

**Hydrogeological Assessment  
Severance from 1050 County Road 19 to benefit 1038  
County Road 19  
Consecon, Ontario**

Prepared for:

**Mr. Dan Westerveld**  
1038 County Road 19,  
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K0K 1T0

Submitted by:

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March 2025



**G R E E R  
G A L L O W A Y**  
CONSULTING  
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March 5, 2025

Project 24-3-8615

Dan Westerveld  
1038 County Road 19,  
Ward 10 (Sophiasburgh),  
Prince Edward County, Ontario  
K0K 1T0

**Hydrogeological Assessment for a proposed severance from 1050 County Road 19 to benefit 1038 County Road 19, Consecon, Prince Edward County, Ontario**

Dear Dan,

We are pleased to submit this hydrogeological study report in support of a proposed severance from 1050 County Road 19 to benefit 1038 County Road 19, Consecon, Prince Edward County, Ontario.

We trust that this report is complete and sufficient for your requirements. Please don't hesitate to contact us if you have any questions about the report or our conclusions.

Yours very truly,

**THE GREER GALLOWAY GROUP INC.  
CONSULTING ENGINEERS**

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Consulting  
Engineers  
of Ontario



Professional Engineers  
Ontario

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# 1. Introduction

The Greer Galloway Group was retained by Mr. Dan Westerveld to complete a hydrogeological assessment for the property located at 1050 County Road 19, Consecon, Prince Edward County, Ontario. Mr. Westerveld wishes to sever the existing house and associated lot from 1050 County Road 19 to benefit 1038 County Road 19. The new benefiting lot will have an area of approximately 12.9 hectares, with the “retained” severed lands having an area of approximately 0.9 ha. The 0.9 ha severed lands are located on the northwest side of County Road 19, 260 m northeast of its intersection with Badgley Road. The proposed retained lands are currently undeveloped. 1050 County Road 19 is currently zoned Special Rural 1 (RU1-263) while 1038 County Road 19 is zoned Rural 2 (RU2). The proposed benefiting parcel is to benefit 1038 County Road 19 and does not require a hydrogeological assessment but the severed parcel is effectively a new lot and requires a hydrogeological assessment.

The purpose of the work was to assess the soil and groundwater conditions at the site to demonstrate that the 0.9 ha severed parcel may be adequately serviced by groundwater and onsite sewage servicing.

## 2. Investigation Methods

The study was carried out in general accordance with the Ministry of the Environment, Conservation, and Parks (MECP) procedures D-5-4 (Individual On-Site Sewage Systems) and D-5-5 (Private Well: Well Assessment).

The investigation included a review of water well records, available geologic and hydrogeologic information for the area, an inventory of water well supplies within a reasonable distance of the proposed severance, performing at least a six (6) hour pumping test in the well along with chemical and bacteriological analysis, and monitoring water level response in observation wells prior, during, and after the pumping test. The investigation methods are described further in the following subsections.

### 2.1 Information Sources

The initial task was a review of available information to characterize existing soil and groundwater conditions, and to identify any potential hazards/constraints associated with the planned project. Information sources include topographic and geologic mapping, aerial photography and MECP Water Well Records.

### 2.2 Well Records Search and Survey

Information about nearby wells was obtained from available MECP water well records on the MECP wells database using a search radius of 300 m from the subject site. MECP Water Well Record sheets for the searched area are provided in Appendix B.

Typically, a door-to-door well survey is carried out for select neighbouring wells within a 300 m radius of the subject property. During the door-to-door survey properties at 1073, 1065, 1060, 1055, 1043, 1041, 1027, 1025 and 1017 County Road 19 were included. 1027 and 1065 County Road 19 were visited a letter was left with someone at the house who was not the homeowner, but the homeowner failed to contact Greer Galloway staff.

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## 2.3 Water Supply Assessment

This water supply assessment was based on a pumping test of the dug water supply well A334420 constructed on the severed parcel on December 8<sup>th</sup>, 2023. The well is located approximately 160 m north of County Road 19. The well is a 91.44 cm diameter dug well with a depth of 6.93 m below ground surface, and the well casing sticks out 0.43 m above the ground surface. The drillers record for this well indicates a static level of 2.9 m and an estimated yield of 40 L/min.

The pumping test was performed on July 4, 2024, using a submersible pump and the discharge was routed through a flow restriction valve corresponding to the desired pumping rate. The discharge water was directed away from the pumped well a distance of approximately thirty 30 m downgradient of the well.

Water levels were recorded during the pumping and recovery using datalogging pressure transducers (Solinst Model 3001). All dataloggers were synchronized prior to the testing. The datalogger was set to record at 10 second intervals for the test well. Neighbouring wells at 1073, 1060, 1055, 1043, 1041, 1038 (A307989), and 1024 were monitored during the pumping test.

## 3. Summarized Findings

### 3.1 Site Description

The proposed severance covers an area of 0.9 hectares and is located at Lot 3, Concession 1 west of green point, Sophiasburgh, Prince Edward County, Ontario. Topography of the proposed severance is declining towards the east. Drainage is predominately in a south-southeast direction, following local topography, towards a wetland that is present to the south of County Road. The elevation of the proposed severance is about 85 m above mean sea level (mASL) at its highest and about 78 mASL at the eastern edge.

The only local major water body is Consecon Lake, located 4.7 km south of 1050 County Road 19. As previously discussed, there is a large wetland just to the south of County Road 19 that ultimately drains into Consecon Lake. There are no municipal services in the area and the neighbouring residences rely on private wells and septic systems.

### 3.2 Climate and Water Balance

The area is characterized by mild winters and relatively cool humid summers. Snow typically occurs during 5 months of the year from December to April. Annual precipitation is approximately 911.4 mm/a at the Trenton weather station (Environment Canada, 2020) with an average annual evapotranspiration (ET) of roughly 500 mm based on the site location (Statistics Canada, 2017).

Mapping shows primarily thin surficial soils classified as thin soils over Paleozoic bedrock in the Surficial Geology of Southern Ontario (OGS, 2011). The infiltration factors for the area were calculated as per the Ontario Ministry of the Environment 1995 Hydrogeological Technical Information Requirements for Land Development Applications.

It is based on three sub-factors which are:

- Topography sub-factor;
- Soil sub-factor; and,
- Cover sub-factor.

Table 1 presents infiltration factors based on the details of the ground cover factors for the area under current conditions:

**Table 1: Estimated Infiltration Factors**

Site Characteristic	Infiltration Factor
<u>Topography</u>	
<b>Flat Land</b>	<b>0.3</b>
Rolling Land	0.2
Hilly Land	0.1
<u>Soils</u>	
Tight impervious clay	0.1
<b>Medium combinations of clay and loam</b>	<b>0.2</b>
Open Sandy loam	0.4
<u>Cover</u>	
<b>Cultivated Land</b>	<b>0.1</b>
Woodland	0.2
Sum of Infiltration Factors	<b>0.6</b>

Given an average annual moisture surplus (P-ET) of approximately 411 mm/a, and an infiltration factor of 0.6, we estimate an average infiltration of about 246.8 mm/a. We note that this number is taken from guidelines published by the MECP (Guideline D-5-4) for the purposes of Nitrate loading calculations and the resulting recharge estimate may not reflect real conditions. More current guidelines (Design Guidelines for Sewage Works, 2008) call for the use of a default annual value of 250 mm.

### 3.3 Geology

The Ontario Soil Report No.10 classifies soils in this area as Ameliasburgh Clayey loam. These soils are characterized stony, grey to brown clay loam overlying bedrock. Typically feature fair to good drainage and occur in slightly undulating topography. This soil series is used for a wide variety of crops and dairy farming despite the shallow depth of this unit.

Carson (1981) has described the bedrock as crystalline limestone with shaly partings belonging to the lower member of the Linday Formation Formation. The lower formation is approximately 30 m in thickness and varies in colour from blueish grey to medium grey. The well record for the well on the subject property indicates that bedrock occurs at a depth of 2 meters.

### 3.4 Hydrogeology

A search of the Ministry of Environment, Conservation and Parks (MECP) Well Record Database returned eight (8) wells within a 300 m radius of the site. The record suggests the groundwater table in the area is encountered just above the limestone, with bedrock being encountered from 0.6 to 3.5 m below ground surface. Three records are for well abandonments. Well yield is reported to range from dry to 32 L/min based on the drillers records. The subject lands are located outside any mapped WHPA. A summary of water well records for the site and immediately surrounding lands is shown in Table 2.

**Table 2: Summary of well depths and yields within a 300 m radius of the property**

Well Number	Water Found (m)	Static Level (m)	Yield (L/min)	Overburden Depth (m)	Hole Depth (m)	Water Type	Aquifer	Well Use
5303127	2.1	1.2	13.7	1.5	12.5	Fresh	Bedrock	Domestic
5303128	-	-	-	0.9	23.7	Dry	-	Abandoned
5305907	17.1	10.4	11.4	0.3	22.9	Sulphur	Bedrock	Domestic
A169027	-	-	-	3	6.2	Dry	-	Abandoned
A169028	-	-	-	3.5	6.1	Dry	-	Abandoned
A137600	3	1.8	32	0.7	6.5	Fresh	Bedrock	Domestic
A257774	23.5	0.9	13.7	1.2	32.0	Fresh	Bedrock	Domestic
A285867	-	-	low	0.6	25.0	Dry	Bedrock	Domestic

### 3.5 Water Availability

A 6-hour pumping test was completed on the dug water supply well A334420 on the severed property. A brief description of the test results is provided below along with a conclusion regarding the suitability of the well yield to meet typical household water demands.

The pumping test started at 11:04 am on July 4, 2024, following a lengthy period with little to no precipitation. The static level was recorded at 1.75 m below ground surface prior to commencing the pumping test. Pumping was carried out at a constant rate of 28 L/min over the first 1.5 hours of pumping and the rate was adjusted to 33 L per minute for the remainder of the approximately 6-hour period (362 minutes) and ended at 17:15 on the same day removing a total of 11,506 L of water. The final water level reading before the test was stopped was 2.98 m below ground surface, indicating a maximum drawdown of 1.23 m over the duration of the pumping test.

A 39% recovery of the static water level was recorded in the first 3.2 days of monitoring following the pumping test. An additional 3% recovery occurred over the last approximately 2.5 days of monitoring following the initial recovery. We interpret that the absence of 100% recovery can be attributed to the dewatering of mounded water. The test did not significantly drop the static water level and around 74% of the standing water column remained at the end of the 6-hour pumping test. It should be noted that the well was pumped down twice in the month prior to the pumping test.

The water demand for the assumed 3-bedroom or 4-bedroom home is approximately 1,000 L/day on average according to MECP guideline D-5-4 or 675 L/day based on the most current data for Ontario. According to the MECP Guideline D-5-5, the per person requirement is 450 L/day with peak demand occurring for a period of 120 minutes each day (equivalent to a peak demand of 15 L/min) for a 4-person household which is significantly lower than the pumping rate during the pumping test. There is therefore sufficient water availability to support the proposed severance. Based on the time of year tested and the significant water column we believe the test results are a conservative representation of yield conditions.

### 3.6 Water Quality

A groundwater sample was obtained from the tested well (A334420) during the last hour of the pumping test and was analyzed at Caduceon Laboratories Ltd. in Kingston, Ontario for selected parameters.

Key results of this testing are summarized in Table 3, with the full table of results of the testing being available on the Laboratory Certificate of Analysis in Appendix C.

**Table 3: Summary of Key Water Quality Results**

Parameter	Units	RL	July 4, 2024	September 5, 2024	February 10, 2025	ODWS
<b><u>Bacteriological Parameters</u></b>						
Total Coliform	cfu/100mL	1	<b>30</b>	-	1	0 (5)
E coli	cfu/100mL	1	0	-	0	0
Background	cfu/100mL	1	60	-	>200	N/A
<b><u>Physical/Chemical parameters with Health-related Criteria</u></b>						
Turbidity	NTU	0.1	0.3	-	-	5
Nitrite (N)	mg/L	0.1	0.24	1.02	0.22	1
Nitrate (N)	mg/L	0.1	8.96	23	9.39	10
Fluoride	mg/L	0.1	<0.1	-	-	2.4
<b><u>Physical/Chemical parameters with Aesthetic Criteria/Operational Guidelines</u></b>						
Alkalinity (as CaCO <sub>3</sub> )	mg/L	5	<b>626</b>	-	-	500 <sup>OG</sup>
pH @25°C	pH Units	-	8.12	-	-	6.5 – 8.5 <sup>OG</sup>
Colour	TCU	2	<2	-	-	5 <sup>OG</sup>
Chloride	mg/L	0.5	35.3	<b>277</b>	131	250 <sup>AO</sup>
Sulphate	mg/L	1	136	-	-	500 <sup>AO</sup>
Dissolved Organic Carbon	mg/L	0.2	2.8	-	-	5 <sup>AO</sup>
Sulphide	mg/L	0.01	< 0.01	-	-	0.05 <sup>AO</sup>
Hardness (as CaCO <sub>3</sub> )	mg/L	1	<b>228</b>	-	-	100 <sup>OG</sup>
Iron	mg/L	0.05	0.005	-	-	0.3 <sup>AO</sup>
Manganese	mg/L	0.01	0.004	-	-	0.05 <sup>AO</sup>
Sodium	mg/L	0.2	<b>259</b>	<b>484</b>	<b>223</b>	200 <sup>AO</sup>
TDS	mg/L	3	<b>848</b>	<b>1500</b>	<b>753</b>	500

Total coliform bacteria was found to be at 30 cfu/100 mL and E. Coli counts are 0 cfu/100 mL during the pumping test. On January 27 2025 the test well was shock chlorinated and a second sample was collected after two weeks on February 10 2025. The February 10 2025 bacteriological sample was found to have 1 cfu/100 mL of Total coliform and 0 cfu/100 mL E.coli bacteria. Chlorides were initially low but sodium concentrations were found to be above both the aesthetic Standard of 200 mg/L and

above the 20 mg/L threshold at which notification to Public Health would be required for a regulated system.

Nitrate and nitrite were found to be below the maximum allowable concentration (MAC) listed in the Ontario Drinking Water Standards during the pumping test and the resample event on February 10, 2025, however Nitrate is elevated compared to typical groundwater. Nitrate and Nitrite were found to be above the MAC on the first resampling event on September 5 2024. No other health-related parameters were exceeded. Filtration prior to UV is required to increase the efficiency of UV and lower turbidity to NTU counts below the aesthetic objective. It is interpreted that nitrate, nitrite, sodium, chloride and TDS are elevated due to the blasting process and should become significantly lower over time and with further well development.

### 3.7 Potential for Well Interference

The radius of influence (r, metres) between a pumped well and the neighbouring properties may be estimated using the estimated value for Q (i.e., the average amount pumped per day in litres) and the average recharge (R, mm per year) to the aquifer according to:

$$Q = \frac{R\pi r^2}{365} \quad [1]$$

This calculation yields a zone of influence distance of less than 22 m based on a shallow bedrock well, pumping at a rate of 1,000 L/day over the course of a year.

No observable interference was noted at any of the monitored wells during the 6 hour pumping test (i.e., 1073, 1060, 1055, 1043, 1041, 1038 and 1024 County Road 19).

We note that the fractured bedrock aquifer does not behave in the same way as an ideal porous media. Localized zones of higher permeability soils will be associated with a locally greater radius of influence, while lower permeability zones will have a correspondingly reduced radius of influence. Well interference is not anticipated to cause an adverse effect at the site or the surrounding properties. The drinking water wells on the south side of County Road 19 are all blasted dug wells constructed proximal to the wetland that is present at a southern position on these properties, these wells are interpreted to be strongly connected to the surface water and have a low likelihood of interference from neighbouring wells.

### 3.8 Onsite Sewage Treatment

Existing inground Class 4 septic systems currently service residential building at 1038 County Road 19 and 1050 County Road 19 currently is an undeveloped property. There are no current residential buildings on the proposed severance.

The concentration of nitrate at the property boundary of the proposed severance, in accordance with MECP Guideline D-5-4 for individual onsite sewage systems, is calculated as follows:

$$C_T = \frac{(Q_O \times C_O) + (Q_{bk} \times C_{bk}) + (Q_R \times C_R)}{Q_R + Q_O} \quad [2]$$

Where:

- C<sub>T</sub> = Nitrate concentration at property boundary (mg/L as N)
- Q<sub>O</sub> = Sewage Effluent Volume (L/day)

- $C_O$  = Nitrate concentration of sewage effluent (mg/L as N)  
 $C_{bk}$  = Nitrate concentration in background groundwater (mg/L as N)  
 $Q_R$  = Groundwater recharge or precipitation infiltration (L/day)  
 $C_R$  = Nitrate concentration of groundwater recharge (mg/L as N)

Each of these parameters are discussed as follows:

$Q_O$  – Daily sewage flows will be dependent on the number of persons at each residence. Based on a 4 to 5 person household, the daily flow per lot is 1 m<sup>3</sup>/day (1,000 L/day).

$C_O$  – For conventional sewage systems for residential developments, an effluent nitrate flux of 40 mg/L per building lot is typically assumed for residential developments.

$C_{bk}$  – Background nitrate levels of 8.96 mg/L 23 mg/L and 9.39 were detected from the sample taken during the pumping test, as indicated in the laboratory analysis report included in the appendix. An average of 13.8 mg/L was used for the calculation. It should be noted that this high background nitrate concentration can be attributed to the use of ANFO during well construction. The closest septic system to the test well is approximately 150 m located in a downgradient position in terms of groundwater flow and the field has been used for hay for more than 15 years.

$Q_R$  - A groundwater recharge rate of 250 mm/year and an area of 0.9 ha yields a groundwater recharge of 6,177 L/day.

$C_R$  – Nitrate levels in groundwater recharge are ignored since precipitation does not typically contain detectable levels of nitrate.

$C_T$  - The calculated groundwater nitrate at the property boundary.

These quantities yield a nitrate concentration of less than 10 mg/L in groundwater leaving the property:

$$C_T = \frac{(1,000L \times 40 \text{ mg/L}) + (1,000 \times 13.8 \text{ mg/L}) + (6,177 \times 0 \text{ mg/L})}{6,177 + 1,000} = 7.50 \text{ mg/L}$$

Site conditions are considered suitable for a private septic system in order to service a future residential building at 1050 County Road under the reduced lot size of 0.9 ha.

## 4. Summary

The purpose of the work was to determine soil and groundwater conditions at the site and to demonstrate that the property can accommodate private sewage treatment/disposal systems in accordance with Provincial standards without affecting surrounding private water sources.

Our assessment found the following:

1. The dug well A334420 has sufficient yield to support the existing residence on the retained lands.
2. Well interference is not anticipated to be a concern based on the monitoring of neighbouring wells during the 6-hour pumping test.
3. Water quality results showed acceptable water quality during the 6-hour pumping test, and laboratory analysis showed no health-related exceedances with the exception of Total Coliform Bacteria and Turbidity. Further well development should be carried out to lower elevated aesthetic parameters and turbidity. The well was shock chlorinated on January 27 2025 and resampled on February 10 2025 and was found to meet MECP guideline D-5-5 for Total Coliform and E.coli Bacteria (1 cfu/100ml and 0 cfu/100ml respectfully) . The well is classified as a GUDI well and water treatment must be equivalent to that required for a surface water source.
4. The well A334420 is setback sufficiently from any winter road salting and the shallow bedrock aquifer encountered in the well is not expected to contain naturally elevated sodium. The elevated concentrations of parameters that exceed the aesthetic objectives are attributable to well construction. Reverse Osmosis or similar drinking water treatment placed on drinking water taps can be considered if parameters such as sodium or TDS continue to remain above the aesthetic objective of the Ontario Drinking Water Standards, Objectives and Guidelines.
5. The proposed severed lot is large enough to accommodate the Class 4 septic system to meet projected design flows for a 3-bedroom residential building. Nitrate dilution calculations suggest that the severance is large enough to meet MECP Guideline D-5-4 with respect to nitrate in groundwater leaving the property.

All of which is respectfully submitted.

**THE GREER GALLOWAY GROUP INC.  
CONSULTING ENGINEERS**



David Cooper M.Env.Sc.  
Hydrogeology Specialist



Charles Mitz, M.Eng., Ph.D., P.Geo  
Senior Project Manager

## 5. References

Carson, D.M. 1981. Paleozoic Geology of the Belleville-Wellington Area, Southern Ontario; Ontario Geological Survey Preliminary Map P. 2412, Geological Series, Scale 1:50,000. : Geology 1980.

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MECP (Ministry of Environment Conservation and Parks) 1996: D-5-4 Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment, updated April 14, 2016.

Ontario Geological Survey 2011. Surficial geology of Southern Ontario; Ontario Geological Survey, Miscellaneous Release--Data 128-REV

Stats Canada, 2017 <https://www150.statcan.gc.ca/n1/pub/16-201-x/2017000/sec-2/m-c/m-c-2.5-eng.htm>

Appendix A

# Figures



GREER GALLOWAY  
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**NOTES:**

- 1) Base drawing and information obtained from Ontario.ca -  
Make A Topographic Map

**LEGEND:**

-  Property Location

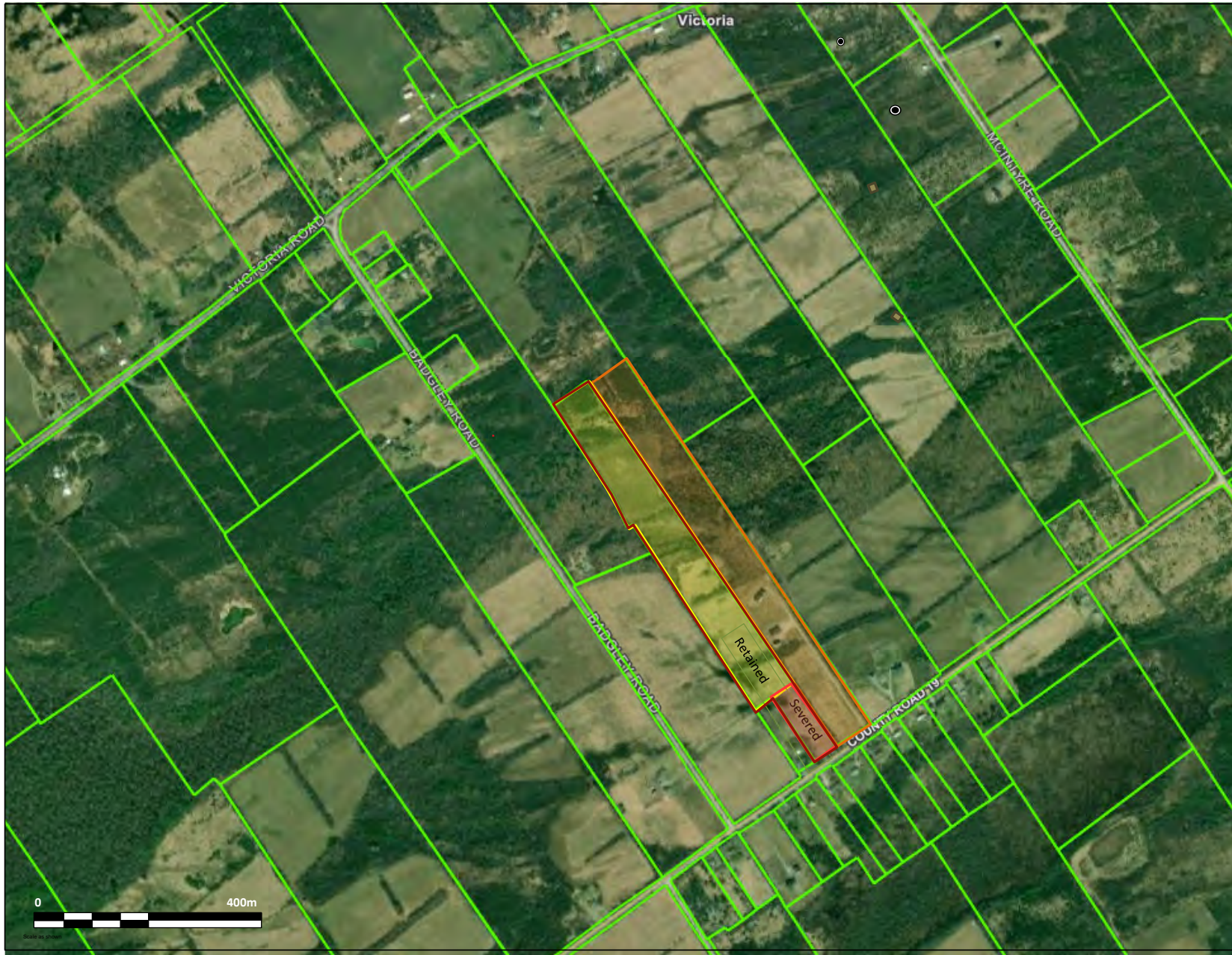


PROJECT 2438615:

HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO

DRAWING 1:

SITE PLAN SHOWING PROPERTY LOCATION



GREER GALLOWAY  
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PHONE: 613-966-3068  
FAX: 613-966-3087

**NOTES:**  
Base drawing and information obtained from the Hastings GIS  
<https://hastings-gis.maps.arcgis.com/apps/webappviewer/index.html?id=4831ccb4e8b04a90a83048982673340>

- LEGEND:**
- Property boundary
  - Severance
  - Adding Lot to Benefiting Lot
  - Benefiting Lot



PROJECT 2438615:  
HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO

DRAWING 2:  
SITE PLAN SHOWING WELL LOCATIONS



**GREER GALLOWAY  
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FAX: 613-966-3087

**NOTES:**

Base drawing and information obtained from the Hastings GIS  
<https://hastings-gis.maps.arcgis.com/apps/webappviewer/index.html?id=4831cc64e80c4a90a83048982673340>

**LEGEND:**

- Property boundary
- Severance
- Adding to Benefiting Lot
- Benefiting Lot
- Monitoring Well
- Test Well
- Well (not monitored)
- Class 4 Septic Bed
- 30m and 15m setback



PROJECT 2438615:

**HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO**

DRAWING 2:

**SITE PLAN SHOWING WELL LOCATIONS**



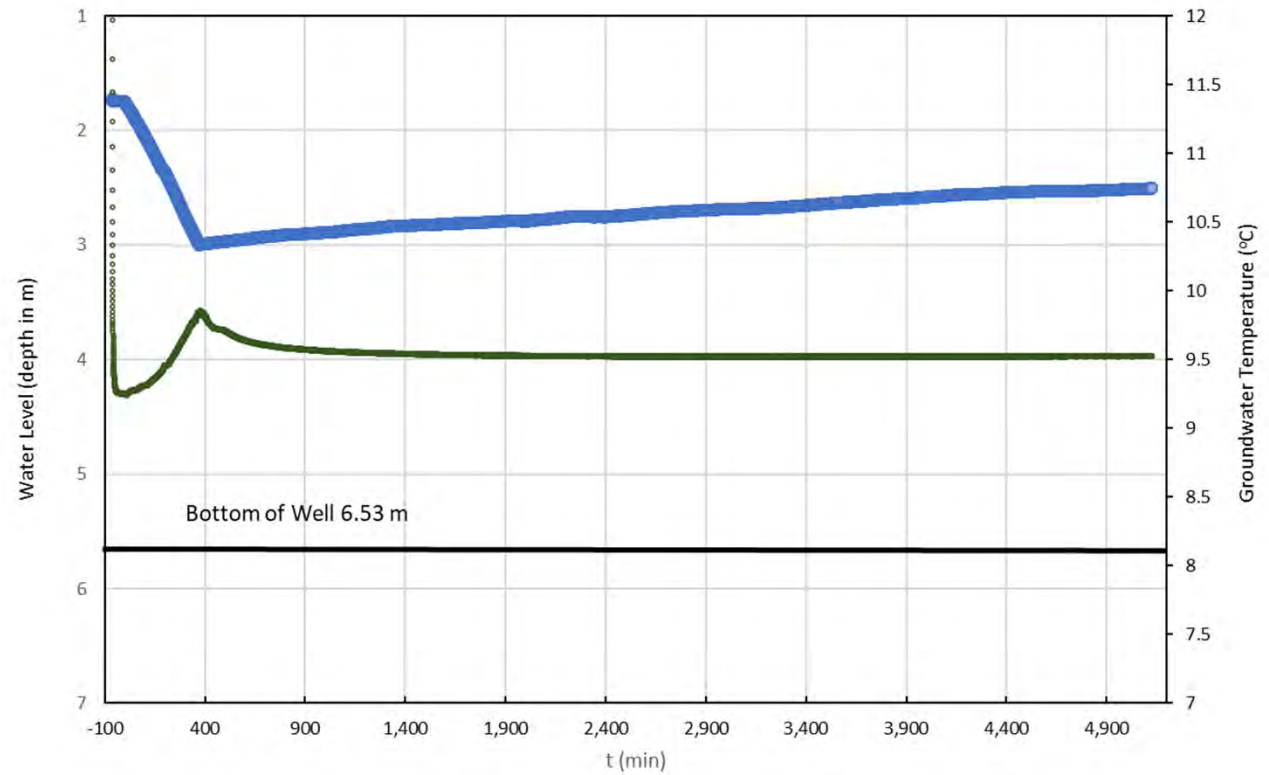
State as shown



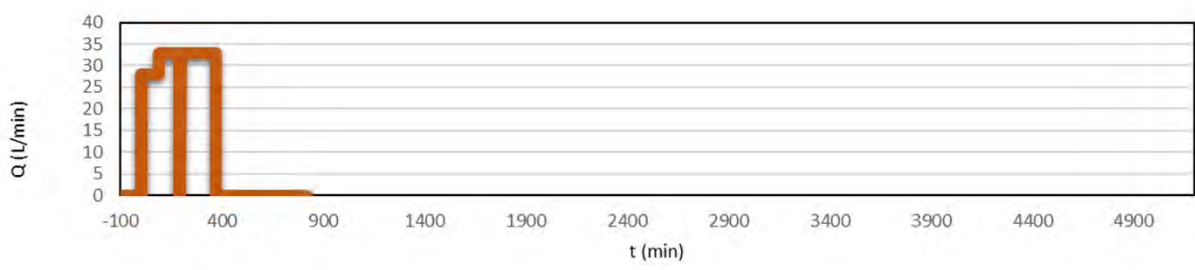
GREER GALLOWAY  
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BELLEVILLE, ONTARIO, K8N 4Z5  
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**NOTES:**

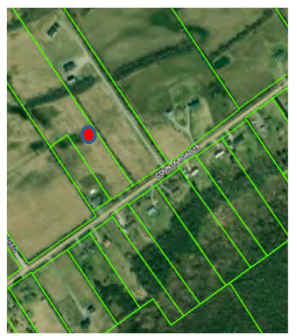
- 1) Quantity testing carried out July 4, 2024
- 2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
- 3) Water level data is not corrected for fluctuations in barometric pressure.



● Water level    • Water temperature



**Key Plan:**



PROJECT 2438615:  
HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO

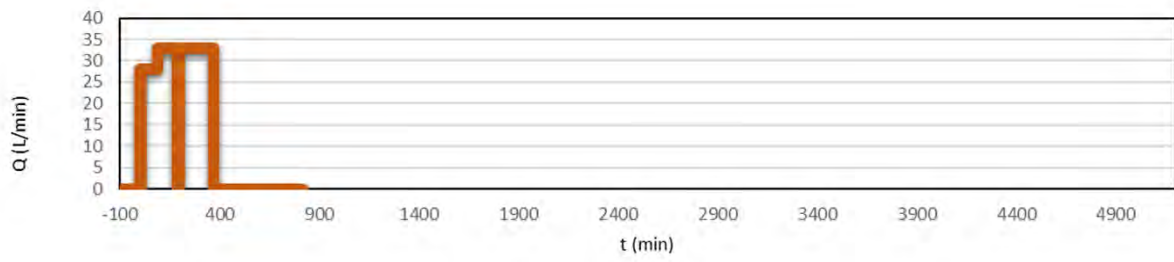
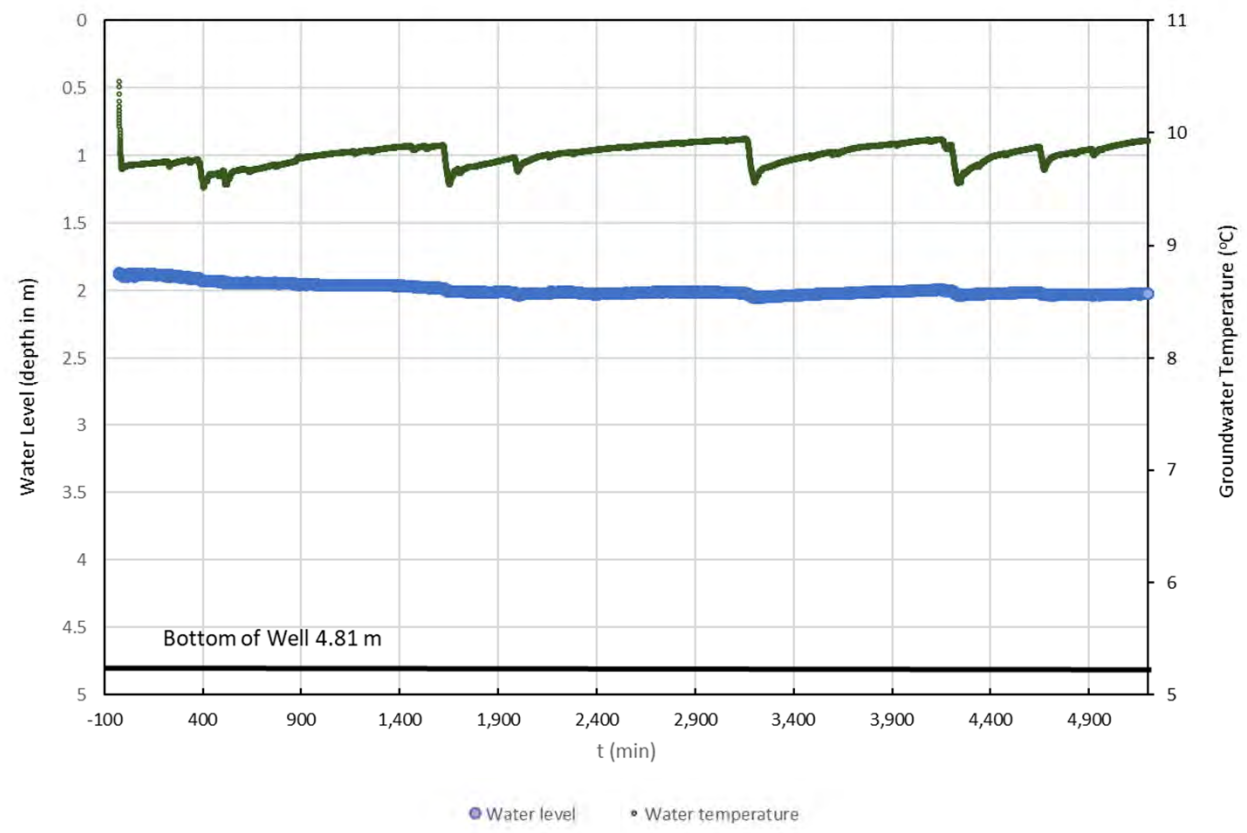
FIGURE 1:  
WELL HYDROGRAPH - A334420  
JULY 4, 2024



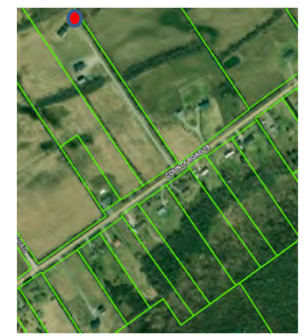
GREER GALLOWAY  
CONSULTING ENGINEERS  
PETERBOROUGH  
BELLEVILLE  
KINGSTON  
1620 WALLBRIDGE LOYALIST ROAD  
BELLEVILLE, ONTARIO, K8N 4Z5  
PHONE: 613-966-3068  
FAX: 613-966-3087

**NOTES:**

- 1) Quantity testing carried out October 26, 2023
- 2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
- 3) Water level data is not corrected for fluctuations in barometric pressure.



**Key Plan:**



PROJECT 2438615:  
HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO

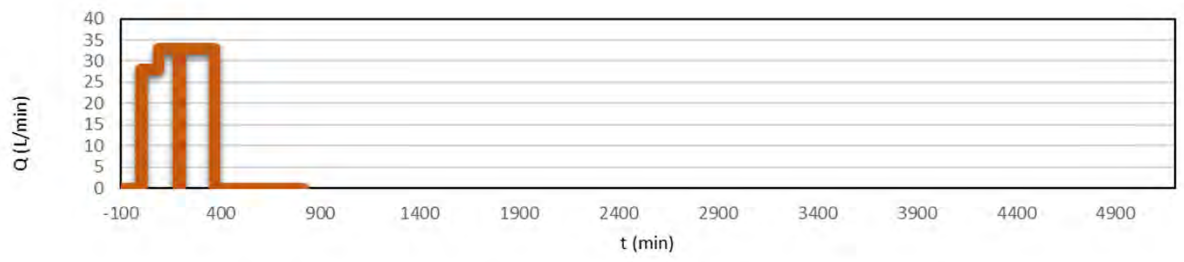
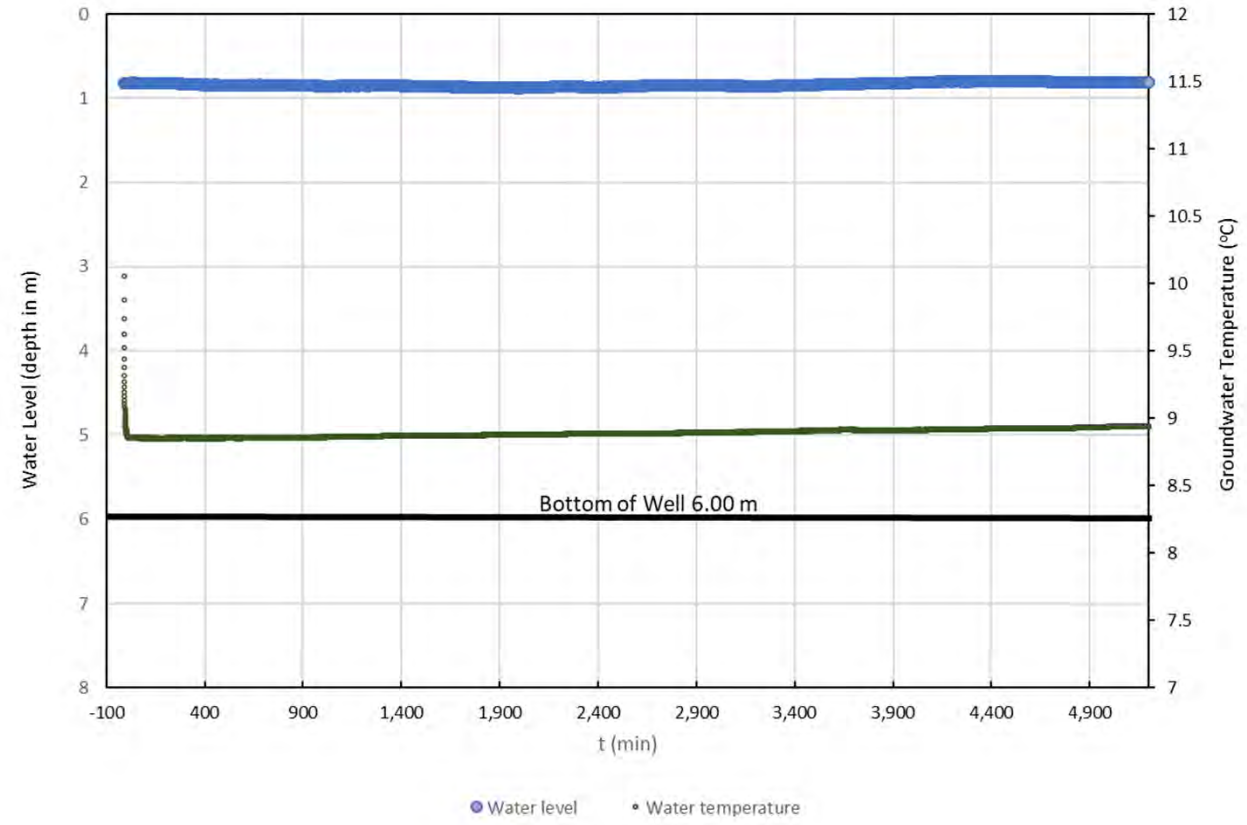
FIGURE 2:  
WELL HYDROGRAPH - A307989 138 COUNTY ROAD  
19



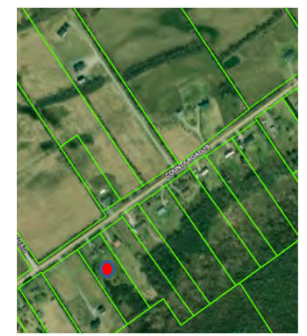
GREER GALLOWAY  
CONSULTING ENGINEERS  
PETERBOROUGH  
BELLEVILLE  
KINGSTON  
1620 WALLBRIDGE LOYALIST ROAD  
BELLEVILLE, ONTARIO, K8N 4Z5  
PHONE: 613-966-3068  
FAX: 613-966-3087

**NOTES:**

- 1) Quantity testing carried out July 4 2024
- 2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
- 3) Water level data is not corrected for fluctuations in barometric pressure.



**Key Plan:**



PROJECT 2438615:  
HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO

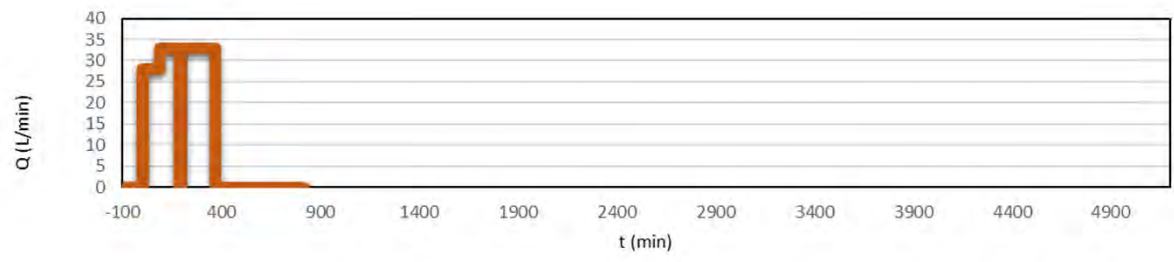
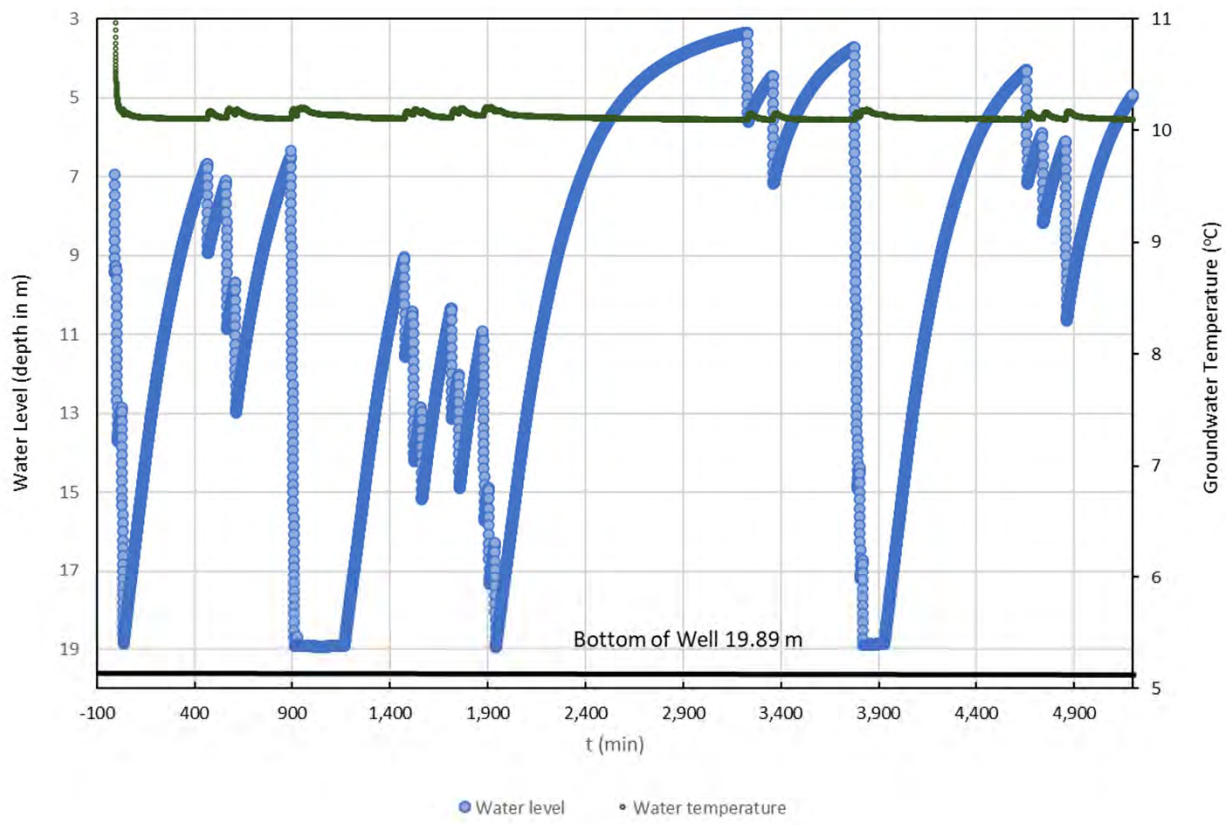
FIGURE 3:  
WELL HYDROGRAPH – MW 1073 COUNTY ROAD 19



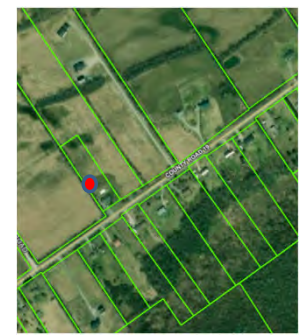
GREER GALLOWAY  
CONSULTING ENGINEERS  
PETERBOROUGH  
BELLEVILLE  
KINGSTON  
1620 WALLBRIDGE LOYALIST ROAD  
BELLEVILLE, ONTARIO, K8N 4Z5  
PHONE: 613-966-3068  
FAX: 613-966-3087

**NOTES:**

- 1) Quantity testing carried out July 4, 2023
- 2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
- 3) Water level data is not corrected for fluctuations in barometric pressure.



**Key Plan:**



PROJECT 2438615:  
**HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO**

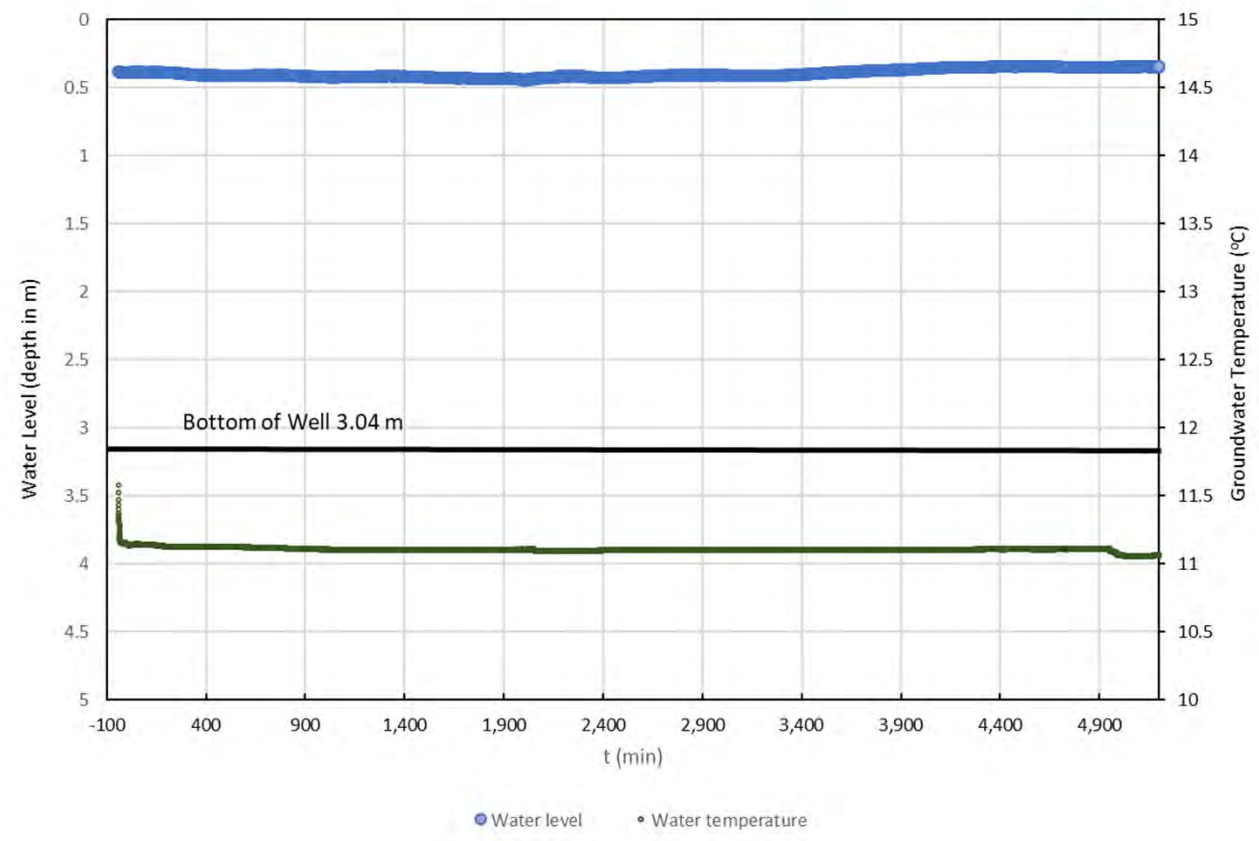
FIGURE 4:  
**WELL HYDROGRAPH – MW 1060 COUNTY ROAD 19**



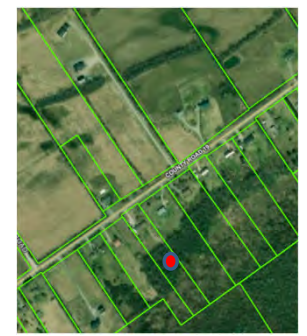
GREER GALLOWAY  
CONSULTING ENGINEERS  
PETERBOROUGH  
BELLEVILLE  
KINGSTON  
1620 WALLBRIDGE LOYALIST ROAD  
BELLEVILLE, ONTARIO, K8N 4Z5  
PHONE: 613-966-3068  
FAX: 613-966-3087

**NOTES:**

- 1) Quantity testing carried out July 4, 2024
- 2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
- 3) Water level data is not corrected for fluctuations in barometric pressure.

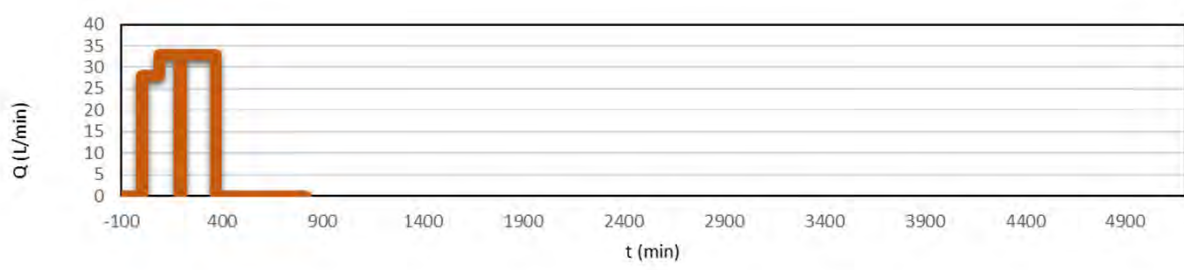


**Key Plan:**



PROJECT 2438615:  
HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO

FIGURE 5:  
WELL HYDROGRAPH - MW 1055 COUNTY ROAD 19

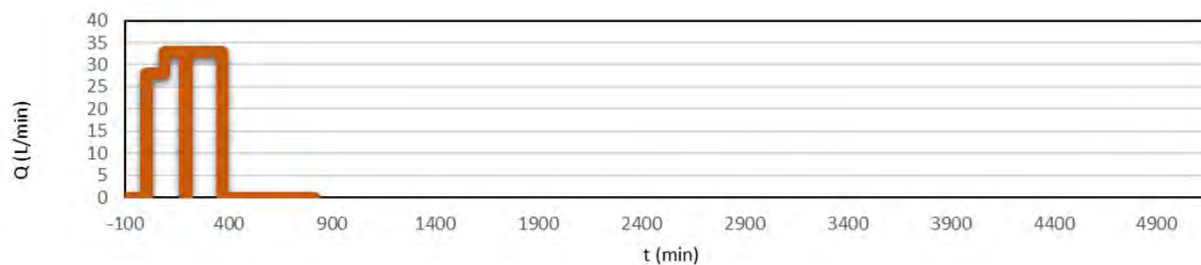
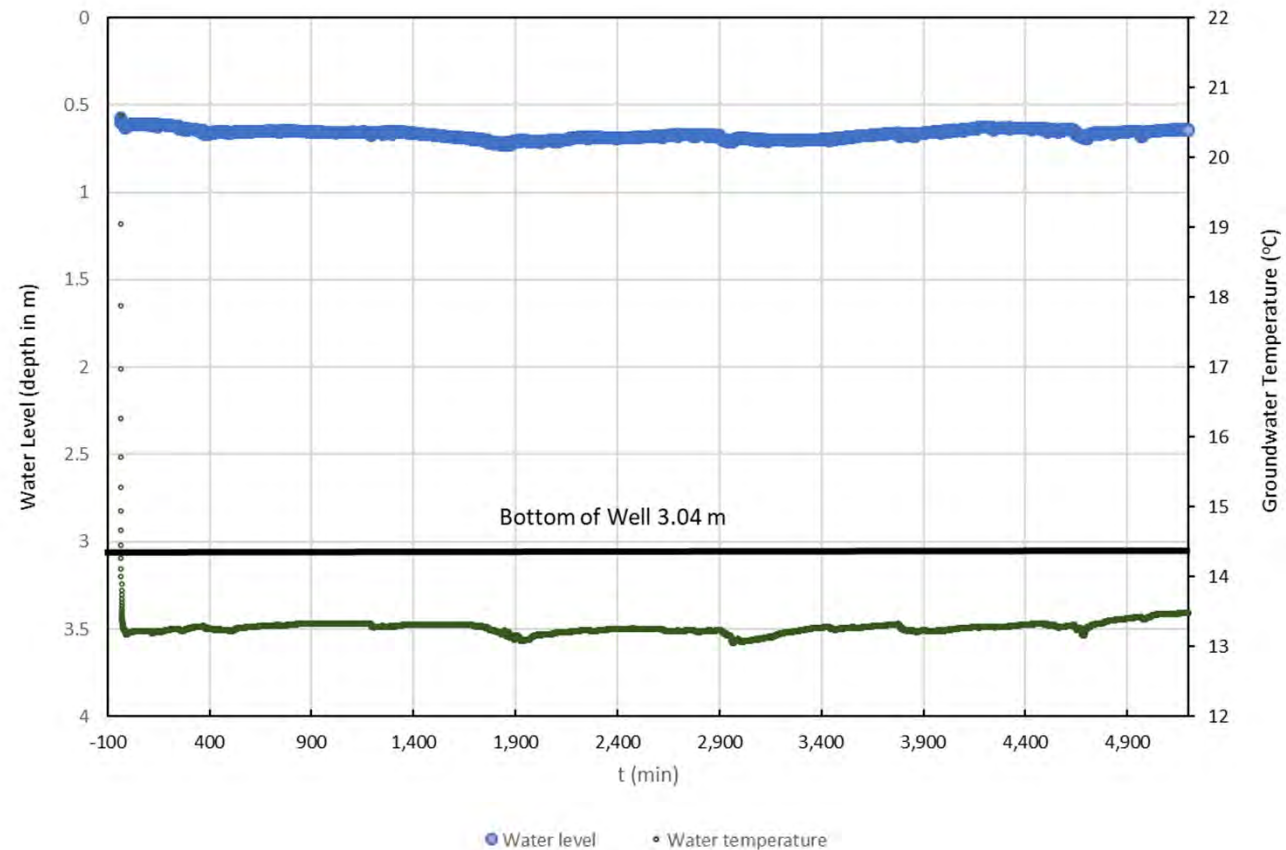




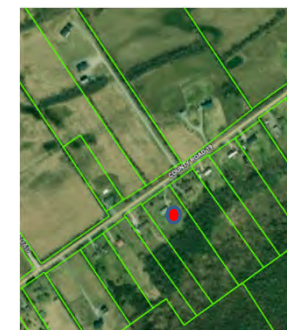
GREER GALLOWAY  
CONSULTING ENGINEERS  
PETERBOROUGH  
BELLEVILLE  
KINGSTON  
1620 WALLBRIDGE LOYALIST ROAD  
BELLEVILLE, ONTARIO, K8N 4Z5  
PHONE: 613-966-3068  
FAX: 613-966-3087

**NOTES:**

- 1) Quantity testing carried out July 4, 2024
- 2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
- 3) Water level data is not corrected for fluctuations in barometric pressure.



**Key Plan:**



PROJECT 2438615:

HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO

FIGURE 7:

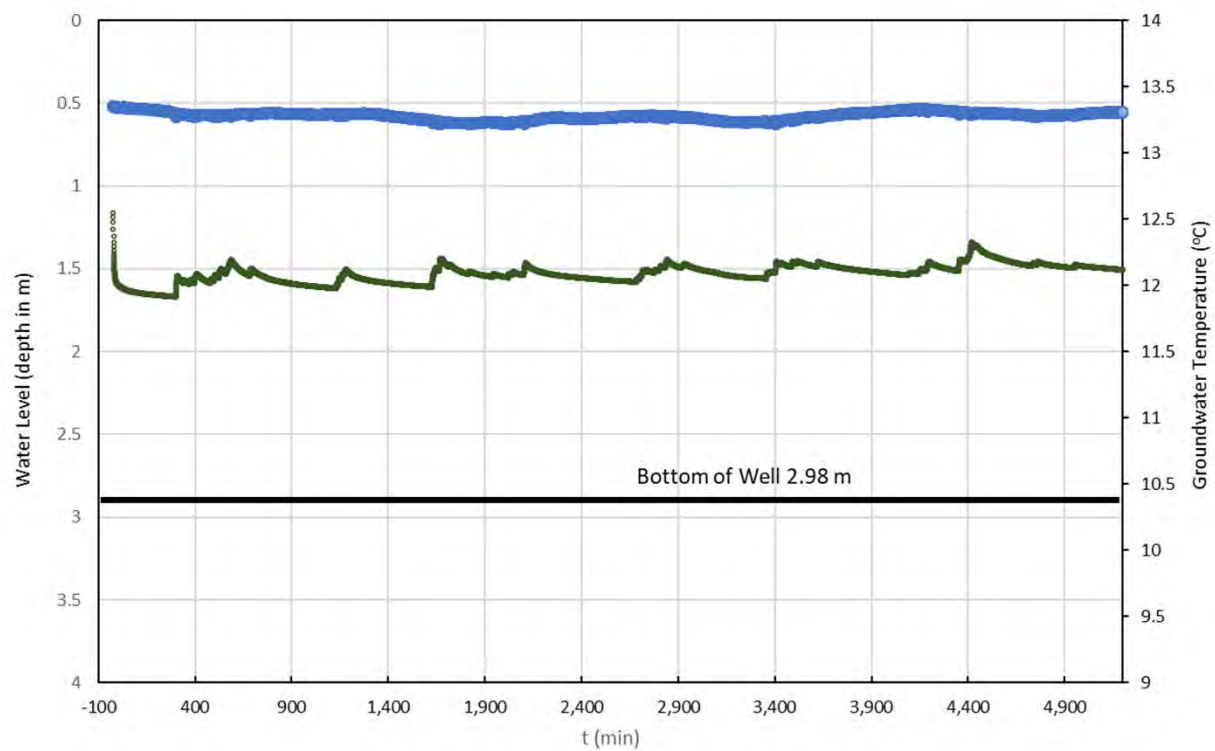
WELL HYDROGRAPH - MW 1043 COUNTY ROAD 19



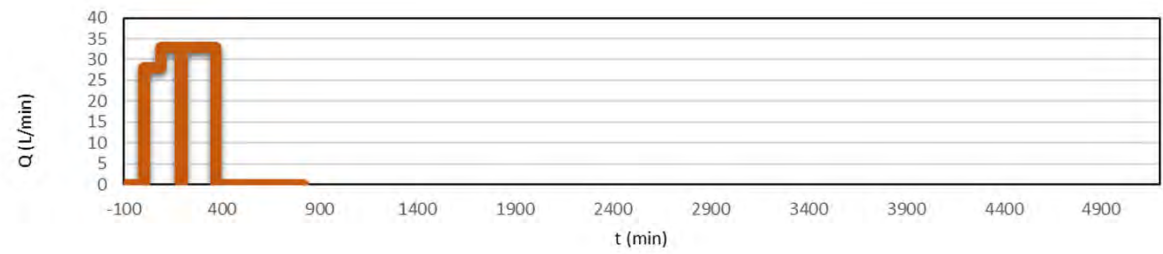
GREER GALLOWAY  
CONSULTING ENGINEERS  
PETERBOROUGH  
BELLEVILLE  
KINGSTON  
1620 WALLBRIDGE LOYALIST ROAD  
BELLEVILLE, ONTARIO, K8N 4Z5  
PHONE: 613-966-3068  
FAX: 613-966-3087

**NOTES:**

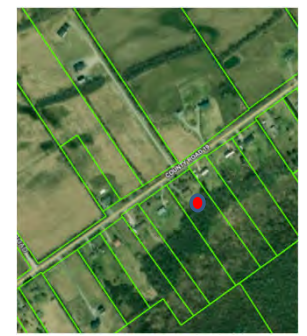
- 1) Quantity testing carried out July 4, 2024
- 2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
- 3) Water level data is not corrected for fluctuations in barometric pressure.



● Water level    ● Water temperature



**Key Plan:**



PROJECT 2438615:  
HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO

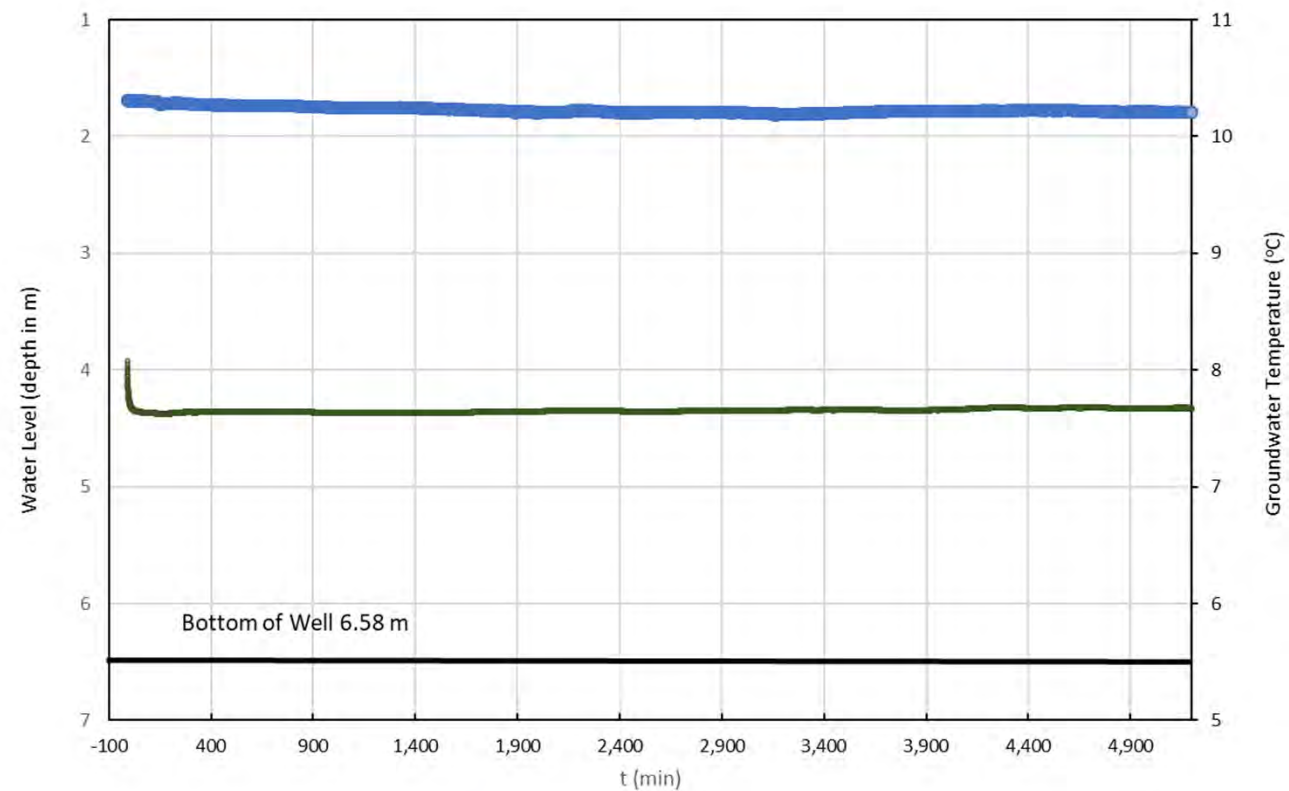
FIGURE 8:  
WELL HYDROGRAPH – MW 1041 COUNTY ROAD 19



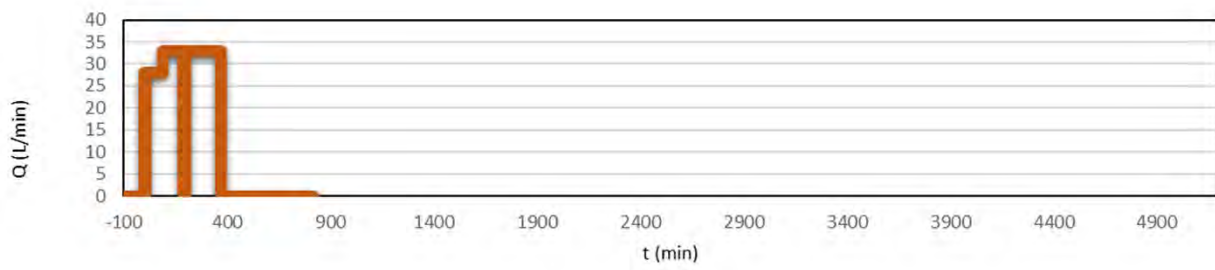
GREER GALLOWAY  
CONSULTING ENGINEERS  
PETERBOROUGH  
BELLEVILLE  
KINGSTON  
1620 WALLBRIDGE LOYALIST ROAD  
BELLEVILLE, ONTARIO, K8N 4Z5  
PHONE: 613-966-3068  
FAX: 613-966-3087

**NOTES:**

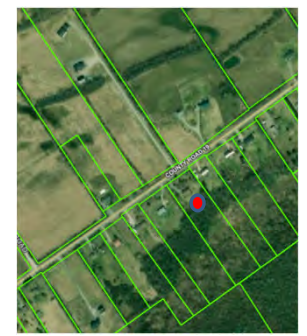
- 1) Quantity testing carried out July 4, 2024
- 2) On-site pressure and temperature data collected using a Solinst Model 3001 datalogger transducer.
- 3) Water level data is not corrected for fluctuations in barometric pressure.



● Water level    ● Water temperature

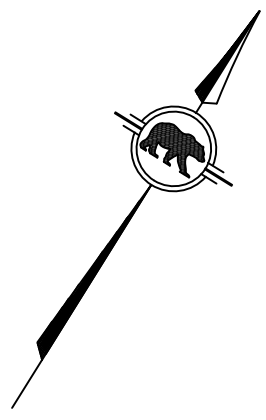


**Key Plan:**



PROJECT 2438615:  
HYDROGEOLOGICAL ASSESSMENT  
SEVERANCE AT 1050 COUNTY ROAD 19 PRINCE  
EDWARD, ONTARIO

FIGURE 9:  
WELL HYDROGRAPH – MW 1024 COUNTY ROAD 19



SEVERANCE SKETCH OF  
1038 COUNTY ROAD 19, CONSECON  
GEOGRAPHIC TOWNSHIP OF AMELIASBURGH  
MUNICIPALITY OF THE  
COUNTY OF PRINCE EDWARD  
MONUMENT-URSO SURVEYING LTD.

SCALE 1 : 1000

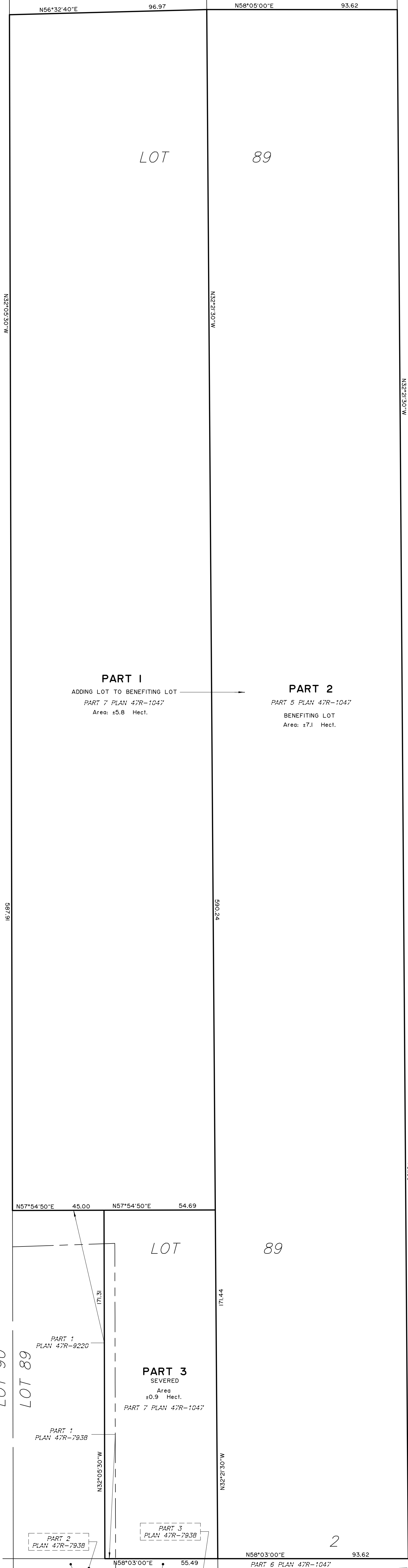


METRIC  
DISTANCES SHOWN ON THIS PLAN ARE IN METRES AND CAN BE  
CONVERTED TO FEET BY DIVIDING BY 0.3048.

December 7th, 2023  
DATE

*CS*  
COEL STOREY  
ONTARIO LAND SURVEYOR

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



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Monument-Urso Surveying Ltd.  
Ontario Land Surveyors | Canada Land Surveyors

1755 WOODWARD DRIVE  
OTTAWA, ONT K2C 0P9

TEL: (613) 800-5571

DRAWN: CS

CHECKED: CS

FIELD: XX

FILE No:

R-7724

Appendix B

# MECP Water Well Records

Measurements recorded in:  Metric  Imperial

A334420

Page 1 of 1

**Well Owner's Information**

First Name: DAN  
 Last Name/Organization: WESTERVELD  
 E-mail Address: danwesterveld@gmail.com  
 Mailing Address (Street Number/Name): 1050 CTY RD #19  
 Municipality: CONSECON  
 Province: ON  
 Postal Code: K0K1T0  
 Telephone No. (inc. area code):  
 Well Constructed by Well Owner

**Well Location**

Address of Well Location (Street Number/Name): 1050 CTY RD #19  
 Township: AMELIASBURGH  
 Lot: 89  
 Concession: 2 - BAYSIDE  
 County/District/Municipality: PRINCE EDWARD COUNTY  
 City/Town/Village: CONSECON  
 Province: Ontario  
 Postal Code: K0K1T0  
 UTM Coordinates: Zone: NAD 83, Easting: 18301940, Northing: 04880994  
 Municipal Plan and Sublot Number:  
 Other:

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BLACK	TOPSOIL			0	0.3
BROWN	LOAM			0.3	2
BLUE	LIMESTONE			2	6.93

**Annular Space**

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
0 to 2.5	Gravel	20

**Method of Construction**

Cable Tool  Diamond  Public  Commercial  Not used  
 Rotary (Conventional)  Jetting  Domestic  Municipal  Dewatering  
 Rotary (Reverse)  Driving  Livestock  Test Hole  Monitoring  
 Boring  Digging  Irrigation  Cooling & Air Conditioning  
 Air percussion  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)		Status of Well
			From	To	
90	CONCRETE	7.6	0	6.93	<input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify <input type="checkbox"/> Other, specify

**Construction Record - Screen**

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

**Water Details**

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

**Well Contractor and Well Technician Information**

Business Name of Well Contractor: FRANK'S DRILLING & BLASTING LTD  
 Well Contractor's Licence No.: U81811  
 Business Address (Street Number/Name): P.O. Box 100  
 Municipality: NEWBURGH  
 Province: ON  
 Postal Code: K0K2S0  
 Business E-mail Address: info@fabhd.com  
 Name of Well Technician (Last Name, First Name): PAUL GREG  
 Well Technician's Licence No.: 21603  
 Signature of Technician and/or Contractor: [Signature]  
 Date Submitted: 2023/12/08

**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): 6.93

Pumping rate (l/min/GPM): 475

Duration of pumping: 60 min

Final water level end of pumping (m/ft): 4.85

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

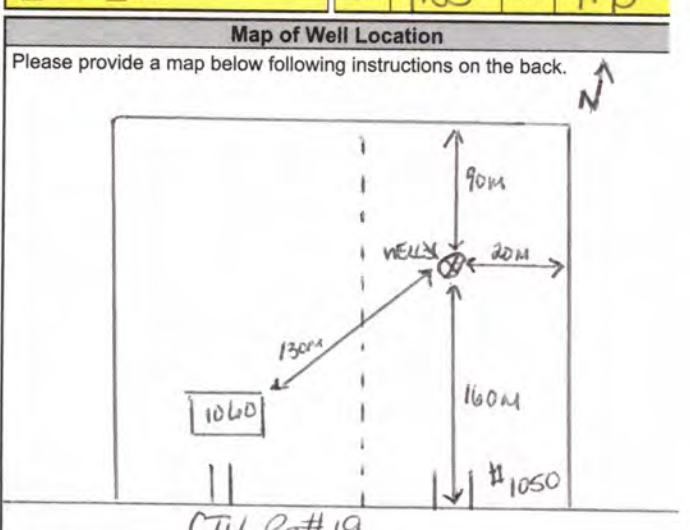
Recommended pump depth (m/ft): 6.93

Recommended pump rate (l/min/GPM): 40

Well production (l/min/GPM): 40

Disinfected?  Yes  No

Time (min)	Draw Down		Recovery	
	Water Level (m/ft)	Time (min)	Water Level (m/ft)	Time (min)
Static Level	2.90		4.85	
1		1		
2				
3				
4				
5		5		
10		10		
15		15		
20		20		
25		25		
30		30		
40		40		
50		50		
60	4.85	60	4.75	



Comments:

Well owner's information package delivered:  Yes  No

Date Package Delivered: 2023/12/08

Date Work Completed: 2023/12/08

**Ministry Use Only**

Audit No.: 2407634

Received:





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

11 5305907 53000 CON 103

COUNTY OR DISTRICT: **Prince Edward** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **Ameliasburgh** CON. BLOCK, TRACT, SURVEY ETC: **III** LOT: **89**  
DATE COMPLETED: DAY **10** MO **07** YR **92**  
R. R. # 1, Consecon, Ontario

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown	Topsoil		Loose	0	1
Brown	Shale Limestone		Broken	1	5
Grey	Limestone		Broken	5	14
Grey	Limestone		Hard	14	75

31 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
10-13	1 <input type="checkbox"/> FRESH 3 <input checked="" type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6 1/4"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	.188	0	22
6"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input checked="" type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		22	75

**SCREEN**

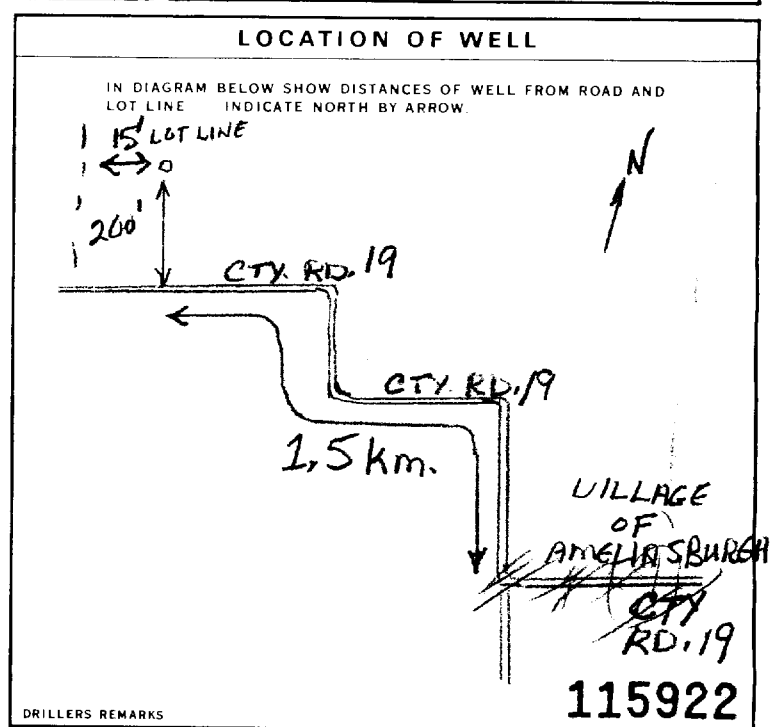
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

**61 PLUGGING & SEALING RECORD**

DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT LEAD PACKER, ETC.)
0 10-13 5 14-17	Cuttings
5 18-21 20 22-25	Cement

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	2 1/2 GPM	1 1/2 HOURS 0 MIN.
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
34 FEET	75 FEET	15 MINUTES: 47 FEET 30 MINUTES: 36 FEET 45 MINUTES: 34 FEET 60 MINUTES: 34 FEET
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	72 FEET	2 1/2 GPM



**FINAL STATUS OF WELL**

1  WATER SUPPLY 5  ABANDONED, INSUFFICIENT SUPPLY  
2  OBSERVATION WELL 6  ABANDONED POOR QUALITY  
3  TEST HOLE 7  UNFINISHED  
4  RECHARGE WELL 8  DEWATERING

**WATER USE**

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

**METHOD OF CONSTRUCTION**

1  CABLE TOOL 6  BORING  
2  ROTARY (CONVENTIONAL) 7  DIAMOND  
3  ROTARY (REVERSE) 8  JETTING  
4  ROTARY (AIR) 9  DRIVING  
5  AIR PERCUSSION 10  DIGGING 11  OTHER

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **CHALK WELL DRILLING LTD.** WELL CONTRACTOR'S LICENCE NUMBER: **1507**  
ADDRESS: **R. R. # 6, Napanee, Ontario**  
NAME OF WELL TECHNICIAN: **R. Ian Chalk** WELL TECHNICIAN'S LICENCE NUMBER: **T-0097**  
SIGNATURE OF TECHNICIAN/CONTRACTOR: **CHALK WELL DRILLING LTD.** SUBMISSION DATE: DAY **10** MO **07** YR **92**

**OFFICE USE ONLY**

DATA SOURCE: **1507** CONTRACTOR: **1507** DATE RECEIVED: **APR 07 1993**  
DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_  
REMARKS: \_\_\_\_\_

Measurements recorded in:  Metric  Imperial

A 169027

Address of Well Location (Street Number/Name) CTY RD 19		Township AMELIASBURG	Lot R 88	Concession 2
County/District/Municipality PRINCE EDWARD		City/Town/Village	Province Ontario	Postal Code K0K 3L0
UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number
NAD	83	18302377	4880969	

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)					
General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BROWN	TOP SOIL	STONES	DENSE	0	3
BROWN	SHALE		POROUS	3	5
GREY	LIMESTONE		HARD	5	62

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
From: 20 To: 0	QUICK GRout	7 FT 3

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

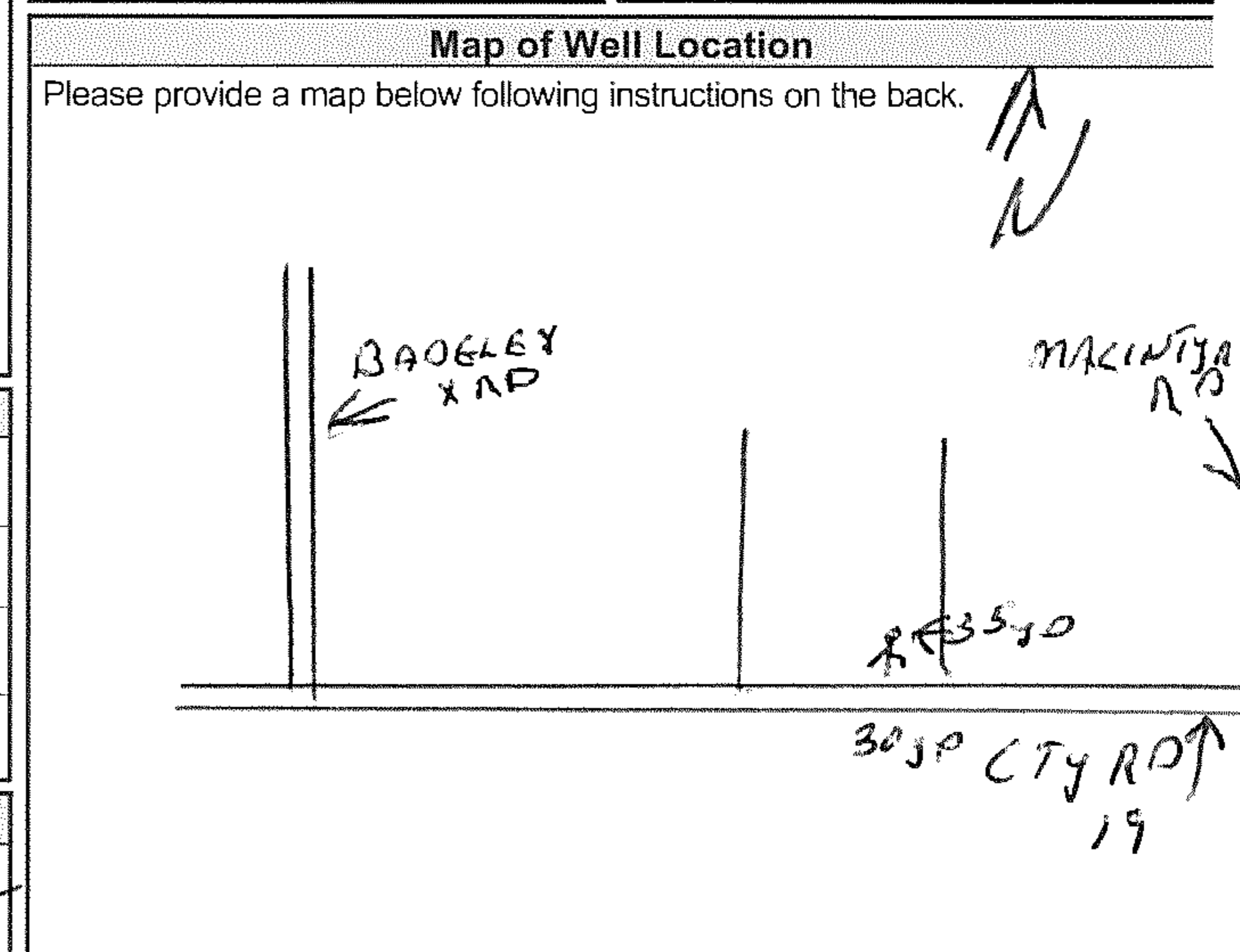
Method of Construction		Well Use		
<input checked="" type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input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

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input checked="" type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify <input type="checkbox"/> Other, specify
			From	To	
6 1/4	STEEL	.188	0	20	

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

Water Details		Hole Diameter		
Water found at Depth (m/ft) <input type="checkbox"/> Gas <input checked="" type="checkbox"/> Other, specify <u>DRY</u>	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft) From	To	Diameter (cm/in)
Water found at Depth (m/ft) <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	0	20	8 5/8
Water found at Depth (m/ft) <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	20	62	6 1/4

Well Contractor and Well Technician Information	
Business Name of Well Contractor PRINCE EDWARDS WELL DRILLERS	Well Contractor's Licence No. 6005
Business Address (Street Number/Name) 2 JOHNSON ST PICTON	Municipality
Province ONT	Postal Code K0K 2T0
Business E-mail Address FAX 613-476 5457	
Bus. Telephone No. (inc. area code) 613 476 5457	Name of Well Technician (Last Name, First Name) MCKEE GLENDON
Well Technician's Licence No. 2826	Signature of Technician and/or Contractor Glendon McKee
	Date Submitted 2015 01 17



Comments:

Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered 2015 10 20	Ministry Use Only Audit No. Z 168101 Received MAR 09 2015
Date Work Completed 2015 01 14		

Measurements recorded in:  Metric  Imperial

A169027

Address of Well Location (Street Number/Name) CITY RD 19		Township AMELIASBURG	Lot PT 88	Concession 2
County/District/Municipality PRINCE EDWARD		City/Town/Village	Province Ontario	Postal Code K0K3L0
UTM Coordinates	Zone Easting NAD 83 18 302 377	Northing 4880969	Municipal Plan and Sublot Number	Other

Overburden and Bedrock Materials (Abandonment Sealing Record) (see instructions on the back of this form)						
General Colour	Most Common Material	Other Materials	General Description		Depth (m/ft)	
					From	To
	CEMENT				60	57
	3/8" HOLE PLUG				57	60
	TOP SOIL				60	62

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
From	To	
	/	

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

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

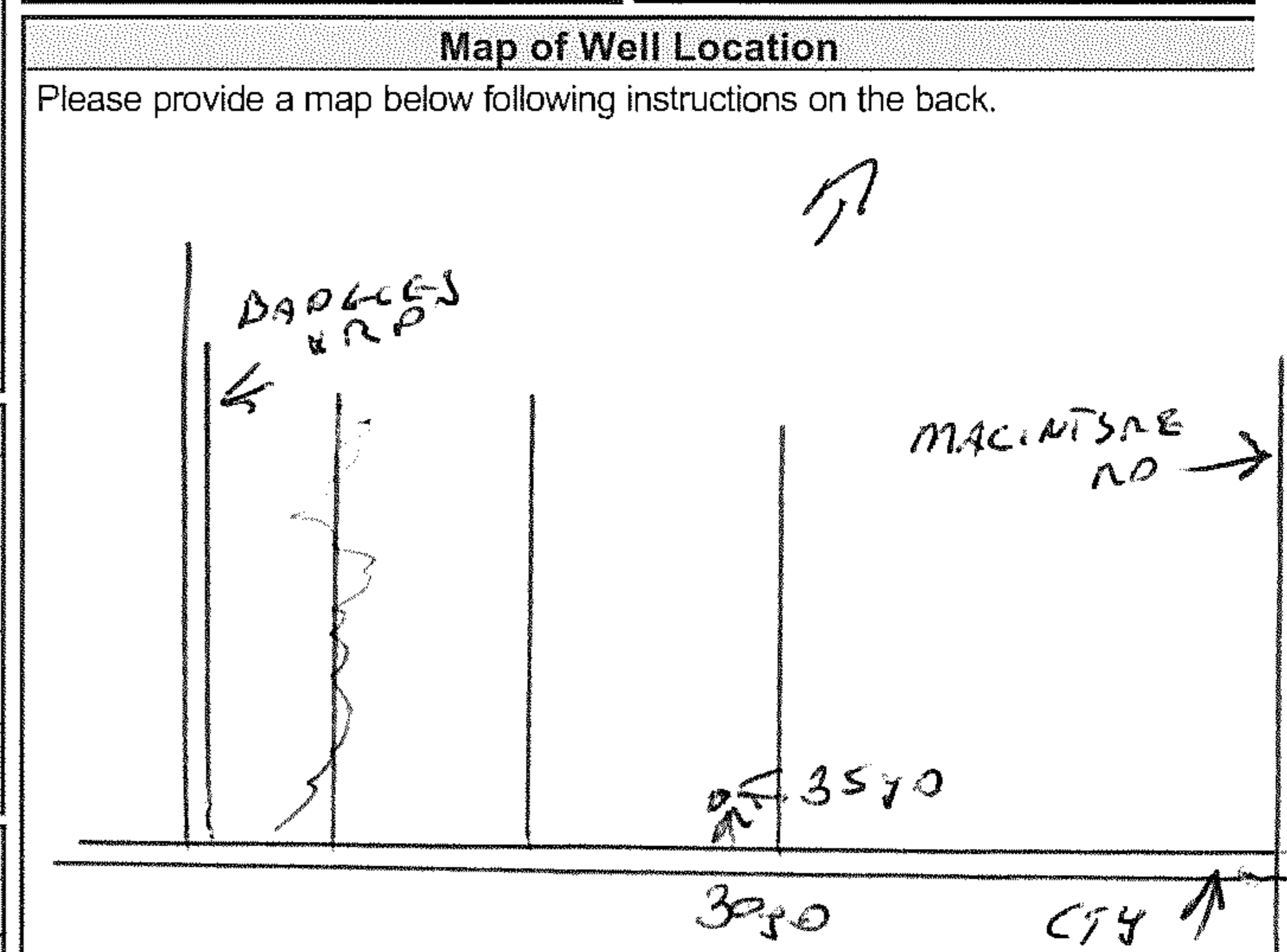
Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input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

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

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

Well Contractor and Well Technician Information	
Business Name of Well Contractor PRINCE EDWARD WELL DRILLERS	Well Contractor's Licence No. 6005
Business Address (Street Number/Name) 22 JOHNSON ST PICTON	Municipality
Province ONT	Postal Code K0K2T0
Business E-mail Address	

Bus. Telephone No. (inc. area code) 613 476 5457	Name of Well Technician (Last Name, First Name) MCKEE GLENDON
Well Technician's Licence No. 2826	Signature of Technician and/or Contractor Glendon McKee
Date Submitted 2015 01 17	



Comments:

Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered 2014 01 14	Ministry Use Only Audit No. Z 168102 Received MAR 09 2015
Date Work Completed 2015 01 14		

169028

Measurements recorded in:  Metric  Imperial

Address of Well Location (Street Number/Name) CITY RD 19		Township AMELIASBURG	Lot R 88	Concession 2
County/District/Municipality PRINCE EDWARD		City/Town/Village	Province Ontario	Postal Code K0K3L0
UTM Coordinates NAD 83	Zone 18	Easting 3023094	Northing 880907	Municipal Plan and Sublot Number

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BROWN	TOP SOIL	STONES	DENSE	0	3.5
BROWN	SHALE		POROUS	3.5	6
GREY	LIMESTONE		LAYERED	6	61

Annular Space		
Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)
0	20	QUICK GROUT
		Volume Placed (m³/ft³) 8 ft³

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

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

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify <input type="checkbox"/> Other, specify
			From	To	
6 1/4	STEEL	.188	0	20	DRY

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

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Depth (m/ft) From	To
	DRY	0	20
		20	61

Well Contractor and Well Technician Information	
Business Name of Well Contractor PRINCE EDWARD WELL DRILLERS	Well Contractor's Licence No. 6005
Business Address (Street Number/Name) 22 JOHNSON ST PICTON	Municipality
Province ONT	Postal Code K0K2T0
Business Phone Number 613-476-5647	Business Email Address FAV
Bus. Telephone No. (inc. area code) 613-476-5457	Name of Well Technician (Last Name, First Name) McKEE GLENDON
Well Technician's Licence No. 2826	Signature of Technician and/or Contractor Glendon McKee
	Date Submitted 20150206

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

Comments:

Well owner's information package delivered		Ministry Use Only	
<input checked="" type="checkbox"/> Yes	Date Package Delivered 20141020	Audit No.	Z193183
<input type="checkbox"/> No	Date Work Completed 20150203	Received	MAR 09 2015

Measurements recorded in:  Metric  Imperial

169028

Address of Well Location (Street Number/Name): **STY RD 19**  
 Township: **AMELIASBURG** Lot: **PT 88** Concession: **2**  
 County/District/Municipality: **PRINCE EDWARD** City/Town/Village: \_\_\_\_\_ Province: **Ontario** Postal Code: **K0K3L0**  
 UTM Coordinates: Zone **18** Easting **302309** Northing **4880907** Municipal Plan and Sublot Number: \_\_\_\_\_ Other: \_\_\_\_\_

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
	<b>CEMENT</b>			<b>61</b>	<b>5</b>
	<b>3/8 HOLE PLUG</b>			<b>5</b>	<b>2.5</b>
	<b>TOP SOIL</b>			<b>2.5</b>	<b>0</b>

**Annular Space**

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
<b>0</b> <b>20</b>	<b>QUICK GROUT</b>	<b>8 FT 3</b>

**Results of Well Yield Testing**

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

**Method of Construction**  Cable Tool  Rotary (Conventional)  Rotary (Reverse)  Boring  Air percussion  Other, specify \_\_\_\_\_

**Well Use**  Diamond  Jetting  Driving  Digging  Public  Domestic  Livestock  Irrigation  Industrial  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)		Status of Well
			From	To	
	<b>CASING PULLED</b>				<input type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify <b>DRY</b> <input type="checkbox"/> Other, specify _____

**Construction Record - Screen**

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

**Water Details**

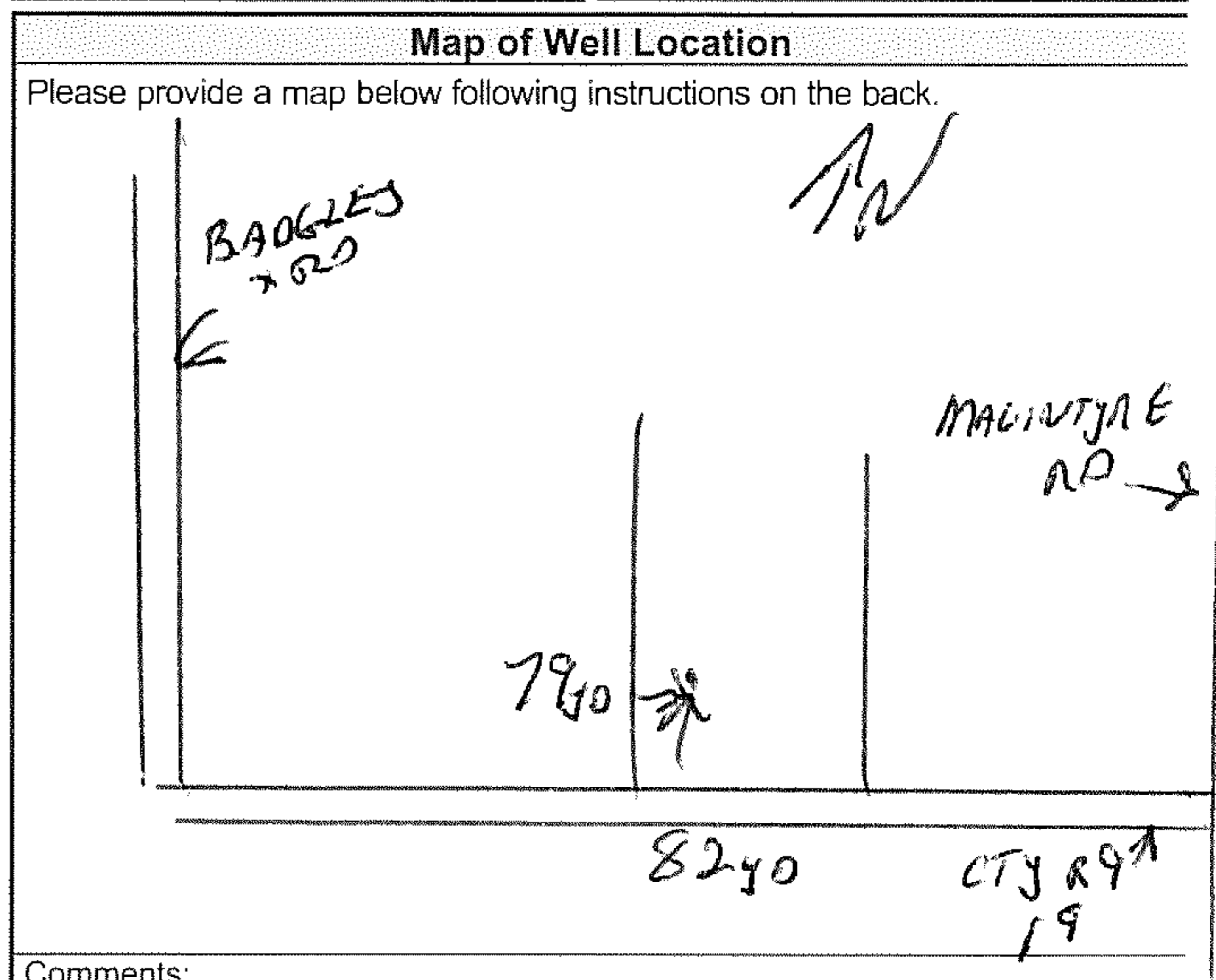
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____
	<b>DRY</b>

**Hole Diameter**

Depth (m/ft)	Diameter (cm/in)	
	From	To
<b>0</b> <b>20</b>	<b>8 5/8</b>	
<b>20</b> <b>61</b>	<b>6 1/2</b>	

**Well Contractor and Well Technician Information**

Business Name of Well Contractor: **PRINCE EDWARD WELL DRILLERS** Well Contractor's Licence No.: **60005**  
 Business Address (Street Number/Name): **2 JOHNSON ST PICTON** Municipality: \_\_\_\_\_  
 Province: **ONT** Postal Code: **K0K2T0** Business E-mail Address: **FAX 613-476-5647**  
 Bus. Telephone No. (inc. area code): **613-476-5457** Name of Well Technician (Last Name, First Name): \_\_\_\_\_  
 Well Technician's Licence No.: **2826** Signature of Technician and/or Contractor: **Alendon McKe** Date Submitted: **2015 02 06**



Comments: \_\_\_\_\_

Well owner's information package delivered:  Yes  No

Date Package Delivered: **2014 10 20**  
 Date Work Completed: **2015 02 03**

**Ministry Use Only**  
 Audit No: **2193185**  
 Received: **MAR 09 2015**

Measurements recorded in:  Metric  Imperial

A 137 600

Address of Well Location (Street Number/Name): **City Rd #19**  
 County/District/Municipality: **Prince Edward County**  
 Township: **Ameliasburgh**  
 City/Town/Village: **Consecon**  
 Lot: **10+88**  
 Concession: **2**  
 Province: **Ontario**  
 Postal Code: **K0K3L0**  
 UTM Coordinates: Zone Easting: **18** Northing: **7023244880913**  
 Municipal Plan and Sublot Number: \_\_\_\_\_

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
Black	Topsoil			0	0.7
Grey	Limestone			0.7	6.5

**Annular Space**

Depth Set at (m/ft)		Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
From	To		
0	2.5	Clay	20

**Results of Well Yield Testing**

After test of well yield, water was: <input checked="" type="checkbox"/> Clear and sand free <input type="checkbox"/> Other, specify _____	Draw Down		Recovery	
	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason: _____	Static Level	1.8		3.0
	1		1	
Pump intake set at (m/ft): <b>6.5</b>	2		2	DUG WELL
Pumping rate (l/min / GPM): <b>585</b>	3		3	
Duration of pumping: hrs + <b>30</b> min	4		4	RECOVERY
Final water level end of pumping (m/ft): <b>3.0</b>	5		5	6 GPM
If flowing give rate (l/min / GPM): _____	10		10	
	15		15	RESERVE
	20		20	8000 GALS
Recommended pump depth (m/ft): _____	25		25	
Recommended pump rate (l/min / GPM): _____	30	3.0	30	
Well production (l/min / GPM): <b>32</b>	40		40	
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	50		50	
	60		60	2.8

**Method of Construction**

Cable Tool  Diamond  Public  Commercial  Not used  
 Rotary (Conventional)  Jetting  Domestic  Municipal  Dewatering  
 Rotary (Reverse)  Driving  Livestock  Test Hole  Monitoring  
 Boring  Digging  Irrigation  Cooling & Air Conditioning  
 Air percussion  Industrial  
 Other, specify \_\_\_\_\_  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)		Status of Well
			From	To	
90	Concrete	3	0	6.5	<input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test Hole <input type="checkbox"/> Recharge Well <input type="checkbox"/> Dewatering Well <input type="checkbox"/> Observation and/or Monitoring Hole <input type="checkbox"/> Alteration (Construction) <input type="checkbox"/> Abandoned, Insufficient Supply <input type="checkbox"/> Abandoned, Poor Water Quality <input type="checkbox"/> Abandoned, other, specify _____ <input type="checkbox"/> Other, specify _____

**Construction Record - Screen**

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

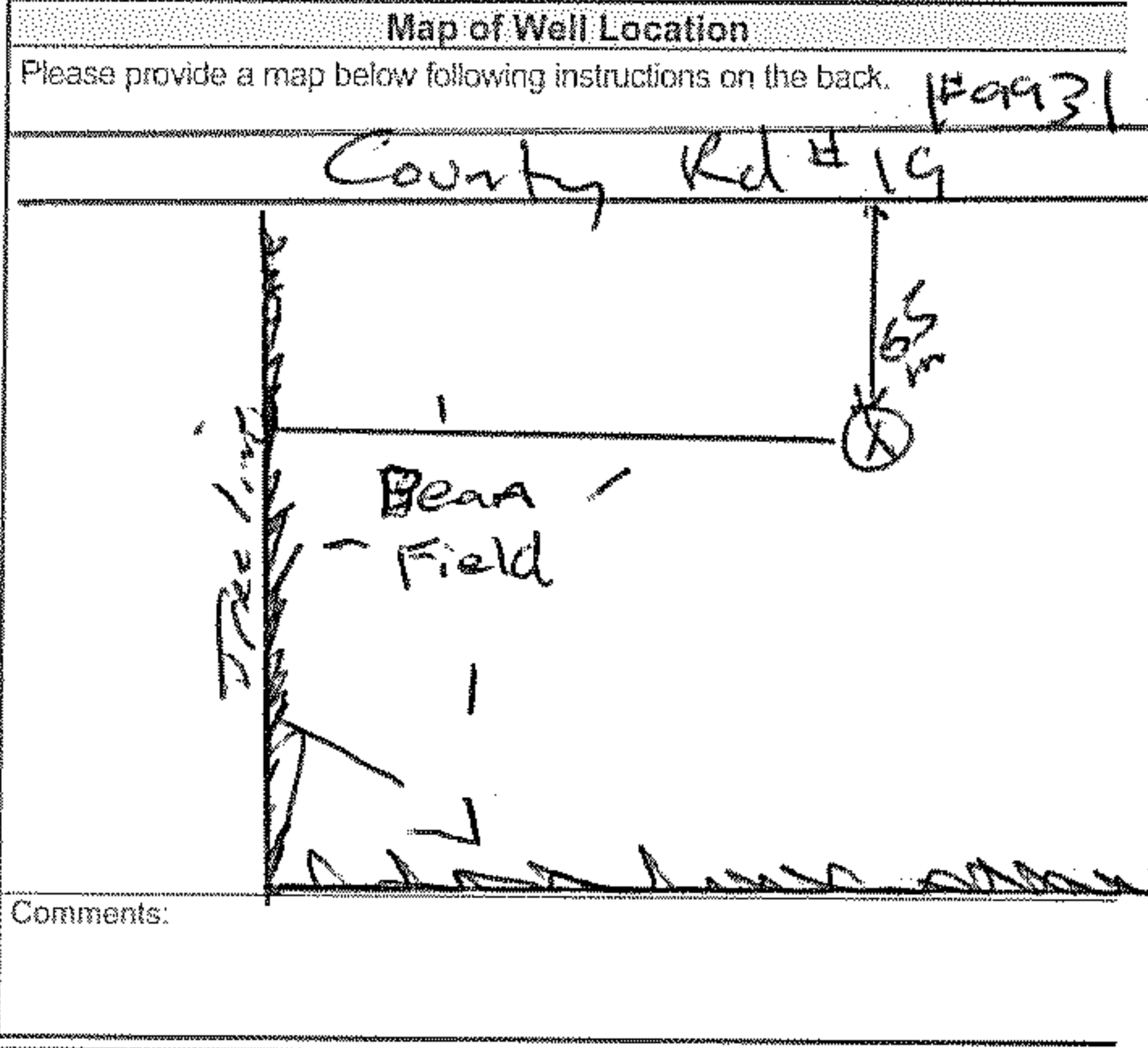
**Water Details**

Water found at Depth (m/ft)	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft) From	To	Diameter (cm/in)
3	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____			
	<input type="checkbox"/> Fresh <input type="checkbox"/> Untested			
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____			
	<input type="checkbox"/> Fresh <input type="checkbox"/> Untested			
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____			

**Well Contractor and Well Technician Information**

Business Name of Well Contractor: **Frank's Drilling & Blasting Ltd.** Well Contractor's Licence No.: **G 8881**  
 Business Address (Street Number/Name): **Box 100** Municipality: **Newburgh**  
 Province: **Ontario** Postal Code: **K0K2S0** Business E-mail Address: **info@fdltd.com**

3us. Telephone No. (inc. area code): **8133782178** Name of Well Technician (Last Name, First Name): **Parr, Greg**  
 Well Technician's Licence No.: **2503** Signature of Technician: \_\_\_\_\_ Date Submitted: **20150603**



Well owner's information package delivered:  Yes  No

Date Package Delivered: **2015/05/13**

Date Work Completed: **2015/05/13**

**Ministry Use Only**  
 Audit No: **2209364**  
**MAR 14 2016**



Measurements recorded in:  Metric  Imperial

A257774

Page of

Address of Well Location (Street Number/Name) 1060 Cty Rd 19 Township Ameliasburg Lot Pt 17 89-90 Concession 2

County/District/Municipality Prince Edward Cty. City/Town/Village Ameliasburg Province Ontario Postal Code

UTM Coordinates Zone Easting Northing NAD 83 18 30 193 648 80 645 57 7,849 47R1047 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	clay			0	4
Grey	limestone			4	105

**Annular Space**

Depth Set at (m/ft) From	Depth Set at (m/ft) To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0	20	20% solid Bentonite grout	

**Results of Well Yield Testing**

After test of well yield, water was:		Draw Down		Recovery	
<input checked="" type="checkbox"/> Clear and sand free	<input type="checkbox"/> Other, specify	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
If pumping discontinued, give reason:		Static Level	3' 1"		
Pump intake set at (m/ft)		1	5' 6"	1	59
Pumping rate (l/min / GPM)		2	8' 1"	2	56
Duration of pumping		3	10' 4"	3	53
Final water level end of pumping (m/ft)		4	12' 1"	4	50
If flowing give rate (l/min / GPM)		5	14' 1"	5	47
Recommended pump depth (m/ft)		10	33	10	33.9'
Recommended pump rate (l/min / GPM)		15	40.2	15	22.2"
Well production (l/min / GPM)		20	48.4	20	13' 9"
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		25	57.1	25	9' 1"
		30	61.1	30	4' 9"
		40	62	40	4'
		50	62.1	50	3' 3"
		60	62.1	60	3' 1"

**Method of Construction**

Cable Tool  Diamond  Public  Commercial  Not used

Rotary (Conventional)  Jetting  Domestic  Municipal  Dewatering

Rotary (Reverse)  Driving  Livestock  Test Hole  Monitoring

Boring  Digging  Irrigation  Cooling & Air Conditioning

Air percussion  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)		Status of Well
			From	To	
6 1/4	Steel	0.188	20	20	<input checked="" type="checkbox"/> Water Supply
					<input type="checkbox"/> Replacement Well
					<input type="checkbox"/> Test Hole
					<input type="checkbox"/> Recharge Well
					<input type="checkbox"/> Dewatering Well
					<input type="checkbox"/> Observation and/or Monitoring Hole
					<input type="checkbox"/> Alteration (Construction)
					<input type="checkbox"/> Abandoned, Insufficient Supply
					<input type="checkbox"/> Abandoned, Poor Water Quality
					<input type="checkbox"/> Abandoned, other, specify
					<input type="checkbox"/> Other, specify

**Construction Record - Screen**

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

**Water Details**

Water found at Depth (m/ft)	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
77	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	0	20	10 1/4
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	20	105	6 1/8

**Well Contractor and Well Technician Information**

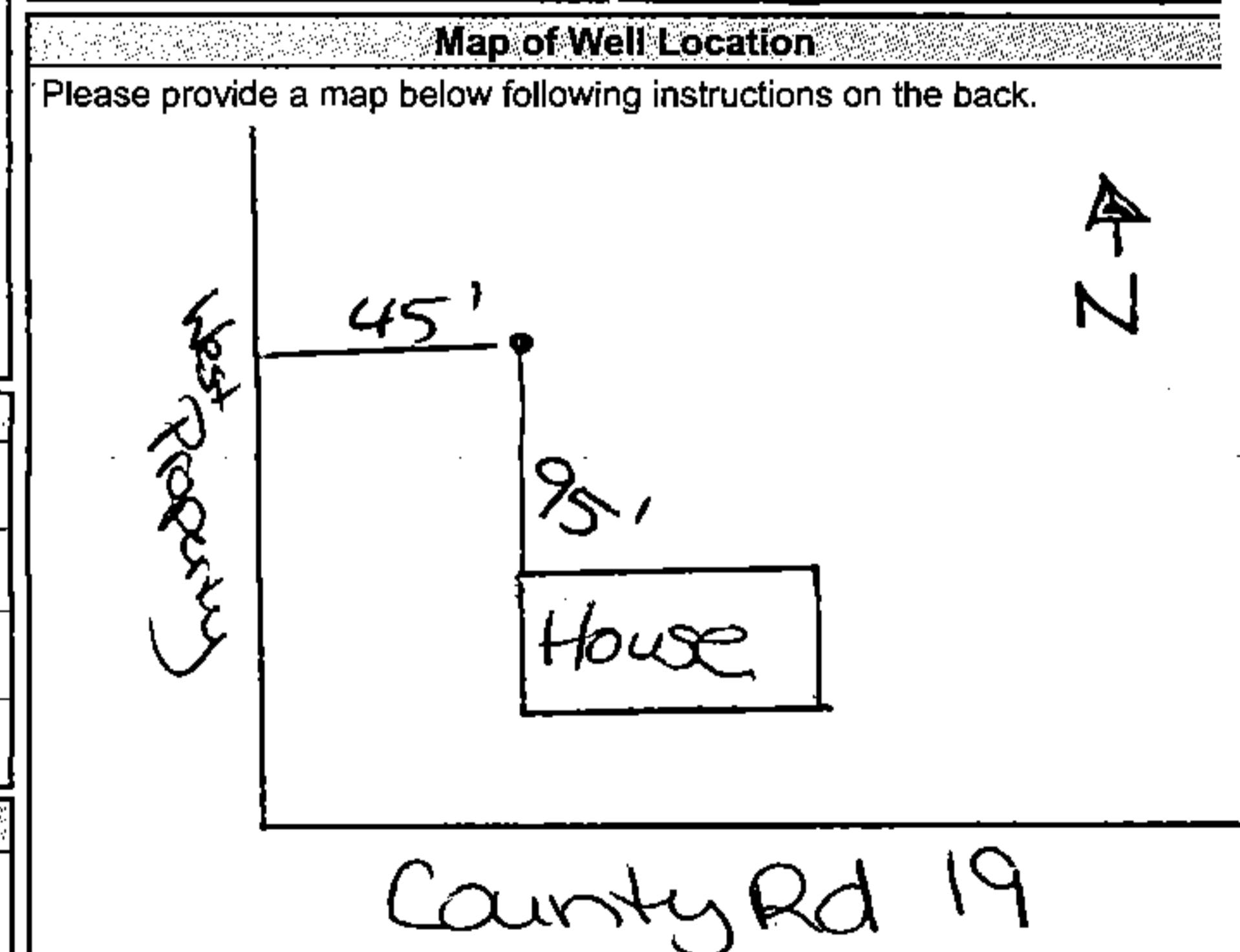
Business Name of Well Contractor: Holmes Hydrofracturing Ltd. Well Contractor's Licence No.: 7453

Business Address (Street Number/Name): 1848 county Rd 9 Municipality: Wapanzee

Province: Ont Postal Code: K7R3K8 Business E-mail Address: sean@holmeshydrofracturing.com

Bus. Telephone No. (inc. area code): 613 539 2991 Name of Well Technician (Last Name, First Name): Holmes, Sean

Well Technician's Licence No.: 35169 Signature of Technician and/or Contractor: [Signature] Date Submitted: 2019/12/01



Comments:

Well owner's information package delivered:  Yes  No

Date Package Delivered: 2019/12/01

Date Work Completed: 2019/11/15

**Ministry Use Only**

Audit No.: Z328015

Received: DEC 12 2019

Units in:  Metric  Imperial

A285867

Page \_\_\_\_\_ of \_\_\_\_\_

Address of Well Location (Street Number/Name) 1083 County Rd 19		Township Censcion	Lot	Concession
County/District/Municipality Prince Edward County		City/Town/Village	Province Ontario	Postal Code K0K1T0
ITM Coordinates Zone	Easting	Northing	Municipal Plan and Sublot Number	
NAD	831830	19794880569	Other	

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)				
General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From To
Brown	Clay			0 2
Grey	Limestone			2 82
Very low yield				

Annular Space		
Depth Set at (m/ft) From To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0 20	20% Solids Bentonite	

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

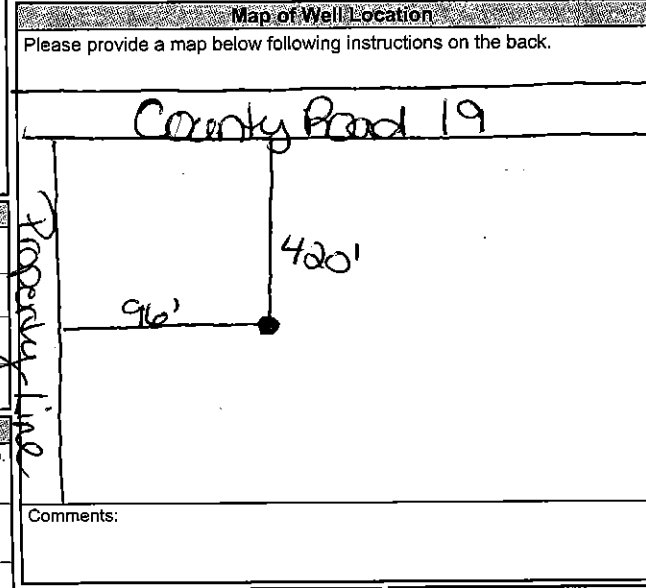
Method of Construction		Well Use		
<input checked="" type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input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

Construction Record - Casing			Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	
			From	To
6 7/8	Steel	.188	+2	20

<input checked="" type="checkbox"/> Water Supply	<input type="checkbox"/> Replacement Well
<input type="checkbox"/> Test Hole	<input type="checkbox"/> Recharge Well
<input type="checkbox"/> Dewatering Well	<input type="checkbox"/> Observation and/or Monitoring Hole
<input type="checkbox"/> Alteration (Construction)	<input type="checkbox"/> Abandoned, Insufficient Supply
<input type="checkbox"/> Abandoned, Poor Water Quality	<input type="checkbox"/> Abandoned, other, specify _____
<input type="checkbox"/> Other, specify _____	

Construction Record - Screen		Water Details		Hole Diameter		
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft)	
					From	To
				<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	0	20
				<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	20	82
				<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____		

Well Contractor and Well Technician Information	
Business Name of Well Contractor Holmes Hydrofracturing Ltd	Well Contractor's Licence No. 71453
Business Address (Street Number/Name) 1848 County Road 9	Municipality Napanee
Province Ont	Postal Code K7R3K8
Business E-mail Address sean@holmeshydrofracturing.com	Name of Well Technician (Last Name, First Name) Holmes, Sean
Bus. Telephone No. (inc. area code) 6135392991	Date Submitted 20210518
Well Technician's Licence No. 3569	Signature of Technician and/or Contractor



Well owner's information package delivered		Date Package Delivered		Ministry Use Only	
<input type="checkbox"/> Yes	<input type="checkbox"/> No	Y Y Y Y	M M D D	Audit No.	2348799
		2021	05/18	Received	MAY 31 2021

Appendix C

# Laboratory Certificates of Analysis

**Table C1: Water Quality Results Test Well  
1050 County Road 19 HydroG**

			Sample ID:	A334420	TW	A334420	
			Date Collected:	4-Jul-24	5-Sep-24	10-Feb-25	
Parameter	Units	M.D.L.	Reference Method				ODWSOG*
Total Coliform	cfu/100m L	1	E012A.EC/WT	30		1	0 <sup>MAC</sup>
E coli	cfu/100m L	1	E012.TC/WT	0		0	0 <sup>MAC</sup>
Background	cfu/100m L	1	E012.TC/WT	60		>200	NA
Alkalinity (CaCO3) total	mg/L	2	E290/WT	626			30-500
TDS	mg/L	3		848	1500	753	500
pH @25°C	pH Units	-	SM 4500H	8.12			6.5-8.5 <sup>OG</sup>
Conductivity @25°C	µS/cm	1	E100/WT	1550			NA
Colour	TCU	2	E330/WT	2			5 <sup>AO</sup>
Turbidity	NTU	0.1	SM 2130B	0.3			5 <sup>AO</sup>
Fluoride	mg/L	0.1	E235.FI/WT	< 0.1			1.5 <sup>MAC</sup>
Chloride	mg/L	0.5	E235.CI/WT	35.3	277	131	250 <sup>AO</sup>
Nitrite (N)	mg/L	0.05	SM 4110B	0.24	1.02	0.22	1 <sup>MAC</sup>
Nitrate (N)	mg/L	0.05	SM 4110B	8.96	23	9.39	10 <sup>MAC</sup>
Sulphate	mg/L	1	E235.SO4	136			500
Phosphorus-Total	mg/L	0.01	MECP E3516.2	< 0.01			NA
Total Kjeldahl Nitrogen	mg/L	0.1	MECP E3516.2	8.9			NA
Ammonia (N)- Total (NH3+ NH4)	mg/L	0.05	SM 4500NH3	8.51			NA
Dissolved Organic Carbon	mg/L	0.2	EPA 415.2	2.8			5 <sup>AO</sup>
Lead	mg/L	0.00002	E420/WT	0.00008			0.01 <sup>MAC</sup>
Hardness (as CaCO3)	mg/L	0.02	EC100A/WT	228			80-100 <sup>OG</sup>
Sulphide	mg/L	0.01	SM 4500-S2	< 0.01			0.05 <sup>AO</sup>
Calcium	mg/L	0.02	E420/WT	44.8			NA
Iron	mg/L	0.005	E420/WT	0.005			0.3 <sup>AO</sup>
Magnesium	mg/L	0.02	E420/WT	28.3			NA
Potassium	mg/L	0.1	E420/WT	20.8			NA
Manganese	mg/L	0.001	E420/WT	0.004			0.05 <sup>AO</sup>
Sodium	mg/L	0.05	E420/WT	259	484	223	20/200 <sup>AO</sup>

\*Ontario Drinking Water Standards, Objectives and Guidelines

\*\*MAC (Health Canada)

**C.O.C.: DW**

**REPORT No: 24-020196 - Rev. 1**

**Report To:**

The Greer Galloway Group  
 1620 Wallbridge-Loyalist Road, RR #5  
 Belleville, ON K8N 4Z5

**CADUCEON Environmental Laboratories**

285 Dalton Ave  
 Kingston, ON K7K 6Z1

**Attention: David Cooper**

DATE RECEIVED: 2024-Jul-05  
 DATE REPORTED: 2024-Jul-24  
 SAMPLE MATRIX: Drinking Water

CUSTOMER PROJECT: 2438615  
 P.O. NUMBER:

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Anions (Liquid)	1	OTTAWA	PCURIEL	2024-Jul-08	A-IC-01	SM 4110B
Colour (Liquid)	1	OTTAWA	STAILLON	2024-Jul-09	A-COL-01	SM 2120C
Cond/pH/Alk Auto (Liquid)	1	OTTAWA	SBOUDREAU	2024-Jul-08	COND-02/PH-02/A LK-02	SM 2510B/4500H/ 2320B
Coliforms - DC Media (Liquid)	1	KINGSTON	BBURTCH	2024-Jul-05	ECTC-001	MECP E3407
DOC/DIC (Liquid)	1	OTTAWA	VKASYAN	2024-Jul-09	C-OC-01	EPA 415.2
Fecal Coliforms (Liquid)	1	KINGSTON	BBURTCH	2024-Jul-05	FC-001	SM 9222D
Ion Balance (Calc)	1	OTTAWA	STAILLON		CP-028	MECP E3196
ICP/MS (Liquid)	1	OTTAWA	TPRICE	2024-Jul-23	D-ICPMS-01	EPA 200.8
ICP/OES (Liquid)	1	OTTAWA	APRUDYVUS	2024-Jul-09	D-ICP-01	SM 3120B
Ammonia (Liquid)	1	KINGSTON	JYEARWOOD	2024-Jul-10	NH3-001	SM 4500NH3
Sulphide (Liquid)	1	KINGSTON	EHINCH	2024-Jul-08	H2S-001	SM 4500-S2
TP & TKN (Liquid)	1	KINGSTON	KDIBBITS	2024-Jul-24	TPTKN-001	MECP E3516.2
Turbidity (Liquid)	1	OTTAWA	PLUSSIER	2024-Jul-08	A-TURB-01	SM 2130B

R.L. = Reporting Limit

NC = Not Calculated

Test methods may be modified from specified reference method unless indicated by an \*



**Michelle Dubien**  
**Data Specialist**

**CADUCEON Environmental Laboratories Certificate of Analysis**

Final Report  
REPORT No: 24-020196 - Rev. 1

Parameter	Units	R.L.	Client I.D.
			A334420
			Sample I.D.
			24-020196-1
			Date Collected
			2024-07-04
Total Coliform (DC Media)	CFU/100mL	1	30
E coli (DC Media)	CFU/100mL	1	0
Background (DC Media)	CFU/100mL	1	60
Fecal Coliform	CFU/100mL	1	0
Alkalinity(CaCO3) to pH4.5	mg/L	5	626
TDS (Calc. from Cond.)	mg/L	3	848
Conductivity @25°C	uS/cm	1	1550
pH @25°C	pH units	-	8.12
Colour	TCU	2	<2
Turbidity	NTU	0.1	0.3
Fluoride	mg/L	0.1	<0.1
Chloride	mg/L	0.5	35.3
Nitrate (N)	mg/L	0.05	8.96
Nitrite (N)	mg/L	0.05	0.24
Sulphate	mg/L	1	136
Phosphorus (Total)	mg/L	0.01	<0.01
Total Kjeldahl Nitrogen	mg/L	0.1	8.9
Ammonia (N)-Total (NH3+NH4)	mg/L	0.05	8.51
Dissolved Organic Carbon	mg/L	0.2	2.8
Sulphide	mg/L	0.01	<0.01
Hardness (as CaCO3)	mg/L	0.02	228



**Michelle Dubien**  
**Data Specialist**

The analytical results reported herein refer to the samples as received and relate only to the items tested. Reproduction of this analytical report in full or in part is prohibited without prior consent from Caduceon Environmental Laboratories.

Parameter	Units	R.L.	Client I.D.
			A334420
			Sample I.D.
			24-020196-1
			Date Collected
			2024-07-04
Parameter	Units	R.L.	
Calcium	mg/L	0.02	44.8
Iron	mg/L	0.005	0.005
Magnesium	mg/L	0.02	28.3
Manganese	mg/L	0.001	0.004
Potassium	mg/L	0.1	20.8
Sodium	mg/L	0.2	259
Lead	mg/L	0.00002	0.00008
Anion Sum	meq/L	-	16.9
Cation Sum	meq/L	-	16.7
% Difference	%	-	0.560
TDS (Ion Sum Calc)	mg/L	1	943
Conductivity Calc	µmho/cm	-	1470

Revised to additional testing



**Michelle Dubien**  
**Data Specialist**

**C.O.C.:** DW

**REPORT No:** 24-027965 - Rev. 0

**Report To:**

The Greer Galloway Group  
1620 Wallbridge-Loyalist Road, RR #5  
Belleville, ON K8N 4Z5

**CADUCEON Environmental Laboratories**

285 Dalton Ave  
Kingston, ON K7K 6Z1

**Attention: David Cooper**

DATE RECEIVED: 2024-Sep-10  
DATE REPORTED: 2024-Sep-13  
SAMPLE MATRIX: Ground Water

CUSTOMER PROJECT: 1050 CR 19  
P.O. NUMBER: PO#2438615

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Anions (Liquid)	1	OTTAWA	PCURIEL	2024-Sep-12	A-IC-01	SM 4110B
Cond/pH/Alk Auto (Liquid)	1	OTTAWA	SBOUDREAU	2024-Sep-12	COND-02/PH-02/A LK-02	SM 2510B/4500H/ 2320B
ICP/OES (Liquid)	1	OTTAWA	NHOGAN	2024-Sep-12	D-ICP-01	SM 3120B

R.L. = Reporting Limit

NC = Not Calculated

Test methods may be modified from specified reference method unless indicated by an \*

Parameter	Units	R.L.	Client I.D.
			TW
			Sample I.D.
			24-027965-1
			Date Collected
			2024-09-05
Parameter	Units	R.L.	
TDS (Calc. from Cond.)	mg/L	3	1500
Chloride	mg/L	0.5	277
Nitrate (N)	mg/L	0.05	23.0
Nitrite (N)	mg/L	0.05	1.02
Sodium	mg/L	0.2	484



**Michelle Dubien**  
Data Specialist

**C.O.C.: DW**

**REPORT No: 25-003851 - Rev. 1**

**Report To:**

The Greer Galloway Group (Division of Jp2g)  
 1620 Wallbridge-Loyalist Road, RR #5  
 Belleville, ON K8N 4Z5

**CADUCEON Environmental Laboratories**

285 Dalton Ave  
 Kingston, ON K7K 6Z1

**Attention: David Cooper**

DATE RECEIVED: 2025-Feb-11  
 DATE REPORTED: 2025-Feb-20  
 SAMPLE MATRIX: Drinking Water

CUSTOMER PROJECT: 1050 CR 19  
 P.O. NUMBER: PO#2438615

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Anions (Liquid)	1	OTTAWA	LMACGREGOR	2025-Feb-12	A-IC-01	SM 4110B
	0	OTTAWA	LMACGREGOR	2025-Feb-12		
Cond/pH/Alk Auto (Liquid)	1	OTTAWA	SBOUDREAU	2025-Feb-18	COND-02/PH-02/A LK-02	SM 2510B/4500H/ 2320B
Coliforms - DC Media (Liquid)	1	KINGSTON	VHAMMOND	2025-Feb-12	ECTC-001	MECP E3407
ICP/OES (Liquid)	1	OTTAWA	AOZKAYMAK	2025-Feb-12	D-ICP-01	SM 3120B

R.L. = Reporting Limit

NC = Not Calculated

Test methods may be modified from specified reference method unless indicated by an \*



**Michelle Dubien**  
**Data Specialist**

Parameter	Units	R.L.	Client I.D.
			A334420
			Sample I.D.
			25-003851-1
			Date Collected
			2025-02-10
			-
Total Coliform (DC Media)	CFU/100mL	1	1
E coli (DC Media)	CFU/100mL	1	0
Background (DC Media)	CFU/100mL	1	>200
TDS (Calc. from Cond.)	mg/L	3	753
Conductivity @25°C	uS/cm	1	1390
Chloride	mg/L	0.5	131
Nitrate (N)	mg/L	0.05	9.39
Nitrite (N)	mg/L	0.05	0.22
Manganese	mg/L	0.001	0.002
Sodium	mg/L	0.2	223

Revised to include additional parameters



**Michelle Dubien**  
**Data Specialist**

Appendix D

# Site Photographs



*Photo 1: Test well A334420 at proposed severance just prior to the pumping test*



*Photo 2: Severed parcel looking south towards county Road 19 from the test well*



*Photo 3: Monitored well A307989 on the retained lands that services a residential dwelling*



*Photo 4: Monitored drilled well A257774 at 1060 County Road 19*



*Photo 5: Monitored dug well at 1024 County Road 19*



*Photo 6: Monitored dug well at 1055 County Road 19*



*Photo 7: Existing residential dwelling at 1038 County Road 19, the water supply well can be seen in the right hand side of the image next to a propane tank*