0	37	93
31- 8	1.3	39	39	0	8	26	28	5	0	38	107
30- 9	1.5	38	38	0	8	13	11	14	0	42	110
31-10	1.4	37	37	2	7	6	2	20	0	42	37
30-11	1.7	27	28	9	4	4	0	32	13	25	45
31-12	3.0	30	22	14	1	1	0	30	34	14	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...150 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE..... 90 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	23	83	144	299
28- 2	-8.8	57	12	18	1	1	0	26	110	146	356
31- 3	-2.7	66	32	80	5	5	0	103	64	150	422
30- 4	5.9	72	67	69	32	32	0	104	0	150	494
31- 5	13.0	74	74	0	80	80	0	13	0	131	568
30- 6	18.3	82	82	0	116	116	0	4	0	93	651
31- 7	20.8	89	89	0	135	127	-8	2	0	52	740
31- 8	19.5	87	87	0	117	97	-19	1	0	41	827
30- 9	14.6	84	84	0	75	68	-6	3	0	54	912
31-10	8.1	77	76	0	36	36	-1	8	0	88	77
30-11	1.3	80	63	8	10	10	0	23	9	126	157
31-12	-7.0	78	26	15	1	1	0	26	47	140	236
AVE	5.9 TTL	911	705	205	608	573	-34	336			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	31	43	15	55
28- 2	2.6	29	15	27	1	1	0	37	59	12	59
31- 3	2.3	28	22	47	4	4	0	54	83	0	65
30- 4	1.7	31	31	84	8	8	0	84	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	8	1	17	0	41	93
31- 7	1.2	42	42	0	8	18	18	11	0	42	93
31- 8	1.3	39	39	0	8	22	23	5	0	44	107
30- 9	1.5	38	38	0	8	12	10	14	0	49	110
31-10	1.4	37	37	2	7	6	2	19	0	47	37
30-11	1.7	27	28	9	4	4	0	30	13	31	45
31-12	3.0	30	22	14	1	1	0	29	34	20	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...200 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE.....120 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	21	83	187	299
28- 2	-8.8	57	12	18	1	1	0	24	110	191	356
31- 3	-2.7	66	32	80	5	5	0	99	64	199	422
30- 4	5.9	72	67	69	32	32	0	103	0	200	494
31- 5	13.0	74	74	0	80	80	0	13	0	181	568
30- 6	18.3	82	82	0	116	116	0	4	0	143	651
31- 7	20.8	89	89	0	135	132	-3	2	0	97	740
31- 8	19.5	87	87	0	117	106	-11	1	0	78	827
30- 9	14.6	84	84	0	75	70	-4	3	0	89	912
31-10	8.1	77	76	0	36	36	0	7	0	123	77
30-11	1.3	80	63	8	10	10	0	19	9	164	157
31-12	-7.0	78	26	15	1	1	0	22	47	182	236
AVE	5.9 TTL	911	705	205	608	589	-18	318			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	30	43	24	55
28- 2	2.6	29	15	27	1	1	0	36	59	20	59
31- 3	2.3	28	22	47	4	4	0	55	83	4	65
30- 4	1.7	31	31	84	8	8	0	83	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	9	0	17	0	41	93
31- 7	1.2	42	42	0	8	11	10	11	0	48	93
31- 8	1.3	39	39	0	8	16	16	5	0	54	107
30- 9	1.5	38	38	0	8	10	8	14	0	59	110
31-10	1.4	37	37	2	7	6	1	19	0	55	37
30-11	1.7	27	28	9	4	4	0	29	13	41	45
31-12	3.0	30	22	14	1	1	0	28	34	29	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...225 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE.....135 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	21	83	209	299
28- 2	-8.8	57	12	18	1	1	0	24	110	214	356
31- 3	-2.7	66	32	80	5	5	0	97	64	224	422
30- 4	5.9	72	67	69	32	32	0	103	0	225	494
31- 5	13.0	74	74	0	80	80	0	13	0	206	568
30- 6	18.3	82	82	0	116	116	0	4	0	168	651
31- 7	20.8	89	89	0	135	133	-2	2	0	121	740
31- 8	19.5	87	87	0	117	109	-8	1	0	99	827
30- 9	14.6	84	84	0	75	71	-4	3	0	109	912
31-10	8.1	77	76	0	36	36	0	7	0	143	77
30-11	1.3	80	63	8	10	10	0	18	9	185	157
31-12	-7.0	78	26	15	1	1	0	21	47	204	236
AVE	5.9 TTL	911	705	205	608	594	-14	314			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	30	43	28	55
28- 2	2.6	29	15	27	1	1	0	36	59	24	59
31- 3	2.3	28	22	47	4	4	0	56	83	7	65
30- 4	1.7	31	31	84	8	8	0	82	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	9	0	17	0	41	93
31- 7	1.2	42	42	0	8	10	7	11	0	49	93
31- 8	1.3	39	39	0	8	14	13	5	0	58	107
30- 9	1.5	38	38	0	8	10	7	14	0	63	110
31-10	1.4	37	37	2	7	6	1	19	0	58	37
30-11	1.7	27	28	9	4	4	0	29	13	44	45
31-12	3.0	30	22	14	1	1	0	28	34	33	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...250 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE.....150 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	20	83	232	299
28- 2	-8.8	57	12	18	1	1	0	23	110	238	356
31- 3	-2.7	66	32	80	5	5	0	96	64	248	422
30- 4	5.9	72	67	69	32	32	0	102	0	250	494
31- 5	13.0	74	74	0	80	80	0	13	0	231	568
30- 6	18.3	82	82	0	116	116	0	4	0	193	651
31- 7	20.8	89	89	0	135	134	-1	2	0	145	740
31- 8	19.5	87	87	0	117	111	-6	1	0	121	827
30- 9	14.6	84	84	0	75	72	-3	3	0	130	912
31-10	8.1	77	76	0	36	36	0	7	0	164	77
30-11	1.3	80	63	8	10	10	0	18	9	207	157
31-12	-7.0	78	26	15	1	1	0	20	47	226	236
AVE	5.9 TTL	911	705	205	608	598	-10	309			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	29	43	32	55
28- 2	2.6	29	15	27	1	1	0	36	59	27	59
31- 3	2.3	28	22	47	4	4	0	56	83	9	65
30- 4	1.7	31	31	84	8	8	0	82	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	9	0	17	0	41	93
31- 7	1.2	42	42	0	8	9	5	11	0	50	93
31- 8	1.3	39	39	0	8	12	11	5	0	61	107
30- 9	1.5	38	38	0	8	9	6	14	0	66	110
31-10	1.4	37	37	2	7	7	1	19	0	61	37
30-11	1.7	27	28	9	4	4	0	29	13	47	45
31-12	3.0	30	22	14	1	1	0	28	34	36	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...265 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE.....159 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	20	83	246	299
28- 2	-8.8	57	12	18	1	1	0	23	110	252	356
31- 3	-2.7	66	32	80	5	5	0	96	64	263	422
30- 4	5.9	72	67	69	32	32	0	102	0	265	494
31- 5	13.0	74	74	0	80	80	0	13	0	246	568
30- 6	18.3	82	82	0	116	116	0	4	0	208	651
31- 7	20.8	89	89	0	135	134	-1	2	0	160	740
31- 8	19.5	87	87	0	117	112	-5	1	0	135	827
30- 9	14.6	84	84	0	75	72	-3	3	0	144	912
31-10	8.1	77	76	0	36	36	0	7	0	177	77
30-11	1.3	80	63	8	10	10	0	18	9	221	157
31-12	-7.0	78	26	15	1	1	0	20	47	240	236
AVE	5.9 TTL	911	705	205	608	599	-9	309			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	29	43	34	55
28- 2	2.6	29	15	27	1	1	0	36	59	29	59
31- 3	2.3	28	22	47	4	4	0	56	83	10	65
30- 4	1.7	31	31	84	8	8	0	82	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	9	0	17	0	41	93
31- 7	1.2	42	42	0	8	8	4	11	0	51	93
31- 8	1.3	39	39	0	8	11	10	5	0	62	107
30- 9	1.5	38	38	0	8	9	5	14	0	68	110
31-10	1.4	37	37	2	7	7	1	19	0	62	37
30-11	1.7	27	28	9	4	4	0	29	13	49	45
31-12	3.0	30	22	14	1	1	0	28	34	38	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...275 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE.....165 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	19	83	255	299
28- 2	-8.8	57	12	18	1	1	0	23	110	261	356
31- 3	-2.7	66	32	80	5	5	0	96	64	272	422
30- 4	5.9	72	67	69	32	32	0	101	0	275	494
31- 5	13.0	74	74	0	80	80	0	13	0	256	568
30- 6	18.3	82	82	0	116	116	0	4	0	218	651
31- 7	20.8	89	89	0	135	135	-1	2	0	170	740
31- 8	19.5	87	87	0	117	113	-4	1	0	144	827
30- 9	14.6	84	84	0	75	72	-2	3	0	153	912
31-10	8.1	77	76	0	36	36	0	7	0	186	77
30-11	1.3	80	63	8	10	10	0	18	9	230	157
31-12	-7.0	78	26	15	1	1	0	20	47	249	236
AVE	5.9 TTL	911	705	205	608	601	-7	307			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	29	43	35	55
28- 2	2.6	29	15	27	1	1	0	36	59	30	59
31- 3	2.3	28	22	47	4	4	0	56	83	11	65
30- 4	1.7	31	31	84	8	8	0	81	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	9	0	17	0	41	93
31- 7	1.2	42	42	0	8	8	3	11	0	51	93
31- 8	1.3	39	39	0	8	11	9	5	0	63	107
30- 9	1.5	38	38	0	8	9	5	14	0	69	110
31-10	1.4	37	37	2	7	7	1	19	0	63	37
30-11	1.7	27	28	9	4	4	0	29	13	50	45
31-12	3.0	30	22	14	1	1	0	28	34	39	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...280 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE.....168 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	19	83	260	299
28- 2	-8.8	57	12	18	1	1	0	23	110	266	356
31- 3	-2.7	66	32	80	5	5	0	95	64	277	422
30- 4	5.9	72	67	69	32	32	0	101	0	280	494
31- 5	13.0	74	74	0	80	80	0	13	0	261	568
30- 6	18.3	82	82	0	116	116	0	4	0	223	651
31- 7	20.8	89	89	0	135	135	-1	2	0	175	740
31- 8	19.5	87	87	0	117	113	-4	1	0	148	827
30- 9	14.6	84	84	0	75	72	-2	3	0	157	912
31-10	8.1	77	76	0	36	36	0	7	0	191	77
30-11	1.3	80	63	8	10	10	0	18	9	234	157
31-12	-7.0	78	26	15	1	1	0	20	47	254	236
AVE	5.9 TTL	911	705	205	608	601	-7	306			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	29	43	35	55
28- 2	2.6	29	15	27	1	1	0	36	59	31	59
31- 3	2.3	28	22	47	4	4	0	56	83	12	65
30- 4	1.7	31	31	84	8	8	0	81	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	9	0	17	0	41	93
31- 7	1.2	42	42	0	8	8	3	11	0	52	93
31- 8	1.3	39	39	0	8	10	9	5	0	64	107
30- 9	1.5	38	38	0	8	9	5	14	0	69	110
31-10	1.4	37	37	2	7	7	1	19	0	64	37
30-11	1.7	27	28	9	4	4	0	29	13	50	45
31-12	3.0	30	22	14	1	1	0	28	34	39	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...300 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE.....180 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	19	83	279	299
28- 2	-8.8	57	12	18	1	1	0	23	110	285	356
31- 3	-2.7	66	32	80	5	5	0	95	64	297	422
30- 4	5.9	72	67	69	32	32	0	101	0	300	494
31- 5	13.0	74	74	0	80	80	0	13	0	281	568
30- 6	18.3	82	82	0	116	116	0	4	0	243	651
31- 7	20.8	89	89	0	135	135	0	2	0	194	740
31- 8	19.5	87	87	0	117	114	-3	1	0	167	827
30- 9	14.6	84	84	0	75	73	-2	3	0	176	912
31-10	8.1	77	76	0	36	36	0	7	0	209	77
30-11	1.3	80	63	8	10	10	0	18	9	252	157
31-12	-7.0	78	26	15	1	1	0	20	47	272	236
AVE	5.9 TTL	911	705	205	608	603	-5	306			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	29	43	37	55
28- 2	2.6	29	15	27	1	1	0	36	59	33	59
31- 3	2.3	28	22	47	4	4	0	57	83	13	65
30- 4	1.7	31	31	84	8	8	0	81	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	9	0	17	0	41	93
31- 7	1.2	42	42	0	8	8	2	11	0	52	93
31- 8	1.3	39	39	0	8	10	8	5	0	65	107
30- 9	1.5	38	38	0	8	9	5	14	0	71	110
31-10	1.4	37	37	2	7	7	1	19	0	65	37
30-11	1.7	27	28	9	4	4	0	29	13	52	45
31-12	3.0	30	22	14	1	1	0	28	34	41	56

Ottawa Airport, ON WATER BUDGET MEANS FOR THE PERIOD 1950-2010 DC20492

LAT.... 45.32 WATER HOLDING CAPACITY...400 MM HEAT INDEX... 36.41
LONG... 75.67 LOWER ZONE.....240 MM A..... 1.075

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	-10.6	64	13	15	0	0	0	19	83	375	299
28- 2	-8.8	57	12	18	1	1	0	22	110	382	356
31- 3	-2.7	66	32	80	5	5	0	94	64	395	422
30- 4	5.9	72	67	69	32	32	0	99	0	400	494
31- 5	13.0	74	74	0	80	80	0	13	0	381	568
30- 6	18.3	82	82	0	116	116	0	4	0	343	651
31- 7	20.8	89	89	0	135	135	0	2	0	294	740
31- 8	19.5	87	87	0	117	116	-1	1	0	265	827
30- 9	14.6	84	84	0	75	74	-1	3	0	272	912
31-10	8.1	77	76	0	36	36	0	7	0	305	77
30-11	1.3	80	63	8	10	10	0	18	9	349	157
31-12	-7.0	78	26	15	1	1	0	19	47	369	236
AVE	5.9 TTL	911	705	205	608	606	-2	301			

Ottawa Airport, ON STANDARD DEVIATIONS FOR THE PERIOD 1950-2010 DC20492

DATE	TEMP (C)	PCPN	RAIN	MELT	PE	AE	DEF	SURP	SNOW	SOIL	ACC P
31- 1	3.0	26	16	18	1	1	0	29	43	44	55
28- 2	2.6	29	15	27	1	1	0	36	59	39	59
31- 3	2.3	28	22	47	4	4	0	57	83	20	65
30- 4	1.7	31	31	84	8	8	0	80	0	2	74
31- 5	1.9	32	32	0	12	12	0	21	0	22	85
30- 6	1.2	38	38	0	9	9	0	17	0	41	93
31- 7	1.2	42	42	0	8	8	0	11	0	53	93
31- 8	1.3	39	39	0	8	8	4	5	0	69	107
30- 9	1.5	38	38	0	8	8	2	14	0	76	110
31-10	1.4	37	37	2	7	7	0	19	0	69	37
30-11	1.7	27	28	9	4	4	0	29	13	57	45
31-12	3.0	30	22	14	1	1	0	28	34	46	56

ATTACHMENT X

Septic System Specifications

norweco®

HYDRO-KINETIC® GREEN WASTEWATER TREATMENT SYSTEM

WITH SERVICE PRO® CONTROL CENTER

SPECIFICATIONS

SPECIFICATIONS

GENERAL SPECIFICATIONS

The contractor shall furnish and install one complete Hydro-Kinetic Green wastewater treatment system with all necessary parts and equipment as described in the following specifications. Treatment of the domestic wastewater shall be accomplished by the extended aeration process with non-mechanical flow equalization, pretreatment of the influent and filtration of the final effluent. The treatment system shall provide primary, secondary and tertiary treatment of the wastewater flow, denitrification, and if required, chlorination/dechlorination or ultraviolet disinfection of the effluent prior to discharge. All treatment processes shall be contained within tankage which shall be manufactured using high density polyethylene resin. The wastewater treatment system shall be a Hydro-Kinetic Green as manufactured by Norweco, Inc., Norwalk, Ohio, USA.

The wastewater treatment system shall include high density polyethylene tankage providing separate pretreatment, anoxic, aeration, clarification and final filtration chambers. The tankage shall be furnished with a Schedule 40 PVC inlet hub, submerged transfer ports, access risers with removable covers, molded plastic vent assembly, molded receiving flange and Schedule 40 PVC outlet hub. Principal items of electro-mechanical equipment supplied with the Hydro-Kinetic Green system shall be an air pump, recirculation pump, UL Listed Service Pro Model 801P electrical control center with MCD technology, flow equalization device and Hydro-Kinetic Bio-Film Reactor for final filtration of system effluent.

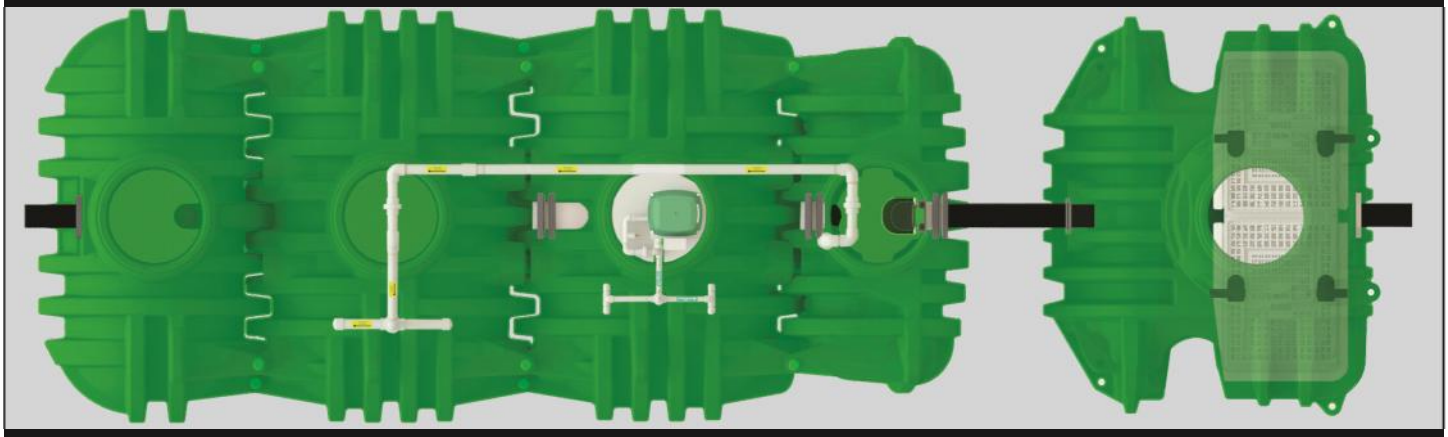
HYDRO-KINETIC®

OPERATING CONDITIONS

Total holding capacity of the system shall provide a minimum of 85 hour retention of the daily flow. The pretreatment chamber shall provide at least 18 hour retention, the anoxic chamber shall provide at least 24 hour retention, the extended aeration chamber shall provide at least 24 hour retention, the clarification chamber shall provide at least 7 hour retention and the Hydro-Kinetic Bio-Film Reactor shall provide at least 12 hour retention of the daily flow. The non-mechanical flow equalization device shall increase individual chamber and total system retention time in direct proportion to loading. Design of the system shall include a compartmented tank and non-mechanical flow equalization device to insure successful treatment performance without upset even when the significant runoff period is six hours. Hydraulic design considerations of the system and flow equalization device shall be such that intermittent peak flow factors as high as four shall not upset hydraulic reliability within the system. Capability of the system to perform as outlined, when built by an approved manufacturer, shall be certified by an independent testing laboratory and approved for use by the local governing regulatory agency.

PRETREATMENT CHAMBER

The pretreatment chamber shall be an integral part of the wastewater treatment system. All domestic wastewater shall be preconditioned and flow equalized while passing through the pretreatment chamber prior to being introduced to the anoxic chamber. The outlet of the pretreatment chamber shall be equipped with a discharge tee that extends vertically into the liquid so that only the preconditioned flow from the center area of the chamber is displaced to the anoxic chamber. The discharge tee and transfer port shall be of adequate size to handle a peak flow factor of four without restricting the outlet and disturbing hydraulic displacement to the anoxic chamber. A removable inspection cover shall be incorporated into the top of the pretreatment chamber to allow tank and transfer tee inspection.



ANOXIC CHAMBER

The anoxic chamber shall provide in excess of 24 hour retention of the equalized daily flow. In the anoxic chamber, low oxygen levels shall compel facultative heterotrophic bacteria to use nitrate-bound oxygen in their respiratory process. Nitrified liquid from the clarifier shall enter the chamber in measured doses and nitrogen compounds shall be converted to harmless nitrogen gas which shall escape into the atmosphere. Overall design of the chamber shall insure that effective mixing and suspension of the biomass is maintained in an anoxic condition to insure consistent biological denitrification. Systems that have not been performance certified to reduce Total Nitrogen (TN) more than 50% shall not be considered for this application.

AERATION CHAMBER

The extended aeration chamber shall provide in excess of 24 hour retention of the equalized daily flow. The chamber shall be of sufficient size to provide a minimum of 80 cubic feet of tank capacity per pound of applied BOD. The aeration chamber shall be an integral part of the system flow path and configured to insure effective mixing of microorganisms, wastewater and fresh air. No area of the chamber shall be isolated from process mixing, thereby eliminating dead or quiescent areas of the treatment chamber which are detrimental to the treatment process. Influent into the aeration chamber shall be preconditioned, equalized flow from the anoxic chamber.

FINAL CLARIFICATION CHAMBER

The final clarification chamber shall consist of 5 functionally independent zones operating together to provide satisfactory settling and clarification of the equalized flow. An inlet zone shall be provided and shall dissipate transfer turbulence at the flow inlet of the clarification chamber. Liquid is then displaced into the hopper zone of the clarifier. In this zone, settling by gravity takes place. Three of the four sidewalls are slanted to form a hopper which directs all settled material back to the settled sludge zone. A recirculation pump in the settled sludge zone shall transfer a portion of the wastewater back to the anoxic chamber. Clarified liquid from the hopper zone shall be displaced into the final settling zone to provide additional clarification of the liquid. The liquid is finally displaced to the outlet zone where the treated effluent shall pass through the flow equalization device and be discharged from the final clarification chamber.

FLOW EQUALIZATION DEVICE

The system shall include a non-mechanical, demand use, flow equalization device. The device shall be installed with the design flow equalization port located below the normal liquid level of the clarifier. If intermittent flow rates exceed the capacity of the design flow port, flow shall be held upstream until the intermittent flow dissipates. If the intermittent flow continues to increase, the liquid level may reach a sustained flow equalization port. With both ports in use, flow through the system increases while continuing to provide flow equalization to upstream and downstream processes. A peak flow equalization port is supplied but should not be required in a properly sized system. The device shall control normal residential flow rates and reduce typical residential flow surges. The flow equalization rate shall be dependent upon the specific loading pattern and the duration of flow surges. At the 600 GPD (gallons per day) NSF Standard 40/245 design loading schedule, minimum performance of the device shall equalize daily flow an average of 50%.

HYDRO-KINETIC BIO-FILM REACTOR

Significant reduction of organic matter shall occur in the treatment system prior to the Hydro-Kinetic Bio-Film Reactor. The Bio-Film Reactor shall provide final treatment of the effluent to a near pristine state. Flow equalized liquid from the clarifier shall enter the influent chamber, travel down and be evenly distributed beneath the Reactor Elements. The effects of gravity shall cause solids to settle to the bottom of the tank. As liquid travels up through the proprietary attached growth media, further reduction of organic matter shall take place. Additional settling and consolidation of solids shall take place downstream of the filter media. After passing through the filtration media for final polishing, the highly treated liquid shall flow into the final effluent zone before exiting the Bio-Film Reactor through the outlet tee.

GREEN

SERVICE PRO® MODEL 801P ELECTRICAL CONTROL CENTER

The Model 801P control center with MCD technology shall provide Monitoring, Compliance and Diagnostic functions for the treatment system. The pre-wired controls shall be mounted in a lockable NEMA rated enclosure designed specifically for outdoor use. The control center shall be a UL Listed assembly and shall include a time clock, alarm light, reset button, power switch, power light, phone/network light, recirculation pump light, air pump light, high water light and auxiliary alarm light. A pre-programmed time clock shall control the recirculation pump to insure that approximately 400% of the average daily flow is returned to the anoxic chamber. The control center shall monitor recirculation pump current, air pump operation, high water and auxiliary alarm circuitry. In the event of an alarm from the air pump or auxiliary input, the audible and visual alarms shall activate and the optional telemetry system shall report the condition. If abnormal operation of the recirculation pump is detected, a diagnostic sequence shall begin and the visual alarm shall activate. After a factory programmed recovery interval, an automatic restart attempt shall be initiated. If normal pump operation does not resume during 24 programmed recovery and restart cycles, the audible alarm shall activate and the optional telemetry system shall report the condition to the Service Pro monitoring center.

SERVICE PRO‖ MONITORING CENTER

The Service Pro monitoring center shall include a 256 bit encrypted password protected website for interface with the monitoring center database. Access to the secure website shall be obtained through a unique user name and password that provides tiered access to data from monitored treatment systems. Access level tiers shall include dealers, service providers, regulatory agencies and individual system owners. Dealers and service providers shall be able to create accounts, enter serial numbers for system equipment, maintain service records and grant regulatory agencies access to the information. The monitoring center shall have the capability to schedule future service inspections and provide notification. Individual system owners shall be able to view information regarding their own systems, as well as download instructional information. Integrity of stored data shall be maintained through the use of multiple servers operating in geographically isolated locations.

MODEL AT 1500 ULTRAVIOLET DISINFECTION SYSTEM (Optional)

The Hydro-Kinetic Green system shall be furnished complete with a Model AT 1500 ultraviolet disinfection system. The AT 1500 system shall incorporate a turbulence inducer and dual-pass design to insure bacteria receive maximum exposure to the ultraviolet light source. The ultraviolet disinfection system shall be UL Listed under Standard 979 as a residential treatment device and shall include a disinfection chamber, turbulence inducer, extension riser, quartz tube with Teflon cover, ultraviolet bulb and controls. An interlock switch shall be furnished to automatically disable the ultraviolet light source when the disinfection chamber is accessed. Ultraviolet disinfection systems without a residential UL Listing have not demonstrated compliance with international electrical standards for safety and reliability and shall not be considered for this application.

SPECIFICATIONS

CERTIFIED PERFORMANCE

The wastewater treatment system shall be certified to operate for 12 consecutive months at the rated daily capacity without routine service. This performance shall be demonstrated by a continuous 12 month evaluation performed by an independent ANSI accredited, third-party testing facility. The evaluation shall consist of 2 consecutive ANSI/NSF Standard 40 and 245 evaluations, including the stress sequences, with no maintenance allowed in between. The system shall also be certified by a SCC accredited, third-party testing facility to BNQ Standards CAN/BNQ 3680-600 and NQ 3680-910. For the entire certification protocol, the system shall achieve a total test average of less than 5 mg/L Biochemical Oxygen Demand (CBOD), less than 5 mg/L Total Suspended Solids (TSS), and greater than 50% reduction of Total Nitrogen (TN) in the effluent. Systems unable to meet these effluent quality parameters for at least 12 months of continuous testing by independent ANSI and SCC accredited, third-party testing facilities without service do not provide the desired level of effluent quality or service frequency, and shall not be considered for this application.

AIR PUMP

The air pump shall be configured to allow remote mounting or installation within the mounting riser above the aeration chamber. When installed in the access riser, fresh air shall be supplied through a vented, injection molded, heavy duty, glass-filled polypropylene access cover above the air pump. Fresh air shall enter the air pump through a filter located under the housing cover and be introduced below the liquid surface through a prefabricated diffuser assembly. Only the plastic diffuser assembly and the air piping shall be installed in contact with the liquid. The air pump shall be wired for 115 volt, single phase, 60 cycle operation. The air pump shall include impact-resistant rubber diaphragms and valves which prolong operational life. The unique design and construction shall provide easy maintenance, excellent cooling and quiet operation. The air pump shall continue aerating and mixing the aeration chamber even during high water conditions. Treatment systems that interrupt air delivery during high water conditions disrupt biological activity and shall not be considered for this application.

RECIRCULATION PUMP

The submersible recirculation pump shall be wired for 115 volt, single phase, 60 cycle operation and shall be installed in the clarification chamber. Operation of the submersible recirculation pump shall be controlled by the Service Pro control center. The pump shall periodically recirculate nitrified liquid from the clarification chamber to the anoxic chamber. The pump shall be designed to be non-overloading throughout the entire pump curve and shall draw less than 8 full load amps. The pump motor shall contain moisture resistant windings and shall be securely mounted inside an oil-filled, watertight housing for maximum pump life. The stator housing and casing shall be of high grade cast iron, stainless steel or thermoplastic construction.

BLUE CRYSTAL⊩ CHLORINATION SYSTEM (Optional)

The Hydro-Kinetic Green system shall be furnished complete with a tablet feeder and a six month supply of Blue Crystal disinfecting tablets. Blue Crystal tablets shall be specifically formulated for consistent chlorine dosage and effluent disinfection to the sustained, variable and intermittent flows that are typical of domestic wastewater treatment systems. The tablets shall be manufactured from pure calcium hypochlorite and contain a minimum of 70% available chlorine. Each tablet shall be 2⅝" diameter, compressed to a 1" thickness, weigh approximately 5 ounces and be white in color with blue crystals for easy identification. The tablets shall dissolve in direct proportion to the flow rate, releasing controlled amounts of chlorine.

BIO-MAX⊩ DECHLORINATION SYSTEM (Optional)

The Hydro-Kinetic Green system shall be furnished complete with a tablet feeder and a six month supply of Bio-Max dechlorination tablets. The dechlorination tablets shall contain 92% sodium sulfite as the active ingredient and shall be specially formulated to chemically neutralize both free and combined chlorine. Each tablet shall be 2⅝" diameter, compressed to a 13⁄16" thickness, weigh approximately 5 ounces and be green in color for easy identification. The tablets shall dissolve slowly, releasing controlled amounts of chemical for the instantaneous removal of residual chlorine from the system effluent.

LIMITED WARRANTY

The wastewater treatment system shall be covered by a two year limited warranty. The air pump, recirculation pump, Service Pro Model 801P control center and any other Hydro-Kinetic components purchased from the manufacturer shall be warranted to be free from defects in material and workmanship, under normal use and service, for a period of two years from the date of purchase. A warranty registration card shall be attached to the system before shipment from the factory. A means to register the wastewater treatment system for warranty protection via the internet shall be provided by the manufacturer for the convenience of the dealer, customer and regulatory agency. The dealer shall provide details of the limited warranty to the regulatory agency, contractor and customer as required.

EQUIPMENT MANUFACTURER

The equipment specified herein shall be the product of a manufacturer having a minimum of seven years experience in the construction of prefabricated wastewater treatment equipment and systems. Bids shall be prepared on the basis of the equipment and material specified herein for purposes of determining the low bid. This is not done, however, to eliminate other products or equipment of equal quality and efficiency. If equipment is to be substituted, approval of such substitution must be made prior to execution of any order. It is assumed that substitution will result in a reduction of cost to the contractor and that if accepted, these savings will be passed along by a reduction in the base bid.

PROGRESS THROUGH SERVICE SINCE 1906

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