

Prepared By:



# Hydrogeological Report On-Site Servicing Study

## Glen Allan Subdivision

**GMBP File: 317033-2**

**March 2021**

## TABLE OF CONTENTS

<b>1. INTRODUCTION .....</b>	<b>1</b>
1.1 Purpose and Scope of Work .....	2
<b>2. REGIONAL SETTING AND HYDROGEOLOGY.....</b>	<b>3</b>
2.1 Topography .....	3
2.2 Hydrogeological Setting .....	3
2.3 Nearby Water Wells and Users .....	4
<b>3. FIELD STUDY .....</b>	<b>5</b>
3.1 Methodology .....	5
3.1.1 Overburden Boreholes and Well Installation .....	5
3.1.2 Overburden Groundwater Quality Sampling.....	6
3.1.3 Bedrock Boreholes and Well Installation .....	6
3.1.4 Bedrock Groundwater Pumping Tests.....	7
3.1.5 Bedrock Groundwater Quality Sampling.....	7
3.2 Overburden Observations and Measurements .....	7
3.2.1 Overburden Test Holes.....	7
3.2.2 Overburden – Groundwater Flow Direction .....	8
3.2.3 Overburden – Groundwater Quality .....	8
3.3 Overburden – Hydrogeologic Setting .....	8
3.4 Bedrock Observations and Measurements.....	9
3.4.1 Geologic Setting.....	9
3.4.2 Bedrock Groundwater Flow Direction .....	9
3.4.3 Bedrock Groundwater Quality.....	9
3.4.4 Aquifer Performance Testing .....	10
3.5 Water Supply – Interference with Other Wells .....	11
<b>4. SEWAGE SYSTEM ASSESSMENT .....</b>	<b>12</b>
4.1 Sewage System – Lot Carrying Capacity.....	12
4.2 On-Site Sewage System Feasibility .....	12
<b>5. DOMESTIC WATER SUPPLY ASSESSMENT .....</b>	<b>13</b>
5.1 Groundwater Quantity .....	13
5.2 Groundwater Quality .....	13
5.3 Water Supply Recommendations.....	14
<b>6. WATER RESOURCES IMPACT ASSESSMENT .....</b>	<b>14</b>
6.1 Groundwater Quality – Sewage Systems .....	14
6.2 Water Quality and Quantity – Stormwater Management .....	15
<b>7. CONCLUSIONS AND RECOMMENDATIONS .....</b>	<b>16</b>
<b>8. STATEMENT OF LIMITATIONS.....</b>	<b>17</b>

9. REFERENCES ..... 18

## **FIGURES**

- Figure 1: Site Location
- Figure 2: Site Physiography
- Figure 3: Site Geology
- Figure 4: MECP Well Record Search and Well Location Map
- Figure 5: Borehole and Monitoring Well Location Map
- Figure 6: Well Location Map
- Figure 7: Cross Section Plan
- Figure 8: Hydrogeological Cross-Section A-A'
- Figure 9: Shallow Overburden Groundwater Flow Map

## **TABLES**

- Table 1: Summary of MECP Well Records
- Table 2: Theoretical Well Yields for Nearby Wells
- Table 3; Summary of Water Level Observations
- Table 4: Summary of Overburden Groundwater Quality
- Table 5: Summary of Bedrock Groundwater Quality
- Table 6: Summary of Pumping Test
- Table 7: Summary of Aquifer Supply Characteristics
- Table 8: Estimates of Sustainable Well Yield and Radius of Influence
- Table 9: Estimates of Radius of Influence
- Table 10: Attenuation of Nitrogen from Sewage Output of Proposed Development

## **APPENDICES**

- APPENDIX A: DRAFT PLAN OF SUBDIVISION
- APPENDIX B: MECP WATER WELL RECORDS
- APPENDIX C: SITE PHOTOS
- APPENDIX D: LABORATORY CERTIFICATES OF ANALYSIS
- APPENDIX E: TESTHOLE LOGS AND WELL RECORDS FOR ONSITE WELLS
- APPENDIX F: AQUIFERTEST REPORTS
- APPENDIX G: SOIL GRAIN-SIZE ANALYSES

---

## HYDROGEOLOGICAL REPORT

### GLEN ALLAN SUBDIVISION

MARCH 2021

GMBP FILE: 317033-2

---

## 1. INTRODUCTION

GM BluePlan Engineering Limited (GM BluePlan) was retained by Mr. Murray Martin to perform a hydrogeological study for the property located at the proposed residential subdivision, west of South Mill Street, Glen Allan, in the Township of Mapleton. The subject property is situated just south of Wellington Road 45 in the southerly portion of Glen Allan. The location of the subject Site is present on Figure 1.

The subject Site is comprised of multiple separate lots. The legal description of each respective lot is as follows:

- Lot 70, 71 Donald Sutherland Survey – West of Centre Street and North of Wellesley Street; Township of (Peel) Mapleton, County of Wellington
- Lot 68, 69 Donald Sutherland Survey – West of Centre Street and South of George Street; Township of (Peel) Mapleton, County of Wellington
- Lot 62, 75, 76, 77 Donald Sutherland Survey – West of South Mill Street and North of Wellesley Street; Lot 72, 73, 74 East of Centre Street and North of Wellesley Street; Township of (Peel) Mapleton, County of Wellington
- Lot 63, 64 Donald Sutherland Survey – West of South Mill Street and Lot 65, 66, 67 East of Centre Street and South George Street; Township of (Peel) Mapleton, County of Wellington
- Lot 34, 35, 36 West of South Mill Street and South of Hill Street; Lot 44, 45, 46 East of Centre Street and North of George Street – Donald Sutherland Survey; Township of (Peel) Mapleton, County of Wellington
- Hill Street, Donald Sutherland Survey, et al; Township of (Peel) Mapleton, County of Wellington
- George Street/Centre Street between George Street and Hill Street/Wellesley Street a.k.a. Wellesley Street; Donald Sutherland Survey, Township of (Peel) Mapleton, County of Wellington
- Part Lot 5 Concession 2 as in RON75856 (third); Township of (Peel) Mapleton, County of Wellington
- Part Lot 5 Concession 2; Lots 40, 41, 42, 43 Donald Sutherland Survey; Township of (Peel) Mapleton, County of Wellington

It is understood that the development is anticipated to comprise of single family residential lots that will be serviced by on-site sewage systems and private water supply wells, as well as a storm water management facility and a new road. A draft plan of the development showing a conceptual layout of the property is provided in Appendix A.

The following report presents the findings of the hydrogeological study, which gathers data from review of background information and field investigation, to assess the potential impact that the proposed subdivision may have on the local groundwater and nearby surface water features.

## 1.1 Purpose and Scope of Work

The purpose of this report is to gather information about the Site from existing sources and from field investigation in order to characterize the hydrogeological setting of the Site and to assess the feasibility of the proposed development with respect to the use of on-site sewage systems and private water supply wells.

The objectives of this study are:

1. to provide an assessment of groundwater supply quantity and quality;
2. to determine the feasibility of on-site private well and sewage systems; and
3. to assess the potential for impacts to area water resources due to the proposed development with private services for water supply and sewage.

The scope of work was developed based on Ministry of Environment, Conservation and Parks (MECP) Procedures D-5-4 *Technical Guideline for Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment* (1996) and D-5-5 *Technical Guideline for Private Wells: Water Supply Assessment* (1996). The scope of work was also based on experience with hydrogeological studies conducted to support development applications for other sites in the area.

To gather the necessary information for the required analyses, both desktop (e.g. review of records on file) and field study work was performed. In general, the scope of work included:

- Background study regarding the geological and physiographic setting of the Site;
- Search of MECP records for wells within 500 m of the Site boundaries;
- Completion of overburden boreholes, complete with monitoring wells, for characterization of overburden materials and groundwater;
- Installation and aquifer performance testing (i.e. pumping tests) of water supply test wells on-Site;
- Water quality testing of samples taken from monitoring wells and water supply test wells installed on-Site;
- Estimation of the nitrate attenuation capacity of the proposed development (as per Procedure D-5-4); and
- Assessment for adequate water supply as per Procedure D-5-5.

For the purposes of this report, the information has been divided into Overburden Geology, which deals primarily with sewage disposal (i.e., Procedure D-5-4), and Bedrock Geology, which deals primarily with the domestic water supply assessment (i.e., Procedure D-5-5). While discussed separately, the sewage system assessment, water supply assessment, and impact assessment have been completed with respect to the holistic groundwater system, including consideration to interactions with surface water systems.

## 2. REGIONAL SETTING AND HYDROGEOLOGY

The Site is situated in the vicinity of the geographic community of Glen Allan in the Township of Mapleton (refer to Figure 1). It occupies an area of 4.29 ha (10.59 acres), which consists primarily of undeveloped agricultural fields. The Site is bounded on the east by South Mill Street, on the north by residential properties, and on the south and west by agricultural properties. The Conestogo River lies approximately 250 m northeast of the Site and flows out of the Conestogo Lake reservoir, which lies approximately 1.5 km northwest.

### 2.1 Topography

The Site is situated in a region of smooth undulating topography, with slopes generally trending toward the Conestogo River, which is located approximately 250 m northeast of the Site and forms a bow (i.e. bends) at an approximate distance of 1.8 km from the southeast edge of the Site. The subject property consists of a smooth, moderate slope with ground elevations on the Site ranging from about 407 m above sea level (masl) in the southwest to about 390 masl in the north.

### 2.2 Hydrogeological Setting

The Site is located at the boundary between the Physiographic Regions known as the Stratford Till Plain and the Dundalk Till Plain (Chapman and Putnam 2007) (see Figure 2). The soils in the area primarily consist of silt till that is characterized as part of the Huron Loam Series. In terms of physiographic landforms, the site is located primarily on undrumlined till plains, with the north corner of the site located within the spillway of the Conestogo River. The surficial geology of the Site is characterized by clay to silt-textured till derived from glaciolacustrine deposits or shale (Ontario Geological Survey 2010). Based on the MECP well records within the vicinity of the Site, and onsite testhole and drilling investigations, the overburden soils are described as being clayey silt, silt and clay, and/or silt with some gravel and sand. Refer to Figure 3 for geological mapping roughly showing the distribution of surficial materials across the Site and its surroundings.

The Site is underlain at depth by the Salina Formation. This bedrock formation consists of limestone, shale, dolostone, sandstone, gypsum, and salt. The vertical gradient in the vicinity of the Site is downward, meaning that the Site is in an area of groundwater recharge (GRCA, 2009). This formation is well-known for significant groundwater yield containing high levels of sulphates and minerals due to the presence of gypsum.

Hydrologically, the Site is in the watershed of the Grand River, in which a tributary, the Conestogo River, runs northwest to southeast approximately 250 m northeast of the Site. Annual average precipitation in the area is approximately 822.5 mm of rainfall and 1014.5 mm total precipitation, as recorded by Environment Canada (2015) at the Glen Allan monitoring station, which is 3.2 km northwest of the Site.

In terms of hydrogeology, the Grand River Conservation Authority (2000) indicates that the vertical gradient in the vicinity of the Site is moderately downward, meaning that the site is in an area of groundwater recharge. The regional direction of shallow groundwater flow is inferred to be east-northeast toward the Conestogo River.

Stratigraphic information taken from records of water wells in the vicinity of the Site indicate that the Glen Allan area is dominated by fine-grained soils, commonly described as “Clay” or “Clay with stones.” Some of the well records indicate loam and sand layers around the Site. The well records generally indicate brown to blue “Limestone” or “Shale” as the bedrock, typically occurring at depths between 11.5 m and 75 m below ground surface (mbgs).

### 2.3 Nearby Water Wells and Users

Review of mapping available through the MECP indicates that the Site is within the Grand River Source Protection Area, but not within a Wellhead Protection Area or Intake Protection Zone.

The map interface of the Ontario Water Well Information System was used to list all of the water well records within 500 m of the site. The locations of the wells are presented on Figure 4 and the well records are provided in Appendix B. A summary of the well records, including stratigraphic and usage information, is provided in Table 1 and Table 2. A brief summary of the water well records is given here:

- A total of 67 water well records were identified within the search area
  - 44 of these were installed to bedrock
  - 13 were installed in the overburden
  - 10 were not specified
- The uses of the water wells are broken down as follows:
  - 47 domestic wells
  - 6 domestic/livestock wells
  - 1 livestock well
  - 1 well for public usage
  - 1 well for monitoring or observation purposes
  - 2 wells of unknown or other use
  - 9 abandonment records
- Hydraulic parameters of bedrock wells used for domestic purposes (41 records)
  - Average static water level 15.71 m below ground surface
  - Average well depth is 46.47 m below ground surface
  - Average pumping rate (as recommended on the well record) of 10.98 GPM (41.6 L/min)
  - Average estimated aquifer Transmissivity (based on pumping tests on the well records) of  $2.23 \times 10^{-4}$  (m<sup>2</sup>/s)

Figure 4 shows the locations of the water well records according to the coordinates given by the MECP. It is noted that twelve of the wells in the study area have been identified as overburden wells for domestic use. These wells have an average depth of 29.89 m below ground surface and appear to be drilled within gravel, clay, and/or hardpan. Based on the MECP Procedure D-5-5: Technical Guideline for Private Wells: Water Supply Assessment, the recommended minimum supply rate for individual residential homes is 13.7 L/min. The average pumping rate of all water wells in the study area is 40.79 L/min according to well records. This is well above the minimum recommended value; however, it should be noted that this information is considered approximate and is provided by drillers on the well records.

In summary, based on the information from the MECP well records within 500m of the subject site, it is reasonable to expect that well yield for wells drilled on the subject property will be sufficient for a single family dwelling, or be at a rate that would allow storage to overcome peak demand. It is noted that three locations indicate potential well yields below 5 GPM. Based on natural variability of fractures and other secondary porosity features that typically control groundwater yield to wells, it is also reasonable to expect that the yield will be variable with location and depth. Where relatively low yields are intersected, options to increase supply include water storage, well deepening, or the completion of an additional well.

The groundwater quality is considered to be typical of that from the Salina Formation, with elevated hardness and in some cases sulphates and/or salt. This may require a treatment system based on the homeowner requirements/preferences for general/aesthetic groundwater parameters.

Based on the information provided in the MECP well Records, the amount of interference between wells is considered to be insignificant. To provide more certainty and to support this study, a site-specific investigation with pumping tests has been completed, with the results provided in Section 5 and 6.

### **3. FIELD STUDY**

#### **3.1 Methodology**

The Hydrogeological Study was conducted in general accordance with the MECP D-5-4 *Technical Guideline for Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment* (1996) and D-5-5 *Technical Guideline for Private Wells: Water Supply Assessment* (1996). The purpose of the Hydrogeological Study is to characterize the hydrogeological setting of the Site and to assess the feasibility of the proposed development with respect to the use of on-site sewage systems and private water supply wells.

A Geotechnical Investigation was completed and documented by CMT Engineering Inc. in September of 2018. The Geotechnical report was provided directly to GMBP and was reviewed as part of the Hydrogeology Study.

Background information for the site and surrounding area was assembled. Regional mapping and well records were examined to assess previous land uses, topographical features, surface water flow routes, local soil conditions, geological features and groundwater flow patterns. Copies of applicable maps are presented as Figures.

A site visit and inspection of the property was completed by Mrs. K. Camlis of GMBP, on October 10, 2018. Photographs of the property were taken during the site visit and selected site photos are presented in Appendix C. For the site reconnaissance, free and clear access to the property was available.

A Ministry of the Environment well record search was completed for wells located in a 250 m radius of the subject property. A copy of the applicable Well Records for the site and adjacent properties is presented in Appendix B.

##### **3.1.1 Overburden Boreholes and Well Installation**

The drilling of six (6) overburden boreholes was conducted by CMT Engineering Inc. on August 29 and 30, 2018, after ON1Call locates were organized to ensure that underground utilities would not be damaged. A Geoprobe 7822DT drill rig was used to drill boreholes numbered 1 to 6 at depths ranging from 5.79 m to 10.67 m below ground surface.

Soil sampling was undertaken by CMT utilizing the Standard Penetration Test (SPT) and Macro Core (MC5) systems for Boreholes 1 to 6. SPT was generally conducted at 0.76 m (2.5 ft) intervals to a depth of 3.66 m (12 ft), after which SPT sampling was conducted at 1.5 m (5 ft) intervals to borehole termination. MC5 continuous sampling was conducted between the 1.5 m (5 ft) SPT sampling intervals. Technical staff from CMT observed the drilling operation and collected and logged the recovered soil samples. A small portion of each sample was placed in a sealed, marked jar for moisture content determinations.

As requested by GMBP, representative samples from the following boreholes and depths were submitted to CMT's laboratory for grain size analyses:

- Borehole 1 – depth 0.76 m to 1.87 m (2.5 ft to 4.5 ft)
- Borehole 2 – depth 4.57 m to 5.18 m (15.0 ft to 17.0 ft)
- Borehole 3 – depth 3.20 m to 3.66 m (10.5 ft to 12.0 ft)
- Borehole 4 – depth 9.14 m to 10.67 m (30.0 ft to 35.0 ft)
- Borehole 5 – depth 5.18 m to 6.10 m (17.0 ft to 20.0 ft)
- Borehole 6 – depth 2.29 m to 2.90 m (7.5 ft to 9.5 ft)

Boreholes 2, 3, 4, and 5 with 38 mm diameter (nominal 1.5-inch diameter) monitoring wells comprising a 3.0 m long prepack screen with a sand filter, then rider pipe backfilled with bentonite, a J-plug, and then a locking monument style protective cover. The monitoring wells were installed in accordance with the Ontario Water Resources Act (O. Reg. 903) by well technicians licenced by the MECP, working for a contractor also licenced by the MECP. The boreholes that were not instrumented with monitoring wells were backfilled with bentonite in accordance with O. Reg. 903. The monitoring wells are registered with the MOE in accordance with O. Reg. 903 and must be decommissioned in accordance with O. Reg. 903 when they are no longer required.

A survey of the ground surface elevations at the borehole locations was conducted by GMBP, using a nail in the hydro pole on the west side of South Mill Street as a benchmark. The reported elevation of the benchmark was 400.679 masl. The ground surface elevations at the borehole locations ranged from 396.57 m to 401.025 m. The locations of the boreholes are shown on Figure 5.

### 3.1.2 Overburden Groundwater Quality Sampling

Water quality samples were collected from overburden monitoring wells at Boreholes 2, 3, 4, and 5 by Mrs. K. Camlis and Ms. K. Ash of GMBP on December 5, 2018. Overburden wells were purged (i.e. withdrawal of three times their well volume) before sampling. These samples were submitted to Maxxam Laboratory (now Bureau Veritas Labs Inc.), accredited by the Canadian Association for Laboratory Accreditation (CALA), to be analyzed for the following: routine comprehensive analysis (including major anions, cations, nutrients, hardness, field-filtered metals, and other parameters). Borehole 5 was also analyzed for petroleum hydrocarbons due to its proximity to a diesel fuel tank on the Site. The laboratory certificate of analysis is included in Appendix D.

### 3.1.3 Bedrock Boreholes and Well Installation

For the bedrock well installation and aquifer performance testing, three new water supply wells were installed at the property by Keith Lang Well Drilling Inc. using the conventional rotary drilling method. The wells were spaced in the western, central and northern areas to provide coverage of the property and for future use by the planned lots.. The well locations were also selected in consideration of the numerous existing wells to the north and east of the property, that provide a level of certainty regarding the ability of the aquifer system to provide an adequate water supply for residential use beyond the property limits.

No methane or explosive gases were reported to have been encountered during well drilling.

The wells were drilled to depths of 64 to 74 m (210 to 242 ft) below ground surface and finished as open holes within the dolostone bedrock. The wells were completed with a nominal "6-inch" (0.15 m) steel casing from approximately 0.5 m above the ground surface. At the wells, the bedrock surface is reported to be situated at an elevation between 332 MASL and 340 MASL, or approximately 60 to 72 meters deep.

Water well records were submitted for each of the wells. Appendix E contains a copy of these well records, which includes more detailed information about the well construction and the geologic materials encountered during drilling.

### 3.1.4 Bedrock Groundwater Pumping Tests

Pumping tests were completed on select wells in September 2020. Pumping tests were completed after development of the wells by the licensed well contractor via pumping and purging. The pumping tests were completed by the licensed well contractor with monitoring and water quality sampling completed by GMBP personnel. During the pumping tests, the discharge line was placed approximately 9 m (30 feet) or greater from the well in a downslope position and the discharge monitored to ensure it was flowing away from the well (i.e., so that the discharge could not potentially influence the well).

This aquifer performance testing involved performing a pumping test with a constant-discharge of approximately 40 to 100 L/min for approximately 6 hours. A combination of logging pressure transducers (Solinst Levellogger instruments) and manual measurements were used to measure the water levels at the wells where the pumping tests were being performed, and at select wells in the vicinity of the pumping tests. The level loggers were typically set to collect data on intervals from 0.5 to 5 second intervals in the pumping wells (depending on the expected results), and from 1 to 5 minute intervals in the monitoring wells. In each case, the neighbouring bedrock supply wells on the subject property were monitored during each pumping test

Following each pumping test, the recovery of the water level was logged until a static or near-static (i.e. 95%) water level was reached.

### 3.1.5 Bedrock Groundwater Quality Sampling

Groundwater quality was measured at each of the pumped bedrock wells. A total of two samples were collected from each well. Samples were collected approximately half an hour after the start of pumping, and half an hour prior to the end of pumping.

Samples were collected using industry accepted methodology. Groundwater samples were collected for Rapid Chemical Analysis Package (RCAP) procedure to determine the comprehensive groundwater quality in each well. Wells were also sampled for microbiological parameters E.coli and total coliforms. Residual chlorine testing was completed in the field using a Hach Chlorine Pocket Colorimeter test kit.

Samples were submitted to Bureau Veritas Labs Inc. within the specified hold times in coolers and under standard chain of custody protocols. Bureau Veritas Labs is accredited by the Canadian Association for Laboratory Accreditation (CALA) and by the Standards Council of Canada for the analyses requested. The laboratory Certificates of Analysis are provided in Appendix D and the results are summarized in Table 5.

## 3.2 Overburden Observations and Measurements

### 3.2.1 Overburden Test Holes

The soils observed in the overburden test holes were consistent with the geologic mapping of the Site geology and MECP well records. Immediately below the topsoil layer, which was observed to be 100 mm to 400 mm thick, the soil was predominantly clayey silt with some sand and trace gravel. The clayey silt was considered to be soft to hard, with soft to firm clayey silt typically encountered directly underlying the topsoil.

Silt and Clay/clay and silt with trace to some sand and trace gravel was encountered underlying the clayey silt in all boreholes, as well as underlying the silt in Borehole 3. Occasional wet sand seams were observed within the silt and clay/clay and silt deposit in Boreholes 2 and 3.

Grey silt with some sand and clay was encountered underlying the silt and clay/clay and silt in Boreholes 3, 4, and 5. Occasional wet sand seams were observed within the silt deposit in Borehole 3. The testhole logs are provided in Appendix E.

### 3.2.2 Overburden – Groundwater Flow Direction

Table 3 contains the water level readings and groundwater elevations for the overburden wells. These readings were processed to construct a map of the potentiometric surface of the shallow overburden groundwater across the site, provided in Figure 9. In general, the shallow groundwater flow is inferred to follow the ground topography east-northeast towards the Conestogo River.

### 3.2.3 Overburden – Groundwater Quality

A summary of the analytical results of the groundwater samples taken from the overburden are summarized in Table 4. The groundwater in the overburden can be characterized as moderately mineralized, with little evidence of influence from anthropogenic sources. The analytical results in Table 4 are compared against the Ontario Drinking Water Standards (2002) Maximum Allowable Concentration (MAC) limits and Aesthetic Objective (A/O) limits. It should be noted that the Ontario Drinking Water Standards are established for *treated* drinking water. It is expected that the shallow groundwater would be influenced by surface water sources.

The results are considered to be reflective of shallow overburden groundwater, which can be influenced by surface sources. Hardness is reported to be between 360 and 470 mg/L (as CaCO<sub>3</sub>). The Ontario Drinking Water Standards (2002) considers water supplies with a hardness of greater than 200 mg/L but less than 500 mg/L as poor but tolerable. Little evidence of anthropogenic influence is present. Nitrate plus nitrite concentrations ranged from below the Reportable Detection Limit (RDL) of 0.10 mg/L to 0.26 mg/L, much lower than the MAC limit of 10 mg/L for nitrate. Chloride concentrations varied from 4.9 mg/L to 17 mg/L, well below the A/O of 250 mg/L. Sodium concentrations were reported to be between 11 and 36 mg/L, with an average of 19.5 mg/L. Sodium and chloride are commonly distributed in nature as sodium chloride (NaCl).

Borehole 5 was analyzed for petroleum hydrocarbons due to its proximity to a diesel fuel tank. All reported concentrations were less than the RDL, except toluene. The reported concentration of toluene was 0.27 µg/L, well below the A/O of 0.024 mg/L (24 µg/L).

## 3.3 Overburden – Hydrogeologic Setting

Shallow groundwater flow often correlates to topographical features and typically flows towards nearby water bodies and wetland areas. Based on the area geology and topography, groundwater is expected to flow in an east-northeast direction toward the Conestogo River situated 250 m northeast of the Site. The inferred direction of shallow groundwater flow is shown in Figure 9, and the measured groundwater elevations are summarized in Table 3.

Based on groundwater elevation monitoring events to date, the shallow groundwater elevations at the four monitoring wells were found to occur between approximately 388.90 masl to 400.71 masl, and were found to generally mimic ground surface topography. On the southerly portion of the site, the depth to groundwater correlates to approximately 2.4 to 6.4 m and towards the northerly portion of the site the depths to groundwater correlates to approximately 10 m below ground surface. Based on groundwater elevation measurements collected between August 2018 and September 2020, the water table is observed to fluctuate with seasonal and precipitation events (as expected).

The Site is generally considered to be within a recharge area with moderate downward gradients. The majority of the overburden soils identified at depth throughout the borehole program are considered to have low permeability (primarily silt and clay), and are expected to limit infiltration. The deepest and dense soils of the boreholes have the potential to create perched water conditions which can result in wet to saturated zones. Perched water conditions are typically influenced by surface sources and are dependent on the amount of precipitation, control of surface water, and time of year. Perched water levels are expected to fluctuate significantly in elevation and volume.

### 3.4 Bedrock Observations and Measurements

#### 3.4.1 Geologic Setting

The geological materials beneath the Site and its surroundings fall under two main categories: glacial deposits (overburden) and sedimentary bedrock. The observations made during the drilling of the test holes and wells indicate that the overburden materials are dominated by clayey silt with small amounts of sand and gravel to the top of the bedrock. The thickness of the unconsolidated glacial materials overlying the bedrock varies between 64 m and 74 m. Based on the findings of the observations made within the MECP Well Records for nearby wells, dolostone bedrock of the Salina formation underlies the site. Overburden and bedrock observations were generally consistent with the information available through the Ontario Geological Survey (2010). The top 2.5 m of the dolostone bedrock was noted in two of the drilled well records to be soft and broken.

#### 3.4.2 Bedrock Groundwater Flow Direction

Based on GRCA groundwater flow in the bedrock (Grand River Regional Groundwater Study, Figure 8), the groundwater flow in this area is generally towards the southeast, and may be locally directed easterly towards the Grand River. The groundwater elevations in the area determined in the Regional Groundwater Study were estimated to be slightly less than 375 masl, consistent with the observed groundwater elevations around 373 masl.

Groundwater hydraulic gradients based on site observations appear to be minimal with observations of water elevation change ranging 0.3 m across the site.

#### 3.4.3 Bedrock Groundwater Quality

For the purposes of this report, the analytical results are compared against the Ontario Drinking Water Standards (2002) MAC and A/O for treated drinking water, and are presented in Table 5. Results of note are as follows:

- As expected from a carbonate bedrock aquifer system, the groundwater is relatively hard, with hardness between 250 and 410 mg CaCO<sub>3</sub>/L, exceeding the A/O (100 mg/L) in all bedrock wells.
- Total dissolved solids (TDS) ranged from 570 mg/L to 470 mg/L, exceeding the A/O (500 mg/L) in one well.
- Total Coliforms were not detected in any samples. Regardless of the sampling results, it is recommended that all wells be provided with disinfection.
- The water quality results were found to be generally consistent during pumping. The minor variability obtained is considered to be within that expected with natural variability when groundwater sampling. There is no evidence of dramatic changes in water quality that may indicate change in water source during pumping (such as a boundary condition or increased influence from near surface sources).
- The concentration of sodium in all the samples was below the A/O of 200 mg/L, but above the threshold for notification.

The groundwater quality is considered to be typical of that from a carbonate-based bedrock system, with elevated hardness and slightly elevated manganese. Elevated total dissolved solids (TDS) and sulphate is reported to be common in the Salina formation (Hydrogeology of Southern Ontario, 2003).

The groundwater from the dolostone bedrock aquifer (often referred to as limestone in well records) generally meets the Ontario Drinking Water Objective.

The security of groundwater systems in rural environments cannot be guaranteed. As such, it is recommended that water supply systems be fitted with a disinfection treatment component, such as ultra-violet (UV) or chlorination.

The water is considered to be moderately mineralized, typical for groundwater supplied from a carbonate bedrock system. Such water quality issues can be treated by several different treatment technologies, depending on the requirements/preferences of the specific property owner, but typically include filter and water softener and/or reverse osmosis treatment.

#### 3.4.4 Aquifer Performance Testing

As discussed, to characterize the limestone aquifer, each of the wells was subject to a constant-rate pumping test with drawdown observations being made in all three of the wells. The data gathered during these pumping tests is provided in plotted and tabular format in Tables 6, 7, 8, 9 and Appendix F. Following the completion of each pumping test, the pumping well was monitored to record the progress of recovery. Table 6 provides summary observations made during the pumping tests, including discharge rate, maximum drawdown, and time to recovery.

For the purposes of average daily water use, the daily demand for each proposed residential lot is expected to be in the range of 1,000 L/day (from the 2012 Ontario Building Code [OBC]). The number of lots proposed is 11. Therefore, it is expected that the overall area of development will require approximately 11,000 L (11 m<sup>3</sup>) of water per day. Under the D-5-5 Guideline, the short term taking requirement for a private well is 13.7 L/min.

AquiferTest 2013 software was utilized to calculate the aquifer properties. The wells were modelled using the Theis method for confined aquifers, the Hantush method for leaky-confined aquifers and double porosity for fractured bedrock aquifers. The analysis method was selected based on the hydrogeologic conditions observed at the site and the shape of the response curves. The response curves indicating a leaky-confined aquifer or double-porosity aquifer suggest the aquifer has a recharge component from the overburden (i.e., leakage), or the bedrock is fractured and the porous matrix provides for recharge (i.e., double-porosity), or that there are components of each.

Water level drawdown measured during the pumping test were in the range of 0.75 to 4.0 m. Responses were noted in all observation wells with drawdown in the observation wells ranging between 0.3 and 0.9 m. Water level recovery to 95% of static water level ranged between 10 and 200 minutes.

The transmissivity for the aquifer is estimated to be in the range of  $5.4 \times 10^{-5}$  and  $1.0 \times 10^{-3}$  m<sup>2</sup>/s. The average transmissivity for the aquifer is estimated to be  $7.2 \times 10^{-4}$  m<sup>2</sup>/s. Refer to Table 7 for a summary of the analyses.

Based on a practical analysis, each of the wells was pumped at between 41 and 100 Lpm at a constant rate with up to 4.0 m of drawdown, after 6 hours. During each test, approximately 20,000 L of water was withdrawn, enough to supply the entire subdivision.

Based on a water column of approximately 40 m, the limited drawdown measured during the tests at a rate that is reflective of the needs of the entire development, it is evident that there is sufficient short and long-term yield for the proposed development.

Using the results of analysis from each pumping test separately, the modified Moell method (Maathuis and van der Kamp 2006) was used to determine the range of expected sustainable yield ( $Q_{20}$ ) for the aquifer. It was assumed that all of the wells that would be installed in the subdivision could be represented by a single well: this is a conservative assumption made to simplify the analysis, the results of which are presented in Table 8. The  $Q_{20}$  was estimated to be between 349 m<sup>3</sup>/day in well A300134 and 1,569 m<sup>3</sup>/day in well A300131. These estimated sustainable well yields are higher than the expected water demand for the entire subdivision (11 m<sup>3</sup>/day).

Based on this analysis, wells installed in the dolostone bedrock system (approximately 65 to 75 m bgs) are likely to provide sufficient short-term and long-term yield to support a single home. The well yields determined as part of this investigation are considered to be representative of the long-term yields which can be expected by the future residents of the development.

### 3.5 Water Supply – Interference with Other Wells

The radius of influence describes the maximum distance from a pumped well that a lowering to the water table can be measured. Within the radius of influence, a lowering of the water level, and thus water column can occur. Interference occurs when the water level is lowered sufficiently in the neighbouring wells to cause a reduction in the yield beyond those required.

The radius of influence is typically described as the area around a well where water level reductions are experienced. It is important to note that it doesn't differentiate the magnitude of the water level change. Further, it is important to note that the radius of influence typically decreases exponentially with distance from the pumping well, with the majority of influence in the direct vicinity of the well.

The Maathuis and van der Kamp (2006) paper describes how to estimate the drawdown within the radius of influence of a well after pumping for 20 years.

It was assumed that all of the wells that would be installed in the subdivision could be represented by a single well: this is a conservative assumption made to simplify the analysis. The properties of the aquifer from each of the three pumping tests were included in the analysis. Using the design flow of the entire development of approximately 11,000 L (11 m<sup>3</sup>) of water per day, the drawdown within the radius of influence was calculated, the results of which are presented in Table 9. The results show that at 300 m from the well representing the entire subdivision, the drawdown after 20 years was estimated to be between 0.23 and 0.13 m.

The individual lot well drawdown was also estimated. Based on the lot sizes, the average distance from the well to the lot boundaries is approximately 5 m, and the average distance between the wells is approximately 25 m. At a daily pumping rate of 1000 L/day, the drawdown after 20 years ranged from 0.028 to 0.007 m at 5 m from the well and 0.024 m and 0.004 m at 25 m from the well. Based on the aquifer thickness and typical water column height, this drawdown is considered insignificant.

Based on the information collected as part of this investigation, no influences on groundwater levels, interference between wells (on or off-site) or hydrogeological resources is expected from the proposed development.

## 4. SEWAGE SYSTEM ASSESSMENT

### 4.1 Sewage System – Lot Carrying Capacity

Nitrogen is a nutrient of primary concern with respect to on-site sewage systems. In the form of nitrate and nitrite, nitrogen can cause adverse impacts to potable groundwater supply and receiving surface waters. Therefore, it is necessary to ensure that the nitrogen (as nitrate) output of the proposed development will be attenuated to concentrations of no greater than 10 mg/L as per the health-based ODWS. Procedure D-5-4 states that the only acceptable method of estimating attenuation is by dilution and that only sewage effluent and local infiltration (i.e. net precipitation going to groundwater recharge) can be used as diluents. This procedure is considered to be conservative as it does not account for natural attenuation mechanisms that occur within tile bed and groundwater systems, or dilution with groundwater.

Based on the proposed development plan of 11 lots to be serviced by on-site sewage systems, the anticipated nitrogen loading (as nitrate) is 160.6 kg/year. The effective hydrologic water input, accounting for evapotranspiration and runoff, is estimated to be about 13,758 m<sup>3</sup>/year based on an infiltration rate of 321 mm/year. This infiltration rate was obtained by taking the difference between precipitation (1,014.5 mm/year, Environment Canada 2015) and evapotranspiration (480 mm/year, Grand River Conservation Authority 2009) and discounting the result by 40% due to losses to runoff (Ontario Ministry of Transportation 1997). The property area of 4.29 hectares was used in the calculation. A nitrogen loading rate of 40 g/lot/day was assumed.

Table 10 shows the results of calculations to estimate attenuated nitrate concentration as a fraction of number of lots; it is estimated that to maintain nitrogen concentrations below 10 mg/L, the allowable number of lots using standard Class IV sewage systems is 12. For the 11-lot proposed development, attenuated nitrate concentration is calculated to be 9.04 mg/L.

It is also worth noting that the geological setting of this project provides a degree of natural protection to the bedrock aquifer. The deep overburden material consists of fine-grained, hard, and very dense soils. The native clayey silt, silt and clay/clay and silt, and silt encountered in the boreholes limit groundwater migration, and therefore are likely to provide significant attenuation of the sewage related contaminants between the on-site sewage disposal (i.e., shallow groundwater system) and the bedrock aquifer (where the supply is utilized).

### 4.2 On-Site Sewage System Feasibility

The proposed subdivision is anticipated to utilize private on-site sewage systems. To assess the feasibility of this proposal, a preliminary sizing of the on-site sewage system will be compared against the typical lot size.

From the analysis of six soil samples taken from the overburden (Appendix G), the T-time (percolation time) was determined to be 50 minutes/cm for all samples. Based on this T-time, the dispersal beds are expected to have an overall size of approximately 400 m<sup>2</sup>. This was calculated using Table 8.7.4.1. of the Ontario Building Code (OBC), which states that where a T-time of greater than 50 min/cm exists, the overall contact area is determined by a loading rate of 4 L/m<sup>2</sup>/day. It is assumed that offsets for distribution piping of 5 m from structures and 3 m from property lines are added as per OBC Table 8.2.1.6.B.

Based on water levels collected to date, the groundwater table is approximately 2.5 to 10 mbgs in the areas of development. The appended grain-size distribution for the samples from the overburden test holes at depths ranging from 0.76 m and 10.67 m were reviewed and coefficients of permeability of less than  $1.0 \times 10^{-6}$  cm/second were determined for each sample (CMT 2018). Based on these coefficients and the relationship of soil types to percolation times as per the OBC, a corresponding percolation time of greater than 50 minutes/cm has been assessed for the soils. Consequently, imported soils will be required to construct the leaching beds to the requirements of the OBC.

Tables 8.2.1.6.A and 8.2.1.6.B in the Ontario Code and Guide for Sewage Systems 2012 indicates that the distribution bed must be at least 3 metres from the property line, 5 metres from any structures on the property, and 15 metres from any domestic drilled wells cased to at least 6 metres, or 30 metres from any other well (refer to the OBC for specific requirements). A standard house footprint is expected to be in the range of 150 to 200 m<sup>2</sup>, including a garage for a combined footprint of 200 to 250 m<sup>2</sup>.

The lot sizes for the development are proposed to be in the range of 2,240 m<sup>2</sup> (Lot 5) to 4,520 m<sup>2</sup> (Lot 3). The average lot size is 2,980 m<sup>2</sup>. With respect to the logistics of lot layout the smallest lot is considered. Using the information provided above, it is reasonable to expect that a Standard Class IV system could be constructed while meeting the setback at the smallest lot, and accordingly, the other larger lots proposed. Ultimately, the design and construction of the sewage system would be regulated under the requirements of the OBC with the application of associated setbacks, from buildings, wells, and the water table.

## **5. DOMESTIC WATER SUPPLY ASSESSMENT**

### **5.1 Groundwater Quantity**

Based on information from the MECP well record search, there is a reasonable expectation of obtaining sufficient supply of groundwater at each of the proposed lots and that the supply would provide a long-term reliable source of water.

Based on the analyses, the expected sustainable yield ( $Q_{20}$ ) for the wells in the deeper bedrock system is expected to be in the range of 339 to 1408 m<sup>3</sup>/day. With respect to peak flow requirements, the pumping tests completed on the new wells at target depths were completed continuously at rates of between 40 and 100 L/min, well above the 13 L/min identified in Procedure D-5-5. Although not expected, in the event that an installed well could not provide sufficient yield to meet peak water supply, supplemental storage, or an additional, or deeper, well could be used to ensure peak demands are met.

The use of domestic water on the subject property is not expected to cause influence or impact to neighboring properties based on observations made during the pumping tests and corresponding analyses. This analysis is consistent with anecdotal information which indicates similar lot size and density in the broader area.

### **5.2 Groundwater Quality**

Groundwater quality is considered to be consistent with groundwater from a carbonate-rich bedrock system with elevated hardness. Raw water quality generally meets the Maximum Acceptable Criteria with the exception of dissolved sodium concentrations with concentrations between 27 and 32 mg/L. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets. Raw water quality generally meets the aesthetic objectives with the exception of hardness and total dissolved solids.

Elevated hardness can cause staining and/or mineral deposits on fixtures. Depending on the personal preferences of the home-owner standard treatment for hard water includes water softening or filtration and reverse-osmosis systems.

The security of groundwater systems in rural environments cannot be guaranteed. Consequently, it is recommended that water supply systems be fitted with a disinfection treatment component, such as ultra-violet (UV) deactivation or chlorination.

Interference with existing neighbouring property use is not expected. As provided within the impact assessment for on-site sewage systems, sufficient attenuation of sewage within the shallow groundwater system is anticipated.

### 5.3 Water Supply Recommendations

In order to ensure sufficient water quantity and quality supply for the subject property, it is recommended that the water supply wells be installed by licensed drilling contractor with considerations to setbacks from sewage systems required by the Ontario Building Code. It is recommended that the wells target the dolostone bedrock aquifer system (approximately 65 to 75 m below ground surface) and be constructed as per requirements of Ontario Regulation 903.

It is recommended that the aesthetic water treatment requirements be established by the property owner via direct samples from the well on their specific lot. Regardless of water quality results, it is recommended that water supply systems be fitted with a disinfection treatment component, such as ultra-violet (UV) or chlorination.

## 6. WATER RESOURCES IMPACT ASSESSMENT

The primary area water resource is the shallow and deeper groundwater systems. There are no surface water receptors of significance noted on the site or potentially influenced by the development.

### 6.1 Groundwater Quality – Sewage Systems

Water quality degradation due to the use of on-site sewage was estimated using the D-5-4 method, which accounts only for dilution of sewage with rainfall. This approach is considered conservative since it doesn't account for additional attenuation of sewage due to dilution with groundwater or natural attenuation via biological or geochemical processes, which are known to occur. Using the dilution with rainfall approach, for the 11-lot proposed development, the resultant groundwater nitrate concentration is estimated to be 9.04 mg/L, which is below the allowable level of 10 mg/L. Based on this analysis, no impacts are expected due to the proposed development.

Based on a review of geologic conditions, the occurrence of very low permeability soils ( $<1.0 \times 10^{-6}$  cm/s, CMT 2018) found at depths between 0.76 m to 10.67 mbgs are considered to provide a level of protection to the underlying bedrock system. Although not relied upon for protection, the continuous occurrence of the overburden would significantly reduce the potential for influence to the bedrock system.

## 6.2 Water Quality and Quantity – Stormwater Management

A stormwater management report and associated designs for the proposed development has been completed under separate cover. Under existing conditions, the majority of the rainfall runoff on the site drains to the east to an existing ditch. Other smaller portions of the site drain northwest overland to a tributary of the Conestogo River, or northeast to an existing storm water system.

The site development as whole is considered to be low intensity with approximately 30% impervious area. Under proposed conditions, the runoff from all road surfaces is directed to the easterly outlet with water quality is controlled by an Oil/Grit Separator and water quantity controlled by a dry pond stormwater management facility. The northwesterly and northeasterly outlets are proposed to receive runoff from lawns and rooftops which is considered “clean runoff”. The proposed runoff flow rates under proposed conditions for all outlets are expected to be equal to or less than the existing condition runoff flow rates for all storm events.

A water balance analysis was completed as part of the stormwater management report which showed that the annual net change of the amount of recharge was approximately -1%. The majority of the proposed surface grading meets the requirements of a “Vegetative Filter Strip” as defined by the Low Impact Development Stormwater Management Planning and Design (LIDSWMP) Guide which is estimated to provide a runoff reduction of 37.5% and contributes to infiltration. The proposed grading generally follows existing grading and generally maintains existing surface and shallow groundwater flow directions.

## 7. CONCLUSIONS AND RECOMMENDATIONS

Based on the findings of this site servicing study, the following conclusions can be made:

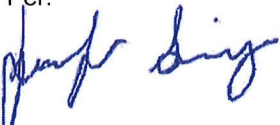
- The aquifer beneath the site is capable of supplying groundwater at a rate greater than the expected demand of the proposed development.
- It is reasonable to expect that individual supply wells installed into the aquifer system will have sufficient yield for both long-term supply and to meet peak demands.
- It is reasonable to expect that the water quality from wells installed into the bedrock aquifer system will be adequate for supply with the use of disinfection and aesthetic treatment for hardness.
- The proposed development of 11 lots with private individual sewage systems are not expected to cause impacts to the groundwater resources. Estimates of the potential for groundwater impact by nitrate (using the D-5-4 Guidelines) indicate a resultant estimated nitrate groundwater concentration of 9.04 mg/L, below the allowable concentration of 10 mg/L.
- The size of the lots is sufficient to logistically support standard Class IV sewage systems and meet set back requirements under the OBC. As per standard process, site layouts are to be confirmed at the time of lot development and should consider neighbouring development plans, including well and sewage system placement.
- No impacts to ecological features due to changes in hydrogeological conditions or the water balance are expected. The development layout and associated grading will maintain groundwater and surface water flow directions and the water balance will generally be maintained.

The following recommendations are made in support of the Conclusions provided above and to support the development:

- Wells are to be completed in the overburden or bedrock aquifer system to a depth of approximately 65 to 75 mbgs (or greater) and properly cased as per the requirements of Ontario Regulation 903.
- The type of treatment system be based on the results of a water quality analysis of the groundwater at each well and the homeowner requirements/preferences for general/aesthetic groundwater parameters. Regardless of water quality results, the treatment system should include a disinfection component, such as UV or chlorination.


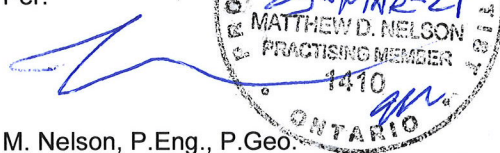
All of which is respectfully submitted.  
GM BLUEPLAN ENGINEERING LIMITED

Per:



J. Swiger, B.E.Sc., E.I.T.  
JS/mr

Per:



M. Nelson, P.Eng., P.Geo.

## 8. STATEMENT OF LIMITATIONS

The information in this report is intended for the sole use of Mr. Murray Martin. GM BluePlan Engineering Limited accepts no liability for use of this information by third parties. Any decisions made by third parties on the basis of information provided in this report are made at the sole risk of the third parties.

GM BluePlan Engineering Limited cannot guarantee the accuracy or reliability of information provided by others. GM BluePlan Engineering Limited does not accept liability for unknown, unidentified, undisclosed, or unforeseen surface or sub-surface conditions that may be later identified.

The conclusions pertaining to the condition of soils and/or groundwater identified at the site are based on the visual observations at the locations of the investigative boreholes/monitoring wells and on the reported analytical data for the selected soil and groundwater samples. GM BluePlan Engineering Limited cannot guarantee the condition of soil and/or groundwater that may be encountered at the site in locations that were not specifically investigated as part of this investigation.

## 9. REFERENCES

- Chapman, L.J. and Putnam, D.F. 2007. *Physiography of Southern Ontario*. Ontario Geological Survey, Miscellaneous Release, Data 228.
- Environment Canada. 2015. Canadian Climate Normals 1981-2010 Station Data Glen Allan Station. Accessed Online at <http://climate.weather.gc.ca/>
- Grand River Conservation Authority. June 2009. *Grand River Watershed Integrated Water Budget Report*.
- Holysh, S., Pitcher, J., Boyd, D. 2002. *Grand River Regional Groundwater Study*.
- Maathuis, H. and van der Kamp, G. 2006. *The Q<sub>20</sub> Concept: Sustainable Well Yield and Sustainable Aquifer Yield*. Saskatchewan Research Council (Publication No. 10417-4E06)
- Ontario Geological Survey. 2011. *1:250 000 Scale Bedrock Geology of Ontario*. Ontario Geological Survey, Miscellaneous Release, Data 126 - Rev. 1
- Ontario Geological Survey. 2010. *Surficial Geology of Southern Ontario; Ontario Geological Survey*. Miscellaneous Release, Data 128 – Rev.
- Ontario Ministry of the Environment and Energy. 1996. *Procedure D-5-4 - Technical Guideline for Private Wells: Water Supply Assessment*. Government of Ontario
- Ontario Ministry of the Environment and Energy. 1996. *Procedure D-5-5 – Technical Guideline for Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment*. Government of Ontario
- Ontario Ministry of Municipal Affairs and Housing. 2012. *Ontario Building Code Part 8: Sewage Systems*. Government of Ontario.
- Ontario Ministry of Natural Resources. 1984. *Water Quantity Resources of Ontario*.
- Ontario Ministry of Transportation. 1997. *Drainage Management Manual Part 4: Design Charts*.
- Terzaghi, K., Peck, R.B., and Mesri, G. 1996. *Soil Mechanics in Engineering Practice – Third Edition*. Wiley Interscience. p. 27-29.

## **FIGURES**

FILE:W:\Listowel\2017\317033-2 Glen Allan - Hydrogeology\5 Work In Progress\Drawings\317033-2 - HydroG.dwg LAYOUT:Fig. 1 - Site Location Map  
LAST SAVED BY:Kash, 1/4/2019 8:44:25 AM PLOTTED BY:Kate Ash - GM BluePlan 1/4/2019 8:47:22 AM

# TOWNSHIP OF MAPLETON



## SITE LOCATION MAP

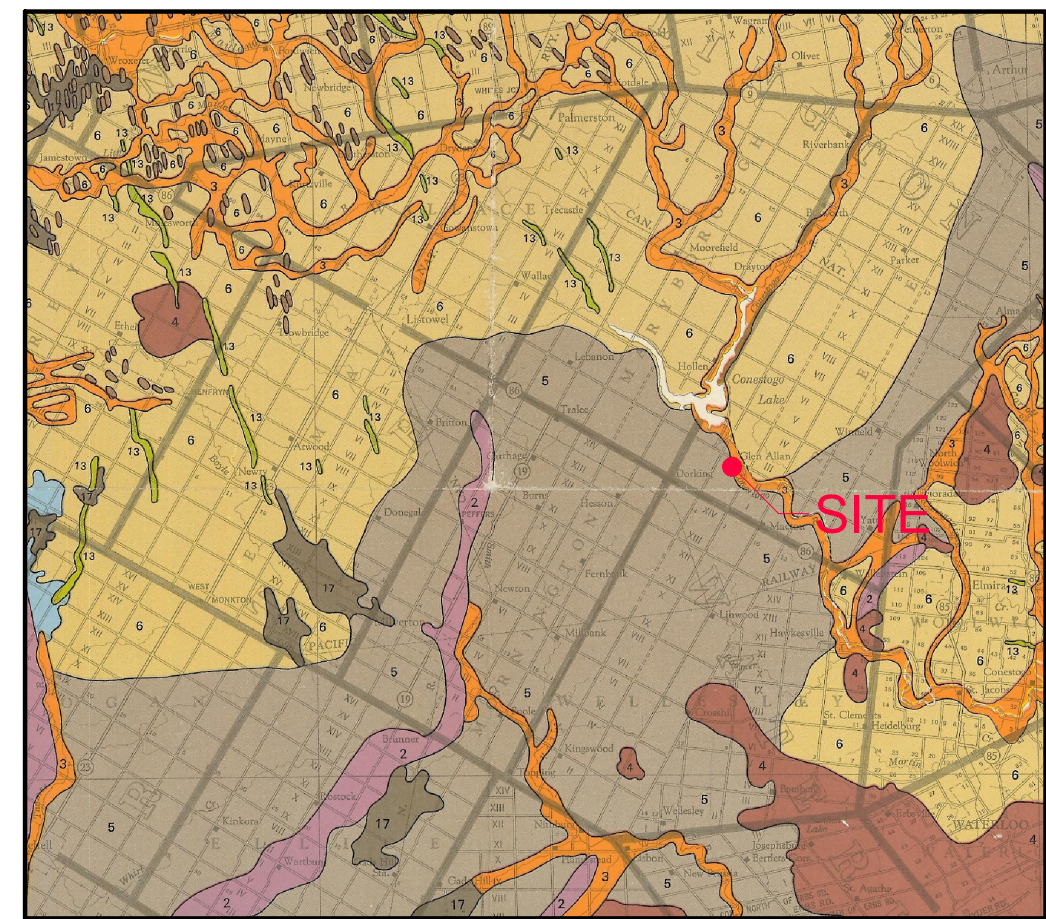
### GLEN ALLAN SUBDIVISION HYDROGEOLOGY STUDY

Figure No. 1A

























317033-2  
JANUARY 2019  
N.T.S.

TOWNSHIP OF  
MAPLETON



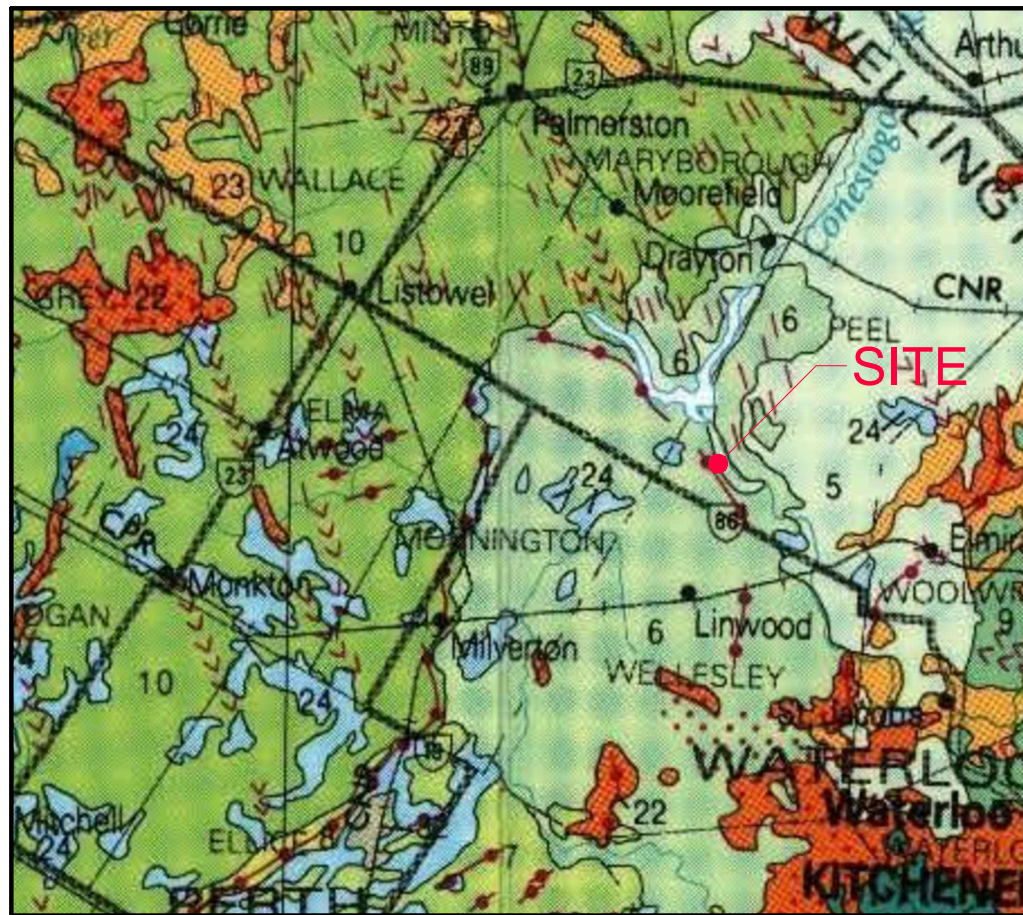
LEGEND

	1 ESCARPMENTS		8 BEVELLED TILL PLAINS		15 SHALLOW TILL AND ROCK RIDGES
	2 TILL MORAINES		9 LIMESTONE PLAINS		16 BARE ROCK RIDGES AND SHALLOW TILL
	3 SPILLWAYS		10 SHALE PLAINS		17 PEAT AND MUCK
	4 KAME MORAINES		11 SAND PLAINS	SYMBOLS	
	5 TILL PLAINS (UNDRUMLINED)		12 CLAY PLAINS		18 BOULDER PAVEMENT
	6 TILL PLAINS (DRUMLINED)		13 ESKERS		19 SAND DUNES
	7 DRUMLINS		14 BEACHES AND SHORECLIFFS		20 DISSECTED TERRAIN
			14 BEACHES AND SHORECLIFFS		21 MUD FLOW SCARS

SITE  
PHYSIOGRAPHY  
  
GLEN ALLAN  
SUBDIVISION  
HYDROGEOLOGY STUDY

Figure No. 2





LEGEND

<p>32 <b>Organic deposits:</b> peat, muck and marl</p> <p>31 <b>Fluvial deposits:</b> gravel, sand, silt and clay; deposited on modern flood plains</p> <p>30 <b>Lacustrine deposits:</b> sand, gravelly sand and gravel; nearshore and beach deposits</p> <p>29 <b>Lacustrine deposits:</b> silt and clay; basin or quiet water deposits</p> <p><b>PLEISTOCENE</b></p> <p>28 <b>Fluvial deposits:</b> gravel, sand, silt and clay; deposited on abandoned flood plains, terrace remnants</p> <p>27 <b>Glaciomarine and marine deposits:</b> sand, gravelly sand and gravel; nearshore and beach deposits</p> <p>26 <b>Glaciomarine and marine deposits:</b> silt and clay; basin and quiet water deposits</p> <p>25 <b>Glaciolacustrine deposits:</b> sand, gravelly sand and gravel; nearshore and beach deposits</p> <p>24 <b>Glaciolacustrine deposits:</b> silt and clay, minor sand; basin and quiet water deposits</p> <p>23 <b>Glaciofluvial outwash deposits:</b> gravel and sand; includes proglacial river and deltaic deposits</p> <p>22 <b>Glaciofluvial ice-contact deposits:</b> gravel and sand; minor till; includes esker, kame, end moraine, ice-marginal delta and subaqueous fan deposits</p> <p>21 <b>Till:</b> undifferentiated, fine grained, predominantly silty clay to silt matrix, commonly clast poor, high matrix carbonate content</p> <p>20 <b>Till:</b> undifferentiated, predominantly sand matrix, extremely stony, bouldery and high in total matrix carbonate, often associated with stratified sediments</p> <p>19 <b>Till:</b> undifferentiated, predominantly sandy silt to silt matrix, commonly rich in clasts, often high in total matrix carbonate content</p> <p>18 <b>Till:</b> undifferentiated, predominantly sand to silty sand matrix, high content of clasts, often low in matrix carbonate content</p> <p>17 <b>Halton Till (Ontario–Erie lobe):</b> predominantly silt to silty clay matrix, high in matrix carbonate content and clast poor</p> <p>16 <b>Kettleby Till (Simcoe lobe):</b> predominantly silt to silty clay matrix, highly calcareous, clast poor</p> <p>15 <b>St. Joseph Till (Huron–Georgian Bay lobe):</b> silt to silty clay matrix, clay content increases southward, clast poor</p> <p>14 <b>Wentworth Till (Ontario–Erie lobe):</b> sandy silt to silt matrix becoming finer grained to silty clay near Lake Erie, highly calcareous, clast content moderate to low decreasing southward</p>	<p>13 <b>Newmarket Till (Simcoe lobe):</b> sandy silt to silt matrix, moderate to high in matrix carbonate content, clast content moderate to high</p> <p>12 <b>Dunkeld Till (Huron–Georgian Bay lobe):</b> silt matrix, high matrix carbonate content, clast poor</p> <p>11 <b>Rannoch Till (Huron–Georgian Bay lobe):</b> silt to clayey silt matrix becoming finer grained southward, highly calcareous, clast poor</p> <p>10 <b>Elma Till (Huron–Georgian Bay lobe):</b> sandy silt to silt matrix, clayey silt along southern margin, moderately stony, strongly calcareous</p> <p>9 <b>Port Stanley Till (Ontario–Erie lobe):</b> silt to sandy silt matrix becoming silt to silty clay near Lake Erie, strongly calcareous, moderate to low clast content decreasing southward</p> <p>8 <b>Wartburg Till (Huron–Georgian Bay lobe):</b> silty clay matrix, high carbonate content in matrix, clast poor</p> <p>7 <b>Stratford Till (Huron–Georgian Bay lobe):</b> sandy silt matrix, strongly calcareous, moderately stony</p> <p>6 <b>Mornington Till (Huron–Georgian Bay lobe):</b> silty clay matrix, moderate to high matrix carbonate content, clast poor.</p> <p>5 <b>Tavistock Till (Huron–Georgian Bay lobe):</b> sandy silt to silt matrix, silty clay matrix in south and in north, moderate to high carbonate content, clast content decreases from moderate to poor northward</p> <p>4 <b>Maryhill Till (Erie lobe):</b> silty clay to clay matrix, moderate to high matrix carbonate content, clast poor</p> <p>3 <b>Catfish Creek Till:</b> sandy silt to silt matrix, strongly calcareous, moderately stony to stony</p> <p><b>PALEOZOIC</b></p> <p>2 <b>Bedrock:</b> undifferentiated carbonate and clastic sedimentary rock, exposed at surface or covered by a discontinuous, thin layer of drift</p> <p><b>PRECAMBRIAN</b></p> <p>1 <b>Bedrock:</b> undifferentiated igneous and metamorphic rock, exposed at surface or covered by a discontinuous, thin layer of drift</p>
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

QUATERNARY  
GEOLOGY

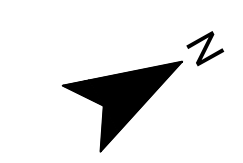
GLEN ALLAN  
SUBDIVISION  
HYDROGEOLOGY STUDY

Figure No. 3







TOWNSHIP OF  
MAPLETON



LEGEND

-  MONITORING WELL
-  BOREHOLE

BOREHOLE AND  
MONITORING WELL  
LOCATION MAP

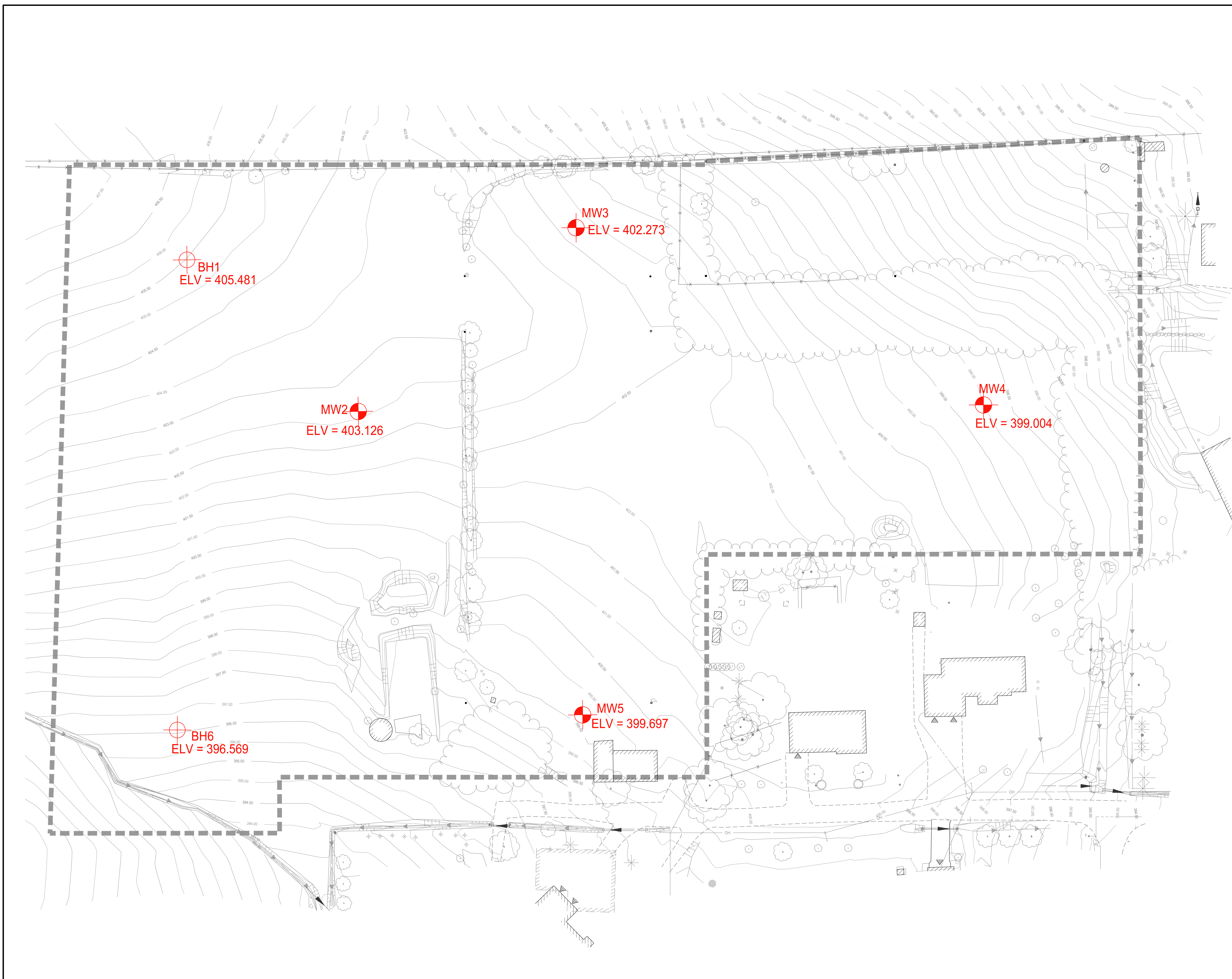
GLEN ALLAN  
SUBDIVISION  
HYDROGEOLOGY STUDY

Figure No. 5

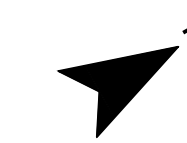


317033-2  
JANUARY 2019  
N.T.S.



FILE: \\s:\data\2017\171033-2 Glen Allan - Hydrogeology Work in Progress\Drawings\171033-2 - Borehole Location Map.dwg LAYOUT Layout  
LAST SAVED BY: User 1, 1/20/2019 4:15 PM, PLOTTED BY: User 1, 1/20/2019 4:15 PM



TOWNSHIP OF  
MAPLETON



LEGEND

-  MONITORING WELL
-  PUMPING WELL

PUMPING WELL AND  
MONITORING WELL  
LOCATION MAP

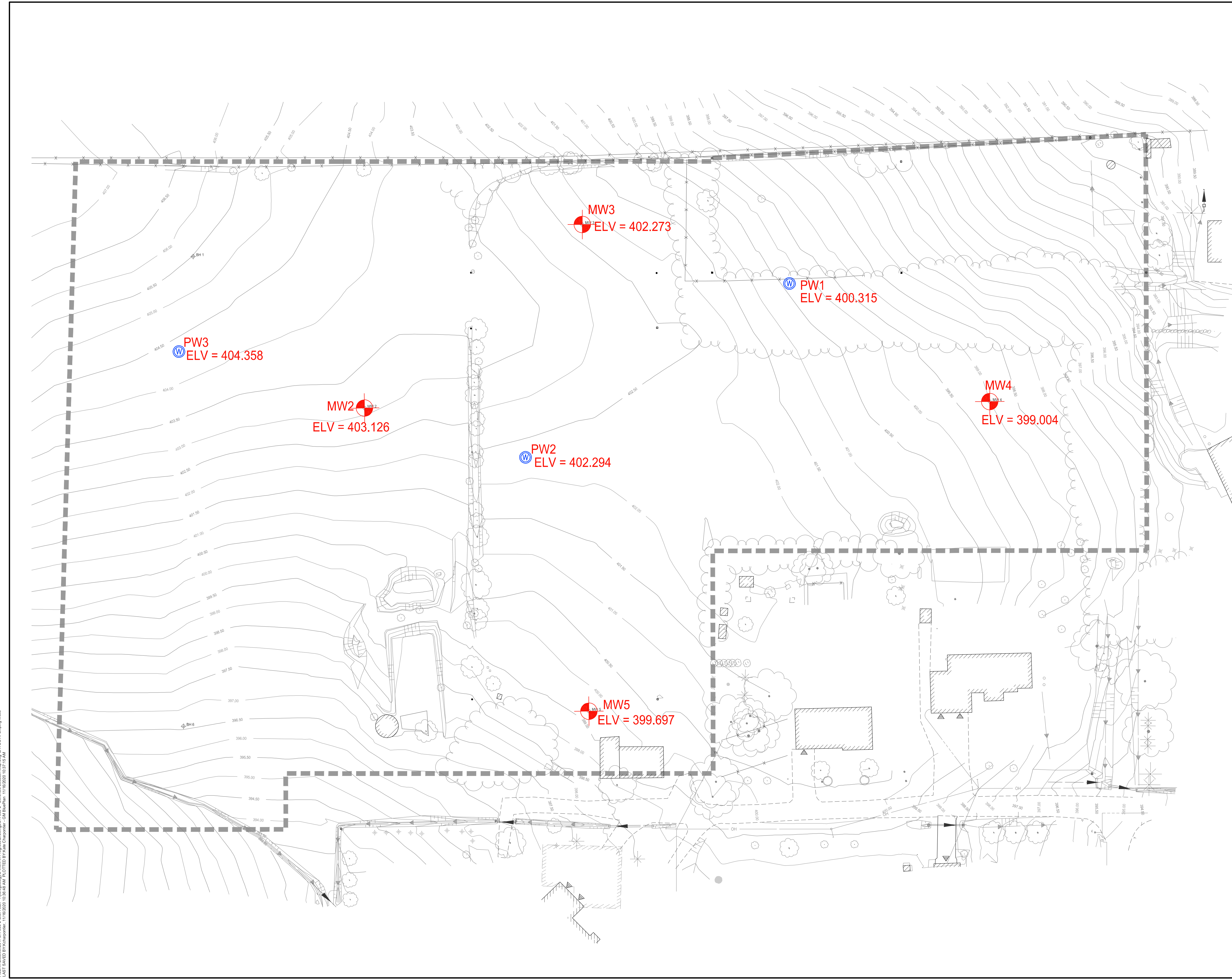
GLEN ALLAN  
SUBDIVISION  
HYDROGEOLOGY STUDY

Figure No. 6

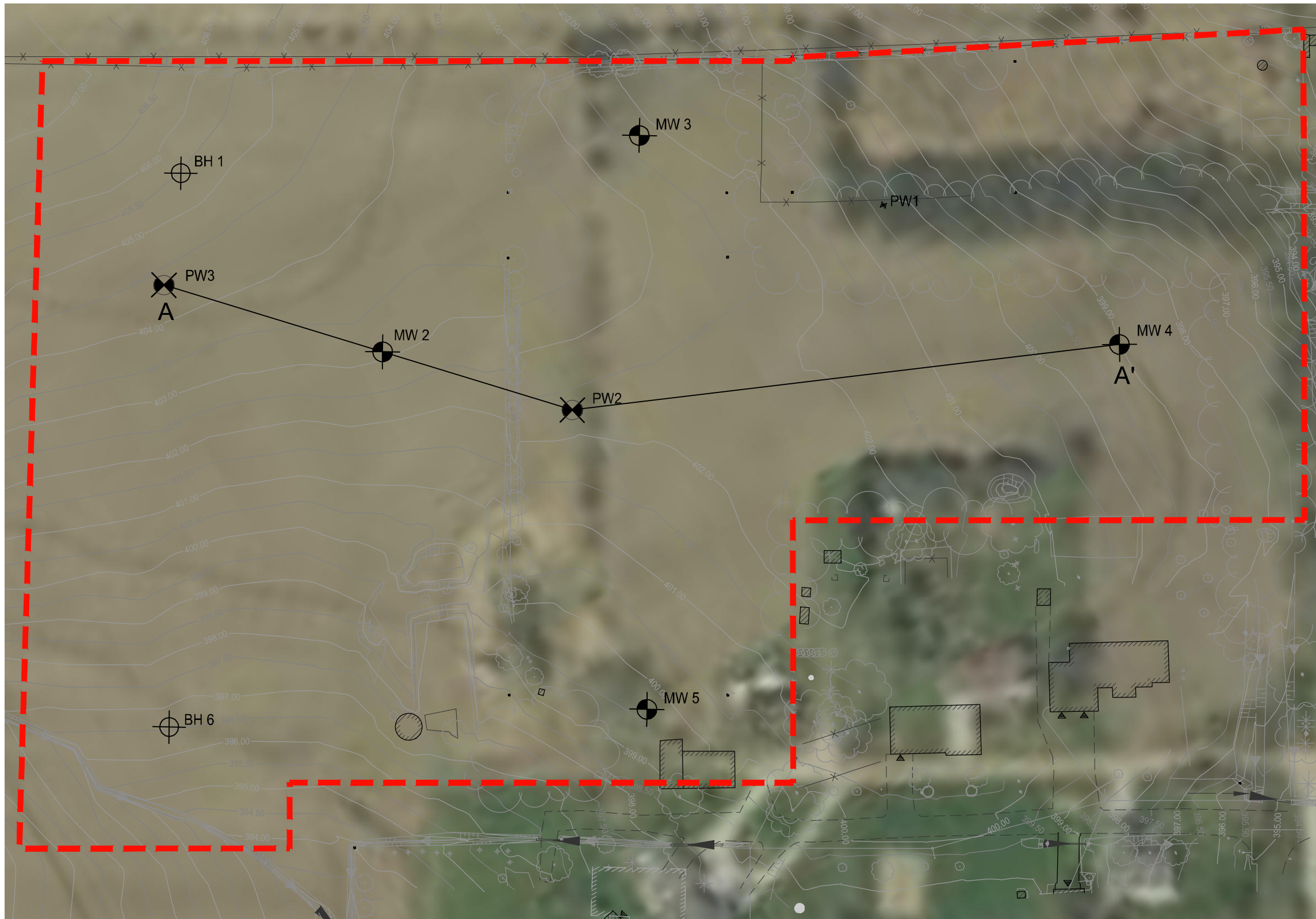
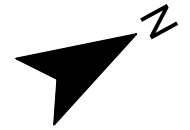


317033-2  
NOVEMBER 2020  
N.T.S.

FILE: I:\Projects\317033-2\Drawings\Hydrogeology\317033-2\_PumpingWells.mxd; LAYOUT: Pumping Wells  
LAST SAVED BY: vkarapinar; 11/16/2020 10:28:48 AM; PLOTTED BY: vkarapinar; C:\BluePlan\11/16/2020 10:27:48 AM



TOWNSHIP OF  
MAPLETON



CROSS SECTION  
PLAN

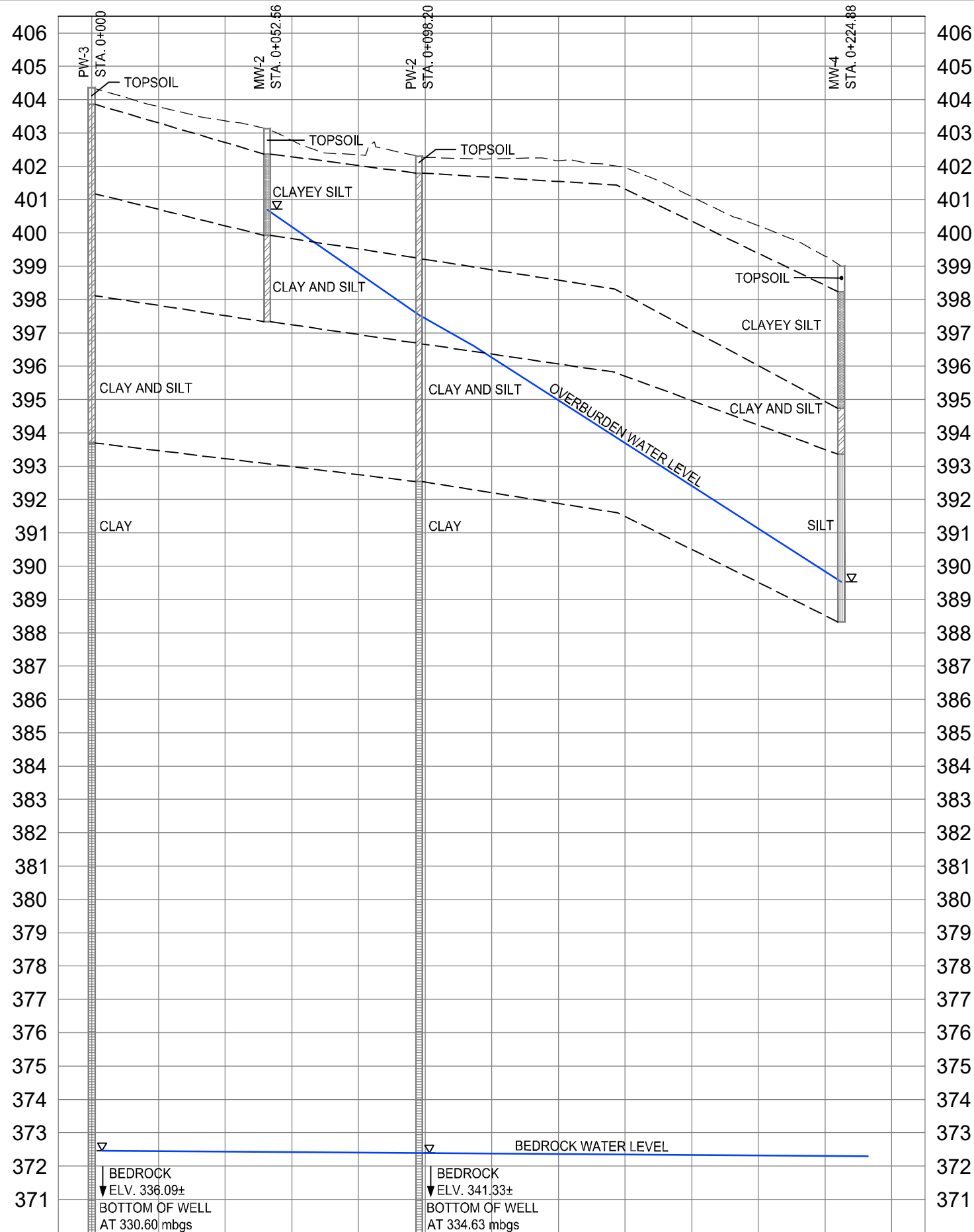
GLEN ALLAN  
SUBDIVISION  
HYDROGEOLOGY STUDY

Figure No. 7

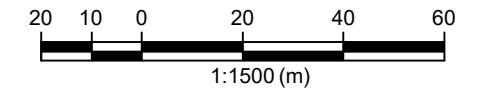


317033-2  
NOVEMBER 2020  
N.T.S.

FILE:W:\Listowel\2017\317033-2 Glen Allan - Hydrogeology\5 Work In Progress\Drawings\317033-2 - Cross Sections.dwg LAYOUT/Layout2  
 LAST SAVED BY:kcharpontier, 11/22/2020 9:48:58 PM PLOTTED BY:Kate Charpontier - GM BluePlan 11/22/2020 9:50:31 PM



TOWNSHIP OF  
MAPLETON



SCALE = 1:1500 HORIZ  
1:150 VERT

CROSS SECTION A-A'

GLEN ALLAN  
SUBDIVISION  
HYDROGEOLOGY STUDY

Figure No. 8





## **TABLES**

Table 1 - Summary of Water Well Records

MECP Well ID	Address	Lot	Conc.	Easting	Northing	Township	County/ Municipality	Well Use	Bedrock/ Overburden	Depth to Bedrock (m)	Total Depth of Well (m)	Static Water Level (m)	Year Drilled	Pumping Rate (GPM)	Notes
<b>Wells on Neighbouring Properties</b>															
6701980	~	4	2	523123	4833925	Peel	Wellington	Domestic/ Livestock	Overburden	~	0.00	0.00	1961	5	
6701981	~	5	2	523402	4833855	Peel	Wellington	Domestic/ Livestock	Bedrock	0	0.00	0.00	1955	10	
6701982	~	6	2	523805	4833404	Peel	Wellington	Domestic/ Livestock	Bedrock	0	0.00	0.00	1955	14	
6701983	~	6	2	523920	4833395	Peel	Wellington	Domestic/ Livestock	Bedrock	0	0.00	0.00	1964	12	
6701989	~	6	3	524035	4833829	Peel	Wellington	Domestic/ Livestock	Bedrock	0	0.00	0.00	1950	12	
6701990	~	6	3	524202	4833546	Peel	Wellington	Public	Bedrock	0	0.00	0.00	1958	12	
6703351	~	5	3	523464	4833973	Peel	Wellington	Domestic	Bedrock	0	0.00	0.00	1969	15	Mennonite Church
6703433	~	5	3	523764	4833783	Peel	Wellington	Domestic	Overburden	~	0.00	0.00	1969	3	
6703657	~	5	3	523614	4833923	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1970	30	
6703821	~	4	3	523134	4834153	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1970	10	
6704556	~	6	2	524268	4833416	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1973	6	
6704584	~	6	2	523784	4833623	Peel	Wellington	Domestic	Overburden	~	0.00	0.00	1972	4	
6705961	~	6	2	523914	4833583	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1974	15	
6706161	~	4	3	523134	4834183	Peel	Wellington	Domestic	Overburden	~	0.00	0.00	1976	25	
6706461	~	6	2	523714	4833723	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1977	8	
6706519	~	6	2	523964	4833423	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1977	12	
6706671	~	5	2	523714	4833723	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1977	6	
6707033	~	5	2	523514	4833773	Peel	Wellington	Domestic	Bedrock	0.00	0.00	~	1979	10	
6707081	~	5	2	523714	4833673	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1979	12	
6707198	~	6	2	523914	4833523	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1979	10	
6707250	~	6	2	524314.1	4833373	Peel	Wellington	Domestic	Overburden	~	0.00	0.00	1979	10	
6708569	~	6	2	523943	4833337	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1986	8	
6708783	~	5	2	523590	4833791	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1987	10	
6708784	~	6	2	523944	4833196	Peel	Wellington	Domestic	Overburden	~	0.00	0.00	1986	10	
6709367	~	5	2	523687	4833607	Peel	Wellington	Domestic	Overburden	~	0.00	0.00	1988	2	
6709653	~	5	2	523610	4833607	Peel	Wellington	Domestic	Bedrock	0	0.00	0.00	1989	10	
6709660	~	6	2	523874	4833562	Peel	Wellington	Domestic	Overburden	~	0.00	0.00	1988	10	
6711052	~	5	2	523703	4833590	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1992	10	
6711371	~	4	2	523214	4833967	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1993	10	
6712620	~	5	2	523195	4833276	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1998	10	
6712623	~	5	2	523383	4833899	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	1998	10	
6713256	~	6	2	523712.5	4832976	Peel	Wellington	Domestic	Overburden	~	0.00	0.00	1999	10	
6713395	~	4	2	523098	4834031	Peel	Wellington	Domestic/ Livestock	Bedrock	0.00	0.00	0.00	2000	10	
6713398	~	5	2	523191.5	4833274	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2000	10	
6714425	6 Snyder Ave	5	3	523854	4834460	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2002	10	
6714426	1 Snyder Ave	5	3	523854	4834460	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2002	8	
6714427	2 Snyder Ave	5	3	523854	4834460	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2002	10	
6714428	3 Snyder Ave	5	3	523854	4834460	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2002	10	
6714429	4 Snyder Ave	5	3	523854	4834460	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2002	10	

Table 1 - Summary of Water Well Records

MECP Well ID	Address	Lot	Conc.	Easting	Northing	Township	County/ Municipality	Well Use	Bedrock/ Overburden	Depth to Bedrock (m)	Total Depth of Well (m)	Static Water Level (m)	Year Drilled	Pumping Rate (GPM)	Notes
<b>Wells on Neighbouring Properties</b>															
6714430	5 Snyder Ave	5	3	523854	4834460	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2002	10	
6714535	~	5	3	523854	4834460	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2003	10	
6715142	2 Wallenstein	4	3	523246	4834068	Peel	Wellington	Domestic	Overburden	~	29.90	13.88	2004	10	
6715293	2 Wallenstein	~	~	523587	4833516	Peel	Wellington	Domestic	Bedrock	54.76	56.00	21.29	2004	10	
6715389	Wellington Rd, 45 St.	~	2	524013	4833561	Peel	Wellington	Observation	Overburden	~	14.00	~	2005	~	
6715648	RR2 Wallenstein	5	2	523645	4833668	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2005	10	
7038922	Wellington Rd 45 Conestoga River Bridge		2	524003	4833597	Peel	Wellington	~	~	~	~	~	2006	~	Abandonment record
7041717	#2 7810 County Rd 45	2	2	523625	4833789	Peel	Wellington	~	~	~	~	~	2007	~	Abandonment record
7041718	RR2 7810 County Rd 45 Con 3	2	2	523626	4833760	Peel	Wellington	Domestic	Bedrock	32.92	45.72	18.28	2007	8.5	
7041860	Wellington Rd 45 Conestoga River Bridge	~	~	524012	4833561	Peel	Wellington	~	~	~	~	~	2007	~	Abandonment record
7102352	7832 Wellington Rd 45, RR2	5	2	523339	4833888	Peel	Wellington	Domestic	Bedrock	18.30	43.00	18.84	2007	10.5	
7103681	6534 SO. Rd. #17 RR #2	6	3	524352	4833524	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2007	10	
7129928	51 Hill Street	6	2	523718	4833578	Peel	Wellington	~	~	~	~	~	2009	~	Abandonment record
7129929	51 Hill Street	6	2	523735	4833596	Peel	Wellington	~	~	~	~	~	2009	~	Abandonment record
7152856	7859 Wellington Rd 45	4	3	523039	4834190	Peel	Wellington	~	~	~	~	~	2010	~	Abandonment record
7169460	58 Hill Street	~	~	523633	4833548	Peel	Wellington	~	~	~	~	~	2011	~	Abandonment record
7181524	37 Hill Street	~	~	523521	4833505	Peel	Wellington	~	~	~	~	~	2012	~	Water Supply Status
7187197	8 Mill Street S	6	2	523618	4833712	Peel	Wellington	Domestic	Bedrock	36.70	50.30	24.38	2012	12	
7187198	7806 Wellington Rd 45	5	2	523678	4833719	Peel	Wellington	Domestic	Bedrock	31.40	37.50	18.26	2012	12	
7189475	7 Centre Street	5	2	523556	4833752	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2012	12	
7194472	7766 Wellington Rd 45	6	2	524230	4833446	Peel	Wellington	Domestic	Overburden	~	24.70	8.99	2012	12	
7202098	7812 Wellington Rd 45, RR2	13	3	523596	4833788	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2013	15	
7202099	7812 Wellington Rd 45, RR2	13	3	523594	4833777	Peel	Wellington	~	~	~	~	~	2013	~	Abandonment record
7219544	6534 Sideroad 17	6	3	524349	4833494	Peel	Wellington	~	~	~	~	~	2014	~	Abandonment record
7265078	7833 RR #45	~	~	523370	4833972	Peel	Wellington	Domestic	Overburden	~	0.00	0.00	2016	5	
7268130	7862 Wellington Rd 45	4	2	523049	4833961	Peel	Wellington	Other	Bedrock	0	0.00	0.00	2016	20	
7281424	7777 Wellington Rd 45	7	3	524398	4833488	Peel	Wellington	Livestock	Bedrock	0	0.00	0.00	2016	15	
7288220	18 Mill Street	6	2	523548	4833669	Peel	Wellington	Domestic	Bedrock	0.00	0.00	0.00	2017	12	

Table 2 - Theoretical Well Yields for Nearby Wells

MECP Well ID	Easting	Northing	County/Municipality	Bedrock/Overburden	Depth to Bedrock (m)	Total Depth of Well (m)	Static Water Level (m)	Year Drilled	Pumping Rate (GPM)	Test Duration (hr)	End of Test Water Level (m)	Drawdowns (m)	Transmissivity =0.6Q/s	Available Drawdown =0.9 sat thickness H (m)	Well Yield =0.54TH (m <sup>3</sup> /s)	Well Yield (L/min)	Well Yield (gpm)	K (m/sec)	R <sub>0</sub> (m)
<b>Wells on Neighbouring Properties</b>																			
6701980	523123	4833925	Wellington	Overburden	~	51.24	39.65	1961	5	15.00	50.33	10.68	2.13E-05	10.43	0.000120	7.20	1.66	1.84E-06	43.41
6701981	523402	4833855	Wellington	Bedrock	40.87	55.51	21.96	1955	10	5.00	23.18	1.22	3.73E-04	30.20	0.006076	364.54	83.85	1.11E-05	12.20
6701982	523805	4833404	Wellington	Bedrock	57.95	61.00	15.86	1955	14	4.00	16.17	0.31	2.09E-03	40.63	0.045778	2746.67	631.73	4.62E-05	6.22
6701983	523920	4833395	Wellington	Bedrock	52.46	54.29	10.98	1964	12	6.00	15.25	4.27	1.28E-04	38.98	0.002689	161.35	37.11	2.95E-06	22.00
6701989	524035	4833829	Wellington	Bedrock	51.24	64.36	7.93	1950	12	~	~	~	-	~	~	~	~	~	~
6701990	524202	4833546	Wellington	Bedrock	54.29	59.78	9.15	1958	12	6.00	10.68	-	-	45.57	-	-	-	-	-
6703351	523464	4833973	Wellington	Bedrock	51.24	55.51	18.30	1969	15	3.00	20.74	2.44	2.79E-04	33.49	0.005054	303.23	69.74	7.51E-06	20.06
6703433	523764	4833783	Wellington	Overburden	~	10.68	7.63	1969	3	~	10.68	3.05	4.47E-05	2.75	0.000066	3.98	0.91	1.47E-05	35.03
6703657	523614	4833923	Wellington	Bedrock	47.28	51.85	3.05	1970	30	2.50	4.58	1.53	8.94E-04	43.92	0.021210	1272.59	292.70	1.83E-05	19.58
6703821	523134	4834153	Wellington	Bedrock	51.55	54.29	25.93	1970	10	7.00	38.13	12.20	3.73E-05	25.53	0.000514	30.82	7.09	1.31E-06	41.95
6704556	524268	4833416	Wellington	Bedrock	55.21	56.43	9.15	1973	6	2.00	12.20	3.05	8.94E-05	42.55	0.002055	123.28	28.35	1.89E-06	12.58
6704584	523784	4833623	Wellington	Overburden	~	17.69	10.07	1972	4	0.50	17.69	7.63	2.38E-05	6.86	0.000088	5.30	1.22	3.13E-06	40.45
6705961	523914	4833583	Wellington	Bedrock	27.15	31.11	6.10	1974	15	4.00	12.20	6.10	1.12E-04	22.51	0.001359	81.53	18.75	4.47E-06	38.69
6706161	523134	4834183	Wellington	Overburden	~	71.07	28.37	1976	25	3.00	-	-	-	-	-	-	-	-	-
6706461	523714	4833723	Wellington	Bedrock	54.90	57.95	17.39	1977	8	1.50	24.71	7.32	4.97E-05	36.51	0.000979	58.77	13.52	1.22E-06	24.30
6706519	523964	4833423	Wellington	Bedrock	25.93	33.55	18.00	1977	12	1.25	24.40	6.41	8.52E-05	14.00	0.000644	38.63	8.89	5.48E-06	44.96
6706671	523714	4833723	Wellington	Bedrock	22.88	33.55	13.42	1977	6	1.75	21.96	8.54	3.19E-05	18.12	0.000312	18.75	4.31	1.59E-06	32.27
6707033	523514	4833773	Wellington	Bedrock	31.11	42.70	~	1979	10	1.00	~	~	~	~	~	~	~	~	~
6707081	523714	4833673	Wellington	Bedrock	57.04	65.58	16.17	1979	12	1.00	20.74	4.58	1.19E-04	44.47	0.002863	171.80	39.51	2.41E-06	21.32
6707198	523914	4833523	Wellington	Bedrock	25.93	42.70	1.53	1979	10	2.00	1.53	0.00	-	37.06	-	-	-	-	-
6707250	524314.1	4833373	Wellington	Overburden	~	19.22	1.83	1979	10	3.50	1.83	0.00	-	15.65	-	-	-	-	-
6708569	523943	4833337	Wellington	Bedrock	44.53	47.28	1.53	1986	8	1.50	3.66	2.14	1.70E-04	41.18	0.003787	227.25	52.27	3.72E-06	12.36
6708783	523590	4833791	Wellington	Bedrock	28.98	39.65	15.25	1987	10	2.00	19.83	4.58	9.94E-05	21.96	0.001178	70.70	16.26	4.07E-06	27.70
6708784	523944	4833196	Wellington	Overburden	~	51.85	19.83	1986	10	1.00	22.88	3.05	1.49E-04	28.82	0.002320	139.19	32.01	4.65E-06	19.74
6709367	523687	4833607	Wellington	Overburden	~	13.42	3.66	1988	2	~	~	~	-	~	~	~	~	~	~
6709653	523610	4833607	Wellington	Bedrock	47.58	61.00	26.54	1989	10	2.00	33.55	7.02	6.48E-05	31.02	0.001085	65.13	14.98	1.88E-06	28.86
6709660	523874	4833562	Wellington	Overburden	~	37.52	6.10	1988	10	2.00	12.20	6.10	7.45E-05	28.27	0.001138	68.27	15.70	2.37E-06	28.19
6711052	523703	4833590	Wellington	Bedrock	29.59	40.57	21.35	1992	10	2.00	24.40	3.05	1.49E-04	17.29	0.001392	83.51	19.21	7.76E-06	25.48
6711371	523214	4833967	Wellington	Bedrock	43.31	48.80	26.23	1993	10	1.00	30.50	4.27	1.06E-04	20.31	0.001168	70.07	16.12	4.72E-06	27.82
6712620	523195	4833276	Wellington	Bedrock	20.44	29.28	10.07	1998	10	1.33	12.51	2.44	1.86E-04	17.29	0.001740	104.39	24.01	9.70E-06	22.79
6712623	523383	4833899	Wellington	Bedrock	49.11	51.85	9.15	1998	10	1.50	18.30	9.15	4.97E-05	38.43	0.001031	61.86	14.23	1.16E-06	29.61
6713256	523712.5	4832976	Wellington	Overburden	~	19.22	5.49	1999	10	3.50	13.73	8.24	5.52E-05	12.35	0.000368	22.09	5.08	4.02E-06	49.55
6713395	523098	4834031	Wellington	Bedrock	69.54	73.20	32.64	2000	10	2.00	42.70	10.07	4.52E-05	36.51	0.000890	53.43	12.29	1.11E-06	31.86
6713398	523191.5	4833274	Wellington	Bedrock	43.01	46.97	10.37	2000	10	1.00	12.81	2.44	1.86E-04	32.94	0.003314	198.84	45.73	5.09E-06	16.52
6714425	523854	4834460	Wellington	Bedrock	13.73	28.98	10.68	2002	10	1.50	11.90	1.22	3.73E-04	16.47	0.003314	198.84	45.73	2.04E-05	16.52
6714426	523854	4834460	Wellington	Bedrock	19.83	28.98	8.85	2002	8	2.00	12.51	3.66	9.94E-05	18.12	0.000972	58.33	13.42	4.94E-06	24.39
6714427	523854	4834460	Wellington	Bedrock	18.91	24.40	9.46	2002	10	1.00	10.68	1.22	3.73E-04	13.45	0.002706	162.39	37.35	2.49E-05	18.28
6714428	523854	4834460	Wellington	Bedrock	18.91	24.40	9.76	2002	10	1.50	10.98	1.22	3.73E-04	13.18	0.002651	159.07	36.59	2.55E-05	18.46
6714429	523854	4834460	Wellington	Bedrock	13.42	28.98	9.76	2002	10	2.00	11.29	1.53	2.98E-04	17.29	0.002784	167.03	38.42	1.55E-05	18.02
6714430	523854	4834460	Wellington	Bedrock	11.59	28.98	10.68	2002	10	1.75	11.59	0.92	4.97E-04	16.47	0.004419	265.12	60.98	2.71E-05	14.30
6714535	523854	4834460	Wellington	Bedrock	21.66	34.47	14.64	2003	10	1.00	22.88	8.24	5.52E-05	17.84	0.000532	31.91	7.34	2.78E-06	41.23
6715142	523246	4834068	Wellington	Overburden	~	29.90	13.88	2004	10	1.50	18.50	4.62	9.84E-05	14.42	0.000766	45.97	10.57	6.14E-06	34.35
6715293	523587	4833516	Wellington	Bedrock	54.76	56.00	21.29	2004	10	1.00	21.91	0.62	7.33E-04	31.24	0.012369	742.13	170.69	2.11E-05	8.55
6715389	524013	4833561	Wellington	Overburden	~	14.00	~	2005	~	~	~	~	-	~	~	~	~	~	~
6715648	523645	4833668	Wellington	Bedrock	30.50	38.13	24.40	2005	10	1.00	26.54	2.14	2.13E-04	12.35	0.001420	85.22	19.60	1.55E-05	25.23

Table 2 - Theoretical Well Yields for Nearby Wells

MECP Well ID	Easting	Northing	County/ Municipality	Bedrock/ Overburden	Depth to Bedrock (m)	Total Depth of Well (m)	Static Water Level (m)	Year Drilled	Pumping Rate (GPM)	Test Duration (hr)	End of Test Water Level (m)	Drawdowns (m)	Transmissivity =0.6Q/s	Available Drawdown =0.9 sat thickness H (m)	Well Yield =0.54TH (m <sup>3</sup> /s)	Well Yield (L/min)	Well Yield (igpm)	K (m/sec)	R <sub>0</sub> (m)
<b>Wells on Neighbouring Properties</b>																			
7038922	524003	4833597	Wellington	~	~	~	~	2006	~		~	~	-	~	~	~	~	~	~
7041717	523625	4833789	Wellington	~	~	~	~	2007	~		~	~	-	~	~	~	~	~	~
7041718	523626	4833760	Wellington	Bedrock	32.92	45.72	18.28	2007	8.5	1.00	27.74	9.46	4.08E-05	24.70	0.000545	32.68	7.52	1.49E-06	34.63
7041860	524012	4833561	Wellington	~	~	~	~	2007	~		~	~	-	~	~	~	~	~	~
7102352	523339	4833888	Wellington	Bedrock	18.30	43.00	18.84	2007	10.5	1.00	22.74	3.90	1.22E-04	21.74	0.001437	86.23	19.83	5.07E-06	26.33
7103681	524352	4833524	Wellington	Bedrock	35.99	50.02	19.52	2007	10	1.00	28.06	8.54	5.32E-05	27.45	0.000789	47.34	10.89	1.75E-06	33.85
7129928	523718	4833578	Wellington	~	~	~	~	2009	~		~	~	-	~	~	~	~	~	~
7129929	523735	4833596	Wellington	~	~	~	~	2009	~		~	~	-	~	~	~	~	~	~
7152856	523039	4834190	Wellington	~	~	~	~	2010	~		~	~	-	~	~	~	~	~	~
7169460	523633	4833548	Wellington	~	~	~	~	2011	~		~	~	-	~	~	~	~	~	~
7181524	523521	4833505	Wellington	~	~	~	~	2012	~		~	~	-	~	~	~	~	~	~
7187197	523618	4833712	Wellington	Bedrock	36.70	50.30	24.38	2012	12	1.00	30.66	6.28	8.69E-05	23.33	0.001094	65.66	15.10	3.35E-06	34.49
7187198	523678	4833719	Wellington	Bedrock	31.40	37.50	18.26	2012	12	1.00	19.68	1.42	3.84E-04	17.32	0.003592	215.53	49.57	2.00E-05	19.04
7189475	523556	4833752	Wellington	Bedrock	32.03	60.09	24.25	2012	12	2.00	44.23	19.98	2.73E-05	32.25	0.000476	28.54	6.56	7.62E-07	52.32
7194472	524230	4833446	Wellington	Overburden	~	24.70	8.99	2012	12	1.00	11.24	2.25	2.42E-04	14.14	0.001851	111.07	25.55	1.54E-05	26.52
7202098	523596	4833788	Wellington	Bedrock	26.54	53.99	18.61	2013	15	1.50	27.45	8.85	7.71E-05	31.84	0.001326	79.54	18.29	2.18E-06	39.17
7202099	523594	4833777	Wellington	~	~	~	~	2013	~		~	~	-	~	~	~	~	~	~
7219544	524349	4833494	Wellington	~	~	~	~	2014	~		~	~	-	~	~	~	~	~	~
7265078	523370	4833972	Wellington	Overburden	~	12.20	6.58	2016	10	1.00	8.97	2.39	1.90E-04	5.06	0.000519	31.16	7.17	3.39E-05	41.72
7268130	523049	4833961	Wellington	Bedrock	74.115	78.39	30.50	2016	45	1.00	33.55	3.05	6.71E-04	43.10	0.015609	936.55	215.41	1.40E-05	34.24
7281424	524398	4833488	Wellington	Bedrock	74.725	76.25	24.71	2016	30	1.00	35.38	10.68	1.28E-04	46.39	0.003200	192.02	44.17	2.48E-06	50.42
7288220	523548	4833669	Wellington	Bedrock	60.09	72.29	27.76	2017	10	1.50	34.47	6.71	6.77E-05	40.08	0.001466	87.97	20.23	1.52E-06	24.83

Average: 2.23E-04

**Table 3: Water Level Observations**

Well ID	Ground Elev. (masl)	Northing (UTM)	Easting (UTM)	TOC Elev. (masl)	Screen		Water Level		Water Level		Water Level		Water Level	
					Bottom Elev. (masl)	Length (m)	Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)
<b>Overburden Monitoring Wells</b>							<b>August 29-30, 2018</b>		<b>September 18, 2020</b>		<b>September 20, 2020</b>		<b>September 20, 2020</b>	
MW-2	403.126	4833551.36	523422.757	403.126	397.34	3.0	2.416	400.71	3.33	399.80	3.47	399.66	3.46	399.67
MW-3	402.273	4833627.209	523408.383	402.273	395.56	3.1	3.403	398.87	3.90	398.37	3.96	398.31	3.95	398.33
MW-4	399.004	4833699.816	523504.398	399.004	388.33	3.1	9.474	389.53	10.10	388.90	10.05	388.95	10.04	388.96
MW-5	399.697	4833563.988	523524.19	399.697	392.99	3.0	5.707	393.99	6.54	393.16	6.61	393.09	6.62	393.08

mbTOC - metres below top of casing of well

TOC - Top of Casing

masl - metres above Sea Level

Elev. - Elevation

**Table 4 - Summary of Overburden Groundwater Quality**

Parameter	ODWS MAC	ODWS A/O	Units	MW-2 (05-Dec-2018)	MW-3 (05-Dec-2018)	MW-4 (05-Dec-2018)	MW-5 (05-Dec-2018)
<b>General Chemistry</b>							
Alkalinity (Total as CaCO <sub>3</sub> )	-	30-500	mg/L	390	<b>510</b>	330	330
Calculated TDS	-	500	mg/L	450	<b>540</b>	390	430
Hardness (CaCO <sub>3</sub> )	-	80-100	mg/L	<b>400</b>	<b>470</b>	<b>360</b>	<b>390</b>
Orthophosphate (P)	-	-	mg/L	<0.010	<0.010	<0.010	<0.010
Conductivity	-	-	umho/cm	780	910	670	730
pH	-	6.5-8.5	pH	7.94	8.03	7.97	7.97
Dissolved Sulphate (SO <sub>4</sub> )	-	500	mg/L	33	22	35	44
Dissolved Chloride (Cl)	-	250	mg/L	16	4.9	15	17
Nitrite (N)	1.0	-	mg/L	<0.010	0.017	<0.010	<0.010
Nitrate (N)	10	-	mg/L	0.24	0.25	<0.10	<0.10
Nitrite + Nitrate	11	-	mg/L	0.24	0.26	<0.10	<0.10
Total Ammonia-N	-	-	mg/L	0.24	0.31	0.23	0.17
Dissolved Sodium (Na)	20	200	mg/L	18	<b>36</b>	11	13
Dissolved Organic Carbon	-	5	mg/L	1.3	1.6	0.64	0.95
Dissolved Iron (Fe)	-	300	µg/L	<100	<b>350</b>	<100	230
Dissolved Manganese (Mn)	-	50	µg/L	<b>95</b>	<b>110</b>	22	42
<b>Petroleum Hydrocarbons (BTEX)</b>							
Benzene	5	-	µg/L	-	-	-	<0.20
Toluene	-	24	µg/L	-	-	-	0.27
Ethylbenzene	-	2.4	µg/L	-	-	-	<0.20
Total Xylenes	-	300	µg/L	-	-	-	<0.40

Notes:

1. ODWS - Ontario Drinking Water Standards
2. MAC - Maximum Acceptable Concentration
3. A/O - Aesthetic Objective
4. Values in **bold** and shaded exceed the A/O
5. Values in **white text** and shaded exceed the MAC
6. The aesthetic objective for sodium in drinking water is 200 mg/L. However, the Local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.
7. "-" indicates that there is no associated value or that the parameter was not measured.
8. MW-5 was analyzed for petroleum hydrocarbons due to its proximity to a diesel fuel tank.

**Table 5  
Summary of Bedrock Groundwater Chemistry**

Parameter	ODWS MAC	ODWS A/O	ODWS OG	Units	DW-1 Well Tag: A300134		DW-2 Well Tag: A300131		DW-3 Well Tag: A300138	
					Pumping Test 18-Sept-2020		Pumping Test 21-Sept-2020		Pumping Test 22-Sept-2020	
					Early Time	Late Time	Early Time	Late Time	Early Time	Late Time
<b>General Chemistry</b>										
Calculated TDS	-	500	-	mg/L	570	560	500	500	470	470
Hardness (CaCO3)	-	80-100	-	mg/L	410	400	330	340	250	250
Total Ammonia-N	-	-	-	mg/L	0.48	0.47	0.57	0.57	<0.050	<0.050
Conductivity	-	-	-	umho/cm	800	810	770	780	480	470
Dissolved Organic Carbon	-	5	-	mg/L	1.4	1.4	1.3	1.3	<0.50	<0.50
Orthophosphate (P)	-	-	-	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH	-	6.5-8.5	-	pH	8.04	7.98	7.99	7.98	8	8.15
Dissolved Sulphate (SO4)	-	500	-	mg/L	260	260	210	210	12	12
Alkalinity (Total as CaCO3)	-	30-500	-	mg/L	200	200	210	200	240	240
Dissolved Chloride (Cl)	-	250	-	mg/L	2.3	1.5	2	2.1	3.8	4
Nitrite (N)	1	-	-	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate (N)	10	-	-	mg/L	<0.10	<0.10	<0.10	<0.10	0.42	0.38
Nitrite + Nitrate (N)	10	-	-	mg/L	<0.10	<0.10	<0.10	<0.10	0.42	0.38
<b>Microbiology</b>										
Residual Chlorine - Field Observed	-	-	-	mg/L	0.01	0.00	0.03	0.01	0.00	0.01
Total Coliforms	-	-	-	CFU/100mL	0	0	0	0	0	0
<b>Dissolved Metals</b>										
Dissolved Aluminum (Al)	-	-	100	ug/L	<4.9	<4.9	<4.9	<4.9	<4.9	<4.9
Dissolved Antimony (Sb)	6	-	-	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Arsenic (As)	25	-	-	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Barium (Ba)	1000	-	-	ug/L	15	14	41	41	53	53
Dissolved Beryllium (Be)	-	-	-	ug/L	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
Dissolved Boron (B)	5000	-	-	ug/L	62	61	62	64	61	60
Dissolved Cadmium (Cd)	5	-	-	ug/L	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Calcium (Ca)	-	-	-	ug/L	100000	100000	83000	86000	78000	79000
Dissolved Chromium (Cr)	50	-	-	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dissolved Cobalt (Co)	-	-	-	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Copper (Cu)	-	1000	-	ug/L	<0.90	<0.90	<0.90	<0.90	<0.90	<0.90
Dissolved Iron (Fe)	-	300	-	ug/L	<100	<100	<100	<100	<100	<100
Dissolved Lead (Pb)	10	-	-	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Magnesium (Mg)	-	-	-	ug/L	37000	35000	30000	31000	29000	28000
Dissolved Manganese (Mn)	-	50	-	ug/L	4.7	3.9	20	16	17	15
Dissolved Molybdenum (Mo)	-	-	-	ug/L	3.2	3.2	3.5	3.6	3.6	3.8
Dissolved Nickel (Ni)	-	-	-	ug/L	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Phosphorus (P)	-	-	-	ug/L	<100	<100	110	110	120	130
Dissolved Potassium (K)	-	-	-	ug/L	1500	1500	830	860	890	870
Dissolved Selenium (Se)	-	-	-	ug/L	<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
Dissolved Silicon (Si)	-	-	-	ug/L	5100	5000	5200	5400	5200	5100
Dissolved Silver (Ag)	-	-	-	ug/L	<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Sodium (Na)	20000	200000	-	ug/L	<b>28000</b>	<b>27000</b>	<b>31000</b>	<b>32000</b>	<b>32000</b>	<b>32000</b>
Dissolved Strontium (Sr)	-	-	-	ug/L	2600	2700	2300	2400	2000	1900
Dissolved Thallium (Tl)	-	-	-	ug/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Titanium (Ti)	-	-	-	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
Dissolved Uranium (U)	20	-	-	ug/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Dissolved Vanadium (V)	-	-	-	ug/L	<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Zinc (Zn)	-	5000	-	ug/L	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

**Notes:**

1. ODWS = Ontario Drinking Water Standards
2. MAC = Maximum Acceptable Criteria; health based criteria
3. A/O = Aesthetic Objective; aesthetic criteria
4. Values in **bold** exceed the A/O
5. Values in **bold** and shaded exceed the MAC
6. The aesthetic objective for sodium in drinking water is 200 mg/L. However, the local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.
7. "-" indicates that there is no associated value or the parameter was not measured.

**Table 6: Summary of Observations from Aquifer Performance Tests**

Well ID	MECP Well ID	Ground Elev. (m ASL)	TOC Elev. (m ASL)	Depth of Well (m)	Bedrock Elev. (m)	Depth to Static WL (m ASL)	Top of Aquifer (m ASL)	Q <sub>t</sub> (L/min)	Duration of Pumping (min)	Maximum Δs (m)	Recovery Time (min)
DW-1	A300134	400.315	400.751	67.6	339.4	27.95	372.8	41	376	3.67	10
DW-2	A300131	402.294	402.951	64	340.1	29.96	373.0	100	370	0.705	195
DW-3	A300138	404.358	404.896	73.8	332.5	31.90	373.0	84 L/min for 2 minutes, then 63 L/Min for remainder	360	2.265	95

**Notes:**

Static WL: Elevation of water surface in well immediately before pumping that well for aquifer performance test.

Maximum Δs: Maximum drawdown, the drawdown at the end of pumping.

Recovery Time: Time for well to recover 95% of its maximum drawdown.

Q<sub>t</sub>: Well discharge (or pumping) rate during the test.

**Table 7: Summary of Aquifer Supply Characteristics**

Pumping Well	Pumping Test Date	Well Completion	Observation Well	Analytical Method	Q <sub>t</sub> (L/min)	T (m <sup>2</sup> /s)	K (m/s)	S (--)	H <sub>A</sub> (m)
DW-1 A300134	9/18/2020	Bedrock	DW-1	Theis	41	3.91E-04	3.91E-05	7.84E-10	40
				Hantush (Leaky)		3.15E-04	3.15E-05	4.63E-08	
			DW-2	Theis		4.40E-04	4.40E-05	1.43E-05	
			DW-3	Theis		1.57E-03	1.57E-04	1.36E-04	
			<b>AVERAGE</b>				<b>6.79E-04</b>	<b>6.79E-05</b>	
DW-2 A300131	9/21/2020	Bedrock	DW-1	Theis	100	7.62E-04	7.62E-05	6.00E-04	34
				Double Porosity		9.24E-04	9.24E-05	1.08E-05	
			DW-2	Theis		1.12E-03	1.12E-04	2.29E+01	
				Double Porosity		1.12E-03	1.12E-04	3.07E+02	
			DW-3	Theis		1.00E-03	1.00E-04	1.00E-04	
				Double Porosity		7.78E-04	7.78E-05	4.77E-05	
			<b>AVERAGE</b>				<b>9.51E-04</b>	<b>9.51E-05</b>	
DW-3 A300138	9/21/2020	Bedrock	DW-1	Theis Early Time Fit	63	8.69E-04	8.69E-05	1.55E-04	42
				Double Porosity		6.16E-04	6.16E-05	7.22E-05	
			DW-2	Theis Early Time Fit - OW 2		7.78E-04	7.78E-05	1.00E-04	
				Double Porosity - OW 2		6.55E-04	6.55E-05	3.21E-05	
			DW-3	Theis		6.61E-04	6.61E-05	5.02E-05	
				Double Porosity		5.40E-05	5.40E-06	3.58E-01	
				Theis Early Time Fit		9.87E-05	9.87E-06	3.92E-01	
				Hantush (Leaky)		8.74E-04	8.74E-05	3.59E-07	
				Hantush - Early Time		7.44E-05	7.44E-06	3.79E-01	
			<b>AVERAGE</b>				<b>5.20E-04</b>	<b>5.20E-05</b>	

**Notes:**

1. Q<sub>t</sub>= Discharge flow rate during pumping test
2. T= Transmissivity of the Aquifer
3. S= Storativity of the Aquifer
4. H<sub>A</sub>= Available Drawdown, height of water column above the top of the aquifer.
5. K= Calculated Hydraulic Conductivity of the Aquifer

**Table 8: Estimates of Sustainable Well Yield and Radius of Influence**

Safety Factor (S <sub>f</sub> ) =	0.7		$Q_{20} = \frac{S_f Q_t H_A}{s_{100} + 5\Delta s_p} \quad \Delta s_p = \frac{2.3Q_t}{4\pi T} \quad s_{20} = \frac{2.3Q}{4\pi T} \log \frac{16436.25T}{r^2 S}$		
Unit Flow =	1000 L/day				
# of Lots =	11				
Design Flow (Q) =	11 m <sup>3</sup> /day				
Observation Well	s <sub>100</sub>	Q <sub>20</sub>	Q <sub>20</sub>	Radius r (m)	
(--)	(m)	(m <sup>3</sup> /day)	(L/day)	10	300
				s <sub>20</sub>	s <sub>20</sub>
				(m)	(m)
DW-1 - A300134	3.82	349.1	3.49E+05	0.28	0.18
DW-2 - A300131	0.58	1569.0	1.57E+06	0.20	0.13
DW-3 - A300138	2.16	665.5	6.65E+05	0.37	0.23

**Notes:**

1. s<sub>100</sub>= Drawdown measured after 100 minutes
2. Q<sub>20</sub>= Sustainable Well Yield as calculated by the Modified Moell Method (Maathuis and van der Kamp 2006)
3. Q<sub>t</sub>= Pumping Rate during the pump tests
4. s<sub>20</sub>= Drawdown at radius r after 20 years of pumping at Design Flow (Maathuis and van der Kamp 2006)

**Table 9: Estimates of Radius of Influence**

		# of Lots = 11					
	Flow Rate (Q)	Unit Flow 1000 L/day			Design Flow 11 m <sup>3</sup> /day		
		s <sub>20</sub> (m)					
	Radius r (m)	5	25	50	5	25	300
Observation Well	DW-1 - A300134	0.028	0.024	0.022	0.30	0.25	0.18
	DW-2 - A300131	0.007	0.004	0.002	0.21	0.18	0.13
	DW-3 - A300138	0.022	0.016	0.014	0.39	0.33	0.23

$$s_{20} = \frac{2.3Q}{4\pi T} \log \frac{16436.25T}{r^2 S}$$

**Notes:**

1. s<sub>20</sub>= Drawdown at radius r after 20 years of pumping at a specified flow rate (Maathuis and van der Kamp 2006)

**Table 10**  
**Attenuation of Nitrogen from Sewage Output of Proposed Development**

<u>Parameters</u>	<u>Value</u>	<u>Source</u>
Total Precipitation (mm/yr) =	1014.5	Environment Canada Climate Normals (Glen Allan Station)
Evapotranspiration (mm/yr) =	480	Grand River Conservation Authority, 2009. Grand River Watershed Integrated Water Budget Report
Nitrogen Loading (as Nitrate, g/lot/day) =	40	Specified by Procedure D-5-4
Sewage Effluent (L/lot/day) =	1000	Allowable under Procedure D-5-4
Total Property Area (ha) =	4.29	Conceptual Lot Plan
Runoff Coefficient =	0.4	Ministry of Transportation of Ontario. Design Chart 1.07: Runoff Coefficients. Typical Suburban Residential.

$$C_N = \frac{N_{load}}{V_{sewage} + V_{hydrologic}}$$

Number of Lots (--)	Nitrogen Load (as Nitrate) (kg/yr)	Volumes Available for Dilution		Estimated Nitrogen Concentration (as Nitrate) (mg/L)
		User Input Sewage Effluent (m <sup>3</sup> /yr)	Hydrologic Input Infiltration by Water Balance (m <sup>3</sup> /yr)	
11	160.6	4015	13758.03	<b>9.04</b>

LEGEND: **Acceptable Nitrogen Loading (less than 10 mg/L)**

**APPENDIX A:  
DRAFT PLAN OF SUBDIVISION**

# DRAFT PLAN OF SUBDIVISION

## Legal Description

LOTS 34-36 WEST OF SOUTH MILL ST AND SOUTH OF HILL ST & LOTS 37-39 EAST OF CENTRE ST AND SOUTH OF HILL ST & LOTS 40 AND 41 WEST OF CENTRE ST AND SOUTH OF HILL ST & LOTS 42 AND 43 WEST OF CENTRE ST AND NORTH OF GEORGE ST & LOTS 44-46 EAST OF CENTRE ST AND NORTH OF GEORGE ST & LOTS 62-64 WEST OF SOUTH MILL ST AND SOUTH OF GEORGE ST & LOTS 65-67 EAST OF CENTRE ST AND SOUTH OF GEORGE ST & LOTS 68 AND 69 WEST OF CENTRE ST AND SOUTH OF GEORGE ST & LOTS 70 AND 71 WEST OF CENTRE ST AND NORTH OF WELLESLEY ST & LOTS 72-74 EAST OF CENTRE ST AND NORTH OF WELLESLEY ST & LOTS 75-77 WEST OF SOUTH MILL ST AND NORTH OF WELLESLEY ST, ALL BEING IN DONALD SUTHERLAND'S SURVEY AND PART OF LOT 5, CONC. 2 (GEOGRAPHIC TOWNSHIP OF PEEL) TOWNSHIP OF MAPLETON COUNTY OF WELLINGTON

## Owner's Certificate

I HEREBY AUTHORIZE MACNAUGHTON HERMSEN BRITTON CLARKSON PLANNING LIMITED TO SUBMIT THIS PLAN FOR APPROVAL.

DATE: \_\_\_\_\_ Heather Smith & Steve Guschbaer

DATE: \_\_\_\_\_ Steve Sebben

DATE: \_\_\_\_\_ Murray Martin

## Surveyor's Certificate

I HEREBY CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED ON THIS PLAN AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE ACCURATELY AND CORRECTLY SHOWN.

DATE: \_\_\_\_\_ Ron Mak, OLS (Van Harten Surveying Inc.)

## Key Plan

Source: County of Wellington

- Subject Lands
- Additional Lands Owned by Applicant
- Urban Boundary

SCALE: NTS

## Additional Information Required Under Section 51(17) of the Planning Act R.S.O. 1990, c.P.13 as Amended

- |                |                           |             |
|----------------|---------------------------|-------------|
| A. AS SHOWN    | B. AS SHOWN               | C. AS SHOWN |
| D. RESIDENTIAL | E. AS SHOWN               | F. AS SHOWN |
| G. AS SHOWN    | H. MUNICIPAL WATER SUPPLY | I. LOAM     |
| J. AS SHOWN    | K. ALL SERVICES REQUIRED  | L. AS SHOWN |

## Area Schedule

Description	Lots/Blocks	Units	Area (ha)
Residential	1-11	11	3.303
Storm Water Management	12		0.292
Future Development	13,14		0.052
Road Widening	15		0.024
Roads			0.380
<b>Total</b>	<b>15</b>	<b>11</b>	<b>4.051</b>

## Notes

- ALL DIMENSIONS ARE IN METRES UNLESS OTHERWISE SHOWN.
- SURVEY INFORMATION PREPARED BY VAN HARTEN SURVEYING INC. (PLAN 61R-21807, JUNE 4, 2020)

No.	Date	Description	By
3	Nov. 27, 2020	Adjust property limits	CAC
2	Sept. 18, 2019	Adjust property limits; Blocks 2-4 realigned;	CAC
1	Dec. 13, 2018	Remove 6.0m SWM Access	CAC

Revision No.	Date	Issued / Revision	By
--------------	------	-------------------	----

**MHBC**  
PLANNING  
URBAN DESIGN  
& LANDSCAPE  
ARCHITECTURE  
200-540 BINGEMANS CENTRE DR. KITCHENER, ON. N2B 3X9 | P: 519.576.3650 F: 519.576.0121 | WWW.MHBCPLAN.COM

**Approval Stamp** Date Nov. 27, 2020

File No. 17410A

Plan Scale 1:500 (Arch D)

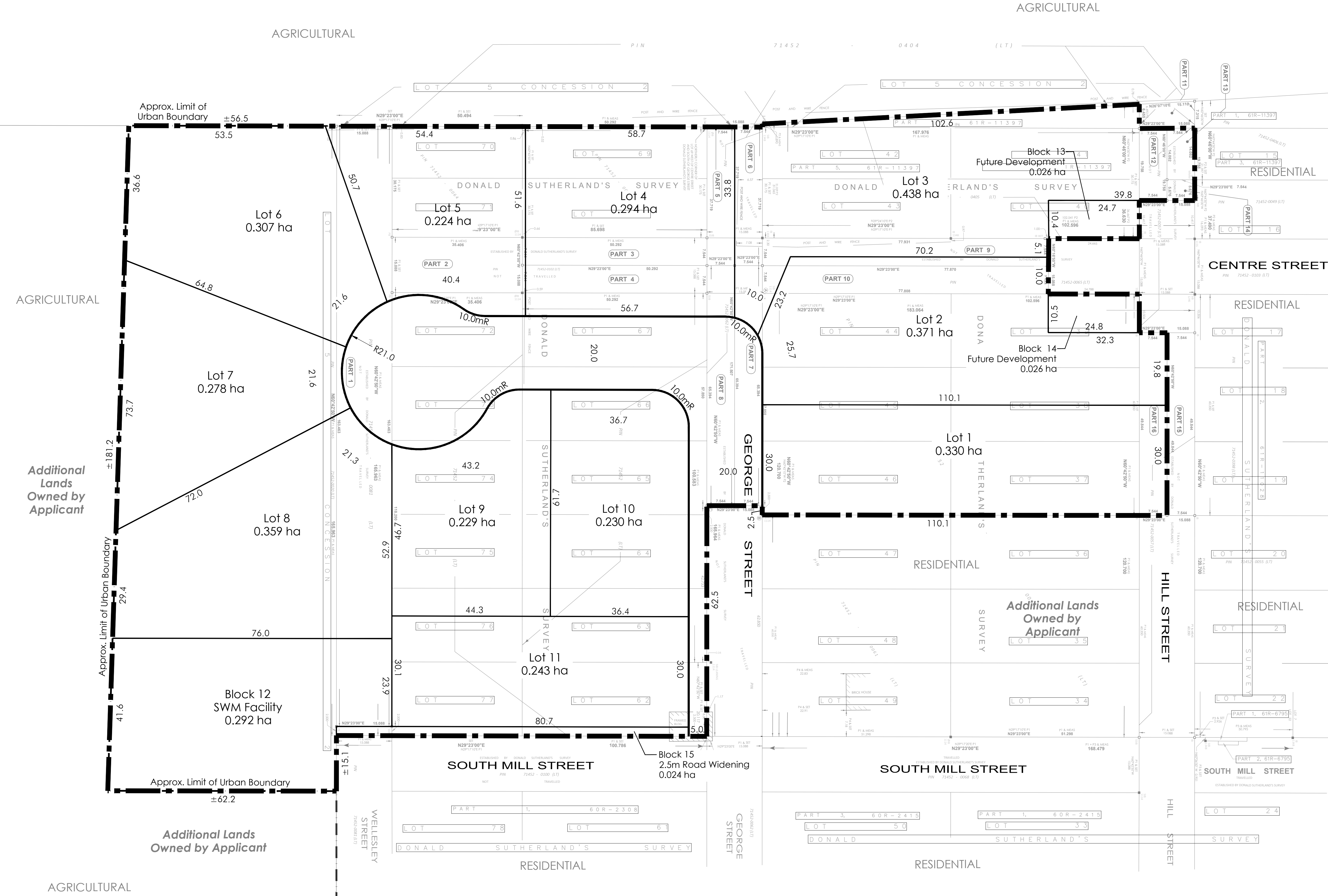
Drawn By DGS/CAC

Project Glen Allan Subdivision Checked By PC

Applicants Heather Smith, Steve Guschbaer, Steve Sebben & Murray Martin Mapleton, ON.

File Name **DRAFT PLAN** Dwg No. 1 of 1

Scale Bar 0 25 50m



AGRICULTURAL

Additional Lands Owned by Applicant

Additional Lands Owned by Applicant

AGRICULTURAL

AGRICULTURAL

**APPENDIX B:  
MECP WATER WELL RECORDS**

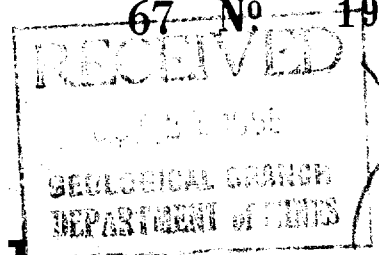


UTM 9 R 12715 E



ONTARIO

67 No 1981



Elev. 9 R 12715 N

The Water-well Drillers Act, 1954

Department of Mines

Basin 23

# Water-Well Record

Con 11  
lot 5

County or Territorial District Wellington Township, Village, Town or City Peel

Village, Town or City

Address Glennallen

Date completed (day) (month) (year)

## Pipe and Casing Record

## Pumping Test

Casing diameter(s) 4" I.D.  
Length(s)  
Type of screen  
Length of screen

Static level 72'  
Pumping rate 10 g.p.m.  
Pumping level 76'  
Duration of test 5 hrs.

## 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)
Top soil	0	1			
Clay	1	23			
hardpan	23	56			
Gravel	56	57			
hardpan	57	80			
Shale (brown)	80	110			
Shale (blue)	110	134			
Rock (blue)	134	182	169 to 182	110'	fresh

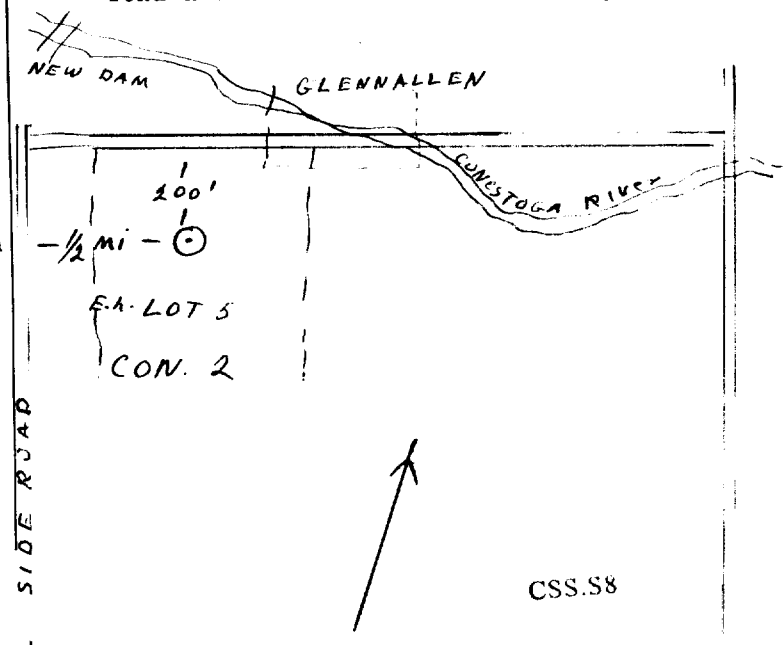
For what purpose(s) is the water to be used?  
DOMESTIC - farm stock  
Is water clear or cloudy? clear  
Is well on upland, in valley, or on hillside?  
hillside  
Drilling firm G. L. Davidson  
Address Wingham  
Name of Driller J. Baker - K. McLaughlin  
Address Wingham  
Licence Number 73

I certify that the foregoing statements of fact are true.

Date 4/1/81  
Signature of Licensee G. L. Davidson

## Location of Well

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



CSS.S8



RECEIVED

AUG 27 1955

67 No 1982

GEOLOGICAL BRANCH  
DEPARTMENT OF MINES

The Water-well Drillers Act, 1954

Department of Mines

U.T.M. 9 R 1250  
Elev. 9 R 1250  
Basin 23  
Con 11  
lot 6

# Water-Well Record

County or Territorial District Wellington Township, Village, Town or City Geel  
Village, Town or City Geel  
Address Edgar Allen

Date completed (day) (month) (year)

## Pipe and Casing Record

## Pumping Test

Casing diameter(s) 4 in.  
Length(s) 190 ft.  
Type of screen  
Length of screen

Static level 5.2 ft.  
Pumping rate 14 gpm/minute  
Pumping level 5.2 ft.  
Duration of test 4 hrs.

## 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		10	198	146	fresh
gravel	10	50			
sand	50	80			
hard pan	80	130			
clay	130	170			
shell	170	190			
limestone rock	190	200			

For what purpose(s) is the water to be used? house and farm stock  
Is water clear or cloudy? clear  
Is well on upland, in valley, or on hillside? hillside

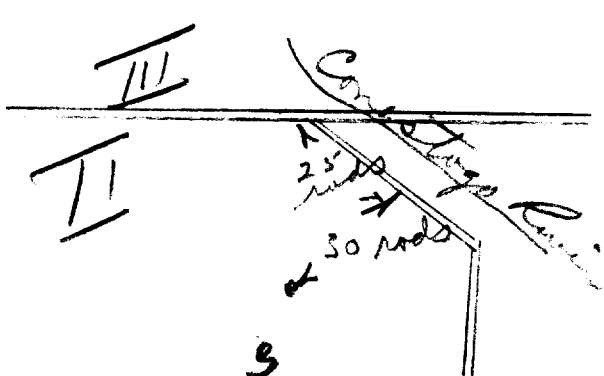
Drilling firm Charles Keenan  
Address Yestonville, Ontario  
Name of Driller Charles Keenan  
Address  
Licence Number 131

I certify that the foregoing statements of fact are true.

Date Charles Keenan  
Signature of Licensee

## Location of Well

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



well is 25 rods S of road  
and 30 rods W of sidewalk

CSS.58



WATER RESOURCES  
DIVISION  
JUL 67 1964 No. 3  
ONTARIO WATER  
RESOURCES COMMISSION

1983

UTM 12 25 5  
Con. 54  
Lot 6  
Elev. 6

The Ontario Water Resources Commission Act

# WATER WELL RECORD

Basin 23 Wellington Township, Village, Town or City Peel  
County or District  
Con. 2 Lot Ek. 6 Date completed 12 May 1964  
(day) (month) (year)  
Address R.R. 2, Wallenstein

### Casing and Screen Record

Inside diameter of casing 4"  
Total length of casing 173'  
Type of screen —  
Length of screen —  
Depth to top of screen —  
Diameter of finished hole 4"

### Pumping Test

Static level 36  
Test-pumping rate 12 G.P.M.  
Pumping level 50'  
Duration of test pumping 6 hrs.  
Water clear or cloudy at end of test clear  
Recommended pumping rate 10 G.P.M.  
with pump setting of 60 feet below ground surface

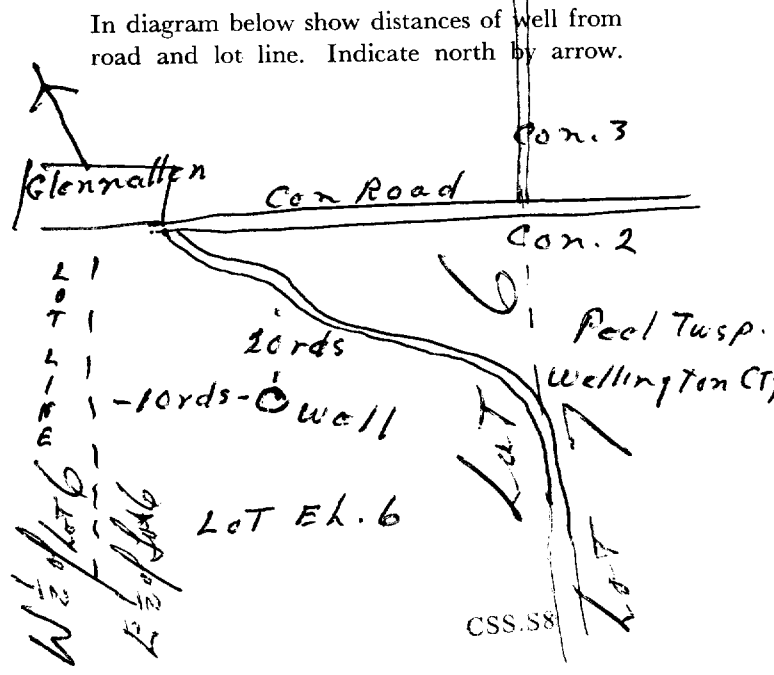
### Well Log

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>Blue clay</u>	<u>0</u>	<u>18</u>		
<u>Sand</u>	<u>18</u>	<u>56</u>		
<u>hardpan &amp; sand streaks</u>	<u>56</u>	<u>128</u>		
<u>hardpan</u>	<u>128</u>	<u>168</u>		
<u>shale, blue</u>	<u>168</u>	<u>172</u>		
<u>limestone rock, brown</u>	<u>172</u>	<u>178</u>	<u>128</u>	<u>fresh</u>

### Water Record

For what purpose(s) is the water to be used? Farm H. & S.  
Is well on upland, in valley, or on hillside? hillside  
Drilling or Boring Firm H. L. Davidson  
Address Wingham  
Licence Number 1197  
Name of Driller or Borer Fred H. Sturdy  
Address Wingham  
Date June 2, 1964  
H. L. Davidson  
(Signature of Licensed Drilling or Boring Contractor)

### Location of Well



5 R 1 2 2 5  
 Elev. 9 R 1 2 2 5  
 Basin 2 3 4  
 2 0 7 6



67 No. 1990  
 GROUND WATER  
 1953  
 DEPARTMENT OF MINES  
 WATER RESOURCES COMMISSION

The Water-well Drillers Act, 1954  
 Department of Mines

# Water-Well Record

County or Territorial District Wellington Township, Village, Town or City Peel  
 Village, Town or City.....  
 Address Glenallen  
 Date completed .....  
 (day) (month) (year)

## Pipe and Casing Record

## Pumping Test

Casing diameter (s) 4 1/2" O.D.  
 Length (s) 174'  
 Type of screen .....  
 Length of screen .....

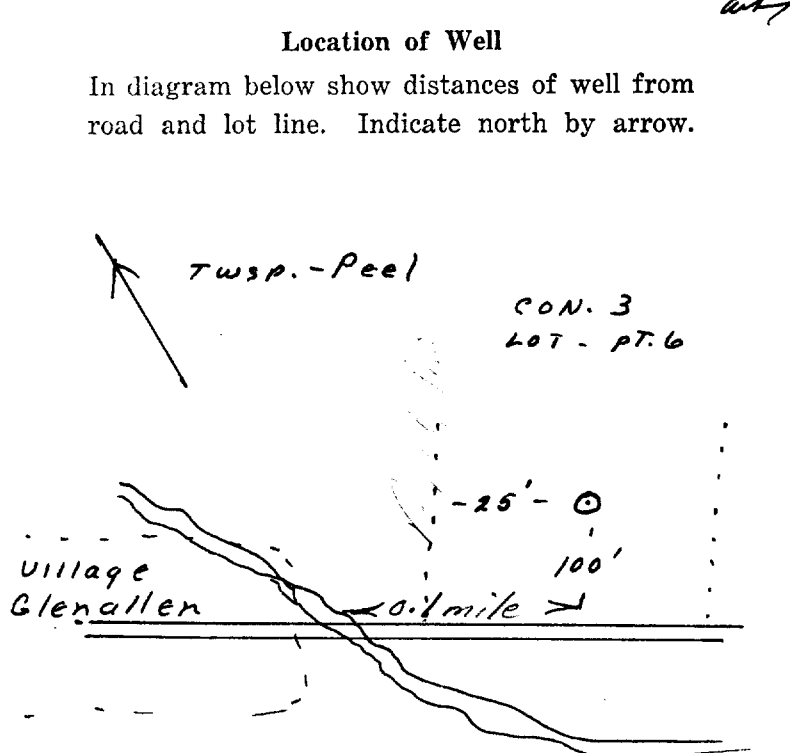
Static level 30'  
 Pumping rate 12 g.p.m.  
 Pumping level 35'  
 Duration of test 6 h. 5.

## 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)
Stoney hardpan	0	58			
sand & gravel	58	96			
SOFT Blue Shale	96	178			
hard Brown Limestone	178	196	196	166'	Fresh

For what purpose(s) is the water to be used?  
Public Service  
 Is water clear or cloudy?..... clear  
 Is well on upland, in valley, or on hillside?.....  
hillside  
 Drilling firm G. L. Davidson  
 Address Wingham  
 Name of Driller E. Thompson  
 Address Wingham  
 Licence Number 73  
 I certify that the foregoing statements of fact are true.  
G. L. Davidson  
 Date.....  
 Signature of Licensee



117

117<sup>2</sup> 523450 Con 111 Lot 5



6703351  
3 9 7  
40 P/10 E 7

lev. 7R 1280

Water management in Ontario

The Ontario Water Resources Commission Act

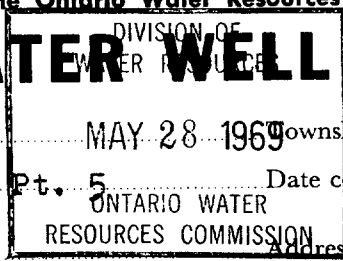
23

# WATER WELL RECORD

County or District Wellington Township, Village, Town or City Peel

Con. 3 Lot Pt. 5 Date completed 7 April 1969 (Day month year)

Owner Mennonite Church (print in block letters) Address Glen Allan



Casing and Screen Record	Pumping Test
Inside diameter of casing 5"	Static level 60'
Total length of casing 169'-7"	Test-pumping rate 15 G.P.M.
Type of screen nil	Pumping level 68'
Length of screen nil	Duration of test pumping 3 hours
Depth to top of screen nil	Water clear or cloudy at end of test clear
Diameter of finished hole 5"	Recommended pumping rate 15 G.P.M.
	with pump setting of 75 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	6		
Sand, gravel, stones	6	38		
Red clay	38	46		
Clay and sand	46	68		
Shale, brown, soft	68	92		
Shale, blue, soft	92	168		
Limestone, brown, soft	168	172		
Limestone, blue, soft	172	182	171-182	fresh

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

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

Drilling or Boring Firm C. L. Davidson  
Davidson's Well Drilling

Address Box 486  
Wingham, Ont.

Licence Number 3356

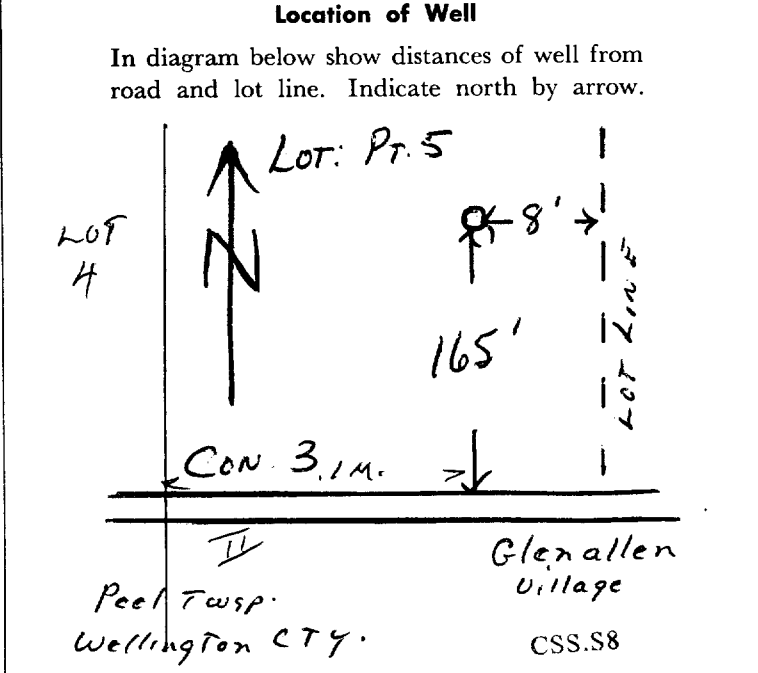
Name of Driller or Borer Edwin Thompson

Address Wingham

Date April 8, 1969

*Gordon L. Davidson*  
(Signature of Licensed Drilling or Boring Contractor)

*RET: Douglas F. Davidson*





# WATER WELL RECORD

COPIES:

Water management in Ontario

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

11

6703433

MUNICIP.

67010

CON.

Edm

103

COUNTY OR DISTRICT  
**Wellington**

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE  
**Peel**

CON., BLOCK, TRACT, SURVEY, ETC.  
**III Village of Glen Allan**

DATE COMPLETED  
DAY **25** MO. **Aug** YR. **69**

33560 RC 4 ELEVATION 1250 RC 7 BASIN CODE 23

## 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	17
Brown		Sand		17	19
Brown		gravel		19	27
Grey		clay		27	30
Brown		gravel & sand		30	33
Grey		Clay		33	35

31 0025 10-13 0025 15-18 0025 20-23 0025 25-28 0025 30-33

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
0025 10-13	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0025 15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0025 20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0025 25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0025 30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
30"	2 <input checked="" type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	16 g.	0 0035
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		27-30

**SCREEN**

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
	31-33	34-38

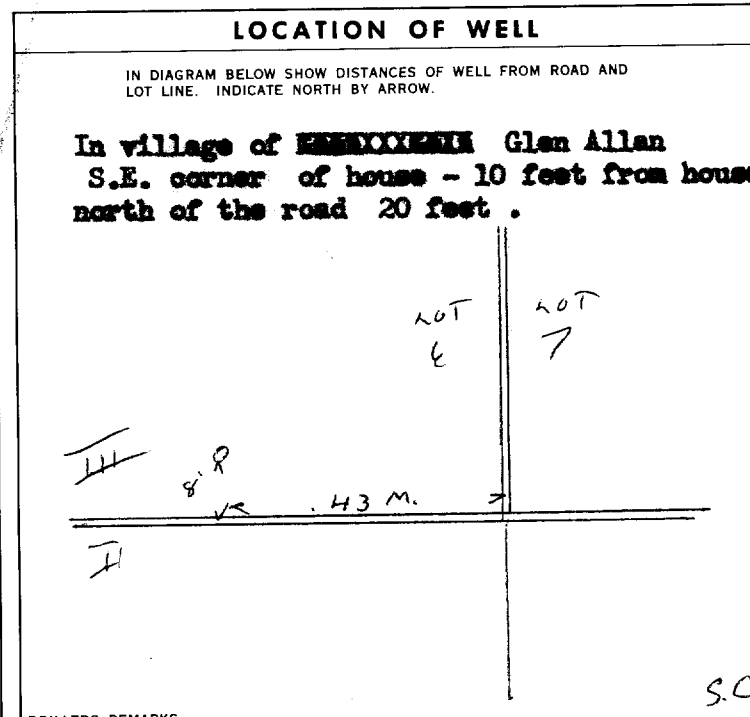
MATERIAL AND TYPE: **gravelpacked**

**61 PLUGGING & SEALING RECORD**

DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	14-17
18-21	22-25
26-29	30-33

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE GPM.	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER		15-16 HOURS 17-18 MINS.
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
025 FEET	035 FEET	15 MINUTES 26-28 FEET 30 MINUTES 29-31 FEET 45 MINUTES 32-34 FEET 60 MINUTES 35-37 FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
		1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
1 <input type="checkbox"/> SHALLOW 2 <input type="checkbox"/> DEEP	031	003



**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

**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 DRILLING**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **HADCO WELL DRILLING & DIGGING** LICENCE NUMBER: **32443**

ADDRESS: **Elmira, Ontario.**

NAME OF DRILLER OR BORER: **R.L. Franklin** LICENCE NUMBER: \_\_\_\_\_

SIGNATURE OF CONTRACTOR: *[Signature]* SUBMISSION DATE: DAY **26** MO. **Aug** YR. **69**

**OFFICE USE ONLY**

DATA SOURCE: **1** CONTRACTOR: **2519** DATE RECEIVED: **270869**

DATE OF INSPECTION: **2, 12, 69** INSPECTOR: **7/P**

REMARKS: \_\_\_\_\_



# The Ontario Water Resources Commission Act

# WATER WELL RECORD

40 P/104

Water management in Ontario 1. PRINT ONLY IN SPACES PROVIDED

2. CHECK  CORRECT BOX WHERE APPLICABLE

6703657

MUNICIP.

67010

CON.

CPN

03

COUNTY OR DISTRICT  
WELLINGTON

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE  
GLENPEEL ALLEN, ONT.

CON., BLOCK, TRACT, SURVEY, ETC.  
3rd Conm.

LOT  
25-27  
28

0 BLUEVALE ST N

DATE COMPLETED 48-53  
DAY 07 MO. May YR. 70

ELEVATION 33700 4 1240 7 23

## LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Blue			Top soil		6
			Hard clay	6	30
			Hard part	30	82
Blue		very soft	shell.	82	155
Blue			limestone	155	170

31 0006 02 0030305 0082 14 0155317 0170315

**41 WATER RECORD**

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

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
10-11	STEEL	1/4	0	155
12	GALVANIZED	1/4		
13-16	CONCRETE			
17-18	OPEN HOLE			
19	STEEL		155	170
20-23	GALVANIZED			
24-25	CONCRETE			
26	OPEN HOLE			
27-30	STEEL			
	GALVANIZED			
	CONCRETE			
	OPEN HOLE			

**SCREEN**

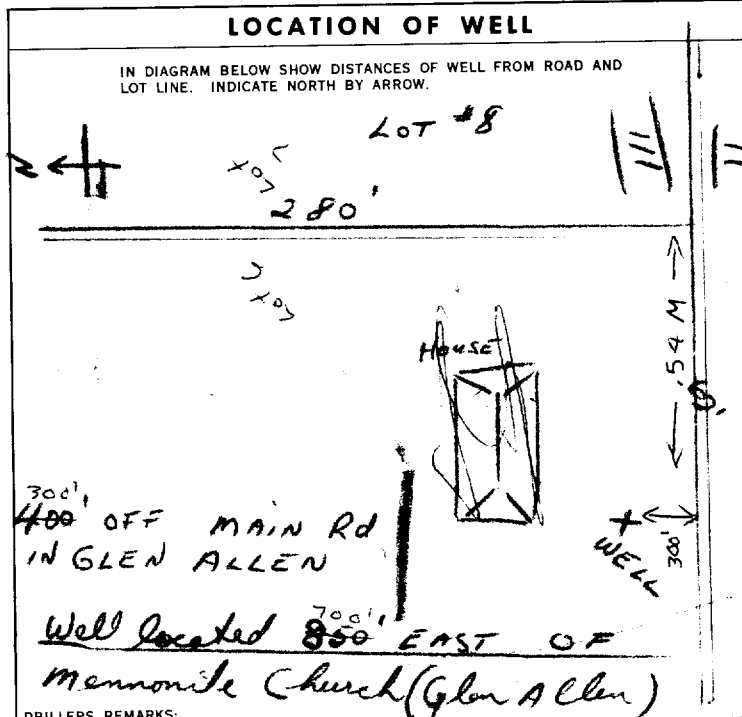
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		41-44 80
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD <input checked="" type="checkbox"/> PUMP <input type="checkbox"/> BAILER	PUMPING RATE 0030 GPM	DURATION OF PUMPING 15-16 HOURS 30 MINS.
STATIC LEVEL 010 FEET	WATER LEVEL END OF PUMPING 015 FEET	WATER LEVELS DURING
15 MINUTES 26-28 015 FEET	30 MINUTES 29-31 012 FEET	45 MINUTES 32-34 012 FEET
60 MINUTES 35-37 012 FEET		
RECOMMENDED PUMP TYPE <input checked="" type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING 025 FEET	RECOMMENDED PUMPING RATE 0030 GPM.



**FINAL STATUS OF WELL**

<input checked="" type="checkbox"/> WATER SUPPLY	<input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY
<input type="checkbox"/> OBSERVATION WELL	<input type="checkbox"/> ABANDONED, POOR QUALITY
<input type="checkbox"/> TEST HOLE	<input type="checkbox"/> UNFINISHED
<input type="checkbox"/> RECHARGE WELL	

**WATER USE** 01

<input checked="" type="checkbox"/> DOMESTIC	<input type="checkbox"/> COMMERCIAL
<input type="checkbox"/> STOCK	<input type="checkbox"/> MUNICIPAL
<input type="checkbox"/> IRRIGATION	<input type="checkbox"/> PUBLIC SUPPLY
<input type="checkbox"/> INDUSTRIAL	<input type="checkbox"/> COOLING OR AIR CONDITIONING
<input type="checkbox"/> OTHER	<input type="checkbox"/> NOT USED

**METHOD OF DRILLING**

<input checked="" type="checkbox"/> CABLE TOOL	<input type="checkbox"/> BORING
<input type="checkbox"/> ROTARY (CONVENTIONAL)	<input type="checkbox"/> DIAMOND
<input type="checkbox"/> ROTARY (REVERSE)	<input type="checkbox"/> JETTING
<input type="checkbox"/> ROTARY (AIR)	<input type="checkbox"/> DRIVING
<input type="checkbox"/> AIR PERCUSSION	

**CONTRACTOR**

NAME OF WELL CONTRACTOR Charles Hues	LICENCE NUMBER 3193
ADDRESS Tutwiler Ont. P.P.	
NAME OF DRILLER OR BOREN Jim Anger	LICENCE NUMBER
SIGNATURE OF CONTRACTOR Charles Hues	SUBMISSION DATE DAY 8 MO. May YR. 70

**OFFICE USE ONLY**

DATA SOURCE 1	CONTRACTOR 3104	DATE RECEIVED 020670
DATE OF INSPECTION 15/7/70	INSPECTOR Z/A	
REMARKS:		

CSS.58 7



# WATER WELL RECORD

Water management in Ontario 1. PRINT ONLY IN SPACES PROVIDED

2. CHECK  CORRECT BOX WHERE APPLICABLE

11

6703821

MUNICIP. 67010

CON. C&N

03

COUNTY OR DISTRICT: **WELLINGTON** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **PEEL** CON., BLOCK, TRACT, SURVEY, ETC.: **3** LOT: **004**

DATE COMPLETED: DAY **03** MONTH **Oct** YEAR **70**

RC. ELEVATION: **339.30** RC. ELEVATION: **132.5** RC. BASIN CODE: **23**

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
grey	clay		soft	0	61
grey	clay	Hard Pan	Layered	61	126
green	Hard Pan		Loose	126	146
brown	shale rock		soft	146	169
Blue	rock		Hard	169	178

31 0061205 012020514 0140414 0169617 0178326

32

#### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
0178'	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
15-18'	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
20-23'	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
25-28'	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL
30-33'	<input type="checkbox"/> FRESH	<input type="checkbox"/> SALTY	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> MINERAL

#### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
05"	STEEL	.244	0	0178
17-18'	STEEL			20-23
24-25'	STEEL			27-30

#### SCREEN

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

MATERIAL AND TYPE: \_\_\_\_\_ DEPTH TO TOP OF SCREEN: \_\_\_\_\_

#### 61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	
16-21	
26-29	

#### 71 PUMPING TEST

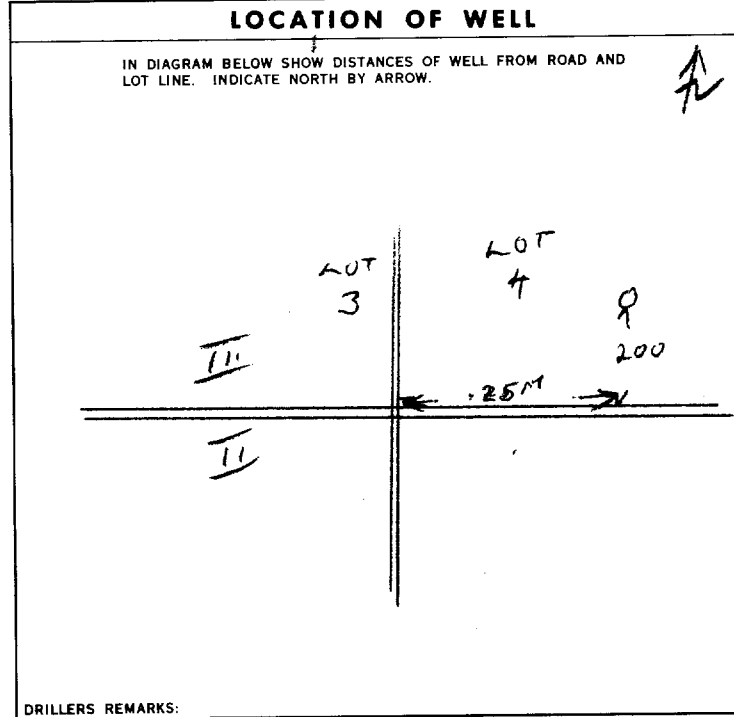
PUMPING TEST METHOD:  PUMP  BAILER

PUMPING RATE: **0010** GPM. DURATION OF PUMPING: **07** HOURS **00** MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
085' FEET	135' FEET	15 MINUTES: 085' FEET	30 MINUTES: 085' FEET	45 MINUTES: 085' FEET	60 MINUTES: 085' FEET

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: **135'** RECOMMENDED PUMPING RATE: **0010** GPM.



#### FINAL STATUS OF WELL

WATER SUPPLY  OBSERVATION WELL  TEST HOLE  RECHARGE WELL

#### WATER USE

DOMESTIC  STOCK  IRRIGATION  INDUSTRIAL  OTHER

#### METHOD OF DRILLING

CABLE TOOL  ROTARY (CONVENTIONAL)  ROTARY (REVERSE)  ROTARY (AIR)  AIR PERCUSSION

#### CONTRACTOR

NAME OF WELL CONTRACTOR: **MCLAUGHLIN WATER WELLS.** LICENCE NUMBER: **3518**

ADDRESS: **Supply BRESLAU.**

NAME OF DRILLER OR BORER: **Roderic Carnif** LICENCE NUMBER: \_\_\_\_\_

SIGNATURE OF CONTRACTOR: **R. McLaughlin** SUBMISSION DATE: DAY **30** MO. **10** YR. **70**

#### OFFICE USE ONLY

DATA SOURCE: **1** CONTRACTOR: **3518** DATE RECEIVED: **211270**

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: **P/E**

REMARKS: \_\_\_\_\_



MINISTRY OF THE ENVIRONMENT  
The Ontario Water Resources Act  
**WATER WELL RECORD**

40 P/ICE

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

6704556 67010 CON. CQN 02

COUNTY OR DISTRICT: **Hastings** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **Beal** CON., BLOCK, TRACT, SURVEY, ETC.: **2** LOT: **006**

R.# **2** **Wallenstein Box 49** DATE COMPLETED: **03** DAY: **01** MO: **Mar** YR: **73**

RC. ELEVATION: **6704556** RC. BASIN CODE: **17 524254 4833193 4 1260 5 23** MAR 02, 1977 232

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown	Sand & Clay			0	6
Brown	Clay			6	21
Grey	Clay & Hardpan			21	77
Grey	Sand			77	81
Grey	Clay & Hardpan			81	141
Blue Shale				141	164
Brown	Shale			164	170
Grey	Shale			170	176
Brown	Shale			176	181
Brown	Rpck			181	185

31 000662805 0021605 007720514 00811228 014120514 0164317

32 0170617 0176217 0181617 0185626

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
0185	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	15-18 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	20-23 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	25-28 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	30-33 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
05"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0	0182
05 1/2"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		182	0185
	24-25 1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER

PUMPING RATE: 0008 GPM

DURATION OF PUMPING: 02 HOURS 00 MINS

STAT. C LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING					
030	040	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	75 MINUTES	90 MINUTES
		26-28	29-31	32-34	35-37		
		FEET	FEET	FEET	FEET	FEET	FEET

PUMP INTAKE SET AT: 50 FEET

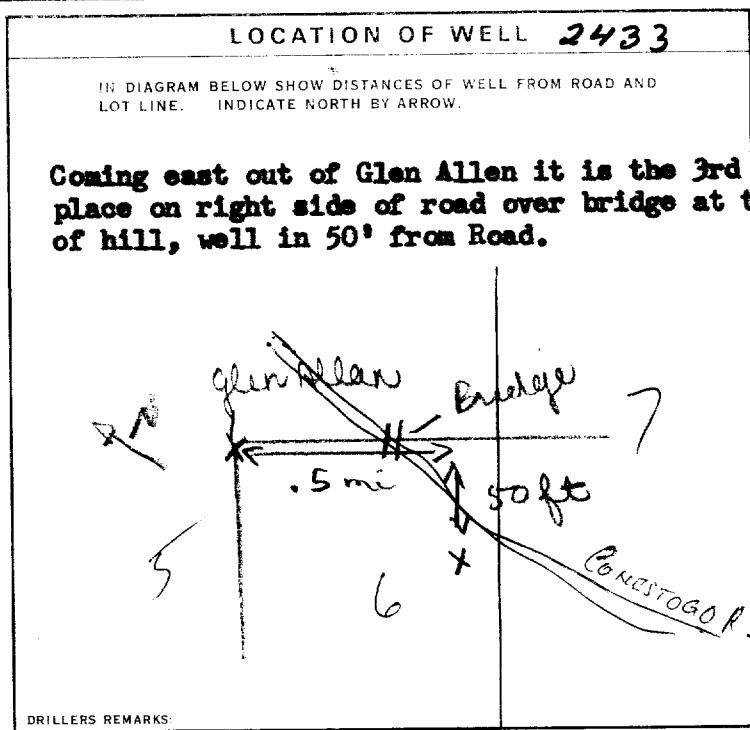
WATER AT END OF TEST: 040 FEET

RECOMMENDED PUMP TYPE:  DEEP

RECOMMENDED PUMP SETTING: 050 FEET

RECOMMENDED PUMPING RATE: 0006 GPM

50-53 000.8 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**

1  DOMESTIC  
2  STOCK  
3  IRRIGATION  
4  INDUSTRIAL  
5  OTHER

6  COMMERCIAL  
7  MUNICIPAL  
8  PUBLIC SUPPLY  
9  COOLING OR AIR CONDITIONING  
10  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: **Hadco Well Drilling and Digging** LICENCE NUMBER: **2519**

ADDRESS: **P.O. Box 730 Elmira Ontario**

NAME OF DRILLER OR BORER: **R.L. Franklin** LICENCE NUMBER: \_\_\_\_\_

SIGNATURE OF CONTRACTOR: *R.L. Franklin*

SUBMISSION DATE: DAY **16** MO. **Mar** YR. **73**

**OFFICE USE ONLY**

DATA SOURCE: **1** CONTRACTOR: **2519** DATE RECEIVED: **280373**

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

CSS.SX

P *WI*



MINISTRY OF THE ENVIRONMENT  
The Ontario Water Resources Act  
**WATER WELL RECORD**

40P/0E

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

11 6704584 67010 02  
MUNICIP. CON.  
COUNTY OR DISTRICT TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE CON., BLOCK, TRACT, SURVEY, ETC. LOT  
MELLINGTON Wellington PEEL 2 006  
DATE COMPLETED 29 08 72  
RC. ELEVATION RC. BASIN CODE  
33400 4 1250 6 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Black	Top Soil			0	1
Brown	Clay & Boulders			1	15
Brown	Sandy Clay & Boulders			15	20
Grey	Hardpan			20	48
Grey	Sand			48	50
Grey	Clay & Boulders			50	58

31 0001800 001549513 00204052813 0048214 0050228 005820513  
32

41 WATER RECORD

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

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
30	2 GALVANIZED	16g	0	0058
30	3 CONCRETE			
	4 OPEN HOLE			
17-18	1 STEEL			20-23
	2 GALVANIZED			
	3 CONCRETE			
	4 OPEN HOLE			
24-25	1 STEEL			27-30
	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

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST METHOD

1  PUMP 2  BAILER

PUMPING RATE 0003 GPM

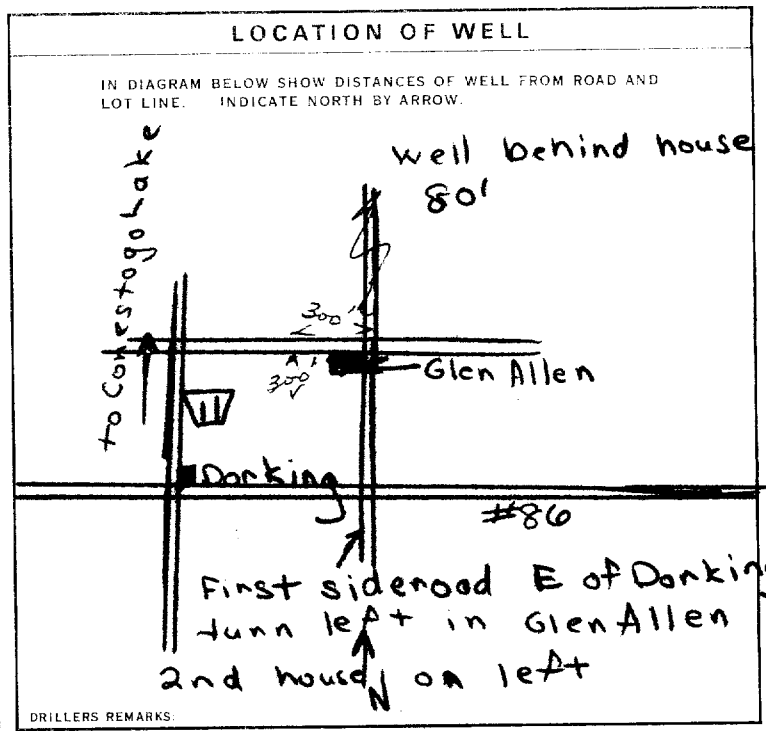
DURATION OF PUMPING 30 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING					
033 FEET	058 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	75 MINUTES	90 MINUTES
		26-28 FEET	29-31 FEET	32-34 FEET	35-37 FEET		

RECOMMENDED PUMP TYPE:  DEEP

RECOMMENDED PUMP SETTING: 055 FEET

RECOMMENDED PUMPING RATE: 0004 GPM



FINAL STATUS OF WELL

1  WATER SUPPLY

WATER USE: 01 DOMESTIC

METHOD OF DRILLING: 6 BORING

CONTRACTOR: Hadeo Well Digging and Drilling, 2519, P.O. Box 730 Elmira Ontario, H.P. Watson

SUBMISSION DATE: 7 9 72

OFFICE USE ONLY

DATA SOURCE: 1, 2519, 080972

REMARKS: CSS.S8, P, WI



# WATER WELL RECORD

40 P/10E

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

11 | 6705961 | 67010 | CON. | 02  
 10 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 | 31 | 32 | 33 | 34 | 35 | 36 | 37 | 38 | 39 | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47

COUNTY OR DISTRICT: WELLINGTON | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PEEL | CON., BLOCK, TRACT, SURVEY, ETC.: CON. # 2 | LOT: 006

X17 RR#2 WALLENSTEIN | DATE COMPLETED: DAY 12 MO. 12 YR. 74

INC: 33360 S | ELEVATION: 1220 S | BASIN CODE: 23

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BLACK	TOP SOIL			0	2
GREY	GRAVEL	CLAY	LAYERED	2	19
'	GRAVEL		DRY	19	55
BROWN	SHALE	HARD PAN	LOOSE	55	89
BLUE	ROCK		SOFT	89	102

31 | 0002802 | 00192110574 | 005521168 | 00896171477 | 010232685

32 |

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
10-13	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL	14
15-18	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL	19
20-23	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL	24
25-28	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL	29
30-33	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL	34-40

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
10-11	STEEL		0	89
17-18	STEEL	231	89	102
24-25	STEEL			

SCREEN

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

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

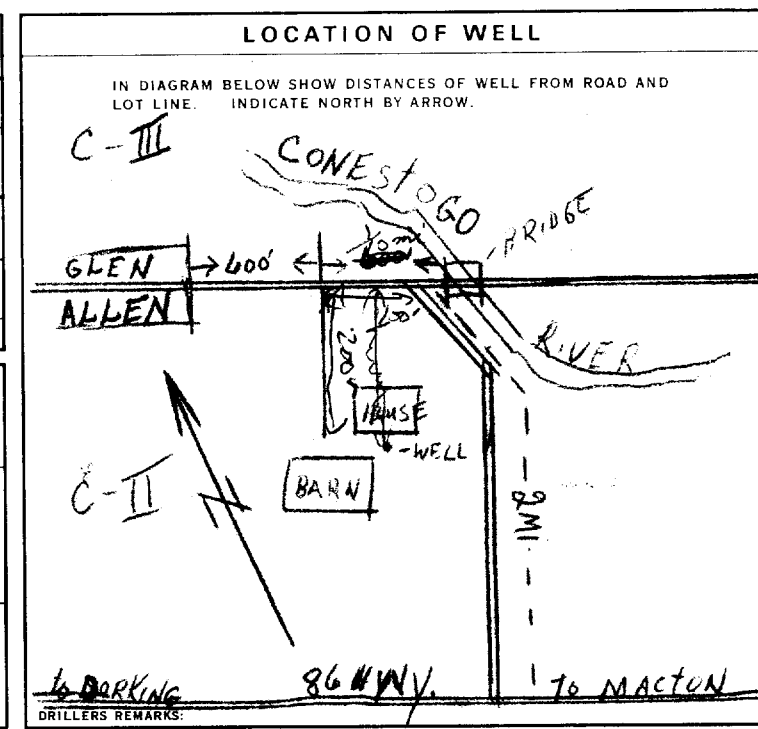
PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	0030 GPM	04 15-16 00 17-18 00 HOURS MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING					
19-21	22-24	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	35-37	
020	040	020	020	020	020	020	

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 050 FEET

RECOMMENDED PUMPING RATE: 0015 GPM



FINAL STATUS OF WELL: 1  WATER SUPPLY

WATER USE: 1  DOMESTIC

METHOD OF DRILLING: 1  TABLE TOOL

CONTRACTOR: MCLAUGHLIN WATER WELLS #3518

ADDRESS: BOX BRESLAU ONT / SUPPLY LTD

NAME OF DRILLER OR BORER: ROGER CAREY

SIGNATURE OF CONTRACTOR: R. McLaughlin

SUBMISSION DATE: DAY 10 MO. JAN YR. 75

OFFICE USE ONLY

DATA SOURCE: 3518

CONTRACTOR: 3518

DATE RECEIVED: 170376

DATE OF INSPECTION: Jan 20/75

INSPECTOR: RBT

REMARKS:

CSS S8

P

WI



# WATER WELL RECORD

40P/10E  
10E

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

11  
 6706161-  
 MUNICIPAL 67.010  
 CON. CAN  
 03  
 COUNTY OR DISTRICT  
 TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE  
 CON., BLOCK, TRACT, SURVEY, ETC.  
 DATE COMPLETED  
 DAY 12 MO. 08 YR. 76  
 ELEVATION  
 33960 5 1328 5 23  
 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	TO
BLK	Topsoil			0	1
Blue	CLAY			1	70
Blue	CLAY	stones		70	222
Brown	GRAVEL - 2"			222	233

31 000/1802 0070305 022230512 0233611  
 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
0232	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
05	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0	0231
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

**61 PLUGGING & SEALING RECORD**

DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
10-13	14-17
16-21	22-25
26-29	30-33

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER

PUMPING RATE: 00.25 GPM

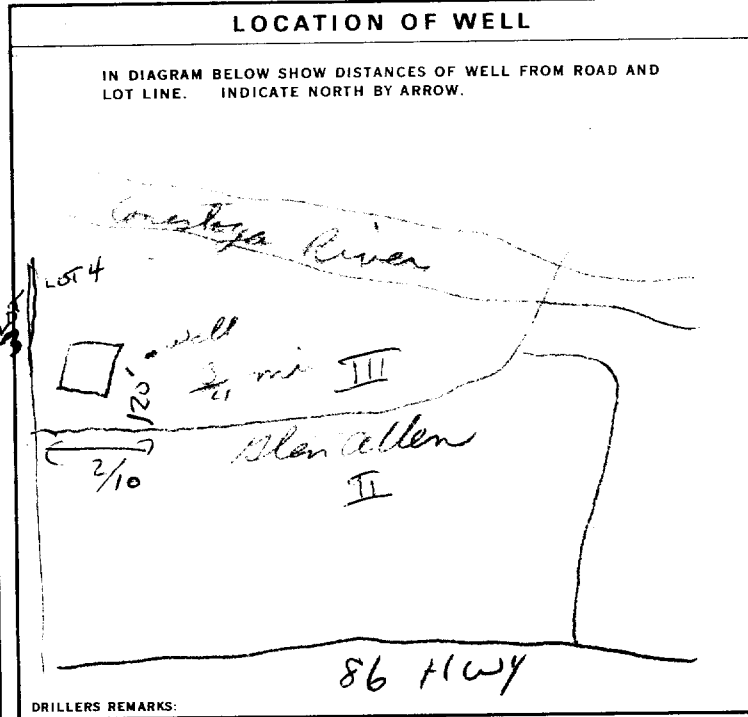
DURATION OF PUMPING: 03 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING				
093		15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	
		26-28	29-31	32-34	35-37	

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 180 FEET

RECOMMENDED PUMP RATE: 0012 GPM



**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  
5  OTHER

6  COMMERCIAL  
7  MUNICIPAL  
8  PUBLIC SUPPLY  
9  COOLING OR AIR CONDITIONING  
10  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: Paul Weber Well Drilling  
LICENCE NUMBER: 5469

ADDRESS: 19 Breckhow

NAME OF DRILLER OR BORER: Paul Weber  
LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Paul Weber

SUBMISSION DATE: DAY 25 MO. 8 YR. 76

**OFFICE USE ONLY**

DATA SOURCE: 1  
CONTRACTOR: 5469  
DATE RECEIVED: 8 20 76

DATE OF INSPECTION: 20/77  
INSPECTOR: M.T.

REMARKS:

CSS.S8

P  
WI



Ministry of the Environment

The Ontario Water Resources Act

40P/10E

# WATER WELL RECORD

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

6706461

MUNICIPALITY 67010

CAD # 02

COUNTY OR DISTRICT: [redacted] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Reel CON. BLOCK, TRACT, SURVEY, ETC: II LOT: 3906

DATE COMPLETED: DA 09 MO 10 YR 77

ELEVATION: 33500 BASIN CODE: 5 1275 5 23

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	Brown clay			0	18
	grey clay			18	66
	Blue clay			66	90
	Green & Blue shale			90	171
	Brown slatted rock			171	180
	Brown limestone			180	190

31: 0018605 0066205 0090305 0171417 018062671 0190615

#### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0172	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR
192-190	2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

#### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
05	1 <input checked="" type="checkbox"/> STEEL	1188	0 0172
	2 <input type="checkbox"/> GALVANIZED		
	3 <input type="checkbox"/> CONCRETE		
	4 <input type="checkbox"/> OPEN HOLE		

#### SCREEN

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

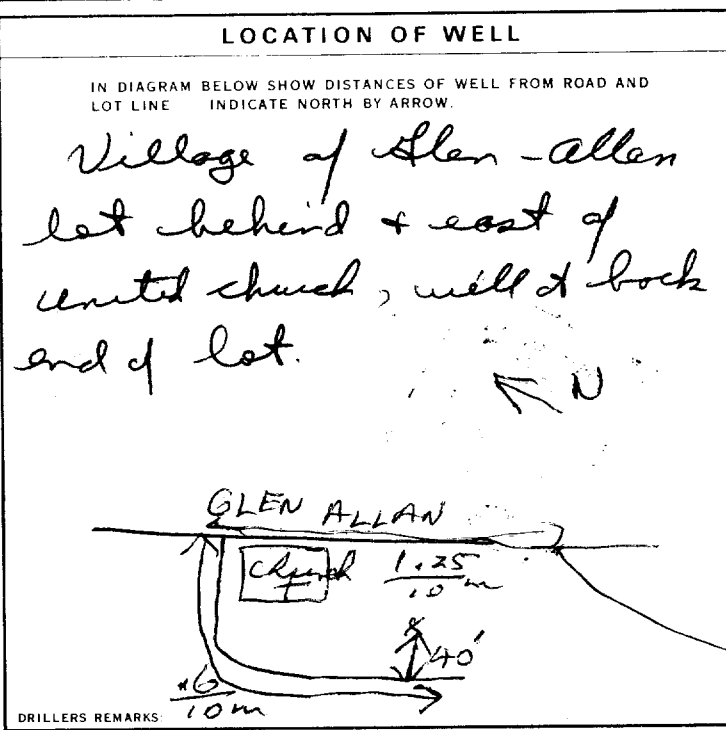
#### 61 PLUGGING & SEALING RECORD

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

#### 71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE GPM	TIME OF PUMPING HOURS
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	0008	01 30

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING PUMPING
057 FEET	081 FEET	15 MINUTES: 26-28 FEET, 30 MINUTES: 29-31 FEET, 45 MINUTES: 32-34 FEET, 60 MINUTES: 35-37 FEET



#### 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

#### WATER USE

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

#### METHOD OF DRILLING

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

#### CONTRACTOR

NAME OF WELL CONTRACTOR: Paul Weber Well Drilling LICENCE NUMBER: 5469  
 ADDRESS: RR 2 Breslau  
 NAME OF DRILLER OR BORER: David Steele LICENCE NUMBER: 5469  
 SIGNATURE OF CONTRACTOR: Paul Weber SUBMISSION DATE: DAY 30 MO 7 YR 77

#### OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 5469 DATE RECEIVED: 080877  
 DATE OF INSPECTION: July 19/78 INSPECTOR: 59  
 REMARKS: CSS.S8



Ontario

Ministry of the Environment

The Ontario Water Resources Act

40P/10E

# WATER WELL RECORD

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

11

6705519

67010

CON CAN

02

COUNTY OR DISTRICT: Wellington TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: 1 Peel Village of Glen Allen, Sutherlands Sur. Pt. 2627006 CON., BLOCK, TRACT, SURVEY, ETC: II LOT: 25-27

2 Wallenstein DATE COMPLETED: DAY 01 MO. 09 YR. 77

33200 ELEVATION: 5 1220 BASIN CODE: 5 23

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Black	Topsoil			0	2
Brown	Clay	Sand		2	23
Grey	Hardpan	Clay, Boulders		23	38
Brown	Hardpan	Clay		38	60
Yellow	Sand		fine	60	68
Brown	Clay	Gravel, Sand		68	85
Multi-Color	Shale	Limestone		85	110

31 0002802 002360528 00382140513 006061405 006852869 00856051128 1

32 01101715

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
0096 06110 16110	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
04"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	205	0	0092
04"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		92	0110
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

SCREEN

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

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST METHOD

1  PUMP 2  BAILER

PUMPING RATE: 0012 GPM DURATION OF PUMPING: 01 HOURS 15 MINS

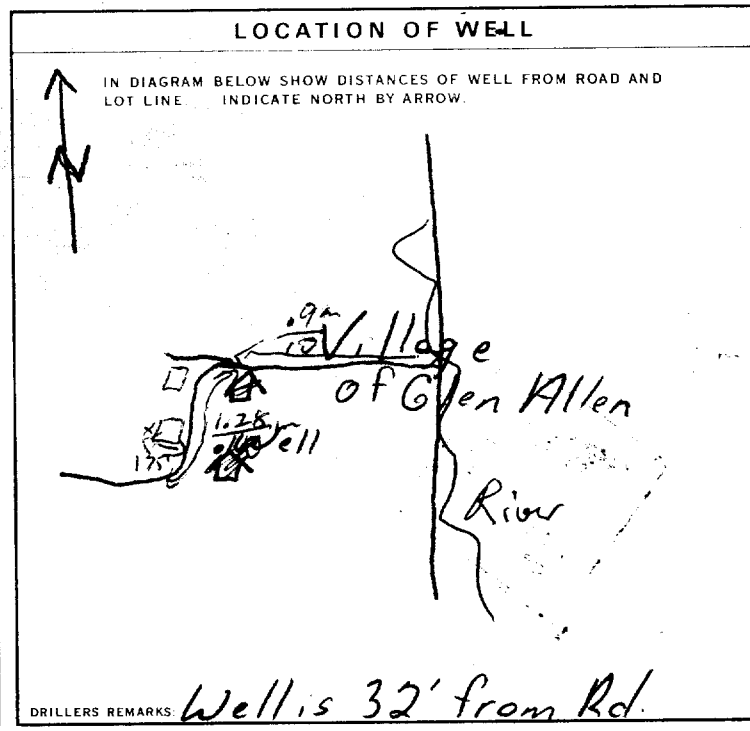
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING PUMPING			
059	080	15 MINUTES: 080	30 MINUTES: 080	45 MINUTES: 080	60 MINUTES: 080

IF FLOWING, GIVE RATE: 80 GPM

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: 080 FEET

RECOMMENDED PUMPING RATE: 0006 GPM



FINAL STATUS OF WELL: 1

WATER USE: 01

METHOD OF DRILLING: 2

CONTRACTOR: Ray Spencer + Son Well Dr. Inc LICENCE NUMBER: 4856

ADDRESS: RR #5 Mount Forest.

NAME OF DRILLER OR BORER: M. Ke Kelly LICENCE NUMBER: \_\_\_\_\_

SIGNATURE OF CONTRACTOR: \_\_\_\_\_ SUBMISSION DATE: \_\_\_\_\_

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 4856 DATE RECEIVED: 140977

DATE OF INSPECTION: July 19/78 INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

CSS.S8



Ministry of the Environment

Ontario

The Ontario Water Resources Act

409/10E

# WATER WELL RECORD

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

11

6706671

MUNICIPALITY 67010

CON. C/N

LOT 02

COUNTY OR DISTRICT: *Wellington* TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: *Peel* CON., BLOCK, TRACT, SURVEY, ETC: *2* LOT: *005*

#2 *Wallenstien* DATE COMPLETED: DAY *19* MO *09* YR *77*

33500 5 ELEVATION: 1330 5 BASIN CODE: 23

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Black	Topsoil			0	1
Brown	Sandy Clay			1	12
Grey	Hardpan	Boulders, Gravel		12	37
Brown	Sand			37	45
Grey	Hardpan	Clay, Gravel		45	75
Blue Green	Shale	Limestone		75	110

31 0001802 001260581 00372141311 0045626 00752140511 011031715

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
0093	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> SALTY	<input type="checkbox"/> MINERAL
0108	<input checked="" type="checkbox"/> FRESH	<input type="checkbox"/> SULPHUR	<input type="checkbox"/> SALTY	<input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
04"	<input checked="" type="checkbox"/> STEEL	205	0	0075
04"	<input checked="" type="checkbox"/> STEEL		75	0110

SCREEN

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

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	14-17
18-21	22-25
26-29	30-33

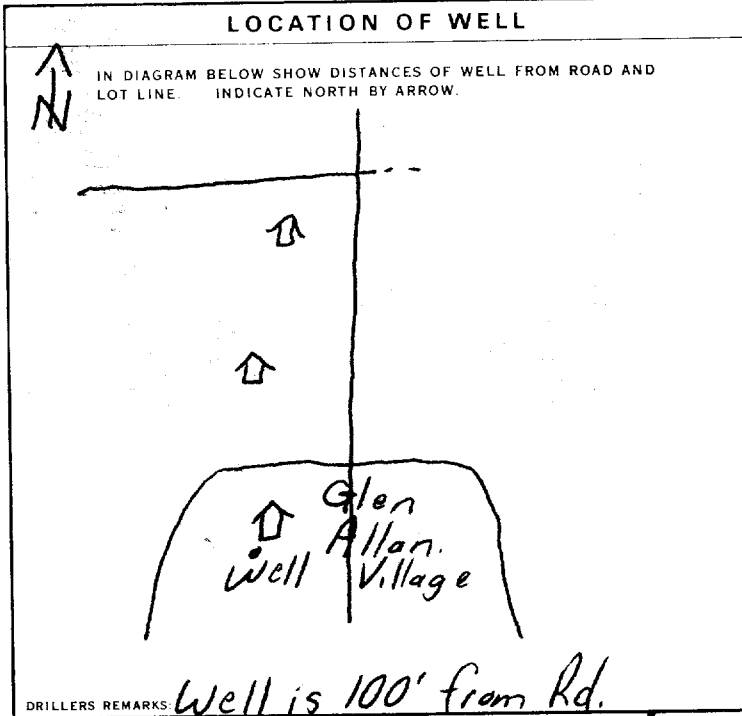
PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE GPM	DURATION OF PUMPING HOURS
<input checked="" type="checkbox"/> PUMP	0006	01 45

STATIC LEVEL FEET	WATER LEVEL END OF PUMPING FEET	WATER LEVELS DURING PUMPING
044	072	072 072 072 072

IF FLOWING, GIVE RATE GPM	PUMP INTAKE SET AT FEET	WATER AT END OF TEST FEET
	72	

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING FEET	RECOMMENDED PUMPING RATE GPM
<input checked="" type="checkbox"/> DEEP	072	0005



FINAL STATUS OF WELL:  WATER SUPPLY

WATER USE:  DOMESTIC

METHOD OF DRILLING:  ROTARY (CONVENTIONAL)

CONTRACTOR: Roy Spencer + Son Well Dr. Inc. LICENCE NUMBER: 4856

ADDRESS: RR 45 Mount Forest.

NAME OF DRILLER OR BORER: Mike Kelly

SIGNATURE OF CONTRACTOR: \_\_\_\_\_ SUBMISSION DATE: \_\_\_\_\_

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 4856 DATE RECEIVED: 100478

DATE OF INSPECTION: 4/75 INSPECTOR: 37

REMARKS: \_\_\_\_\_

CSS.S8

# WATER WELL RECORD

40 P/10 HALL

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

11

6707033

MUNICIPALITY 67010

CON. CDN

02

COUNTY OR DISTRICT: **WILKINSON** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **REEFH TWP** CON. BLOCK, TRACT, SURVEY, ETC: **E. 2** LOT: **005**

DATE COMPLETED: DAY **17** MO **8** YR **79**

NG: **33550** RC: **5** ELEVATION: **1225** RC: **5** BASIN CODE: **23**

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY			0	8
GRAY	CLAY + HAROPAN	STONES		8	62
				62	84
BROWN	ROCK			84	102
RED	SHALE			102	140

31

32

**41 WATER RECORD**

WATER FOUND # - FEET	KIND OF WATER
10-13	<input checked="" type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
15-18	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
20-23	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
25-28	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
30-33	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5"	STEEL	.188	0	104
5"	STEEL		104	140

**SCREEN**

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

**61 PLUGGING & SEALING RECORD**

DEPTH SET AT - FEET	MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN
FROM	TO	FEET
10-13		14-17
18-21		22-25
26-29		30-33

**71 PUMPING TEST**

PUMPING METHOD:  PUMP  BAILER

PUMPING RATE: **10** GPM

DURATION OF PUMPING: **1** HOURS **17** MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
19-21	22-24	15 MINUTES 26-28	30 MINUTES 29-31	45 MINUTES 32-34	60 MINUTES 35-37

IF FLOWING, GIVE RATE: **90** GPM

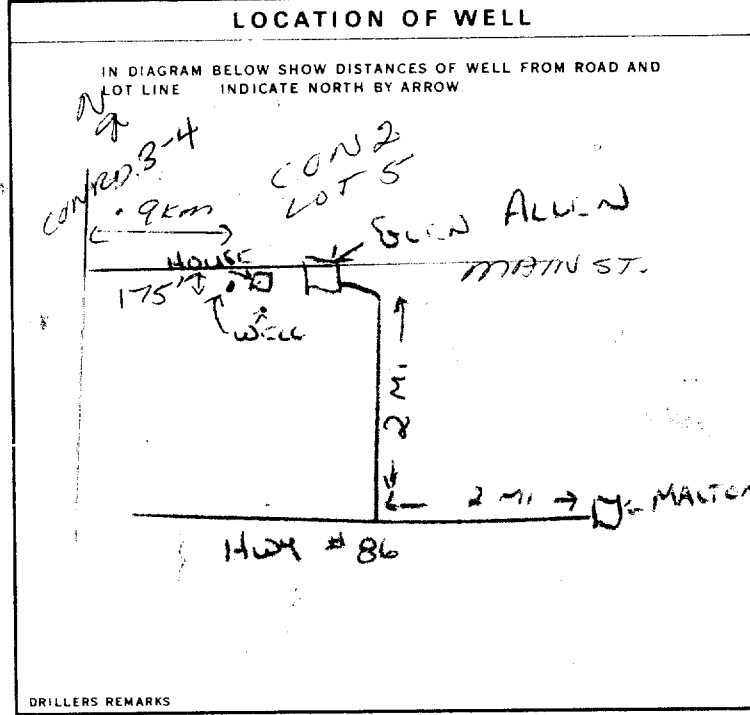
PUMP INTAKE SET AT: **90** FEET

WATER AT END OF TEST:  CLEAR  CLOUDY

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: **90** FEET

RECOMMENDED PUMPING RATE: **8** 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

**WATER USE**

1 DOMESTIC  5 COMMERCIAL

2 STOCK  6 MUNICIPAL

3 IRRIGATION  7 PUBLIC SUPPLY

4 INDUSTRIAL  8 COOLING OR AIR CONDITIONING

OTHER  9 NOT USED

**METHOD OF DRILLING**

1 CABLE TOOL  6 BORING

2 ROTARY (CONVENTIONAL)  7 DIAMOND

3 ROTARY (REVERSE)  8 JETTING

4 ROTARY (AIR)  9 DRIVING

5 AIR PERCUSSION

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **Debra Shuter Shells** LICENCE NUMBER: **5477**

ADDRESS: **RR # 2 Breoran**

NAME OF DRILLER OR BORER: **David J. Steeb** LICENCE NUMBER: \_\_\_\_\_

SIGNATURE OF CONTRACTOR: \_\_\_\_\_ SUBMISSION DATE: DAY **28** MO **9** YR **79**

**OFFICE USE ONLY**

DATA SOURCE: \_\_\_\_\_ CONTRACTOR: \_\_\_\_\_ DATE RECEIVED: **17 09 79**

DATE OF INSPECTION: **July 8, 1980** INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

CSS:58 **P-412**

40°10' EAST  
HALF



# WATER WELL RECORD

6707081

MUNICIPALITY: 67010

CONTRACTOR: CPN

LOT: 02

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

11

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Pool  
 CON., BLOCK, TRACT, SURVEY, ETC.: [REDACTED] LOT: 005  
 DATE COMPLETED: DAY 28, MO 03, YR 79  
 RC: 33450, ELEVATION: 1275, BASIN CODE: 23

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
black	topsoil			0	1
brown	clay	sand		1	15
grey	clay	stones		15	95
green grey shale			soft	95	173
grey	shale		hard	173	187
brown	limestone			187	215

31: 0001802, 001546525, 009520512, 917341785, 012721773, 0215618

#### 41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0215	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

#### 51 CASING & OPEN HOLE RECORD

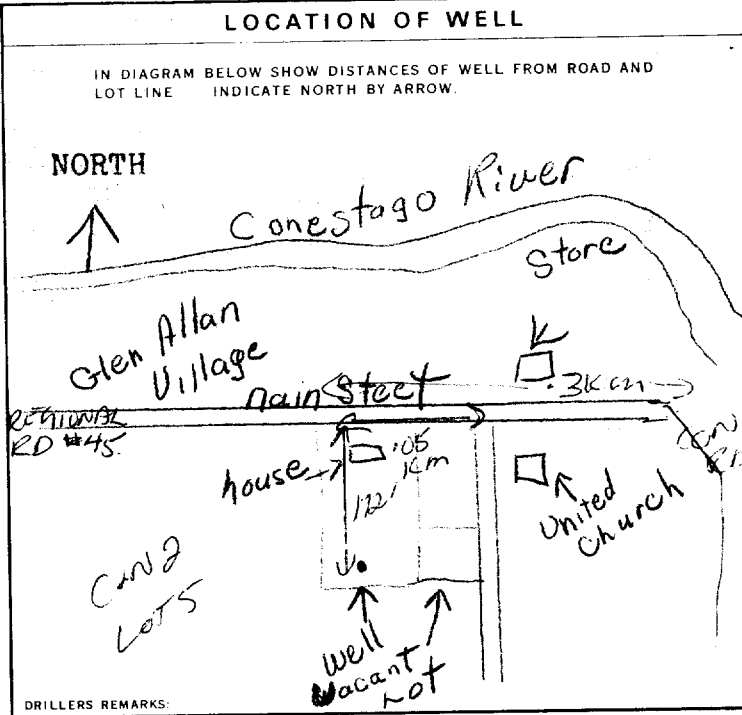
INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
04	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	0	0174
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		174	0215
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			

#### 61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	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 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE: 12 GPM	DURATION OF PUMPING: 01 HOURS 00 MINS
STATIC LEVEL: 053 FEET	WATER LEVEL END OF PUMPING: 068 FEET	WATER LEVELS DURING PUMPING:
IF FLOWING, GIVE RATE:	PUMP INTAKE SET AT: 90 GPM	WATER AT END OF TEST: 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE: <input checked="" type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: 90 FEET	RECOMMENDED PUMPING RATE: 11 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

#### WATER USE

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

#### METHOD OF DRILLING

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

#### CONTRACTOR

NAME OF WELL CONTRACTOR: Hugh Morrison Well Drilling Ltd. LICENCE NUMBER: 3740  
 ADDRESS: R.R. 5 Mount Forest, Ont.  
 NAME OF DRILLER OR BORER: Hugh Morrison LICENCE NUMBER: 3740  
 SIGNATURE OF CONTRACTOR: [Signature] SUBMISSION DATE: DAY MO YR

#### OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 3740 DATE RECEIVED: 121079  
 DATE OF INSPECTION: July 9, 1980 INSPECTOR: [Signature]  
 REMARKS: CSS.S8 P.G.W.

# WATER WELL RECORD

4851  
408/10 HRC

6707198

MUNICIPALITY: 67010  
COUNTY: C.P.N.  
LOT: 02

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

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PEEL CON. BECK TRACT SURVEY ETC.: Con 2 LOT: 006  
DATE COMPLETED: 12/12/79  
ELEVATION: 33300  
BASIN CODE: 23

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	SANDY CLAY FILL			0	4
BROWN	CLAY + STONES			4	29
GRAY	CLAY			29	85
GREEN	SHALE			85	106
BLUE	SHALE			106	140

31: 00046050181 002960512 0085205 0106417 0140317  
32: [REDACTED]

#### 41 WATER RECORD

WATER FOUND AT - FEET: 0136  
KIND OF WATER: FRESH  
PUMPING TEST: 005

#### 51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
05"	STEEL	.188	0-095
05"	STEEL		95-0140

#### SCREEN

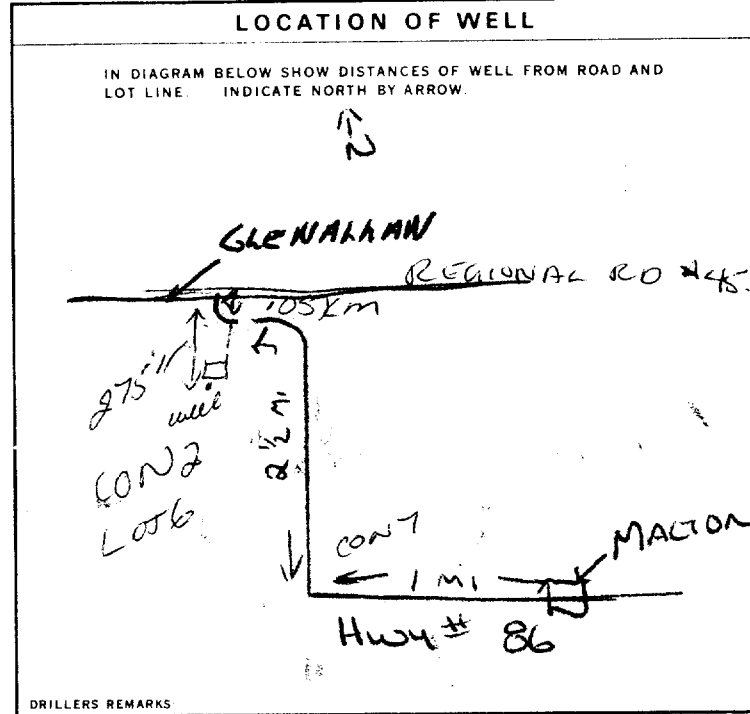
SIZE(S) OF OPENING (SLOT NO.): [REDACTED]  
MATERIAL AND TYPE: [REDACTED]

#### 61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	
18-21	
26-29	

#### 71 PUMPING TEST

PUMPING TEST METHOD:  PUMP  
PUMPING RATE: 0040 GPM  
DURATION OF PUMPING: 02 HRS 00 MINS  
WATER LEVELS DURING: 005 FEET  
PUMP INTAKE SET AT: 60 FEET  
RECOMMENDED PUMP SETTING: 060 FEET



#### 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  
5  COMMERCIAL  
6  MUNICIPAL  
7  PUBLIC SUPPLY  
8  COOLING OR AIR CONDITIONING  
9  NOT USED

#### METHOD OF DRILLING

1  TABLE 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: Debra Stone Wells  
LICENCE NUMBER: 5477  
NAME OF DRILLER OR BOREHOLE CONTRACTOR: David H. Steele  
LICENCE NUMBER: 124 108  
ADDRESS: [REDACTED]  
TANAGER ST, MIRA, ONT  
Phone: 669-2760  
Toll Free: 1-800-265-8402

#### OFFICE USE ONLY

DATA SOURCE: 1  
CONTRACTOR: 5477  
DATE RECEIVED: 08 01 80  
DATE OF INSPECTION: July 9, 1980  
INSPECTOR: [REDACTED]  
REMARKS: [REDACTED]



Ontario

# WATER WELL RECORD

6707250

MUNICIP

67010

CON

CAN

02

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

11

COUNTY OR DISTRICT <b>WELLINGTON</b>	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE <b>PEEL TWP</b>	CON., BLOCK, TRACT, SURVEY, ETC. <b>2</b>	DATE COMPLETED DAY <b>13</b> MO <b>10</b> YR <b>79</b>
WALLENSTEIN ONT.			LOT 25-27 <b>006</b>
NG <b>33.150</b>	RC <b>5</b>	ELEVATION <b>1230</b>	RC <b>5</b>
BASIN CODE <b>23</b>	II III IV		

### LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BLACK			TOP SOIL	0	3
DARK GREY	CLAY			3	12
GREY	"	+ STONES		12	24
"	"	"		24	51
"	"	"		51	62
			SCHALE	62	<del>62-63</del>
			ON TOP OF ROCK WATER	62-6	63

31	00038102	0012' 05165	002420512	0051205	006220512	0063 117	1
32	0063 112						

**41 WATER RECORD**

WATER USED **0063**

KIND OF WATER	15-18	20-23	25-28	30-33
1 <input checked="" type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY	1 <input type="checkbox"/> FRESH 2 <input type="checkbox"/> SALTY
3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL	3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
5-10-11	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	1/4	0	62-6
05				0063
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			20-23
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

**SCREEN**

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

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD: 1  PUMP 2  BAILER

PUMPING RATE: **0010** GPM

DURATION OF PUMPING: **03** HOURS **30** MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING				
006	006	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	
006	006	006	006	006	006	

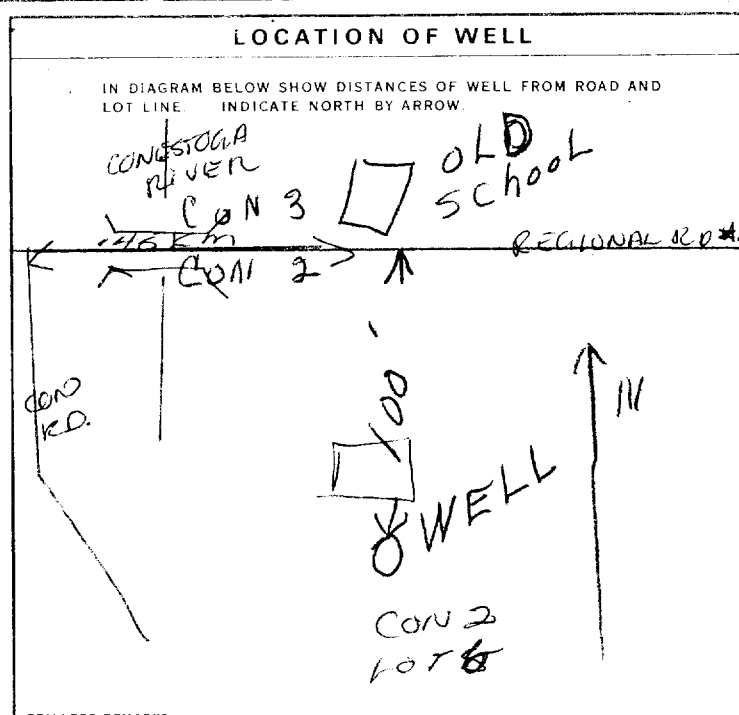
PUMP INTAKE SET AT: **20** FEET

WATER AT END OF TEST: 1  CLEAR 2  CLOUDY

RECOMMENDED PUMP TYPE:  SHALLOW  DEEP

RECOMMENDED PUMP SETTING: **010** FEET

RECOMMENDED PUMP RATE: **0010** GPM



**FINAL STATUS OF WELL** 1

**WATER USE** 01

**METHOD OF DRILLING** 1

**CONTRACTOR**

NAME OF WELL CONTRACTOR: **SADDER WELL DRILLING** LICENCE NUMBER: **4725**

ADDRESS: **R3 WALLENSTEIN ONT**

NAME OF DRILLER OR BORER: **SADDER** LICENCE NUMBER: **4725**

SIGNATURE OF CONTRACTOR: *John Sadder* SUBMISSION DATE: DAY **11** MO **4** YR **80**

**OFFICE USE ONLY**

DATA SOURCE: **1** CONTRACTOR: **4725** DATE RECEIVED: **15 04 80**

DATE OF INSPECTION: **July 9, 80** INSPECTOR: **DLW**

REMARKS: **WELL**

CSS:SS **DLW** WI



6708569

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

11

MUNICIP. 10 14 15 22 23 24  
CON. 15 22 23 24

COUNTY OR DISTRICT <b>Wellington</b>	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE <b>Peel Twp.</b>	CON., BLOCK, TRACT, SURVEY, ETC. <b>Con. 2</b>	LOT 25-27 <b>Pt.6</b>
R. 2, Wallenstein, Ontario.			DATE COMPLETED 48-53 DAY <b>21</b> MO <b>Oct.</b> YR <b>86.</b>

ELEVATION RC 24 25 26 30 31  
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	TO
Brown	Gravel	Stones	Coarse	0	37
Grey	Clay	Stones	Hard	37	74
Grey	Hardpan	Stones	Hard	74	108
Blue	Clay	Shale	Soft	108	119
Blue	Shale	Limestone	Soft, Broken	119	131
Brown	Limestone		Hard	131	135
Blue	Shale		Soft	135	146
Brown	Limestone		Hard	146	155

31 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
10-13 <b>145</b>	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18 <b>155</b>	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
10-11	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0	132-0
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		132-0	155
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

**SCREEN**

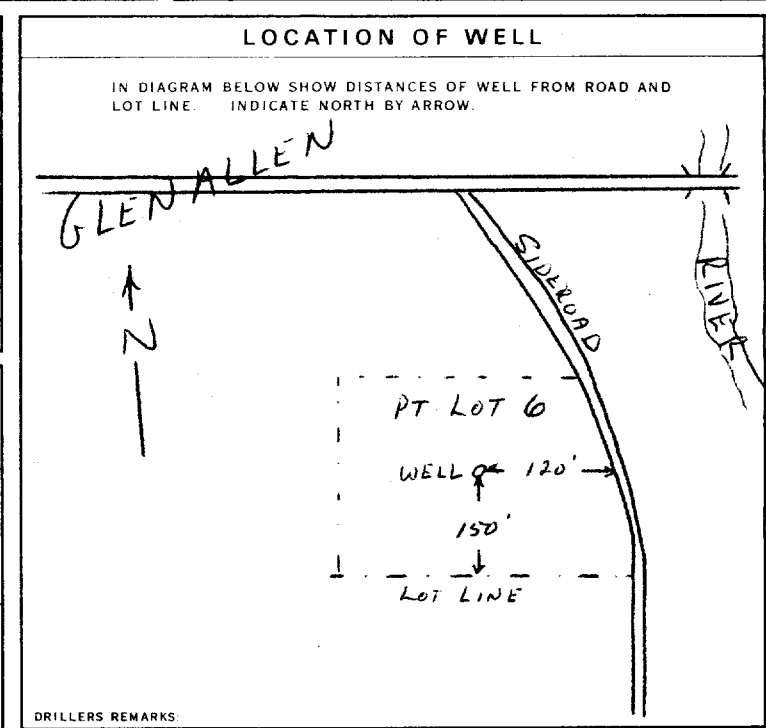
SIZE: S. OF OPENING (SLOT NO.)	DIAMETER 34-38 INCHES	LENGTH 39-40 FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN 41-44 FEET	

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD 1 <input checked="" type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	PUMPING RATE 11-14 <b>8</b> GPM	DURATION OF PUMPING 15-16 HOURS <b>30</b> 17-18 MINS
STATIC LEVEL 19-21 <b>5</b> FEET	WATER LEVEL END OF PUMPING 22-24 <b>12</b> FEET	WATER LEVELS DURING 1 <input checked="" type="checkbox"/> PUMPING 2 <input type="checkbox"/> RECOVERY
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT 30-41 <b>60</b> FEET	WATER AT END OF TEST 42 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE <input type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING 43-45 <b>25</b> FEET	RECOMMENDED PUMPING RATE 46-49 <b>8</b> GPM



**FINAL STATUS OF WELL**

1 <input checked="" type="checkbox"/> WATER SUPPLY	5 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY
2 <input type="checkbox"/> OBSERVATION WELL	6 <input type="checkbox"/> ABANDONED, POOR QUALITY
3 <input type="checkbox"/> TEST HOLE	7 <input type="checkbox"/> UNFINISHED
4 <input type="checkbox"/> RECHARGE WELL	

**WATER USE**

1 <input checked="" type="checkbox"/> DOMESTIC	5 <input type="checkbox"/> COMMERCIAL
2 <input type="checkbox"/> STOCK	6 <input type="checkbox"/> MUNICIPAL
3 <input type="checkbox"/> IRRIGATION	7 <input type="checkbox"/> PUBLIC SUPPLY
4 <input type="checkbox"/> INDUSTRIAL	8 <input type="checkbox"/> COOLING OR AIR CONDITIONING
<input type="checkbox"/> OTHER	9 <input type="checkbox"/> NOT USED

**METHOD OF DRILLING**

1 <input type="checkbox"/> CABLE TOOL	6 <input type="checkbox"/> BORING
2 <input checked="" type="checkbox"/> ROTARY (CONVENTIONAL)	7 <input type="checkbox"/> DIAMOND
3 <input type="checkbox"/> ROTARY (REVERSE)	8 <input type="checkbox"/> JETTING
4 <input type="checkbox"/> ROTARY (AIR)	9 <input type="checkbox"/> DRIVING
5 <input type="checkbox"/> AIR PERCUSSION	

**CONTRACTOR**

NAME OF WELL CONTRACTOR <b>Davidson Well Drilling Limited</b>	LICENCE NUMBER <b>1737</b>
ADDRESS <b>Box 486, Wingham, Ontario. NOG 2WO</b>	
NAME OF DRILLER OR BORER <b>D. Casemore</b>	LICENCE NUMBER
SIGNATURE OF CONTRACTOR <i>[Signature]</i>	SUBMISSION DATE DAY <b>23</b> MO <b>Oct.</b> YR <b>86.</b>

**OFFICE USE ONLY**

DATA SOURCE 58	CONTRACTOR 59-62	DATE RECEIVED <b>141186</b>	63-68 80
DATE OF INSPECTION		INSPECTOR	
REMARKS			

CSS.ES

6708783

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

COUNTY OR DISTRICT: WELLINGTON TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PEEL CON. BLOCK, TRACT, SURVEY ETC: 2 LOT: 11  
WELL IDENTIFICATION: R#2 WALLENSTEIN DATE COMPLETED: DAY 29 MO 05 YR 86

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	TOP SOIL			0	1
BROWN	CLAY	STONES	HARD	1	20
GREY	CLAY	STONES	HARD	20	95
GREY	ROCK		SOFT	95	120
BLUE	ROCK		SOFT	120	130

31 32

**41 WATER RECORD**

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

**51 CASING & OPEN HOLE RECORD**

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
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	.188	0	95
6 1/4	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		95	130

**SCREEN**

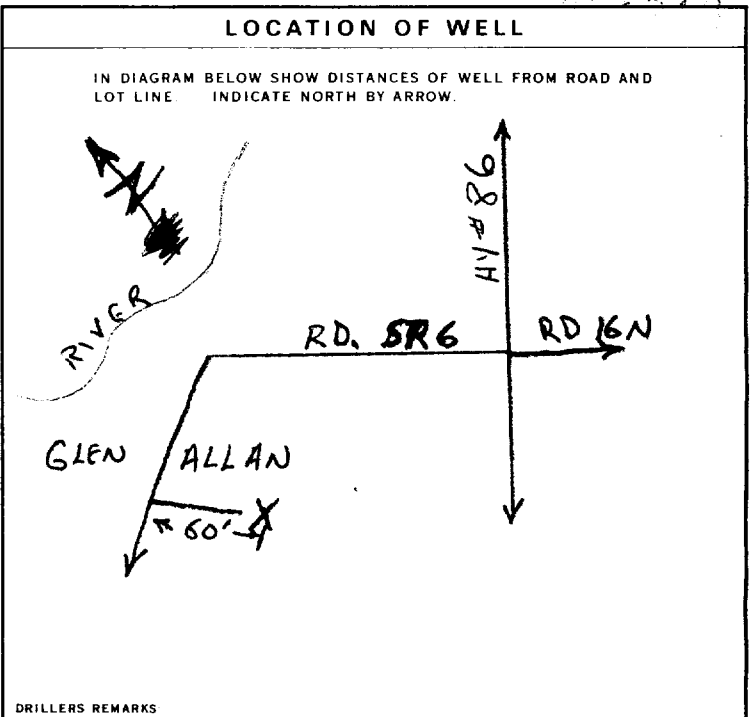
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN
		FEET

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	20 GPM	2 HOURS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
50 FEET	65 FEET	15 MINUTES: 50 FEET 30 MINUTES: 29-31 FEET 45 MINUTES: 32-34 FEET 60 MINUTES: 35-37 FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	80 GPM	1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	80 FEET	10 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

**WATER USE**

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

**METHOD OF DRILLING**

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

**CONTRACTOR**

NAME OF WELL CONTRACTOR: M'LAUGHLIN WATER WELLS LICENCE NUMBER: 3518  
ADDRESS: BOX 51 BRESLAU  
NAME OF DRILLER OR BORER: DON M'LAUGHLIN LICENCE NUMBER: T0349  
SIGNATURE OF CONTRACTOR: R. McLaughlin SUBMISSION DATE: DAY 30 NO. 06 YR. 86

**OFFICE USE ONLY**

DATA SOURCE: 58 CONTRACTOR: 59-62 DATE RECEIVED: JUN 29 1987  
DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_  
REMARKS: \_\_\_\_\_

6708784

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

COUNTY OR DISTRICT <b>PEEL</b>	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE <b>PEEL</b>	CON., BLOCK, TRACT, SURVEY, ETC. <b>2</b>	LOT <b>6</b>
DATE COMPLETED DAY <b>20</b> MO <b>06</b> YR <b>86</b>			

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	TOP SOIL			0	1
BROWN	CLAY		SOFT	1	20
GREY	CLAY	BOULDERS	HARD	20	153
BROWN	SILT		LOOSE	153	160
BROWN	SAND		LOOSE	160	168
BROWN	GRAVEL		LOOSE	168	170

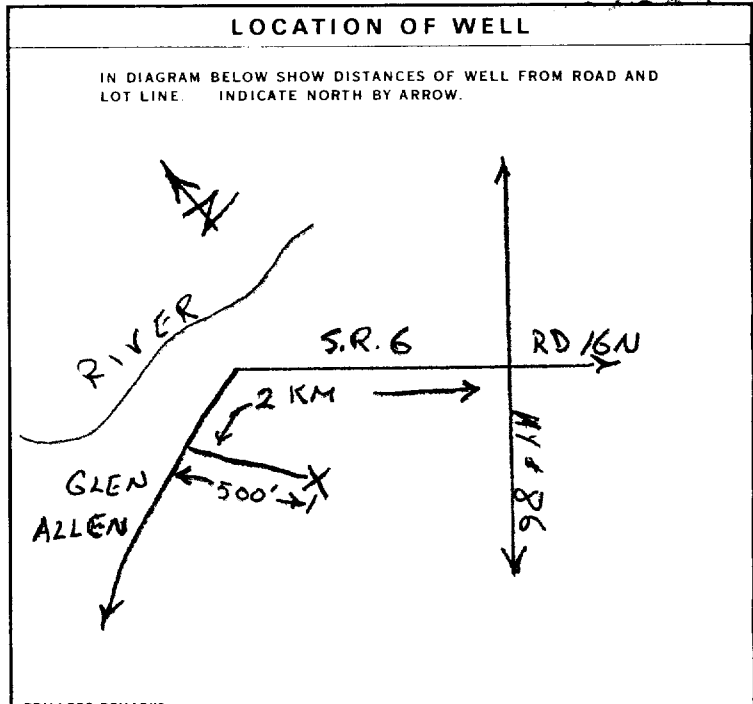
31	32
----	----

41 WATER RECORD	
WATER FOUND AT - FEET	KIND OF WATER
170	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL

51 CASING & OPEN HOLE RECORD				
INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
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	188	0	170
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			20-23
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			27-30

61 PLUGGING & SEALING RECORD	
DEPTH SET AT - FEET	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 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE <b>20</b> GPM
STATIC LEVEL <b>65</b> FEET	WATER LEVEL END OF PUMPING <b>75</b> FEET
WATER LEVELS DURING	
15 MINUTES <b>65</b> FEET	30 MINUTES FEET
45 MINUTES FEET	60 MINUTES FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT <b>85</b> FEET
RECOMMENDED PUMP TYPE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING <b>85</b> FEET
	WATER AT END OF TEST 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
	RECOMMENDED PUMPING RATE <b>10</b> GPM



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

NAME OF WELL CONTRACTOR <b>M'LAUGHLIN WATER WELLS</b>	LICENCE NUMBER <b>3518</b>
ADDRESS <b>Box 51 BRESLAU</b>	
NAME OF DRILLER OR BORER <b>DON M'LAUGHLIN</b>	LICENCE NUMBER <b>70349</b>
NATURE OF CONTRACTOR <b>R. M'Laughlin</b>	SUBMISSION DATE DAY <b>23</b> MO <b>07</b> YR <b>86</b>

OFFICE USE ONLY	DATA SOURCE	CONTRACTOR	DATE RECEIVED <b>JUN 29 1987</b>
	DATE OF INSPECTION	INSPECTOR	
	REMARKS		

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

11

6709367

MUNICIPALITY 67010

CON. 15 22 23 24

COUNTY OR DISTRICT: *Wellington* TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: *Wellington* CON. BLOCK, TRACT, SURVEY ETC: *2* LOT: *5*

DATE COMPLETED: DAY *27* MO *Aug* YR *88*

RC: *A#2* ELEVATION: *Glen Allen* BASIN CODE: *11*

**LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)**

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
<i>Brown</i>	<i>Clay</i>			<i>0</i>	<i>7</i>
<i>Gray</i>	<i>Clay</i>			<i>7</i>	<i>20</i>
<i>=</i>	<i>Sand</i>			<i>20</i>	<i>21</i>
<i>=</i>	<i>Clay</i>			<i>21</i>	<i>27</i>
<i>=</i>	<i>Clay</i>	<i>Shale clay</i>		<i>27</i>	<i>44</i>

31 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
<i>20</i>	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
<i>15-18</i>	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
<i>20-23</i>	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
<i>25-28</i>	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
<i>30-33</i>	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 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
<i>30</i>	1 <input type="checkbox"/> STEEL 2 <input checked="" type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC	<i>18</i> <i>6</i>	<i>0</i>	<i>44</i>
<i>17-18</i>	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			<i>20-23</i>
<i>24-25</i>	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			<i>27-30</i>

**SCREEN**

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

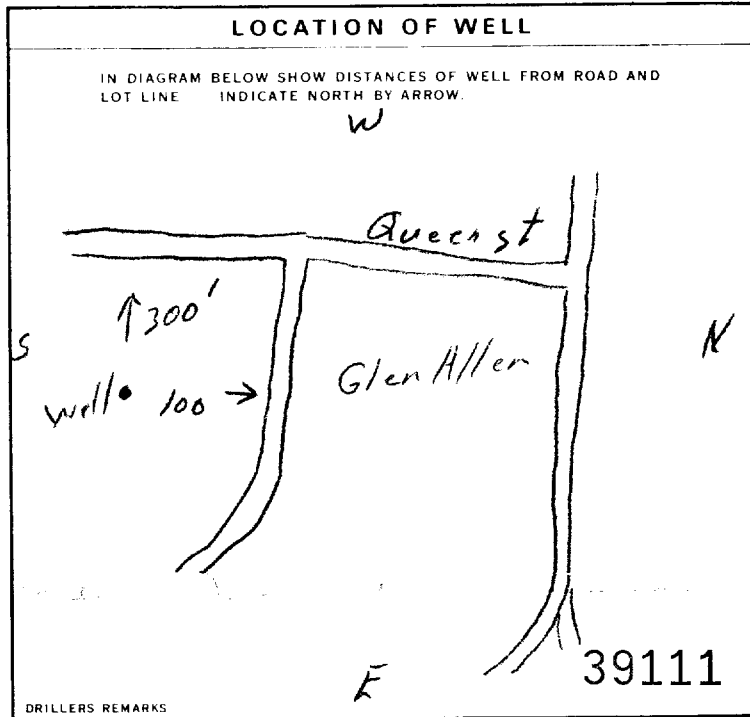
MATERIAL AND TYPE: \_\_\_\_\_ DEPTH TO TOP OF SCREEN: \_\_\_\_\_

**61 PLUGGING & SEALING RECORD**

DEPTH SET AT - FEET	MATERIAL AND TYPE	(CEMENT GROUT LEAD PACKER ETC)
<i>10-13</i>		
<i>18-21</i>		
<i>24-29</i>		

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE GPM	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER		15-16 HOURS 17-18 MINS
STATIC LEVEL: <i>12</i> FEET	WATER LEVEL END OF PUMPING: _____ FEET	WATER LEVELS DURING PUMPING & RECOVERY:
		15 MINUTES: <i>28-28</i> FEET 30 MINUTES: <i>29-31</i> FEET 45 MINUTES: <i>32-34</i> FEET 60 MINUTES: <i>1</i> FEET
IF FLOWING, GIVE RATE: _____ GPM	PUMP INTAKE SET AT: <i>40</i> FEET	WATER AT END OF TEST: 1 <input type="checkbox"/> CLEAR 2 <input checked="" type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE: <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: _____ FEET	RECOMMENDED PUMPING RATE: <i>2</i> GPM



**FINAL STATUS OF WELL**

1 <input checked="" type="checkbox"/> WATER SUPPLY	5 <input type="checkbox"/> ABANDONED, INSUFFICIENT SUPPLY
2 <input type="checkbox"/> OBSERVATION WELL	6 <input type="checkbox"/> ABANDONED, POOR QUALITY
3 <input type="checkbox"/> TEST HOLE	7 <input type="checkbox"/> UNFINISHED
4 <input type="checkbox"/> RECHARGE WELL	9 <input type="checkbox"/> DEWATERING

**WATER USE**

1 <input checked="" type="checkbox"/> DOMESTIC	5 <input type="checkbox"/> COMMERCIAL
2 <input type="checkbox"/> STOCK	6 <input type="checkbox"/> MUNICIPAL
3 <input type="checkbox"/> IRRIGATION	7 <input type="checkbox"/> PUBLIC SUPPLY
4 <input type="checkbox"/> INDUSTRIAL	8 <input type="checkbox"/> COOLING OR AIR CONDITIONING
<input type="checkbox"/> OTHER	9 <input type="checkbox"/> NOT USED

**METHOD OF CONSTRUCTION**

1 <input type="checkbox"/> CABLE TOOL	6 <input checked="" type="checkbox"/> BORING
2 <input type="checkbox"/> ROTARY (CONVENTIONAL)	7 <input type="checkbox"/> DIAMOND
3 <input type="checkbox"/> ROTARY (REVERSE)	8 <input type="checkbox"/> JETTING
4 <input type="checkbox"/> ROTARY (AIR)	9 <input type="checkbox"/> DRIVING
5 <input type="checkbox"/> AIR PERCUSSION	<input type="checkbox"/> DIGGING <input type="checkbox"/> OTHER

**CONTRACTOR**

NAME OF WELL CONTRACTOR: *Speedy Water Well* WELL CONTRACTOR'S LICENCE NUMBER: *4854*

ADDRESS: *RR#1 St. Agatha*

NAME OF WELL TECHNICIAN: *V.L. Pidgeon* WELL TECHNICIAN'S LICENCE NUMBER: *1301*

SIGNATURE OF TECHNICIAN / CONTRACTOR: *V.L. Pidgeon* SUBMISSION DATE: \_\_\_\_\_ DAY \_\_\_\_\_ MO \_\_\_\_\_ YR \_\_\_\_\_

**OFFICE USE ONLY**

DATA SOURCE: *4854* CONTRACTOR: *4854* DATE RECEIVED: *SEP 27 1988*

DATE OF INSPECTION: \_\_\_\_\_ INSPECTOR: \_\_\_\_\_

REMARKS: \_\_\_\_\_

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

11 6709653 67010 CON. 02

COUNTY OR DISTRICT: Wellington TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Peel Twp. CON. BLOCK, TRACT, SURVEY ETC: Con. 2 Sublot 32 & 33  
1, Elmira, Ontario. N3B 2Z1 DATE COMPLETED: 3 Feb. 89

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	TO
Brown	Sandy clay		Soft	0	32
Brown	Clay	Stones		32	82
Grey	Clay	Stones	Hard	82	156
Green	Shale		Soft	156	187
	Shale	Limestone	Soft	187	200

31 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
187-2000	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 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
5	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	157-0
5	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		157-0	200
	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC			27-30

**SCREEN**

SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		41-44
		30

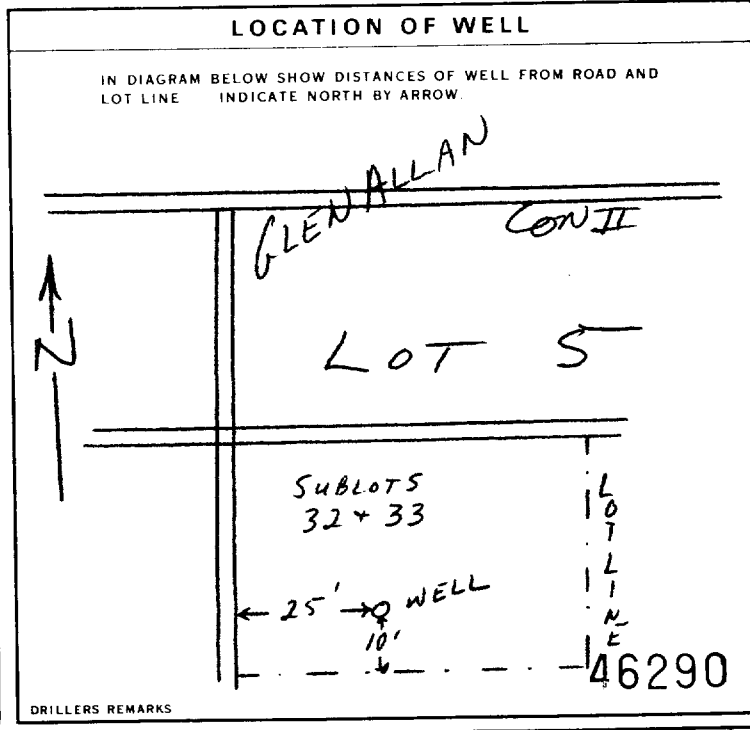
MATERIAL AND TYPE DEPTH TO TOP OF SCREEN

**61 PLUGGING & SEALING RECORD**

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

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> AIR PUMP 2 <input type="checkbox"/> BAILER	10 GPM	2 15-16 HOURS 17-18 MINS
STATIC LEVEL	WATER LEVELS DURING	1 <input checked="" type="checkbox"/> PUMPING 2 <input type="checkbox"/> RECOVERY
87 FEET	15 MINUTES 20-28 96 FEET 30 MINUTES 29-31 103 FEET 45 MINUTES 32-34 106 FEET 60 MINUTES 35-37 108 FEET	
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	120 GPM	1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
<input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	120 FEET	10 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  DEWATERING

**WATER USE**

1  DOMESTIC 5  COMMERCIAL  
2  STOCK 6  MUNICIPAL  
3  IRRIGATION 7  PUBLIC SUPPLY  
4  INDUSTRIAL 8  COOLING OR AIR CONDITIONING  
 OTHER 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  DIGGING  OTHER

**CONTRACTOR**

NAME OF WELL CONTRACTOR: Davidson Well Drilling Limited  
WELL CONTRACTOR'S LICENCE NUMBER: 1737  
ADDRESS: Box 486, Wingham, Ontario. NOG 2W0  
NAME OF WELL TECHNICIAN: K. Lang  
WELL TECHNICIAN'S LICENCE NUMBER: T0446  
SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature]  
SUBMISSION DATE: 16 Feb. 89

**OFFICE USE ONLY**

DATA SOURCE: CONTRACTOR 58 1737 DATE RECEIVED: 59-62 MAR 21 1989 63-68 60  
DATE OF INSPECTION: INSPECTOR:  
REMARKS:  
CSS.ES



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

11 6709660 67010 CON 102

COUNTY OR DISTRICT: WELLINGTON TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: DEEL CON. BLOCK, TRACT, SURVEY ETC: 2 LOT: 6  
DATE COMPLETED: 7 NOV 88  
2 WALLENSTEIN

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)					
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY	STONES	HARD	0	45
GREY	CLAY	STONES	HARD	45	92
BROWN	CLAY	STONES	HARD	92	115
GREY	STONES	SAND	LOOSE	115	121
BROWN	GRAVEL		LOOSE COARSE	121	123

31 32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER		
123	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS
	2 <input type="checkbox"/> SALTY	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	.188	0	123
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input type="checkbox"/> OPEN HOLE			
	5 <input type="checkbox"/> PLASTIC			

**SCREEN**

SIZE(S) OF OPENING (SLOT NO. 1)	DIAMETER INCHES	LENGTH FEET

**61 PLUGGING & SEALING RECORD**

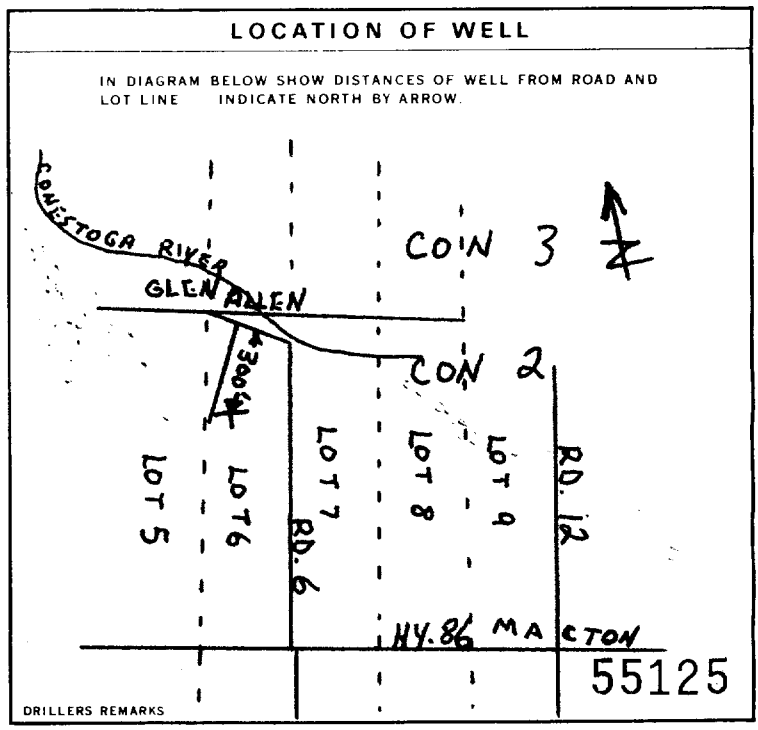
DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
10-13	14-17
18-21	22-25
26-29	30-33

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> AIR PUMP	20 GPM	2 HOURS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
20 FEET	40 FEET	15 MINUTES: 20 FEET	30 MINUTES: 20 FEET	45 MINUTES: 20 FEET	60 MINUTES: 20 FEET

IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	100 FEET	1 <input checked="" type="checkbox"/> CLEAR



**FINAL STATUS OF WELL**

1  WATER SUPPLY

**WATER USE**

1  DOMESTIC

**METHOD OF CONSTRUCTION**

4  ROTARY (AIR)

**CONTRACTOR** McLAUGHLIN WATER WELLS 3518  
ADDRESS: 51 BRESNAU ST. NUBIMO  
**WELL CONTRACTOR'S LICENCE NUMBER** 3518

**WELL TECHNICIAN** DON McLAUGHLIN  
**WELL TECHNICIAN'S LICENCE NUMBER** T349

SIGNATURE OF TECHNICIAN/CONTRACTOR: R. McLaughlin

**OFFICE USE ONLY**

DATE RECEIVED: MAR 15 1989  
CONTRACTOR: 3518

6711052

MUNICIPALITY: 67010 CON. NO.: CAN. LOT: 5

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

COUNTY OR DISTRICT: WENTWORTH TWP TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: DEER  
CON. BLOCK, TRACT, SURVEY ETC: I LOT: 5  
DATE COMPLETED: DAY 04 MO 04 YR 92  
WALLENSTEIN, ONT., NOB250

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY	SAND STONES	HARD	0	13
GREY	CLAY	STONES	HARD	13	82
BROWN	CLAY		HARD	82	90
GREY	CLAY	STONES	HARD	90	97
BROWN	ROCK			97	133

31  
32

**41 WATER RECORD**

WATER FOUND AT - FEET	KIND OF WATER
133	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	15-18 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	20-23 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	25-28 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	30-33 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 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	97
6 1/4	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		97	133

**SCREEN**

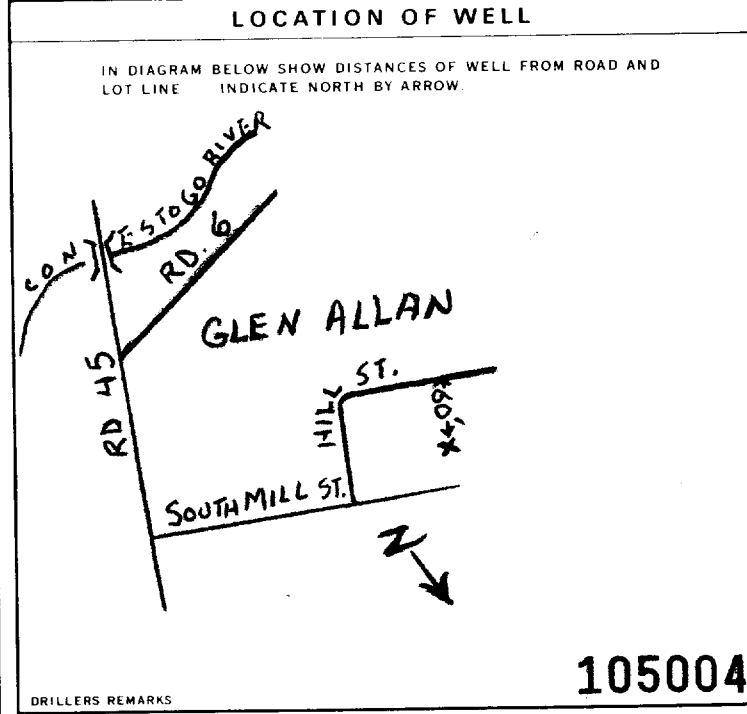
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

**61 PLUGGING & SEALING RECORD**

DEPTH SET AT - FEET	MATERIAL AND TYPE	CEMENT GROUT LEAD PACKER ETC.
10-13		
18-21		
22-25		
26-29		

**71 PUMPING TEST**

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> AIR PUMP 2 <input type="checkbox"/> BAILER	10 GPM	2 HOURS
STATIC LEVEL: 70 FEET	WATER LEVEL END OF PUMPING: 80 FEET	WATER LEVELS DURING:
19-21	22-24	15 MINUTES: 70 FEET
25-28	29-31	30 MINUTES: 70 FEET
32-34	35-37	45 MINUTES: 70 FEET
38-41	42	60 MINUTES: 70 FEET
IF FLOWING GIVE RATE: 100 GPM	PUMP INTAKE SET AT: 95 FEET	WATER AT END OF TEST: 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE: <input checked="" type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: 95 FEET	RECOMMENDED PUMPING RATE: 10 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: M'LAUGHLIN WATER WELLS  
ADDRESS: BOX 51 BRESLAU, ONT., NOB110  
WELL CONTRACTOR'S LICENSE NUMBER: 3518  
NAME OF WELL TECHNICIAN: R. McLAUGHLIN  
WELL TECHNICIAN'S LICENSE NUMBER: 10343  
SIGNATURE OF TECHNICIAN/CONTRACTOR: R. McLaughlin  
SUBMISSION DATE: DAY 06 MO 05 YR 92

**OFFICE USE ONLY**

DATA SOURCE: 3518 CONTRACTOR: 3518 DATE RECEIVED: JAN 28 1993  
DATE OF INSPECTION: INSPECTOR:  
REMARKS:  
CSS.ES

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

11

6711371

MUNICIP. 67010

CON. 102

COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: REEL CON. BLOCK, TRACT, SURVEY ETC: II LOT: 4  
DATE COMPLETED: 27 MO. 9 YR. 93  
2 WALLENST NOB 250

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
BROWN	CLAY	STONES	HARD	0	15
GREY	CLAY	STONES	HARD	15	78
BROWN	STONES	BOULDERS, CLAY	HARD	78	95
GREY	STONES	CLAY	HARD	95	142
BROWN	SHALE		HARD	142	160

31  
32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
160	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	19 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	24 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	29 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERALS 6 <input type="checkbox"/> GAS
	34 1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 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	142
6 1/4	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE 5 <input type="checkbox"/> PLASTIC		142	160

SCREEN

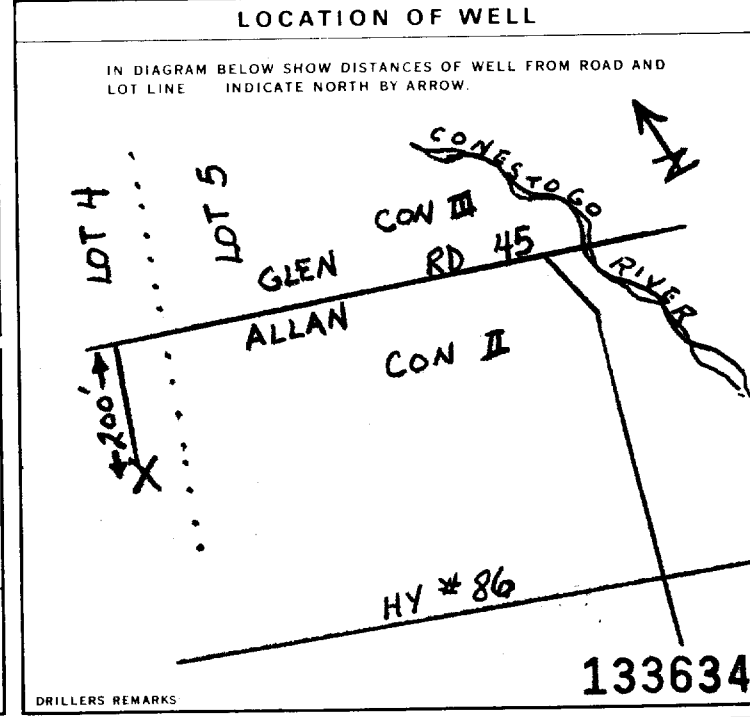
SIZE OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		41-44
		50

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> AIR PUMP 2 <input type="checkbox"/> BAILER	12 GPM	1 15-16 HOURS 17-18 MINS
STATIC LEVEL: 86 FEET	WATER LEVEL END OF PUMPING: 100 FEET	WATER LEVELS DURING:
		15 MINUTES: 85 FEET 30 MINUTES: 29-31 45 MINUTES: 32-34 60 MINUTES: 35-37
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT: 130 GPM	WATER AT END OF TEST: 1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE: <input checked="" type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: 130 FEET	RECOMMENDED PUMPING RATE: 10 GPM



FINAL STATUS OF WELL

WATER USE

METHOD OF CONSTRUCTION

CONTRACTOR: M'LAUGHLIN WATER WELLS, 38 DOLMAN ST., BRESLAU, ONT. NOBIMO  
WELL CONTRACTOR'S LICENCE NUMBER: 3518  
NAME OF WELL TECHNICIAN: DON M'LAUGHLIN, WELL TECHNICIAN'S LICENCE NUMBER: 70349  
SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature]  
SUBMISSION DATE: 27 MO. 10 YR. 93

OFFICE USE ONLY

DATA SOURCE: 3518, DATE RECEIVED: JAN 18 1994  
GATE OF INSPECTION: [Blank], INSPECTOR: [Blank]  
REMARKS: [Blank]

Print only in spaces provided.  
Mark correct box with a checkmark, where applicable.

11  
1 2

6712620

Municipality 67010 Con. 15 CON 22 23 24 92

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>Peel Twp.</b>	Con block tract survey, etc. <b>Con. 2</b>	Lot <b>Pt. 5</b>
Address <b>R.R. 2, Wallenstein, ON NOB 2S0</b>		Date completed <b>19</b> day <b>03</b> month <b>98</b> year	

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
Black	Fill		Soft	0	2
Brown	Clay	Stones	Hard	2	23
Grey	Hardpan		Hard	23	47
Brown	Clay	Stones	Hard	47	67
Brown	Limestone		Medium Hard	67	81
Dk. Brn.	Limestone		Medium Hard	81	96

31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

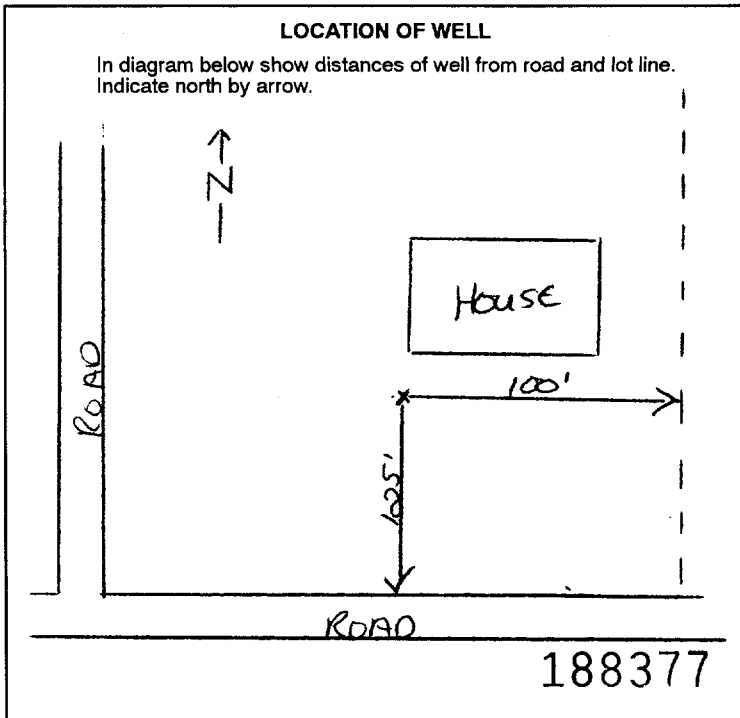
41 WATER RECORD			
Water found at - feet	Kind of water		
89-96	1 <input checked="" type="checkbox"/> Fresh 2 <input checked="" type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	14
15-18	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	19
20-23	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	24
25-28	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	29
30-33	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	34

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6	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	+1-4	69-4
6	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		69-4	96
	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			27-30

SCREEN	Sizes of opening (Slot No.)	Diameter	Length
		inches	feet
	Material and type	Depth at top of screen	

61 PLUGGING & SEALING RECORD			
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
10-13	14-17		
18-21	22-25		
26-29	30-33		

71 PUMPING TEST			
Pumping test method 1 <input checked="" type="checkbox"/> Pump 2 <input type="checkbox"/> Bailor	Pumping rate <b>10</b> GPM	Duration of pumping <b>1</b> Hours <b>20</b> Mins	
Static level <b>33</b> feet	Water level end of pumping <b>41</b> feet	Water levels during Pumping	
If flowing give rate		Pump intake set at <b>60</b> GPM	Water at end of test <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy
Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Recommended pump setting <b>60</b> feet	Recommended pump rate <b>10</b> GPM	



FINAL STATUS OF WELL			
1 <input checked="" type="checkbox"/> Water supply 2 <input type="checkbox"/> Observation well 3 <input type="checkbox"/> Test hole 4 <input type="checkbox"/> Recharge well	5 <input type="checkbox"/> Abandoned, insufficient supply 6 <input type="checkbox"/> Abandoned, poor quality 7 <input type="checkbox"/> Abandoned (Other) 8 <input type="checkbox"/> Dewatering	9 <input type="checkbox"/> Unfinished 10 <input type="checkbox"/> Replacement well	
WATER USE			
1 <input checked="" type="checkbox"/> Domestic 2 <input type="checkbox"/> Stock 3 <input type="checkbox"/> Irrigation 4 <input type="checkbox"/> Industrial	5 <input type="checkbox"/> Commercial 6 <input type="checkbox"/> Municipal 7 <input type="checkbox"/> Public supply 8 <input type="checkbox"/> Cooling & air conditioning	9 <input type="checkbox"/> Not used 10 <input type="checkbox"/> Other	
METHOD OF CONSTRUCTION			
1 <input type="checkbox"/> Cable tool 2 <input type="checkbox"/> Rotary (conventional) 3 <input type="checkbox"/> Rotary (reverse) 4 <input checked="" type="checkbox"/> Rotary (air)	5 <input type="checkbox"/> Air percussion 6 <input type="checkbox"/> Boring 7 <input type="checkbox"/> Diamond 8 <input type="checkbox"/> Jetting	9 <input type="checkbox"/> Driving 10 <input type="checkbox"/> Digging 11 <input type="checkbox"/> Other	

Name of Well Contractor <b>Davidson Well Drilling Limited</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Wingham, Ontario NOG 2W0</b>	
Name of Well Technician <b>G. Wright</b>	Well Technician's Licence No. <b>T0166</b>
Signature of Technician/Contractor <i>D.F. Davidson</i>	Submission date day <b>25</b> mo <b>03</b> yr <b>98</b>

MINISTRY USE ONLY	Data source <b>1737</b>	Contractor <b>1737</b>	Date received <b>SEP 17 1998</b>
	Date of inspection	Inspector	
	Remarks <b>CSS. S9</b>		

Print only in spaces provided.  
Mark correct box with a checkmark, where applicable.

11

6712623

Municipality 67010 Con. CON 02

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>Peel Twp.</b>	Con block tract survey, etc. <b>Con. 2</b>	Lot <b>5 &amp; 6</b>
Address <b>R.R. 2, Petersburg, Ontario NOB 2HO</b>		Date completed <b>12 Aug. 98</b>	

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
Brown	Clay	Stones	Hard	0	19
Grey	Clay	Stones	Hard	19	76
Grey	Clay		Hard	76	118
Blue	Shale		Soft	118	161
Brown	Limestone	Shale	Med.	161	170

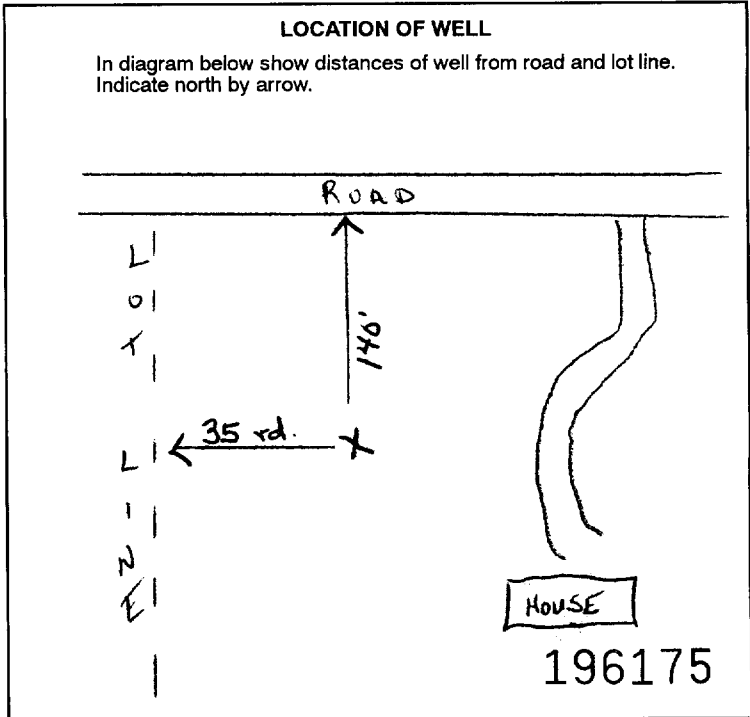
WATER RECORD	
Water found at - feet	Kind of water
164	<input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
15-18	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
20-23	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
25-28	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
30-33	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas

CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic	.188	0	136-6
6	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Open hole <input type="checkbox"/> Plastic		136-6	170
6	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic			

SCREEN	Sizes of opening (Slot No.)	Diameter inches	Length feet
	Material and type		Depth at top of screen feet

PLUGGING & SEALING RECORD			
<input type="checkbox"/> Annular space		<input type="checkbox"/> Abandonment	
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
10-13	14-17		
18-21	22-25		
26-29	30-33		

71	Pumping test method <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Pumping rate <b>10</b> GPM	Duration of pumping <b>1</b> Hours <b>30</b> Mins
PUMPING TEST	Static level	Water level end of pumping	Water levels during
			<input type="checkbox"/> Pumping <input checked="" type="checkbox"/> Recovery
	19-21	22-24	15 minutes 26-28
	30 feet	60 feet	34 feet 31 feet 30 feet 30 feet
	if flowing give rate	Pump intake set at	Water at end of test
		60 GPM	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy
	Recommended pump type	Recommended pump setting	Recommended pump rate
	<input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	60 feet	10 GPM



<b>FINAL STATUS OF WELL</b>					
<input checked="" type="checkbox"/> Water supply	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Unfinished			
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well			
<input type="checkbox"/> Test hole	<input type="checkbox"/> Abandoned (Other)				
<input type="checkbox"/> Recharge well	<input type="checkbox"/> Dewatering				
<b>WATER USE</b>					
<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used			
<input type="checkbox"/> Stock	<input type="checkbox"/> Municipal	<input type="checkbox"/> Other			
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Public supply				
<input type="checkbox"/> Industrial	<input type="checkbox"/> Cooling & air conditioning				
<b>METHOD OF CONSTRUCTION</b>					
<input type="checkbox"/> Cable tool	<input type="checkbox"/> Air percussion	<input type="checkbox"/> Driving			
<input checked="" type="checkbox"/> Rotary (conventional)	<input type="checkbox"/> Boring	<input type="checkbox"/> Digging			
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Diamond	<input type="checkbox"/> Other			
<input checked="" type="checkbox"/> Rotary (air)	<input type="checkbox"/> Jetting				

Name of Well Contractor <b>Davidson Well Drilling Limited</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Wingham, Ontario NOG 2WO</b>	
Name of Well Technician <b>D. Fenton</b>	Well Technician's Licence No. <b>T2003</b>
Signature of Technician/Contractor <i>D. F. Davidson</i>	Submission date <b>31 Aug. 98</b>

MINISTRY USE ONLY	Data source	Contractor <b>7737</b>	Date received <b>SEP 17 1998</b>
	Date of inspection	Inspector	
	Remarks <b>CSS. S9</b>		

Print only in spaces provided. Mark correct box with a checkmark, where applicable.

11

6713256

Municipality 67010 Con. CON 02

County or District Wellington Township/Borough/City/Town/Village Peel Twp. Con block tract survey, etc. Con. 2 Lot 5/6 Address R.R. 2, Wallenstein, Ontario Date completed 7 Oct 99

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions) Table with columns: General colour, Most common material, Other materials, General description, Depth - feet (From, To)

31 32

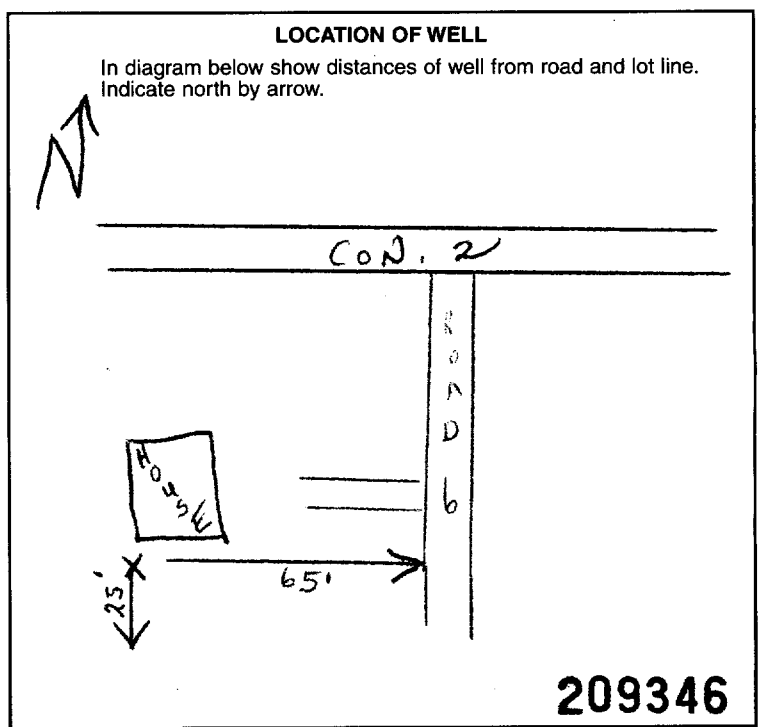
41 WATER RECORD Table with columns: Water found at - feet, Kind of water (Fresh/Salty, Sulphur/Minerals/Gas)

51 CASING & OPEN HOLE RECORD Table with columns: Inside diam inches, Material, Wall thickness inches, Depth - feet (From, To)

61 SCREEN Table with columns: Sizes of opening (Slot No.), Diameter, Length, Material and type, Depth at top of screen

61 PLUGGING & SEALING RECORD Table with columns: Depth set at - feet, Material and type (Cement grout, bentonite, etc.)

71 PUMPING TEST Table with columns: Pumping test method, Pumping rate, Duration of pumping, Static level, Water level end of pumping, Water levels during, If flowing give rate, Recommended pump type



FINAL STATUS OF WELL, WATER USE, METHOD OF CONSTRUCTION Tables with various checkboxes for well status, use, and construction methods.

Name of Well Contractor Davidson Well Drilling Limited, Well Contractor's Licence No. 1737, Address Box 486, Wingham, Ontario NOG 2W0, Name of Well Technician D. Fenton, Well Technician's Licence No. T2003, Signature of Technician/Contractor D.F. Davidson per J.C. Davidson, Submission date 15 Oct 99

MINISTRY USE ONLY Table with columns: Data source 1737, Date received FEB 15 2000, Date of inspection, Inspector, Remarks, Signature CSS.ES0



Print only in spaces provided.  
Mark correct box with a checkmark, where applicable.

11

6713395

Municipality 67010 Con. CON 02

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>Peel Twp.</b>	Con block tract survey, etc. <b>Con. 2</b>	Lot <b>4</b>
Address <b>R.R. 2, Wallenstein, Ontario NOB 2S0</b>		Date completed <b>13 Apr 00</b> day month year	

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
Brown	Clay		Hard	0	9
Grey	Clay		Hard	9	46
Brown	Gravel		Coarse	46	48
Grey	Clay		Hard	48	127
Grey	Till		Hard	127	162
Grey	Clay		Hard	162	215
Blue	Shale		Hard	215	228
Brown	Limestone	Blue shale	Med.	228	240

31

32

41 WATER RECORD

Water found at - feet	Kind of water
234-13	<input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
15-18	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
20-23	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
25-28	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
30-33	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic	.188	+1-6	228
6	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Open hole <input type="checkbox"/> Plastic		228	240
	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic			27-30

SCREEN

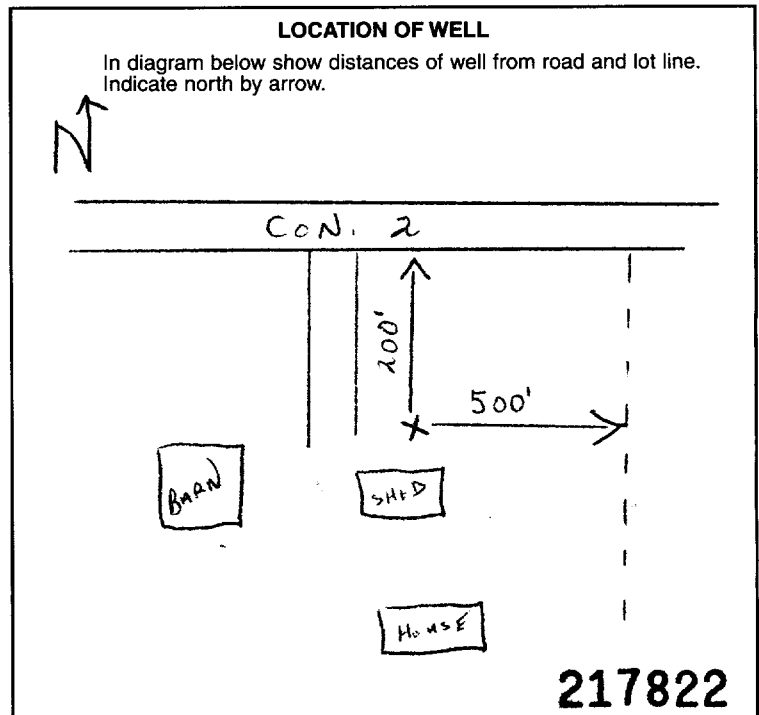
Sizes of opening (Slot No.)	Diameter inches	Length feet
Material and type		Depth at top of screen feet

61 PLUGGING & SEALING RECORD

Depth set at - feet		Material and type (Cement grout, bentonite, etc.)
From	To	
10-13	14-17	
18-21	22-25	
26-29	30-33	

71 PUMPING TEST

Pumping test method <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailor	Pumping rate <b>10</b> GPM	Duration of pumping <b>2</b> Hours <b>17</b> Mins
Static level <b>107</b> feet	Water level end of pumping <b>140</b> feet	Water levels during
		<input type="checkbox"/> Pumping <input checked="" type="checkbox"/> Recovery
		15 minutes <b>111</b> feet 30 minutes <b>109</b> feet 45 minutes <b>107</b> feet 60 minutes <b>107</b> feet
If flowing give rate GPM	Pump intake set at <b>140</b> feet	Water at end of test <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy
Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Recommended pump setting <b>140</b> feet	Recommended pump rate <b>10</b> GPM



54 FINAL STATUS OF WELL

<input checked="" type="checkbox"/> Water supply	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Unfinished
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well
<input type="checkbox"/> Test hole	<input type="checkbox"/> Abandoned (Other)	
<input type="checkbox"/> Recharge well	<input type="checkbox"/> Dewatering	

55-56 WATER USE

<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not use
<input checked="" type="checkbox"/> Stock	<input type="checkbox"/> Municipal	<input type="checkbox"/> Other
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Public supply	
<input type="checkbox"/> Industrial	<input type="checkbox"/> Cooling & air conditioning	

57 METHOD OF CONSTRUCTION

<input type="checkbox"/> Cable tool	<input type="checkbox"/> Air percussion	<input type="checkbox"/> Driving
<input checked="" type="checkbox"/> Rotary (conventional)	<input type="checkbox"/> Boring	<input type="checkbox"/> Digging
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Diamond	<input type="checkbox"/> Other
<input type="checkbox"/> Rotary (air)	<input type="checkbox"/> Jetting	

Name of Well Contractor <b>Davidson Well Drilling Limited</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Wingham, Ontario NOG 2W0</b>	
Name of Well Technician <b>D. Fenton</b>	Well Technician's Licence No. <b>T2003</b>
Signature of Technician/Contractor <i>D.F. Davidson</i>	Submission date <b>01 05 00</b>

MINISTRY USE ONLY

Data source <b>1737</b>	Contractor <b>1737</b>	Date received <b>AUG 03 2000</b>
Date of inspection	Inspector	
Remarks <b>CSS.ES0</b>		



Print only in spaces provided.  
Mark correct box with a checkmark, where applicable.

11

6714425

Municipality  
67010

Con.  
CAN

03

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>(Glen Mapleton (Peel) Twp. Allan)</b>	Con block tract survey, etc. <b>Con. 3</b>	Lot <b>Pt. 5</b>
Address <b>6 Snyder Ave. Glen Allan, Ont.</b>		Date completed <b>17 Oct. 02</b>	

21

1 2

U T

M 10 12 17 18 24 25 26 30 31

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	To
	<b>Topsoil</b>			0	1
<b>Brown</b>	<b>Clay</b>	<b>Gravel</b>		1	12
<b>Brn/Gry</b>	<b>Clay</b>	<b>Stones</b>		12	43
<b>Green</b>	<b>Shale</b>			43	45
<b>Brown</b>	<b>Limestone</b>			45	95

31

32

10 14 15 21 32 43 54 65 75 80

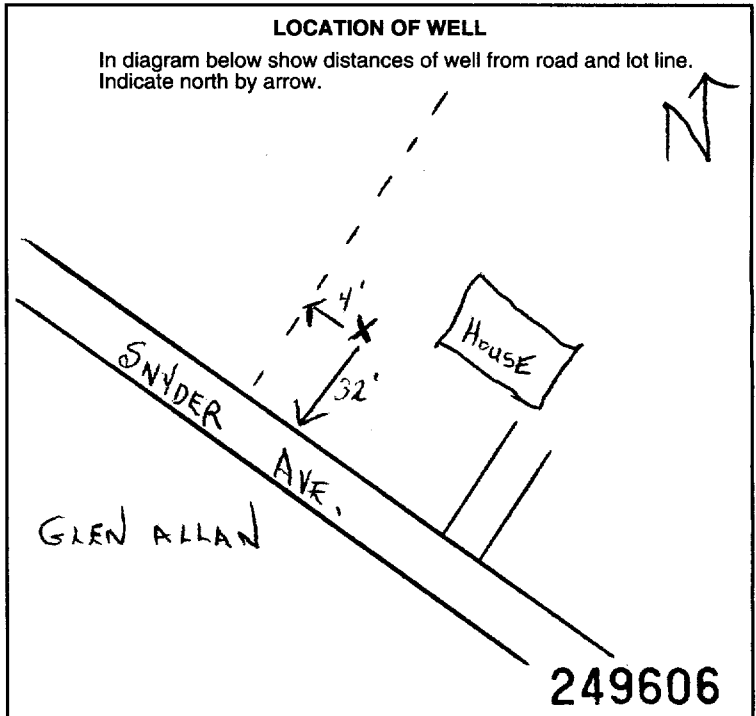
41 WATER RECORD			
Water found at - feet	Kind of water		
65-10-13	1 <input checked="" type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	14
95	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	15
15-18	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	19
20-23	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	24
25-28	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	29
30-33	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	34

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6	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	+2	62
6	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		62	95

SCREEN	Sizes of opening (Slot No.)	Diameter	Length
	Material and type	inches	feet
			30

61 PLUGGING & SEALING RECORD			
<input checked="" type="checkbox"/> Annular space <input type="checkbox"/> Abandonment			
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
62-10-13	20-14-17	<b>Bentonite grout</b>	
20-18-21	0-22-25	<b>Holeplug</b>	

71 PUMPING TEST	Pumping test method		Pumping rate	Duration of pumping	
	1 <input checked="" type="checkbox"/> Pump	2 <input type="checkbox"/> Bailer	10 GPM	1 Hours	30 Mins
	Static level	Water level end of pumping	Water levels during		
	35 feet	39 feet	15 minutes	30 minutes	45 minutes
If flowing give rate		Pump intake set at	Water at end of test		
70 GPM		60 feet	Clear <input checked="" type="checkbox"/> Cloudy <input type="checkbox"/>		
Recommended pump type		Recommended pump setting	Recommended pump rate		
Deep <input checked="" type="checkbox"/> Shallow <input type="checkbox"/>		60 feet	10 GPM		



FINAL STATUS OF WELL		
1 <input checked="" type="checkbox"/> Water supply	5 <input type="checkbox"/> Abandoned, insufficient supply	9 <input type="checkbox"/> Unfinished
2 <input type="checkbox"/> Observation well	6 <input type="checkbox"/> Abandoned, poor quality	10 <input type="checkbox"/> Replacement well
3 <input type="checkbox"/> Test hole	7 <input type="checkbox"/> Abandoned (Other)	
4 <input type="checkbox"/> Recharge well	8 <input type="checkbox"/> Dewatering	

WATER USE		
1 <input checked="" type="checkbox"/> Domestic	5 <input type="checkbox"/> Commercial	9 <input type="checkbox"/> Not use
2 <input type="checkbox"/> Stock	6 <input type="checkbox"/> Municipal	10 <input type="checkbox"/> Other
3 <input type="checkbox"/> Irrigation	7 <input type="checkbox"/> Public supply	
4 <input type="checkbox"/> Industrial	8 <input type="checkbox"/> Cooling & air conditioning	

METHOD OF CONSTRUCTION		
1 <input type="checkbox"/> Cable tool	5 <input type="checkbox"/> Air percussion	9 <input type="checkbox"/> Driving
2 <input checked="" type="checkbox"/> Rotary (conventional)	6 <input type="checkbox"/> Boring	10 <input type="checkbox"/> Digging
3 <input type="checkbox"/> Rotary (reverse)	7 <input type="checkbox"/> Diamond	11 <input type="checkbox"/> Other
4 <input type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor <b>Davidson Well Drilling Ltd.</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Wingham, Ontario NOG 2W0</b>	
Name of Well Technician <b>J. Pickering</b>	Well Technician's Licence No. <b>T2824</b>
Signature of Technician/Contractor <i>J. Pickering</i>	Submission date <b>5 Nov 02.</b>

MINISTRY USE ONLY	Data source	Contractor	Date received
		<b>1737</b>	<b>MAR 12 2003</b>
	Date of inspection	Inspector	
Remarks			
<b>CSS.ES3</b>			

Print only in spaces provided.  
Mark correct box with a checkmark, where applicable.

11  
1 2

6714426

Municipality 67010 Con. CON 03  
10 14 15 22 23 24

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>Mapleton (Peel) Twp. (Glen Allan) Con. 3</b>	Con block tract survey, etc. <b>Con. 3</b>	Lot <b>Pt. 5</b>
Address <b>1 Snyder Ave. Glen Allan, Ont.</b>		Date completed <b>29 Oct. 02.</b> day month year	

21  
1 2

U  
M 10 12 17 18 24 25 26 30 31 47

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
	<b>Topsoil</b>			<b>0</b>	<b>1</b>
<b>Brown</b>	<b>Clay</b>	<b>Gravel, stones</b>		<b>1</b>	<b>38</b>
<b>Gry/Brn</b>	<b>Shale</b>	<b>Limestone</b>		<b>38</b>	<b>65</b>
<b>Brown</b>	<b>Limestone</b>	<b>Green shale</b>		<b>65</b>	<b>80</b>
<b>Brn/Grn</b>	<b>Limestone</b>	<b>Shale</b>		<b>80</b>	<b>95</b>

31

32  
10 14 15 21 32 43 54 65 75 80

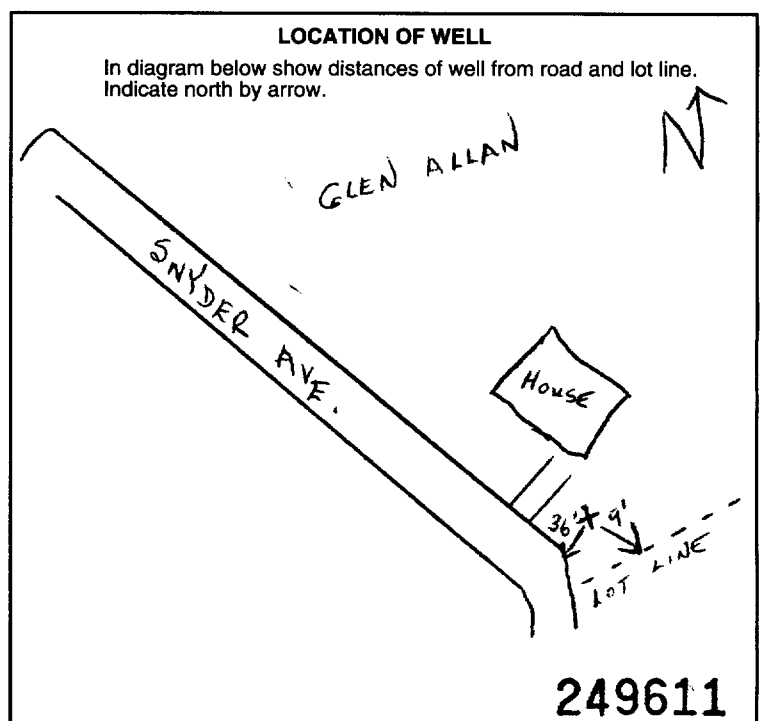
41 WATER RECORD			
Water found at - feet	Kind of water		
<b>70</b> <sup>0-13</sup>	1 <input checked="" type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	14 <input type="checkbox"/> Minerals
<b>95</b> <sup>15-18</sup>	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	6 <input type="checkbox"/> Gas
	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	19 <input type="checkbox"/> Minerals
	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	6 <input type="checkbox"/> Gas
	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	24 <input type="checkbox"/> Minerals
	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	6 <input type="checkbox"/> Gas
	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	29 <input type="checkbox"/> Minerals
	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	6 <input type="checkbox"/> Gas
	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	34 <input type="checkbox"/> Minerals
	2 <input type="checkbox"/> Salty	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
<b>6</b> <sup>10-11</sup>	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	<b>.188</b>	<b>+1-6</b>	<b>65</b> <sup>13-16</sup>
<b>6</b> <sup>17-18</sup>	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		<b>65</b>	<b>95</b> <sup>20-23</sup>
	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			<b>27-30</b> <sup>20-23</sup>

SCREEN	Sizes of opening (Slot No.)	Diameter	Length
	inches	inches	feet
	Material and type		Depth at top of screen
			feet

61 PLUGGING & SEALING RECORD			
<input checked="" type="checkbox"/> Annular space		<input type="checkbox"/> Abandonment	
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
<b>65</b> <sup>10-13</sup>	<b>20</b> <sup>14-17</sup>	<b>Bentonite grout</b>	
<b>20</b> <sup>18-21</sup>	<b>0</b> <sup>22-25</sup>	<b>Holeplug</b>	

71 PUMPING TEST			
Pumping test method	Pumping rate	Duration of pumping	
1 <input checked="" type="checkbox"/> Pump 2 <input type="checkbox"/> Bailer	<b>12</b> GPM	1 <input type="checkbox"/> Pumping 2 <input checked="" type="checkbox"/> Recovery	Hours Mins
Static level	Water level end of pumping	Water levels during	
19-21	22-24	15 minutes	30 minutes
<b>29</b> feet	<b>41</b> feet	<b>33</b> feet	<b>30</b> feet
		45 minutes	60 minutes
		<b>29</b> feet	<b>29</b> feet
If flowing give rate	Pump intake set at	Water at end of test	
GPM	<b>65</b> feet	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy	
Recommended pump type	Recommended pump setting	Recommended pump rate	
<input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	<b>60</b> feet	<b>8</b> GPM	



FINAL STATUS OF WELL		
1 <input checked="" type="checkbox"/> Water supply	5 <input type="checkbox"/> Abandoned, insufficient supply	9 <input type="checkbox"/> Unfinished
2 <input type="checkbox"/> Observation well	6 <input type="checkbox"/> Abandoned, poor quality	10 <input type="checkbox"/> Replacement well
3 <input type="checkbox"/> Test hole	7 <input type="checkbox"/> Abandoned (Other)	
4 <input type="checkbox"/> Recharge well	8 <input type="checkbox"/> Dewatering	

WATER USE		
1 <input checked="" type="checkbox"/> Domestic	5 <input type="checkbox"/> Commercial	9 <input type="checkbox"/> Not use
2 <input type="checkbox"/> Stock	6 <input type="checkbox"/> Municipal	10 <input type="checkbox"/> Other
3 <input type="checkbox"/> Irrigation	7 <input type="checkbox"/> Public supply	
4 <input type="checkbox"/> Industrial	8 <input type="checkbox"/> Cooling & air conditioning	

METHOD OF CONSTRUCTION		
1 <input type="checkbox"/> Cable tool	5 <input type="checkbox"/> Air percussion	9 <input type="checkbox"/> Driving
2 <input checked="" type="checkbox"/> Rotary (conventional)	6 <input type="checkbox"/> Boring	10 <input type="checkbox"/> Digging
3 <input type="checkbox"/> Rotary (reverse)	7 <input type="checkbox"/> Diamond	11 <input type="checkbox"/> Other
4 <input type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor <b>Davidson Well Drilling Ltd.</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Winghm, Ontario NOG 2W0</b>	
Name of Well Technician <b>J. Pickering</b>	Well Technician's Licence No. <b>T2824</b>
Signature of Technician/Contractor <i>J. C. Davidson</i>	Submission date day <b>7</b> Nov. yr <b>02</b>

MINISTRY USE ONLY	Data source	Contractor	Date received
		<b>1737</b>	<b>MAR 12 2003</b>
	Date of inspection	Inspector	
Remarks			<b>CSS.ES3</b>

Print only in spaces provided.

Mark correct box with a checkmark, where applicable.

11

6714427

Municipality  
67010

Con.  
CON 03

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>Mapleton (Peel) Twp. (Glen Allan) Con. 3</b>	Con block tract survey, etc. <b>Pt. 5</b>	Lot 25-27
Address <b>2 Snyder Ave. Glen Allan, Ont</b>		Date completed <b>24 Oct 02.</b>	48-53 day month year
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	To
	<b>Topsoil</b>			0	3
<b>Brn/Gry</b>	<b>Clay</b>	<b>Gravel, stones</b>		3	41
<b>Red</b>	<b>Shale</b>	<b>Brown limestone</b>		41	62
<b>Gry/Brn</b>	<b>Limestone</b>			62	80

31

32

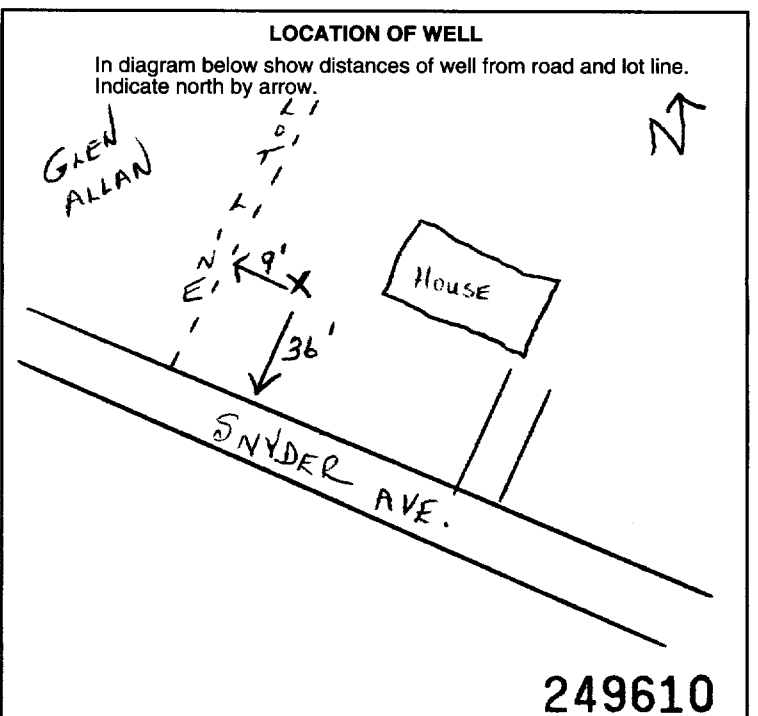
41 WATER RECORD			
Water found at - feet	Kind of water		
65	1 <input checked="" type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	14
80	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	15-18
	3 <input type="checkbox"/> Gas	6 <input type="checkbox"/> Gas	19
	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	20-23
	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	24
	3 <input type="checkbox"/> Gas	6 <input type="checkbox"/> Gas	25-28
	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	29
	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Minerals	30-33
	3 <input type="checkbox"/> Gas	6 <input type="checkbox"/> Gas	34

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6	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	+1-6	51
6	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		51	80
	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			27-30

SCREEN	Sizes of opening (Slot No.)	Diameter	Length
	inches	inches	feet
	Material and type		Depth at top of screen
			feet

61 PLUGGING & SEALING RECORD			
<input type="checkbox"/> Annular space		<input type="checkbox"/> Abandonment	
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
51	20	<b>Bentonite grout</b>	
20	0	<b>Holeplug</b>	

71 PUMPING TEST		Pumping test method		Pumping rate		Duration of pumping	
1 <input checked="" type="checkbox"/> Pump		2 <input type="checkbox"/> Bailer		10 GPM		1 Hours	
Static level	Water level end of pumping	Water levels during		1 <input type="checkbox"/> Pumping		2 <input checked="" type="checkbox"/> Recovery	
31 feet	35 feet	15 minutes	30 minutes	45 minutes	60 minutes		
		32 feet	31 feet	31 feet	31 feet		
If flowing give rate	Pump intake set at	Water at end of test					
GPM	65 feet	<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy					
Recommended pump type	Recommended pump setting	Recommended pump rate					
<input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	60 feet	10 GPM					



54 FINAL STATUS OF WELL		
1 <input type="checkbox"/> Water supply	5 <input type="checkbox"/> Abandoned, insufficient supply	9 <input type="checkbox"/> Unfinished
2 <input type="checkbox"/> Observation well	6 <input type="checkbox"/> Abandoned, poor quality	10 <input type="checkbox"/> Replacement well
3 <input type="checkbox"/> Test hole	7 <input type="checkbox"/> Abandoned (Other)	
4 <input type="checkbox"/> Recharge well	8 <input type="checkbox"/> Dewatering	
55-56 WATER USE		
1 <input type="checkbox"/> Domestic	5 <input type="checkbox"/> Commercial	9 <input type="checkbox"/> Not use
2 <input type="checkbox"/> Stock	6 <input type="checkbox"/> Municipal	10 <input type="checkbox"/> Other
3 <input type="checkbox"/> Irrigation	7 <input type="checkbox"/> Public supply	
4 <input type="checkbox"/> Industrial	8 <input type="checkbox"/> Cooling & air conditioning	
57 METHOD OF CONSTRUCTION		
1 <input type="checkbox"/> Cable tool	5 <input type="checkbox"/> Air percussion	9 <input type="checkbox"/> Driving
2 <input checked="" type="checkbox"/> Rotary (conventional)	6 <input type="checkbox"/> Boring	10 <input type="checkbox"/> Digging
3 <input type="checkbox"/> Rotary (reverse)	7 <input type="checkbox"/> Diamond	11 <input type="checkbox"/> Other
4 <input type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor <b>Davidson Well Drilling Ltd.</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Wingham, Ontario NOG 2W0</b>	
Name of Well Technician <b>J. Pickering</b>	Well Technician's Licence No. <b>T2824</b>
Signature of Technician/Contractor <i>J.C. Davidson</i>	Submission date <b>7 Nov 02.</b>

MINISTRY USE ONLY	Data source	Contractor <b>1737</b>	Date received <b>MAR 12 2003</b>
	Date of inspection	Inspector	
	Remarks		

**CSS.ES3**

Print only in spaces provided.  
Mark correct box with a checkmark, where applicable.

11

6714428

Municipality 67010 Con. CON 03

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>Mapleton (Peel) Twp (Glen Allan) Con. 3</b>	Con block tract survey, etc. <b>Con. 3</b>	Lot <b>5</b>
Address <b>3 Snyder Ave. Glen Allan, Ont.</b>		Date completed <b>23 Oct 02</b>	

21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
	<b>Topsoil</b>			0	1
<b>Brown</b>	<b>Clay</b>	<b>Stones, gravel</b>		1	43
<b>Brown</b>	<b>Shale</b>	<b>Limestone</b>		43	62
<b>Grey</b>	<b>Limestone</b>			62	80

31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80

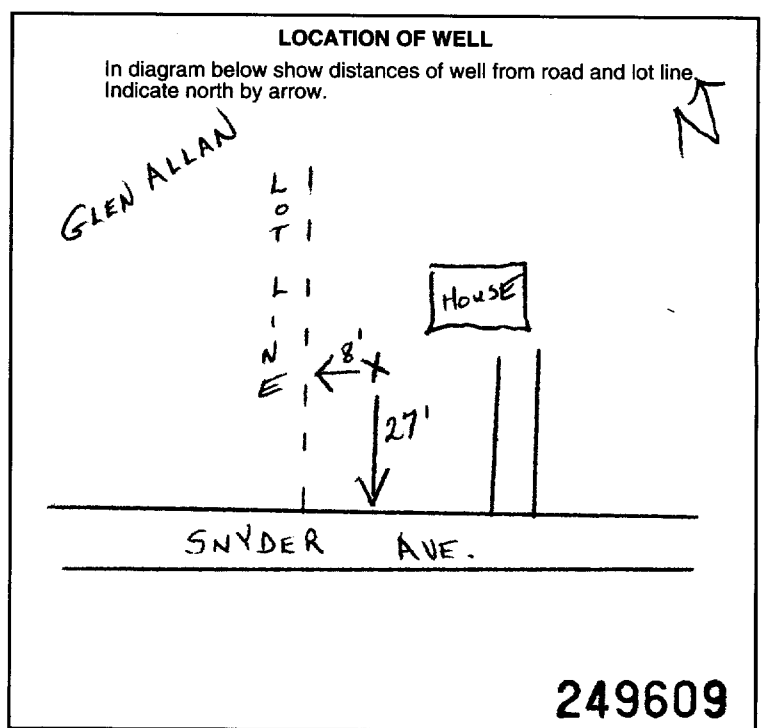
41 WATER RECORD			
Water found at - feet	Kind of water		
65-79	<input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Salty	<input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas	
15-18	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty	<input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas	
20-23	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty	<input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas	
25-28	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty	<input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas	
30-33	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty	<input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas	

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic	.188	+1-6	63
6	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Open hole <input type="checkbox"/> Plastic		63	80
	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic			

SCREEN	Sizes of opening (Slot No.)	Diameter	Length
		inches	feet
	Material and type		Depth at top of screen
			feet

61 PLUGGING & SEALING RECORD			
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
63-20	20	<b>Bentonite grout</b>	
20-0	0	<b>Holeplug</b>	

PUMPING TEST	Pumping test method <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Pumping rate <b>10</b> GPM	Duration of pumping <b>1</b> Hours <b>30</b> Mins
	Static level <b>32</b> feet	Water level end of pumping <b>36</b> feet	Water levels during
			15 minutes <b>33</b> feet
			30 minutes <b>32</b> feet
			45 minutes <b>32</b> feet
		60 minutes <b>32</b> feet	
	If flowing give rate GPM	Pump intake set at <b>65</b> feet	Water at end of test <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy
	Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Recommended pump setting <b>60</b> feet	Recommended pump rate <b>10</b> GPM



<b>FINAL STATUS OF WELL</b>		
<input checked="" type="checkbox"/> Water supply	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Unfinished
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well
<input type="checkbox"/> Test hole	<input type="checkbox"/> Abandoned (Other)	
<input type="checkbox"/> Recharge well	<input type="checkbox"/> Dewatering	
<b>WATER USE</b>		
<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not use
<input type="checkbox"/> Stock	<input type="checkbox"/> Municipal	<input type="checkbox"/> Other
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Public supply	
<input type="checkbox"/> Industrial	<input type="checkbox"/> Cooling & air conditioning	
<b>METHOD OF CONSTRUCTION</b>		
<input type="checkbox"/> Cable tool	<input type="checkbox"/> Air percussion	<input type="checkbox"/> Driving
<input checked="" type="checkbox"/> Rotary (conventional)	<input type="checkbox"/> Boring	<input type="checkbox"/> Digging
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Diamond	<input type="checkbox"/> Other
<input type="checkbox"/> Rotary (air)	<input type="checkbox"/> Jetting	

Name of Well Contractor <b>Davidson Well Drilling Ltd.</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Wingham, ONTARIO NOG 2W0</b>	
Name of Well Technician <b>J. Pickering</b>	Well Technician's Licence No. <b>T2824</b>
Signature of Technician/Contractor <i>J.C. Davidson</i>	Submission date <b>7 Nov yr 02</b>

MINISTRY USE ONLY	Data source <b>1737</b>	Contractor <b>1737</b>	Date received <b>MAR 12 2003</b>
	Date of inspection	Inspector	
	Remarks <b>CSS.ES3</b>		

Print only in spaces provided.  
Mark correct box with a checkmark, where applicable.

11

6714429

Municipality 67010 Con CON Lot 03

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>Mapleton (Peel) Twp. (Glen Allan) Con. 3</b>	Con block tract survey, etc. <b>Con. 3</b>	Lot <b>Pt. 5</b>
Address <b>4 Snyder Ave. Glen Allan, Ont.</b>		Date completed <b>21 Oct 02</b> day month year	

21 2 10 12 17 18 24 25 26 30 31 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
	<b>Topsoil</b>			0	1
<b>Brown</b>	<b>Clay</b>	<b>Stones, shale</b>		1	44
<b>Brn/Grn</b>	<b>Limestone</b>	<b>Shale</b>		44	74
<b>Brown</b>	<b>Limestone</b>			74	95

31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50

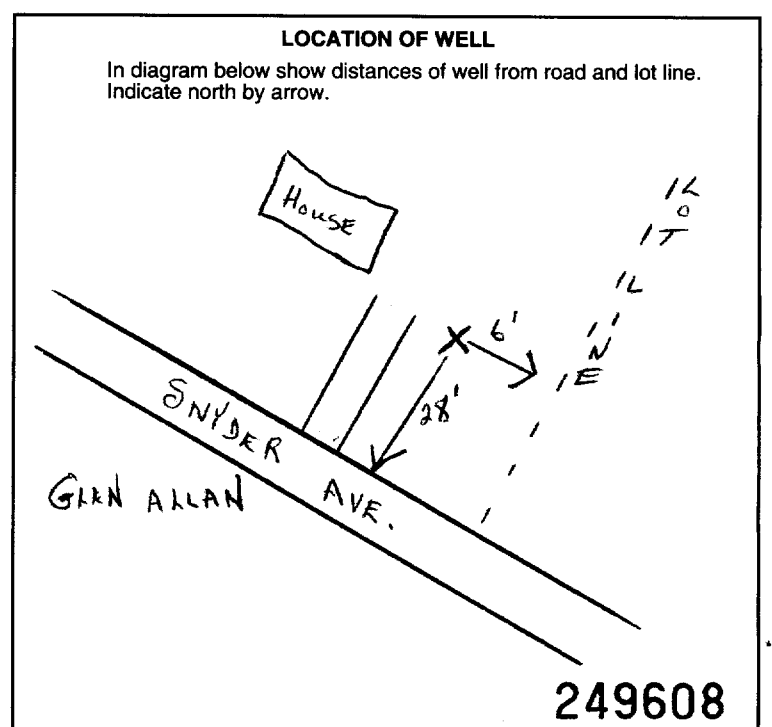
41 WATER RECORD			
Water found at - feet	Kind of water		
67-94	1 <input checked="" type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	14
15-18	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	19
20-23	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	24
25-28	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	29
30-33	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 5 <input type="checkbox"/> Gas	34

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6	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	+1-6	45
6	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		45	95
	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			27-30

SCREEN	Sizes of opening (Slot No.)	Diameter	Length
	31-33	34-38	39-40
		inches	feet
	Material and type		Depth at top of screen
			41-44
			feet

61 PLUGGING & SEALING RECORD			
<input checked="" type="checkbox"/> Annular space <input type="checkbox"/> Abandonment			
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
45	20	<b>Bentonite grout</b>	
20	0	<b>Holeplug</b>	

71 PUMPING TEST			
Pumping test method 1 <input checked="" type="checkbox"/> Pump 2 <input type="checkbox"/> Bailor	Pumping rate <b>10</b> GPM	Duration of pumping 1 <input type="checkbox"/> Hours 2 <input checked="" type="checkbox"/> Mins	
Static level 19-21 <b>32</b> feet	Water level end of pumping 22-24 <b>37</b> feet	Water levels during 1 <input type="checkbox"/> Pumping 2 <input checked="" type="checkbox"/> Recovery	
		15 minutes 26-28 <b>33</b> feet	30 minutes 29-31 <b>32</b> feet
		45 minutes 32-34 <b>32</b> feet	60 minutes 35-37 <b>32</b> feet
If flowing give rate 38-41 GPM	Pump intake set at <b>65</b> feet	Water at end of test 42 <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy	
Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Recommended pump setting 43-45 <b>60</b> feet	Recommended pump rate 46-49 <b>10</b> GPM	



54 FINAL STATUS OF WELL		
1 <input checked="" type="checkbox"/> Water supply	5 <input type="checkbox"/> Abandoned, insufficient supply	9 <input type="checkbox"/> Unfinished
2 <input type="checkbox"/> Observation well	6 <input type="checkbox"/> Abandoned, poor quality	10 <input type="checkbox"/> Replacement well
3 <input type="checkbox"/> Test hole	7 <input type="checkbox"/> Abandoned (Other)	
4 <input type="checkbox"/> Recharge well	8 <input type="checkbox"/> Dewatering	

55-56 WATER USE		
1 <input checked="" type="checkbox"/> Domestic	5 <input type="checkbox"/> Commercial	9 <input type="checkbox"/> Not use
2 <input type="checkbox"/> Stock	6 <input type="checkbox"/> Municipal	10 <input type="checkbox"/> Other
3 <input type="checkbox"/> Irrigation	7 <input type="checkbox"/> Public supply	
4 <input type="checkbox"/> Industrial	8 <input type="checkbox"/> Cooling & air conditioning	

57 METHOD OF CONSTRUCTION		
1 <input type="checkbox"/> Cable tool	5 <input type="checkbox"/> Air percussion	9 <input type="checkbox"/> Driving
2 <input checked="" type="checkbox"/> Rotary (conventional)	6 <input type="checkbox"/> Boring	10 <input type="checkbox"/> Digging
3 <input type="checkbox"/> Rotary (reverse)	7 <input type="checkbox"/> Diamond	11 <input type="checkbox"/> Other
4 <input type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor <b>Davidson Well Drilling Ltd.</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Wingham, Ontario NOG 2W0</b>	
Name of Well Technician <b>J. Pickering</b>	Well Technician's Licence No. <b>T2824</b>
Signature of Technician/Contractor <i>J. C. Davidson</i>	Submission date day <b>7</b> mo <b>Nov</b> yr <b>02</b>

MINISTRY USE ONLY	Data source <b>1737</b>	Contractor <b>1737</b>	Date received <b>MAR 12 2003</b>	
	Date of inspection	Inspector		
	Remarks			

**CSS.ES3**

Print only in spaces provided.  
Mark correct box with a checkmark, where applicable.

11

6714430

Municipality  
67010

Con. CON 02

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>Mapleton (Peel) Twp. (Glen Allan) Con. 3</b>	Con block tract survey, etc. <b>3</b>	Lot <b>Pt. 5</b>
Address <b>5 Snyder Ave. Glen Allan, Ont</b>		Date completed <b>18</b> day <b>Oct</b> month <b>02</b> year	

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)					
General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
	<b>Topsoil</b>			<b>0</b>	<b>1</b>
<b>Brn/Gry</b>	<b>Clay</b>	<b>Stones, till</b>		<b>1</b>	<b>38</b>
<b>Brn/Gry</b>	<b>Limestone</b>	<b>Shale</b>		<b>38</b>	<b>86</b>
<b>Brn/Blu</b>	<b>Limestone</b>			<b>86</b>	<b>95</b>

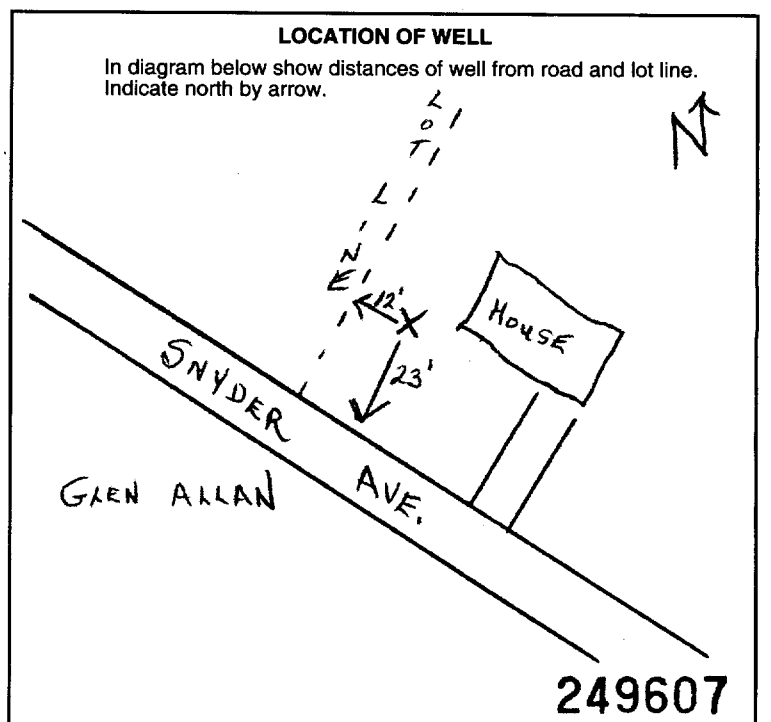
41 WATER RECORD	
Water found at - feet	Kind of water
<b>70</b> <b>93</b>	<input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
15-18	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
20-23	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
25-28	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas
30-33	<input type="checkbox"/> Fresh <input type="checkbox"/> Salty <input type="checkbox"/> Sulphur <input type="checkbox"/> Minerals <input type="checkbox"/> Gas

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
<b>6</b>	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic	<b>.188</b>	<b>+1-6</b>	<b>61</b>
<b>6</b>	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Open hole <input type="checkbox"/> Plastic		<b>61</b>	<b>95</b>
24-25	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic			27-30

SCREEN	31-33 Sizes of opening (Slot No.)		34-38 Diameter inches	39-40 Length feet
	Material and type			41-44 Depth at top of screen feet

61 PLUGGING & SEALING RECORD			
Annular space		Abandonment	
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
<b>61</b>	<b>20</b>	<b>Bentonite grout</b>	
<b>20</b>	<b>0</b>	<b>Holeplug</b>	

71 PUMPING TEST	
Pumping test method <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Pumping rate <b>10</b> GPM
Duration of pumping <b>1</b> Hours <b>45</b> Mins	
Static level <b>35</b> feet	Water level end of pumping <b>38</b> feet
Water levels during <input type="checkbox"/> Pumping <input checked="" type="checkbox"/> Recovery	
15 minutes <b>36</b> feet	30 minutes <b>35</b> feet
45 minutes <b>35</b> feet	60 minutes <b>35</b> feet
If flowing give rate GPM	Pump intake set at <b>65</b> feet
Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Water at end of test <input type="checkbox"/> Clear <input type="checkbox"/> Cloudy
Recommended pump setting <b>60</b> feet	Recommended pump rate <b>10</b> GPM



54 FINAL STATUS OF WELL		
<input checked="" type="checkbox"/> Water supply	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Unfinished
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well
<input type="checkbox"/> Test hole	<input type="checkbox"/> Abandoned (Other)	
<input type="checkbox"/> Recharge well	<input type="checkbox"/> Dewatering	

55-56 WATER USE		
<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not use
<input type="checkbox"/> Stock	<input type="checkbox"/> Municipal	<input type="checkbox"/> Other
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Public supply	
<input type="checkbox"/> Industrial	<input type="checkbox"/> Cooling & air conditioning	

57 METHOD OF CONSTRUCTION		
<input type="checkbox"/> Cable tool	<input type="checkbox"/> Air percussion	<input type="checkbox"/> Driving
<input checked="" type="checkbox"/> Rotary (conventional)	<input type="checkbox"/> Boring	<input type="checkbox"/> Digging
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Diamond	<input type="checkbox"/> Other
<input type="checkbox"/> Rotary (air)	<input type="checkbox"/> Jetting	

Name of Well Contractor <b>Davidson Well Drilling Ltd.</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Wingham, Ontario NOG 2W0</b>	
Name of Well Technician <b>J. Pickering</b>	Well Technician's Licence No. <b>T2824</b>
Signature of Technician/Contractor <i>J.C. Davidson</i>	Submission date <b>5 Nov. yr 02.</b>

MINISTRY USE ONLY	
Data source <b>1737</b>	Date received <b>MAR 12 2003</b>
Date of inspection	Inspector
Remarks <b>CSS.ES3</b>	

Print only in spaces provided.  
Mark correct box with a checkmark, where applicable.

11

6714535

Municipality **67010** Con. **CON** **03**

County or District <b>Wellington</b>	Township/Borough/City/Town/Village <b>Mapleton (Peel) Twp.</b>	Con block tract survey, etc. <b>Con.3</b>	Lot <b>Pt.5</b>
Owner's surname <b>Canada Mortgage &amp; Housing</b>	First Name	Address of Well Location <b>c/o [REDACTED] 200 Catherine Street, Ottawa, Ont</b>	Date completed <b>30 May 03</b>

21

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	To
Brown	Clay			2	16
Brown	Clay	Gravel, cobbles		16	30
Grey	Gravel	Silt		30	41
Grey	Clay	Gravel		41	52
Brown	Clay			52	59
Grey	Clay	Gravel, cobbles		59	71
Green	Shale	White limestone	Layered	71	113

31

32

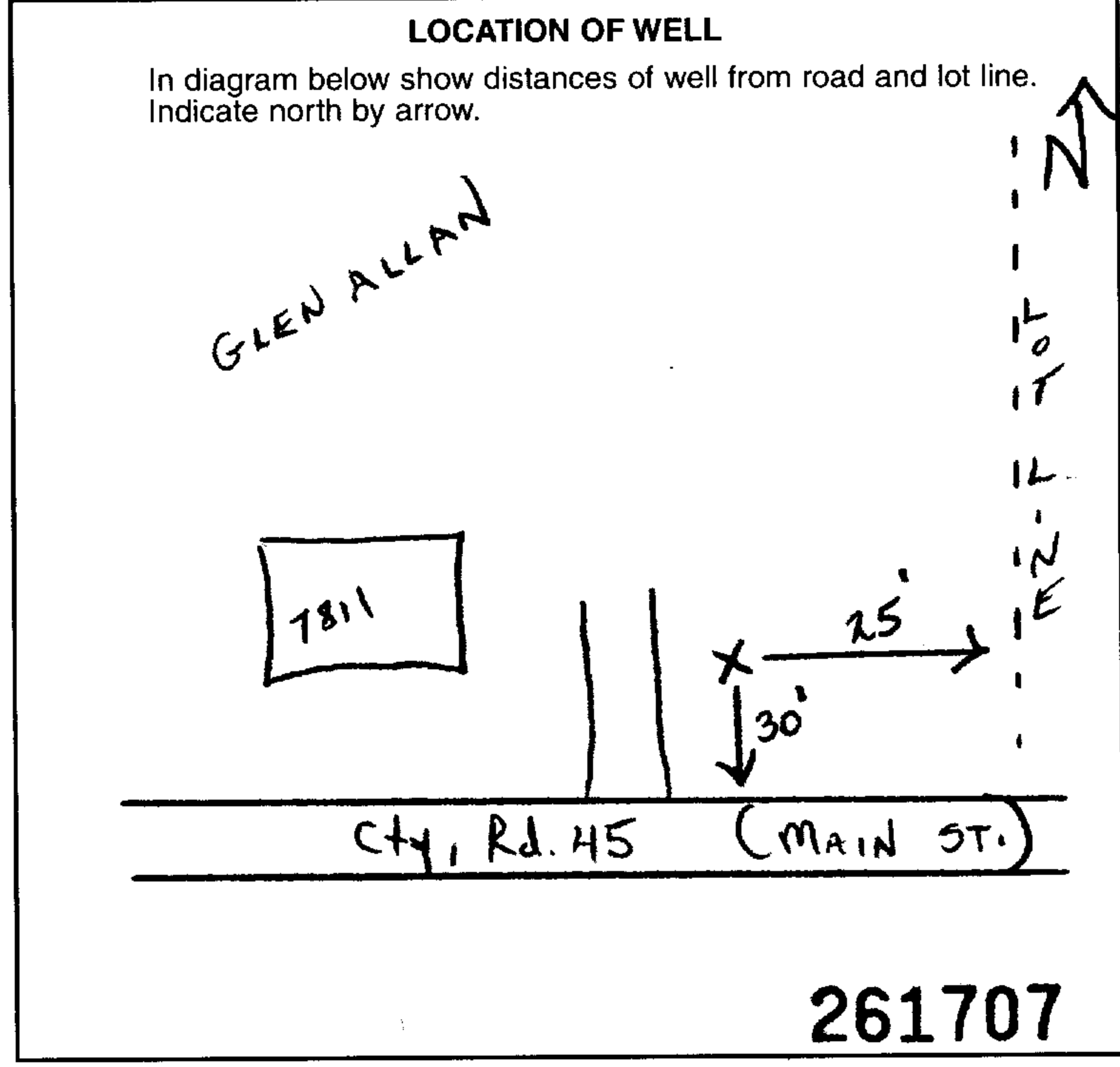
41 WATER RECORD			
Water found at - feet	Kind of water		
89 <sup>13</sup> 97	1 <input checked="" type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas	14
112 <sup>18</sup>	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas	19
20-23	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas	24
25-28	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas	29
30-33	1 <input type="checkbox"/> Fresh 2 <input type="checkbox"/> Salty	3 <input type="checkbox"/> Sulphur 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas	34

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6	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	+1-6	77
6	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		77	113
	1 <input type="checkbox"/> Steel 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			27-30

SCREEN	Sizes of opening (Slot No.)	Diameter inches	Length feet
	Material and type		Depth at top of screen feet

61 PLUGGING & SEALING RECORD			
<input checked="" type="checkbox"/> Annular space		<input type="checkbox"/> Abandonment	
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
77	20	Bentonite grout	
20	0	Holeplug	

71 PUMPING TEST					
Pumping test method	Pumping rate	Duration of pumping			
1 <input checked="" type="checkbox"/> Pump 2 <input type="checkbox"/> Bailer	10 GPM	1	15-16 Hours	17-18 Mins	
Static level	Water level end of pumping	Water levels during			
19-21	22-24	15 minutes	30 minutes	45 minutes	60 minutes
48 feet	75 feet	50 feet	49 feet	48 feet	48 feet
If flowing give rate		Pump intake set at		Water at end of test	
GPM		feet		<input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy	
Recommended pump type		Recommended pump setting		Recommended pump rate	
<input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep		75 feet		10 GPM	



54 FINAL STATUS OF WELL		
1 <input checked="" type="checkbox"/> Water supply	5 <input type="checkbox"/> Abandoned, insufficient supply	9 <input type="checkbox"/> Unfinished
2 <input type="checkbox"/> Observation well	6 <input type="checkbox"/> Abandoned, poor quality	10 <input type="checkbox"/> Replacement well
3 <input type="checkbox"/> Test hole	7 <input checked="" type="checkbox"/> Abandoned (Other)	
4 <input type="checkbox"/> Recharge well	8 <input type="checkbox"/> Dewatering	

55-56 WATER USE		
1 <input checked="" type="checkbox"/> Domestic	5 <input type="checkbox"/> Commercial	9 <input type="checkbox"/> Not use
2 <input type="checkbox"/> Stock	6 <input type="checkbox"/> Municipal	10 <input type="checkbox"/> Other
3 <input type="checkbox"/> Irrigation	7 <input type="checkbox"/> Public supply	
4 <input type="checkbox"/> Industrial	8 <input type="checkbox"/> Cooling & air conditioning	

57 METHOD OF CONSTRUCTION		
1 <input type="checkbox"/> Cable tool	5 <input type="checkbox"/> Air percussion	9 <input type="checkbox"/> Driving
2 <input checked="" type="checkbox"/> Rotary (conventional)	6 <input type="checkbox"/> Boring	10 <input type="checkbox"/> Digging
3 <input type="checkbox"/> Rotary (reverse)	7 <input type="checkbox"/> Diamond	11 <input type="checkbox"/> Other
4 <input type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor <b>Davidson Well Drilling Ltd.</b>	Well Contractor's Licence No. <b>1737</b>
Address <b>Box 486, Wingham, Ontario NOG 2W0</b>	
Name of Well Technician <b>J. Pickering</b>	Well Technician's Licence No. <b>T2824</b>
Signature of Technician/Contractor <i>D. Davidson</i>	Submission date <b>30 May yr 03</b>

MINISTRY USE ONLY	Data source <b>1737</b>	Contractor <b>1737</b>	Date received <b>AUG 05 2003</b>
	Date of inspection	Inspector	
	Remarks <i>OSSEN</i>		

**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 1/10<sup>th</sup> of a metre.**
- Please print clearly in blue or black ink only.

**Well Owner's Information and Location of Well Information**

RR#/Street Number/Name: <b>2 Wallenstein ont NOB2SO</b>		City/Town/Village: <b>Mapleton</b>		Site/Compartment/Block/Tract etc.: <b>Pt 4 3</b>	
GPS Reading	NAD: <b>83</b>	Zone: <b>17</b>	Easting: <b>523246</b>	Northing: <b>4834068</b>	Unit Make/Model: _____
Mode of Operation: <input type="checkbox"/> Undifferentiated <input type="checkbox"/> Averaged <input type="checkbox"/> Differentiated, specify _____					

**Log of Overburden and Bedrock Materials (see instructions)**

General Colour	Most common material	Other Materials	General Description	Depth Metres	
				From	To
Brown	fill		Soft	0	.31
Brown	Clay	Sand	soft	.31	4.94
Brown	Clay	Gravel	Hard	4.94	14.8
" "	Gravel	Sand	Cemented	14.8	17.9
Brown	Clay	Gravel	Hard	17.9	20.9
Grey	Clay		Soft	20.9	23.4
Brown	Clay	Gravel		23.1	29.3
brown	Gravel	Sand	Packed	29.3	29.9

**Hole Diameter**

Depth From	Metres To	Diameter Centimetres
0	6.17	20.32

**Water Record**

Water found at **0.29** Metres

Kind of Water:

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	Metres To
16.81	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	<del>16.81</del> 0.48	FB	29.6

**Casing**

Steel  Fibreglass  Plastic  Concrete  Galvanized

**Screen**

Outside diam  Steel  Fibreglass  Plastic  Concrete  Galvanized

Slot No. \_\_\_\_\_

**No Casing or Screen**

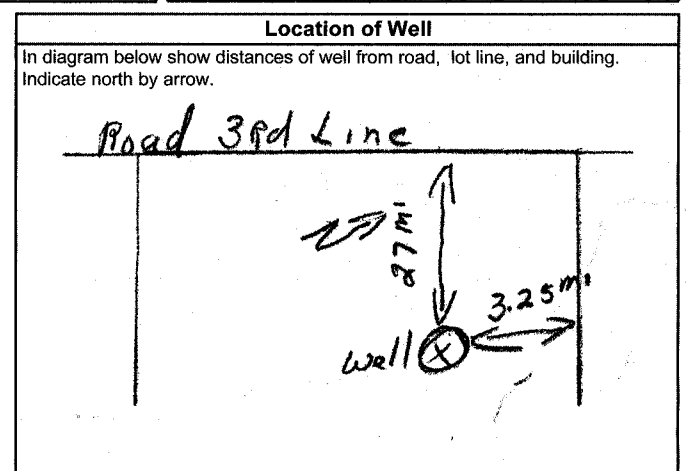
Open hole

**Test of Well Yield**

Pumping test method	Draw Down		Recovery	
	Time min	Water Level Metres	Time min	Water Level Metres
<b>Submersible pump</b>				
Pump intake set at - (metres) <b>23.1</b>	Static Level	<b>13.88</b>		<b>14.5</b>
Pumping rate - (litres/min) <b>36.40</b>	1	<b>15.03</b>	1	<b>16.4</b>
Duration of pumping <b>1 hrs + 30 min</b>	2	<b>16.18</b>	2	<b>16.0</b>
Final water level end of pumping <b>18.5</b> metres	3	<b>17.33</b>	3	<b>15.6</b>
Recommended pump type. <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	4	<b>18.48</b>	4	<b>15.2</b>
Recommended pump depth. <b>23.1</b> metres	5	<b>18.49</b>	5	<b>15</b>
Recommended pump rate. <b>36.40</b> (litres/min)	10	<b>18.5</b>	10	<b>14.8</b>
	15	<b>18.5</b>	15	<b>14.7</b>
If flowing give rate - (litres/min)	20	<b>18.5</b>	20	<b>14.59</b>
	25	<b>18.5</b>	25	<b>14.45</b>
If pumping discontinued, give reason.	30	<b>18.5</b>	30	<b>14.33</b>
	40	<b>18.5</b>	40	<b>14.20</b>
	50	<b>18.5</b>	50	<b>14.09</b>
	60	<b>18.5</b>	60	<b>13.99</b>

**Plugging and Sealing Record**

Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)



**Method of Construction**

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

**Water Use**

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

**Final Status of Well**

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

Audit No. **Z 03074** Date Well Completed **2004/09/03**

Was the well owner's information package delivered?  Yes  No Date Delivered **2004/09/03**

**Well Contractor/Technician Information**

Name of Well Contractor: **Martin well Drilling** Well Contractor's Licence No.: **7146**

Business Address (street name, number, city etc.): **Box 60 Alma ont**

Name of Well Technician (last name, first name): **Leonard Martin** Well Technician's Licence No.: \_\_\_\_\_

Signature of Technician/Contractor: *Leonard Martin* Date Submitted: **2004/09/03**

**Ministry Use Only**

Data Source \_\_\_\_\_ Contractor: **7146**

Date Received: **NOV 19 2004** Date of Inspection: \_\_\_\_\_

Remarks \_\_\_\_\_ Well Record Number: **6715142**

**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 1/10<sup>th</sup> of a metre.**
- Please print clearly in blue or black ink only.

<b>Ministry Use Only</b>									
MUN	CON	LOT							

**Well Owner's Information and Location of Well Information**

Address of Well Location (County, District, Municipality): **Wellington**

City/Town/Village: **mapleton**

RR#/Street Number/Name: **2 Wallenstein**

Site/Compartment/Block/Tract etc.:

GPS Reading: NAD **8.3** Zone **17** Easting **523 587** Northing **4833 516** Unit Make/Model **310 Mcgallen**

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 Metres	
				From	To
Brown	TOP soil		soft	0	0.5
Brown	clay	Stones	soft	0.5	5.23
Brown	clay	Stones	Hard	5.23	12.92
Grey	clay	Gravel		12.92	24.61
Brown	clay	Gravel		24.61	43.07
Grey	clay	Gravel		43.07	54.76
Brown	limestone			54.76	56.00

Hole Diameter			Construction Record				Test of Well Yield					
Depth From	Metres To	Diameter Centimetres	Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Metres To	Pumping test method	Draw Down Time min	Water Level Metres	Recovery Time min	Water Level Metres
0	6.15	20.32	15.55	Steel <input checked="" type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized <input type="checkbox"/>	0.48 + 0.15			Submersible				
<b>Water Record</b>			<b>Casing</b>				<b>Screen</b>					
Water found at _____ m	Kind of Water		Slot No.				No Casing or Screen					
<input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals <input type="checkbox"/> Other:			<input checked="" type="checkbox"/> Open hole 0.5m				Pump intake set at (metres) <b>30</b>					
<input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals <input type="checkbox"/> Other:							Pumping rate - (litres/min) <b>36.4</b>					
<input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals <input type="checkbox"/> Other:							Duration of pumping <b>1</b> hrs + _____ min					
After test of well yield, water was <input type="checkbox"/> Clear and sediment free <input type="checkbox"/> Other, specify _____							Final water level end of pumping <b>21.9</b> metres					
Chlorinated <input type="checkbox"/> Yes <input type="checkbox"/> No							Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep					
							Recommended pump depth <b>30</b> metres					
							Recommended pump rate <b>36.4</b> (litres/min)					
							If flowing give rate - (litres/min)					
							If pumping discontinued, give reason.					
							60 <b>21.91</b> 60 <b>21.29</b>					

**Plugging and Sealing Record**  Annular space  Abandonment

Depth set at - Metres	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
From	To	

**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: **Martin well Drilling** Well Contractor's Licence No.: **7146**

Business Address (street name, number, city etc.): **Box 60 Alma ONT N0B1A0**

Name of Well Technician (last name, first name): **Martin Leonard** Well Technician's Licence No.: **T-1830**

Signature of Technician/Contractor: *[Signature]* Date Submitted: **2004 11 20**

**Location of Well**

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

Audit No. **Z 17780** Date Well Completed: **2004 11 12**

Was the well owner's information package delivered?  Yes  No Date Delivered: **2004 11 20**

**Ministry Use Only**

Data Source: Contractor **7146**

Date Received: **APR 18 2005** Date of Inspection: \_\_\_\_\_

Remarks: \_\_\_\_\_ Well Record Number: \_\_\_\_\_



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. 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

Well Owner's Information and Location of Well Information

MUN CON LOT

Address of Well Location (County/District/Municipality) Wellington Township Peel Concession #1/11 RR#/Street Number/Name Wellington Rd 45 St. Conestoga River Bridge City/Town/Village Alex Dean Site/Compartment/Block/Tract etc. STREET END GPS Reading NAD Zone Easting Northing 83 17 524013 483361 Unit Make/Model Mode of Operation: Undifferentiated Averaged Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

Table with columns: General Colour, Most common material, Other Materials, General Description, Depth From, Metres To. Includes handwritten entries for silt, sand & gravel, and clay.

Hole Diameter (Depth, Metres, Diameter) and Water Record (Water found at, Kind of Water, Chlorinated status)

Construction Record (Casing, Screen, No Casing or Screen) with material and thickness details.

Test of Well Yield table with columns for Pumping test method, Draw Down, and Recovery.

Plugging and Sealing Record (Depth set at, Material and type, Volume Placed)

Location of Well (Diagram area with handwritten 'See DTH')

Method of Construction (Cable Tool, Rotary, etc.) and Water Use (Domestic, Industrial, etc.)

Audit No. Z 28252, Date Well Completed 2005 06 03

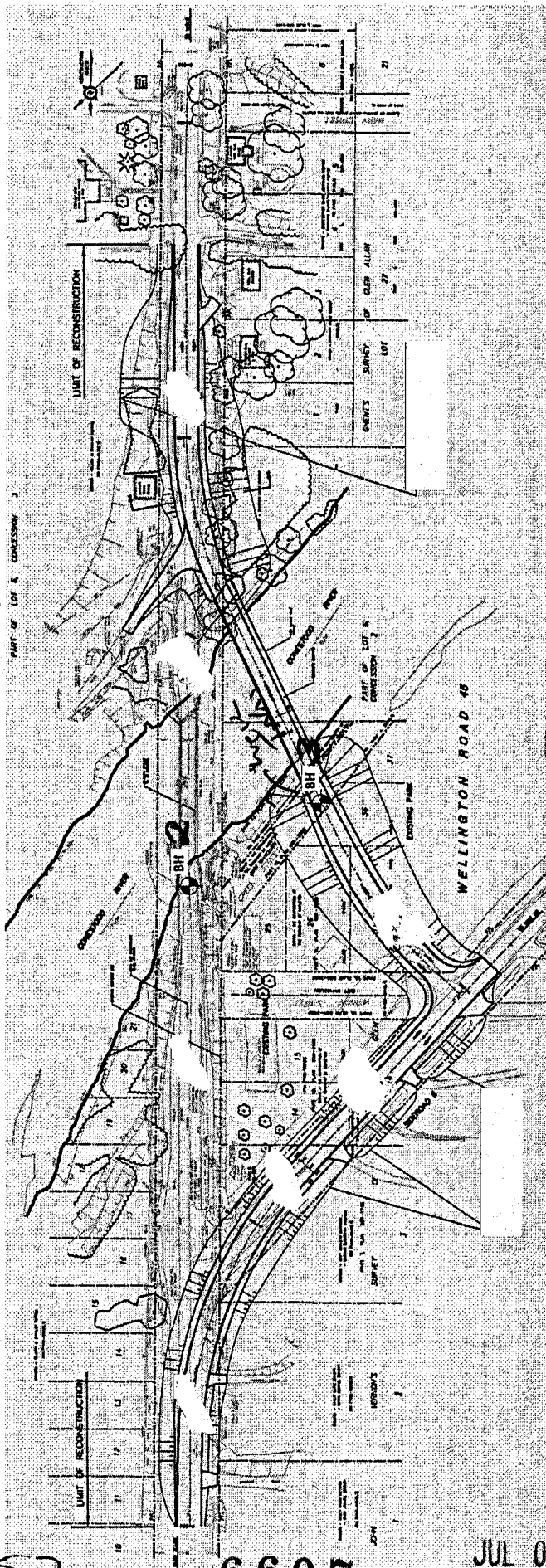
Final Status of Well and Well Contractor/Technician Information (Name, License No., Signature)

Ministry Use Only (Data Source, Date Received, Date of Inspection, Remarks)

Z28252

6607

JUL 08 2005



Legend

⊕ Borehole Location

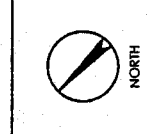
Drawing Reference: Base drawing from McCormick Rapkin Corporation.

REVISED DRAWING  
MAY 5 2005

Note:  
Locations of site features in this drawing are approximate based on available information. Exact locations must be verified in the field.

No.	Revisions
0	Report Issued
1	
2	
3	

Date
May 2005



Naylor  
Engineering  
Associates Ltd.  
CONSULTING ENGINEERS

Glen Allen Bridge Reconstruction  
Wellington Road 45  
County of Wellington, Ontario

SITE PLAN			
Date	Scale	Job No.	Drawing No.
May 2005	1:1250	5711G1	1

**A029206**

**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 1/10<sup>th</sup> of a metre.**
- Please print clearly in blue or black ink only.

**Well Owner's Information and Location of Well Information**

MUN		CON		LOT	

RR#/Street Number/Name: Wellington R.R. #2 City/Town/Village: WALLENSTEIN Site/Compartment/Block/Tract etc.: M/S 2

GPS Reading NAD 83 Zone 17 Easting 523645 Northing 4833668 Unit Make/Model MAG/MER 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 Metres	
				From	To
Brown	Topsail			0	1
Brown	Clay	Stones		1	18
Grey	Clay	Stones		18	61
Grey	Mould pan			61	100
Grey	Brown limestone			100	125

Hole Diameter		
Depth From	Metres To	Diameter Centimetres
0	104	83/4
104	125	6 1/4

Construction Record				
Inside diam centimetres	Material	Wall thickness centimetres	Depth Metres	
			From	To
6 1/4	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	1185	+2	104
<b>Screen</b>				
Outside diam	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	Slot No.		
<b>No Casing or Screen</b>				
		<input checked="" type="checkbox"/> Open hole	104	125

Test of Well Yield				
Pumping test method	Draw Down		Recovery	
	Time min	Water Level Metres	Time min	Water Level Metres
<b>AIR BAIL</b>				
Pump intake set at - (metres)	Static Level	80'		
Pumping rate - (litres/min)	1	100'	1	87
Duration of pumping - hrs + min	2		2	85
Final water level end of pumping - metres	3		3	84
Recommended pump type	4		4	83
Recommended pump depth - metres	5		5	82
Recommended pump rate - (litres/min)	10		10	81
If flowing give rate - (litres/min)	15		15	81
	20		20	81
	25		25	80
	30		30	80
	40		40	
	50	100'	50	80
	60		60	

**Water Record**

Water found at 0 Metres Kind of Water

Fresh  Sulphur  Gas  Salty  Minerals  Other:

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

Chlorinated  Yes  No

**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)
0	104	Bentonite Slurry	.6 cu/m

**Method of Construction**

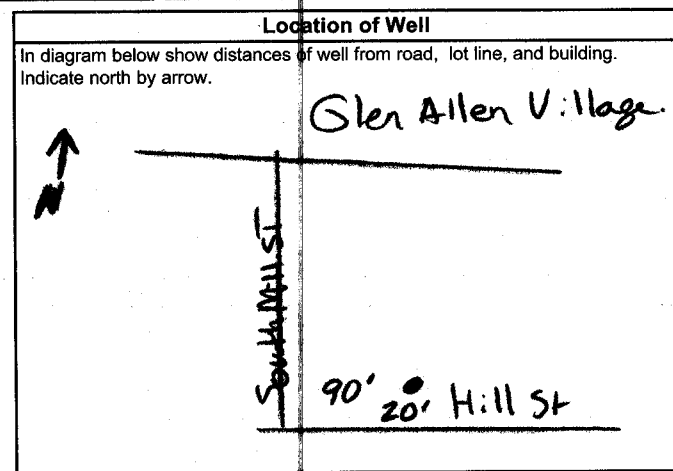
Cable Tool  Rotary (air)  Diamond  Digging  Rotary (conventional)  Air percussion  Jetting  Other  Rotary (reverse)  Boring  Driving

**Water Use**

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

**Final Status of Well**

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



Audit No. **z 29781** Date Well Completed **2005 09 27**

Was the well owner's information package delivered?  Yes  No Date Delivered **2005 09 27**

**Well Contractor/Technician Information**

Name of Well Contractor: **DURL HOPPER LTD.** Well Contractor's Licence No.: **2644**

Business Address (street name, number, city etc.): **R.R. #7, ST. MARYS, ON N4X 1C9**

Name of Well Technician (last name, first name): **HOPPER DOUGLAS** Well Technician's Licence No.: **T-2323**

Signature of Technician/Contractor: *[Signature]* Date Submitted: **2005 10 28**

**Ministry Use Only**

Data Source: Contractor **2644**

Date Received: **FEB 09 2006** Date of Inspection: **2006 02 09**

Remarks: **2005 10 28**

Well Record Number: **2005 10 28**

ABANDON

**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 1/10<sup>th</sup> of a metre.**
- Please print clearly in blue or black ink only.

**Ministry Use Only**

**Well Owner's Information and Location of Well Information**

MUN	CON	LOT
First Name	Last Name	Mailing Address (Street Number/Name, RR, Lot, Concession)
County/District/Municipality	Township/City/Town/Village	Province
Address of Well Location (County/District/Municipality)	Township	Lot
RR#/Street Number/Name	City/Town/Village	Site/Compartment/Block/Tract etc.
GPS Reading	NAD	Zone
Easting	Northing	Unit Make/Model
Mode of Operation:	<input type="checkbox"/> Undifferentiated <input type="checkbox"/> Averaged <input type="checkbox"/> Differentiated, specify _____	

**Log of Overburden and Bedrock Materials (see instructions)**

General Colour	Most common material	Other Materials	General Description	Depth	
				From	To
	ABANDON				

**Hole Diameter**

Depth	Metres	Diameter
From	To	Centimetres
0	9.15	21

**Water Record**

Water found at \_\_\_ Metres / Kind of Water

0 m  Fresh  Sulphur  
 Gas  Salty  Minerals  
 Other: \_\_\_\_\_

\_\_\_ 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	Material	Wall thickness	Depth	Metres
centimetres		centimetres	From	To

**Casing**

Steel  Fibreglass  
 Plastic  Concrete  
 Galvanized

Steel  Fibreglass  
 Plastic  Concrete  
 Galvanized

Steel  Fibreglass  
 Plastic  Concrete  
 Galvanized

**Screen**

Outside diam	Material	Slot No.

Steel  Fibreglass  
 Plastic  Concrete  
 Galvanized

**No Casing or Screen**

Open hole

**Test of Well Yield**

Pumping test method	Draw Down		Recovery	
	Time min	Water Level Metres	Time min	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. <input type="checkbox"/> Shallow <input type="checkbox"/> 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	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
From To		
0 9.15	Bentonite	

**Location of Well**

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

see A+B

**Method of Construction**

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

**Water Use**

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

**Final Status of Well**

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

Audit No. **Z 56668** Date Well Completed **2006 11 14**

Was the well owner's information package delivered?  Yes  No Date Delivered \_\_\_\_\_

**Well Contractor/Technician Information**

Name of Well Contractor **GEO-ENVIRONNEMENTS** Well Contractor's Licence No. **6607**

Business Address (street name, number, city etc.) **340 MARKET AVENUE MILTON**

Name of Well Technician (last name, first name) **GAMMIE TONG** Well Technician's Licence No. **3109**

Signature of Technician/Contractor **[Signature]** Date Submitted **2006 11 14**

**Ministry Use Only**

Data **RECEIVED** Contractor **6607**

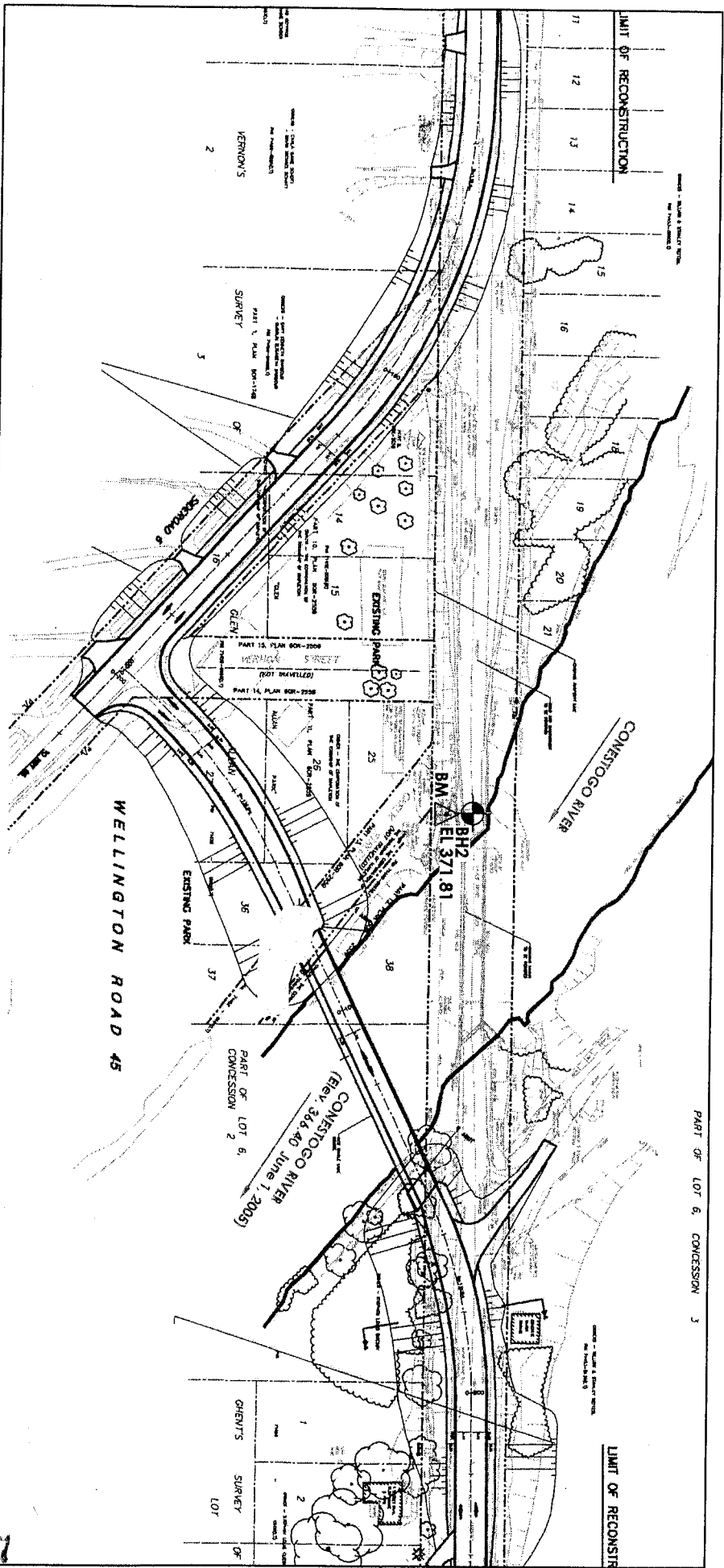
Date Received **JAN 05 2007** Date of Inspection \_\_\_\_\_

Remarks \_\_\_\_\_ Well Record Number \_\_\_\_\_

No.	Revisions	Date
0	Report Issued	June 2005
1		
2		
3		



NORTH



Drawing Reference: Base drawing from McCormick Rankin Corporation.

Note:  
Locations of site features in this drawing are approximate based on available information. Exact locations must be verified in the field.

Glen Allan Bridge Reconstruction  
Wellington Road 45  
County of Wellington, Ontario



SITE PLAN			
Date	Scale	Job No.	Drawing No.
	1:1500	5711G2	2

6607

256668

RECEIVED  
JAN 05 2007

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 1/10<sup>th</sup> of a metre.**
- Please print clearly in blue or black ink only.

Ministry Use Only

Address of Well Location (County/District/Municipality) Wellington Township Mapleton Lot 2 Concession 2  
 RR#/Street Number/Name #2 7510 County Rd 45 City/Town/Village Wallenstein Site/Compartment/Block/Tract etc.  
 GPS Reading NAD Zone Easting Northing Unit Make/Model 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 Metres	
				From	To

Hole Diameter			Construction Record				Test of Well Yield						
Depth From	Metres To	Diameter Centimetres	Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Metres To	Pumping test method	Draw Down Time min	Water Level Metres	Recovery Time min	Water Level Metres	
			<b>Casing</b> <input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized <input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized <input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized						Pump intake set at - (metres)	Static Level			
			<b>Screen</b> <input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized <input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized <input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized						Pumping rate - (litres/min)	1		1	
			<b>No Casing or Screen</b> <input type="checkbox"/> Open hole						Duration of pumping	2		2	
<b>Water Record</b> Water found at <u> </u> Metres / Kind of Water <input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals <input type="checkbox"/> Other: <u> </u> <input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals <input type="checkbox"/> Other: <u> </u> <input type="checkbox"/> Fresh <input type="checkbox"/> Sulphur <input type="checkbox"/> Gas <input type="checkbox"/> Salty <input type="checkbox"/> Minerals <input type="checkbox"/> Other: <u> </u> After test of well yield, water was <input type="checkbox"/> Clear and sediment free <input type="checkbox"/> Other, specify <u> </u> Chlorinated <input type="checkbox"/> Yes <input type="checkbox"/> No							Final water level end of pumping	3		3			
							Recommended pump type	4		4			
							Recommended pump depth	5		5			
							Recommended pump rate	10		10			
							If flowing give rate - (litres/min)	20		20			
							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)
0	24.61	Bentonite	0.016 m <sup>3</sup>

**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 58080 **Date Well Completed** 2007 02 01  
**Was the well owner's information package delivered?**  Yes  No **Date Delivered** 2007 02 01

**Well Contractor/Technician Information**

Name of Well Contractor Martin well Drilling Well Contractor's Licence No. 7146  
 Business Address (street name, number, city etc.) Box 60 Almagant NoBIAO  
 Name of Well Technician (last name, first name) Martin Leonard Well Technician's Licence No. 7-1830  
 Signature of Technician/Contractor X Leonard Martin Date Submitted 2007 02 01

**Ministry Use Only**

Data Source   Contractor 7146  
 Date Received MAR 19 2007 Date of Inspection    
 Remarks   Well Record Number

**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 1/10<sup>th</sup> of a metre.**
- Please print clearly in blue or black ink only.

**Ministry Use Only**

MUN	CON	LOT	CON
-----	-----	-----	-----

Address of well location (County/District/Municipality): Wellington Township: Mapleton Lot: 2 Concession: 2

RR#/Street Number/Name: RR#2 7810 cnty rd 45 con 3 City/Town/Village: Wallenstein Site/Compartment/Block/Tract etc.: \_\_\_\_\_

GPS Reading: NAD 83 Zone 17 Easting 5231626 Northing 4833760 Unit Make/Model: magellen 315 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	Metres To
<u>brown</u>	<u>Top soil</u>		<u>soft</u>	<u>0</u>	<u>6.09</u>
<u>brown</u>	<u>clay</u>	<u>stones</u>	<u>Hard</u>	<u>6.09</u>	<u>25.29</u>
<u>brown</u>	<u>Limestone</u>	<u>shale</u>	<u>layered</u>	<u>25.29</u>	<u>32.92</u>
<u>Green</u>	<u>shale</u>	<u>stones</u>	<u>Hard</u>	<u>32.92</u>	<u>41.15</u>
<u>Green</u>	<u>shale</u>		<u>soft</u>	<u>41.15</u>	<u>45.72</u>

**Hole Diameter**

Depth	Metres	Diameter
From	To	Centimetres
<u>0</u>	<u>6.09</u>	<u>70.95</u>
<u>6.09</u>	<u>45.72</u>	<u>15.55</u>

**Water Record**

Water found at 45 metres Kind of Water:  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	Metres To
<b>Casing</b>				
	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized		<u>15.55</u>	<u>6.09</u> <u>25.29</u>
	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input checked="" type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	<u>477</u>	<u>24</u>	<u>45.72</u>
<b>Screen</b>				
Outside diam	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	Slot No.		
<b>No Casing or Screen</b>				
<input type="checkbox"/> Open hole				

**Test of Well Yield**

Pumping test method	Draw Down		Recovery	
	Time min	Water Level Metres	Time min	Water Level Metres
<u>Submersible</u>				
Pump intake set at - (metres) <u>36.57</u>	Static Level	<u>18.78</u>		<u>27.74</u>
Pumping rate - (litres/min) <u>32.17</u>	1	<u>20.72</u>	1	<u>24.62</u>
Duration of pumping <u>1</u> hrs + <u>0</u> min	2	<u>22.03</u>	2	<u>22.31</u>
Final water level end of pumping <u>22.74</u> metres	3	<u>23.82</u>	3	<u>20.94</u>
Recommended pump type. <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	4	<u>24.98</u>	4	<u>20.01</u>
Recommended pump depth. <u>36</u> metres	5	<u>25.89</u>	5	<u>19.18</u>
Recommended pump rate. <u>32.17</u> (litres/min)	10	<u>26.74</u>	10	<u>18.74</u>
If flowing give rate - (litres/min)	15	<u>27.48</u>	15	<u>18.45</u>
	20	<u>27.72</u>	20	<u>18.31</u>
	25	<u>27.74</u>	25	<u>18.29</u>
If pumping discontinued, give reason.	30		30	<u>18.28</u>
	40		40	
	50		50	
	60	<u>27.74</u>	60	<u>18.28</u>

**Plugging and Sealing Record**  Annular space  Abandonment

Depth set at - Metres	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
From	To	
<u>0</u>	<u>6.09</u> <u>bentonite</u>	<u>1</u>

**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: Martin Well Drilling Well Contractor's Licence No.: \_\_\_\_\_

Business Address (street name, number, city etc.): 45 Queen St. Alma Ont. Po box #160 NOB 1A0

Name of Well Technician (last name, first name): Martin Jeff Well Technician's Licence No.: T-3253

Signature of Technician/Contractor: x Leonard Martin Date Submitted: 2007 10 25

**Location of Well**

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

2m well  
lot line  
6.13m  
County rd 45 Con. 3

Audit No. Z 58078 Date Well Completed: 2007 10 31

Was the well owner's information package delivered?  Yes  No Date Delivered: 2007 10 31

**Ministry Use Only**

Data Source: \_\_\_\_\_ Contractor: 7146

Date Received: MAR 19 2008 Date of Inspection: \_\_\_\_\_

Remarks: \_\_\_\_\_ Well Record Number: \_\_\_\_\_



Well Tag Number (Place sticker and print number below)

A BANON

A 027646 part of

Naylor 070250 Feb. 16/07 Well Record Regulation 903 Ontario Water Resources Act page \_\_\_ of \_\_\_ Ron McMillan 5711-62

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

Well Record header section with fields for MIN, CON, LOT, CONCESSION.

Address of well Location (County/District/Municipality), Township (Peel Township), Lot, Concession (E/A), RR#/Street Number/Name, City/Town/Village (Glenora Allan), Site/Compartment/Block/Tract etc.

Log of Overburden and Bedrock Materials (see instructions)

Table with columns: General Colour, Most common material, Other Materials, General Description, Depth From, Metres To. Contains handwritten entry 'A BANON'.

Hole Diameter (Depth, Metres, Diameter) and Water Record (Water found at, Kind of Water) sections.

Construction Record (Casing, Screen, No Casing or Screen) with material and thickness options.

Test of Well Yield table with columns: Pumping test method, Draw Down (Time, Water Level), Recovery (Time, Water Level).

Plugging and Sealing Record (Depth set at, Material and type, Volume Placed).

Location of Well section with diagram area and text: 'In diagram below show distances of well from road, lot line, and building. Indicate north by arrow. 500' etc.'

Method of Construction (Cable Tool, Rotary, Diamond, Digging, etc.)

Water Use (Domestic, Industrial, Public Supply, etc.)


Final Status of Well (Water Supply, Recharge well, Unfinished, Abandoned, etc.)

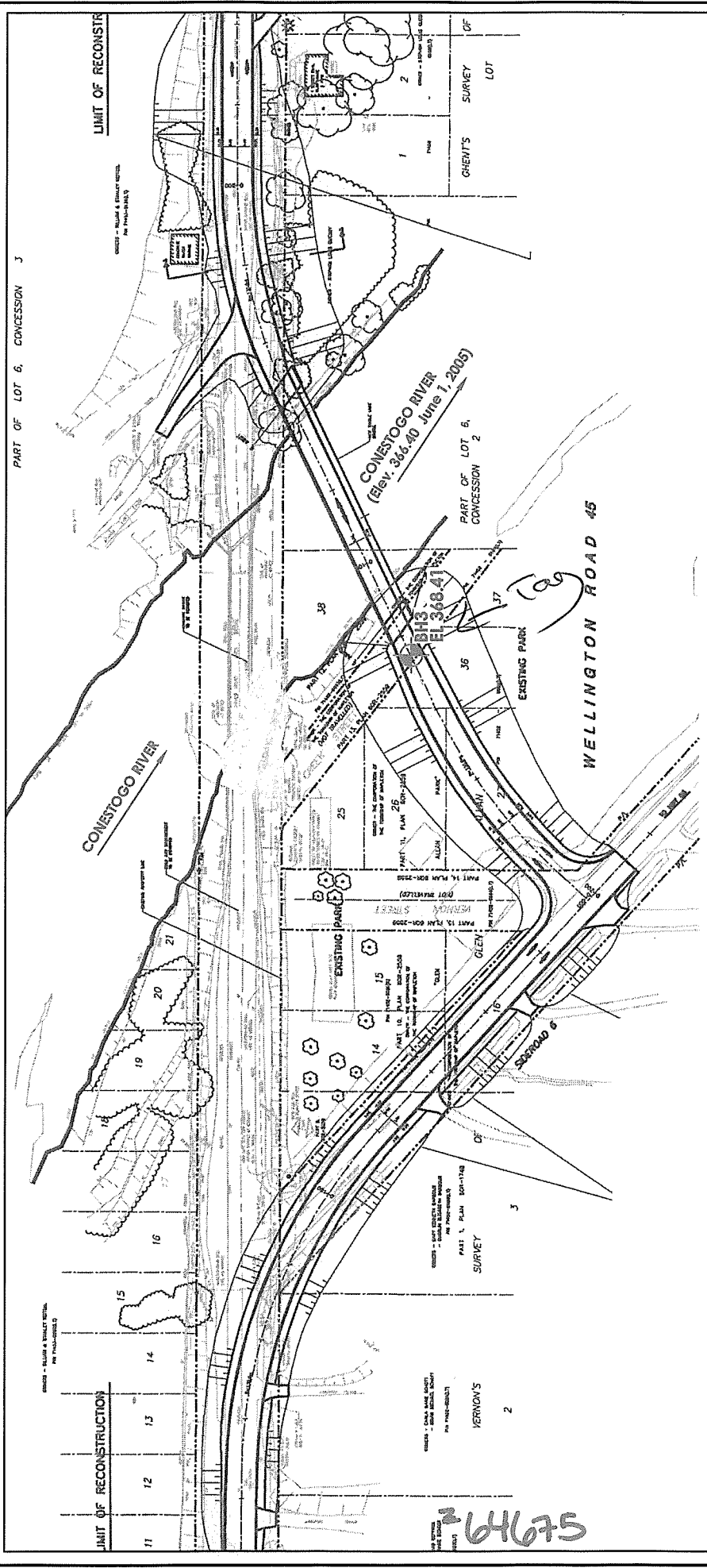
Well Contractor/Technician Information (Name, Licence No., Signature, Date Submitted).

Audit No. (Z 64675), Date Well Completed (2007 02 16), Was the well owner's information package delivered?

Ministry Use Only (Data Source, Contractor (6607), Date Received, Date of Inspection, Remarks (MAR 23 2007), Well Record Number).

2099

 <p>NORTH</p>	Revisions		Date
	No.	Report Issued	June 2005
	0		
	1		
	2		
	3		



Drawing Reference: Base drawing from McCormick Rankin Corporation.

<p><b>Glen Allan Bridge Reconstruction</b> Wellington Road 45 County of Wellington, Ontario</p>	<p><b>SITE PLAN</b></p>		
	Date	Scale	Job No.
<p>Note: Locations of site features in this drawing are approximate based on available information. Exact locations must be verified in the field.</p>	June 2005	1:1500	5711G1
			2



MAR 23 2007

## Well ID

Well ID Number: 7102352  
 Well Audit Number: Z69099  
 Well Tag Number: A057303

*This table contains information from the original well record and any subsequent updates.*

## Well Location

<b>Address of Well Location</b>	7832 WELLINGTON RD. 45 RR2
<b>Township</b>	PEEL TOWNSHIP
<b>Lot</b>	005
<b>Concession</b>	CON 02
<b>County/District/Municipality</b>	WELLINGTON
<b>City/Town/Village</b>	WALLENSTEIN
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 523339.00 Northing: 4833888.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

## Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
BRWN	CLAY		HARD	0 m	5.2 m
GREY	CLAY		HARD	5.2 m	7.6 m
GREY	CLAY			7.6 m	17.1 m
BRWN	GRVL	SAND	SILT	17.1 m	17.1 m
GREY	CLAY	SLTY	STNS	17.1 m	18.3 m
BRWN	LMSN			18.3 m	28 m
GREY	LMSN			28 m	33.2 m
				33.2 m	43 m

## Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
------------	----------	------------------------------------------	---------------

0 m    20 m    BENTONITE SLURRY

## Method of Construction & Well Use

Method of Construction	Well Use
Rotary (Convent.)	Domestic

## Status of Well

Water Supply

## Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
.16 cm	STEEL		30 m

## Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
------------------	----------	------------	----------

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 6865

## Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	
Pump intake set at	30 m
Pumping Rate	38 LPM
Duration of Pumping	1 h:0 m
Final water level	22.74 m
If flowing give rate	
Recommended pump depth	30 m

<b>Recommended pump rate</b>	40 LPM
<b>Well Production</b>	SUBMERGE
<b>Disinfected?</b>	Y

### Draw Down & Recovery

<b>Draw Down Time (min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time (min)</b>	<b>Recovery Water level</b>
SWL	18.84 m		
1	20.12 m	1	21.18 m
2	20.66 m	2	20.64 m
3	20.99 m	3	20.4 m
4	21.3 m	4	20.15 m
5	21.43 m	5	20.02 m
10	21.97 m	10	19.68 m
15	22.24 m	15	19.88 m
20	22.37 m	20	19.31 m
25	22.44 m	25	19.24 m
30	22.54 m	30	19.14 m
40	22.61 m	40	19.08 m
45		45	
50	22.68 m	50	19.02 m
60	22.74 m	60	19 m

### Water Details

<b>Water Found at Depth</b>	<b>Kind</b>
43 m	Not Stated

### Hole Diameter

<b>Depth From</b>	<b>Depth To</b>	<b>Diameter</b>
	43 m	25 cm

**Audit Number:** Z69099

**Date Well Completed:** December 11, 2007

**Date Well Record Received by MOE:** March 05, 2008

Updated: June 28, 2018

## Well ID

Well ID Number: 7103681  
 Well Audit Number: Z79471  
 Well Tag Number: A056212

*This table contains information from the original well record and any subsequent updates.*

## Well Location

<b>Address of Well Location</b>	6534 SO. RD. #17 RR#2
<b>Township</b>	PEEL TOWNSHIP
<b>Lot</b>	006
<b>Concession</b>	CON 03
<b>County/District/Municipality</b>	WELLINGTON
<b>City/Town/Village</b>	WALLENSTEIN
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 524352.00 Northing: 4833524.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

## Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
BLCK	LOAM			0 ft	4 ft
BRWN	CLAY	STNS		4 ft	60 ft
BRWN	CLAY	STNS	BLDR	60 ft	118 ft
BRWN	LMSN			118 ft	135 ft
GREY	LMSN		SHLE	135 ft	164 ft

## Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
0 m	6.09 m	QUICK GROUT	

## Method of Construction & Well Use

Method of Construction	Well Use
Rotary (Air)	Domestic

## Status of Well

Water Supply

## Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
15.87 cm	STEEL		49.98 m

## Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
------------------	----------	------------	----------

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 2663

## Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	
Pump intake set at	
Pumping Rate	10 GPM
Duration of Pumping	1 h:0 m
Final water level	92 ft
If flowing give rate	
Recommended pump depth	150 ft
Recommended pump rate	10 GPM
Well Production	PUMP

**Disinfected?** Y

### Draw Down & Recovery

Draw Down Time (min)	Draw Down Water level	Recovery Time (min)	Recovery Water level
SWL	64 ft		
1	66 ft	1	85 ft
2	68.5 ft	2	72 ft
3	70 ft	3	69 ft
4	74 ft	4	67 ft
5	76 ft	5	64 ft
10	84 ft	10	
15	86 ft	15	
20	87 ft	20	
25	88 ft	25	
30	90 ft	30	
40		40	
45		45	
50		50	
60	92 ft	60	

### Water Details

Water Found at Depth	Kind
49.98 m	Fresh

### Hole Diameter

Depth From	Depth To	Diameter
	49.98 m	25.4 cm

**Audit Number:** Z79471

**Date Well Completed:** December 14, 2007

**Date Well Record Received by MOE:** April 07, 2008

Measurements recorded in:  Metric  Imperial

Page of

**Well Location**

Address of Well Location (Street Number/Name) 51 Hill St.		Township Mapleton	Lot	Concession
County/District/Municipality County of Wellington		City/Town/Village Eker Allen	Province Ontario	Postal Code N0B 2S10
UTM Coordinates NAD 83	Zone 17	Easting 523718	Northing 4833578	Municipal Plan and Sublot Number Lot 5, Lot 9

**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
			gravel	4.57	4.27
			Bentonite chips	4.27	3.96
			gravel	3.96	1.83
			Bentonite chips	1.83	1.52
			gravel	1.52	0

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
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	
	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	
Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No	50		50	
	60		60	

Method of Construction		Well Use		
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input 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)		
			From	To	
					<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 checked="" type="checkbox"/> Abandoned, other, specify NOT A USE
					<input type="checkbox"/> Other, specify

Construction Record - Screen				Status of Well	
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		
			From	To	
					<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 checked="" type="checkbox"/> Abandoned, other, specify NOT A USE
					<input type="checkbox"/> Other, specify

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)	Diameter (cm/in)
		From	To

Well Contractor and Well Technician Information			
Business Name of Well Contractor MARTIN'S WATER SYSTEMS LTD		Well Contractor's Licence No. 6231	
Business Address (Street Number/Name) 3090 BRYCKER SCHOOL LINE		Municipality WATERLOO	
Province ON	Postal Code N3B 2Z3	Business E-mail Address	
Bus Telephone No. (inc. area code) 519 664 2590	Name of Well Technician (Last Name, First Name) MARTIN LEROY		
Well Technician's Licence No. 2196	Signature of Technician and/or Contractor		Date Submitted 2009 09 12

Map of Well Location	
Please provide a map below following instructions on the back.	
Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered 2009 09 15
Date Work Completed 2009 09 15	
Ministry Use Only Audit No. Z 85084 SEP 22 2009	

Measurements recorded in:  Metric  Imperial

Page of

Well Location

Address of Well Location (Street Number/Name) **57 Hill St.** Township **Mapleton** Lot \_\_\_\_\_ Concession \_\_\_\_\_

County/District/Municipality **County of Wellington** City/Town/Village **Glen Allen** Province **Ontario** Postal Code **N0B 2S0**

UTM Coordinates Zone Easting Northing Municipal Plan and Sublot Number Other

NAD | 8 | 3 | **17523735** | **4233596** | **Lot 5, Lot 9**

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>rocks &amp; gravel</b>	<b>3.66</b>	<b>1.22</b>
			<b>bentonite chips</b>	<b>1.22</b>	<b>0.91</b>
			<b>gravel</b>	<b>0.91</b>	<b>0</b>

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:  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? <input type="checkbox"/> Yes <input type="checkbox"/> No	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		

Method of Construction		Well Use		
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input 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 checked="" type="checkbox"/> Abandoned, other, specify <b>not in use</b> <input type="checkbox"/> Other, specify _____
			From	To	

Construction Record - Screen					
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		<input type="checkbox"/> Abandoned, Poor Water Quality <input checked="" type="checkbox"/> Abandoned, other, specify <b>not in use</b> <input type="checkbox"/> Other, specify _____
			From	To	

Water Details		Hole Diameter	
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	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		
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		

**Well Contractor and Well Technician Information**

Business Name of Well Contractor: **MARTIN'S WATER SYSTEMS LTD.** Well Contractor's Licence No.: **6231**

Business Address (Street Number/Name): **3090 BACKER SCHOOL LINE** Municipality: **WATERLOO**

Province: **ONT.** Postal Code: **N3B2Z3** Business E-mail Address: \_\_\_\_\_

Bus. Telephone No. (inc. area code): **519 664 2580** Name of Well Technician (Last Name, First Name): **MARTIN LEROY**

Well Technician's Licence No.: **11816** Signature of Technician and/or Contractor: \_\_\_\_\_ Date Submitted: **2009 09 22**

**Map of Well Location**

Please provide a map below following instructions on the back.

Comments:

Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered Y Y Y Y M M D Date Work Completed <b>2009 09 15</b>	<b>Ministry Use Only</b> Audit No. <b>Z 85085</b> <b>SEP 22 2009</b> Received
--------------------------------------------------------------------------------------------------------	-------------------------------------------------------------------------------------	----------------------------------------------------------------------------------------

Address of Well Location (Street Number/Name) 7859 Wellington Rd. 45		Township Peel	Lot 4	Concession 3
County/District/Municipality Wellington		City/Town/Village Wallenstein	Province Ontario	Postal Code NOB 2S0
UTM Coordinates Zone Easting Northing NAD 83 17 52 30 3 9 48 34190		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
			Topsoil	0	2'
			Sand/Clay	2'	14'
			Bentonite Chips	14'	15'
			Sand/Clay	15'	35'
			Bentonite Chips	35'	36'

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
From	To	

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

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	
36"	Stone		0	36'	

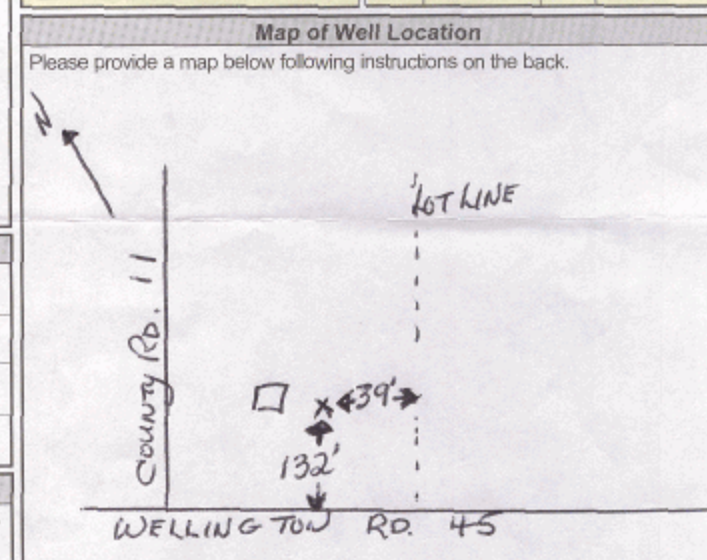
Construction Record - Screen				
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From	To

Water Details		Hole Diameter	
Water found at Depth (m/ft) <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	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		
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		

Well Contractor and Well Technician Information	
Business Name of Well Contractor Donald Goll & Son Well Drilling	Well Contractor's Licence No. 2 4 0 5
Business Address (Street Number/Name) 169 Elora St. N., Box 593	Municipality Harriston
Province ONT	Postal Code NOG 1Z0
Business E-mail Address doug.goll@wightman.ca	

Bus. Telephone No. (inc. area code) 519 338 3022	Name of Well Technician (Last Name, First Name) Goll Doug
Well Technician's Licence No. 2 5 6 2	Signature of Technician and/or Contractor Donald Goll
Date Submitted 2010/10/09	

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:  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? <input type="checkbox"/> Yes <input type="checkbox"/> No	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		



Well owner's information package delivered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date Package Delivered Y Y Y Y M M D D 20 10 0 8 1 0	Date Work Completed Y Y Y Y M M D D 20 10 0 8 1 0
Ministry Use Only Audit No. 2105030 OCT 18 2010		Received

Measurements recorded in:  Metric  Imperial

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

Address of Well Location (Street Number/Name) **58 HILL ST.** Township **MAPLETON** Lot \_\_\_\_\_ Concession \_\_\_\_\_  
 County/District/Municipality **WELLINGTON** City/Town/Village **GLEN ALLAN** Province **Ontario** Postal Code **N0B2S0**  
 UTM Coordinates Zone Easting Northing Municipal Plan and Sublot Number Other  
 NAD 83 **19 523 633 483 3548**

**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
			NATIVE SOIL	0	0.91
			BENTONITE	0.91	1.22
			GRAVEL	1.22	5.79
			BENTONITE	5.79	6.10

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:  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? <input type="checkbox"/> Yes <input type="checkbox"/> No	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		

Method of Construction		Well Use	
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial <input type="checkbox"/> Not used
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input 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)	
			From	To

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

Water Details		Hole Diameter	
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	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		
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		

**Well Contractor and Well Technician Information**

Business Name of Well Contractor **MARTIN'S WATER SYSTEMS LTD** Well Contractor's Licence No. **6231**  
 Business Address (Street Number/Name) **3090 BRICKER SCHOOL LINE** Municipality **ELMIRA**  
 Province **ONT** Postal Code **N3B2Z3** Business E-mail Address \_\_\_\_\_  
 Bus. Telephone No. (inc. area code) **519 664 2580** Name of Well Technician (Last Name, First Name) **MARTIN LARRY**  
 Well Technician's Licence No. **1187** Signature of Technician and/or Contractor *[Signature]* Date Submitted **20110930**

**Map of Well Location**

Please provide a map below following instructions on the back.

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

Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered Y Y Y Y M M D D 20110926	<b>Ministry Use Only</b> Audit No. <b>Z136593</b> Received <b>OCT 04 2011</b>
	Date Work Completed 20110926	

## Well ID

Well ID Number: 7181524

Well Audit Number: Z142789

Well Tag Number: A120741

*This table contains information from the original well record and any subsequent updates.*

## Well Location

<b>Address of Well Location</b>	37 HILL ST
<b>Township</b>	PEEL TOWNSHIP
<b>Lot</b>	
<b>Concession</b>	
<b>County/District/Municipality</b>	WELLINGTON
<b>City/Town/Village</b>	GLEN ALLEN
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 523521.00 Northing: 4833505.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

## Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
----------------	----------------------	-----------------	---------------------	------------	----------

## Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
------------	----------	------------------------------------------	---------------

## Method of Construction & Well Use

Method of Construction	Well Use
------------------------	----------

## Status of Well

Water Supply

## Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
15.875 cm	STEEL	-.6 m	1.83 m

## Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
------------------	----------	------------	----------

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 6231

## Results of Well Yield Testing

After test of well yield, water was
If pumping discontinued, give reason
Pump intake set at
Pumping Rate
Duration of Pumping
Final water level
If flowing give rate
Recommended pump depth
Recommended pump rate
Well Production
Disinfected?

## Draw Down & Recovery

<b>Draw Down Time (min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time (min)</b>	<b>Recovery Water level</b>
---------------------------------	----------------------------------	--------------------------------	---------------------------------

SWL

1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15		15	
20		20	
25		25	
30		30	
40		40	
45		45	
50		50	
60		60	

## Water Details

<b>Water Found at Depth</b>	<b>Kind</b>
-----------------------------	-------------

## Hole Diameter

<b>Depth From</b>	<b>Depth To</b>	<b>Diameter</b>
-----------------------	---------------------	-----------------

**Audit Number:** Z142789

**Date Well Completed:** May 03, 2012

**Date Well Record Received by MOE:** May 24, 2012

Updated: June 28, 2018



Measurements recorded in:  Metric  Imperial

A119000

Address of Well Location (Street Number/Name) **8 MILL ST SOUTH** Township **PEEL** Lot **6** Concession **2**

County/District/Municipality **WELLINGTON** City/Town/Village **GLENEAGLE** Province **Ontario** Postal Code **N0B2S0**

UTM Coordinates Zone **17** Easting **523618** Northing **4833712** Municipal Plan and Sublot Number \_\_\_\_\_ Other \_\_\_\_\_

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BROWN	CLAY	STONES		0	3.4
BROWN	SILTY CLAY			3.4	5.5
GREY	CLAY	STONES		5.5	25.3
GREY	CLAY	STONES + ROCKS		25.3	31.4
BROWN	CLAY	ROCKS		31.4	36.7
GREEN	SHALE			36.7	50.3
FINISHED AT 169 FEET					

**Annular Space**

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0 to 7.6	BENTONITE SLURRY	1.5

**Results of Well Yield Testing**

Time (min)	Draw Down		Recovery	
	Water Level (m/ft)	Time (min)	Water Level (m/ft)	Time (min)
Static Level	24.38		30.66	
1	25.96	1	28.62	
2	26.86	2	27.78	
3	27.48	3	27.27	
4	27.94	4	26.87	
5	28.32	5	26.56	
10	29.30	10	25.80	
15	29.79	15	25.42	
20	30.06	20	25.26	
25	30.23	25	25.12	
30	30.33	30	25.02	
40	30.46	40	24.85	
50	30.60	50	24.75	
60	30.66	60	24.65	

After test of well yield, water was:  
 Clear and sand free  
 Other, specify \_\_\_\_\_

If pumping discontinued, give reason: \_\_\_\_\_

Pump intake set at (m/ft) **36.5m/120'**

Pumping rate (l/min / GPM) **45 LPM / 12 GPM**

Duration of pumping **1 hrs + 0 min**

Final water level end of pumping (m/ft) **30.66**

If flowing give rate (l/min / GPM) \_\_\_\_\_

Recommended pump depth (m/ft) **36.5m/120'**

Recommended pump rate (l/min / GPM) **45 LPM / 12 GPM**

Well production (l/min / GPM) \_\_\_\_\_

Disinfected?  Yes  No

**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	To
16.0	STEEL	0.5	0.9	38.1
15.6	OPEN HOLE		38.1	50.3

**Status of Well**

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

**Construction Record - Screen**

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

**Water Details**

Water found at Depth (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)		Diameter (cm/in)
		From	To	
		0	6.5	25.0
		6.5	38.1	20.0
		38.1	50.3	15.6

**Well Contractor and Well Technician Information**

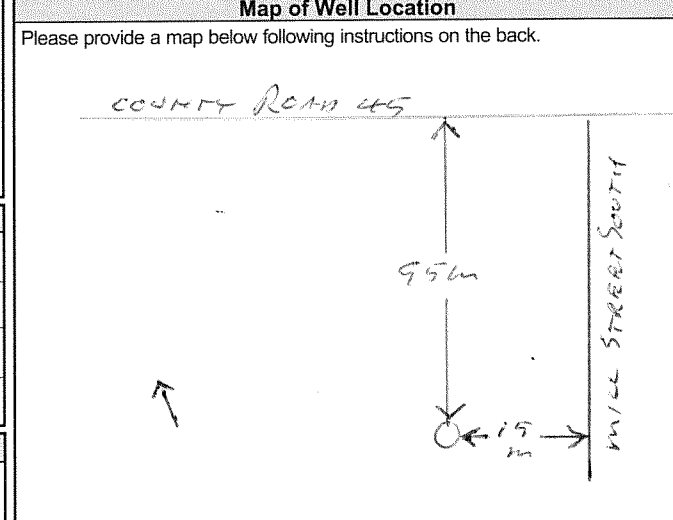
Business Name of Well Contractor **WELL INITIATIVES** Well Contractor's Licence No. **7221**

Business Address (Street Number/Name) **15 TOWNLINE** Municipality **ORANGEVILLE**

Province **ONT** Postal Code **L9W3R4** Business E-mail Address \_\_\_\_\_

Bus. Telephone No. (inc. area code) **519 846 8289** Name of Well Technician (Last Name, First Name) **BROADFOOT JIM**

Well Technician's Licence No. **0370** Signature of Technician and/or Contractor *[Signature]* Date Submitted **20120912**



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

Well owner's information package delivered  Yes  No

Date Package Delivered **Y Y Y Y M M D D**

Date Work Completed **20120831**

**Ministry Use Only**

Audit No. **Z143754**

**SEP 17 2012**



Measurements recorded in: [X] Metric [ ] Imperial

A119004

Address of Well Location (Street Number/Name) 7806 WELLINGTON ROAD 45			Township PEEL		Lot 5	Concession 2	
County/District/Municipality WELLINGTON			City/Town/Village GLEN ALLAN		Province Ontario		Postal Code R0B 2S0
UTM Coordinates NAD 83	Zone 17	Easting 523678	Northing 4833719		Municipal Plan and Sublot Number		Other

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)				
General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From To
Brown	CLAY	STONES & ROCKS		0 5.5
GREY	CLAY	STONES & ROCKS		5.5 24.4
GREEN	SHALE		SOFT	24.4 25.3
TAN	SHALY LIMESTONE			25.3 31.4
GREEN	SHALE	TAN LIMESTONE		31.4 37.5
TOTAL DEPTH - 123 FEET				

Annular Space		
Depth Set at (m/ft) From To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0 15.0	BENTONITE SLURRY	3

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool <input checked="" type="checkbox"/> Rotary (Conventional) <input type="checkbox"/> Rotary (Reverse) <input type="checkbox"/> Boring <input type="checkbox"/> Air percussion <input type="checkbox"/> Other, specify _____	<input type="checkbox"/> Public <input type="checkbox"/> Commercial <input type="checkbox"/> Not used <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Livestock <input type="checkbox"/> Irrigation <input type="checkbox"/> Industrial <input type="checkbox"/> Other, specify _____

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<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 _____
			From	To	
16.0	STEEL	0.5	0.6	27.4	
19.6	OPEN HOLE		27.4	37.5	

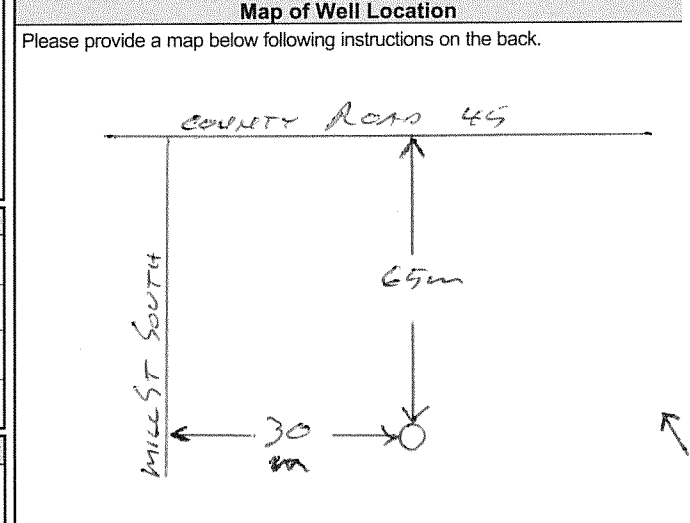
Construction Record - Screen				
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From	To

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	Depth (m/ft) From To	Diameter (cm/in)
30-37	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	0 6.5	25.0
		6.5 27.4	20.0
		27.4 37.5	15.6

Well Contractor and Well Technician Information	
Business Name of Well Contractor WELL INITIATIVES	Well Contractor's Licence No. 7 2 2 1
Business Address (Street Number/Name) 19 TOWNLINE	Municipality ORANGEVILLE
Province ONT	Postal Code L9W 3R4

Bus. Telephone No. (inc. area code) 519 846 8289	Name of Well Technician (Last Name, First Name) BROOKS JIM
Well Technician's Licence No. 0370	Signature of Technician and/or Contractor Jim Brooks
	Date Submitted 2012 09 12

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:  Pump intake set at (m/ft) 26.0m/85'	Static Level	18.26		19.68
	1	19.04	1	18.77
	2	19.20	2	18.77
	3	19.28	3	18.74
	4	19.34	4	18.70
	5	19.38	5	18.67
Pumping rate (l/min / GPM) 45 LPM / 12 GPM	Duration of pumping 1 hrs + 0 min	Final water level end of pumping (m/ft) 19.68	If flowing give rate (l/min / GPM)	
10	19.48	10	18.57	
15	19.51	15	18.50	
20	19.54	20	18.42	
25	19.61	25	18.36	
30	19.61	30	18.31	
40	19.64	40	18.26	
50	19.64	50	1	
60	19.68	60		



Comments:

Well owner's information package delivered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date Package Delivered Y Y Y Y   M M   D D 2012 09 05	Ministry Use Only Audit No. Z 143753 SEP 17 2012
-------------------------------------------------------------------------------------------------------------------	-------------------------------------------------------------	-----------------------------------------------------------



Measurements recorded in:  Metric  Imperial

A129778

Address of Well Location (Street Number/Name): 7 CENTRE ST  
 Township: PEEL Lot 5 Concession 2  
 County/District/Municipality: WELLINGTON City/Town/Village: GLEN ALLAN Province: Ontario Postal Code: \_\_\_\_\_  
 UTM Coordinates: Zone 17 Easting 523556 Northing 4833752 Municipal Plan and Sublot Number: \_\_\_\_\_ Other: \_\_\_\_\_

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)					
General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BROWN	CLAY		LOOSE	0	18
BROWN	CLAY			18	26
GREY	CLAY	STONES		26	105
GREY	LIMESTONE LAYERS			105	115
GREY	LIMESTONE			115	180
BROWN	LIMESTONE			180	197

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
From	To	
0	115 BENTONITE SLURRY	

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	79.5		
	1	145	1	115
Pump intake set at (m/ft) 145	2		2	100
Pumping rate (l/min / GPM) 30	3		3	89
Duration of pumping 2 hrs + _____ min	4		4	84
Final water level end of pumping (m/ft) 145	5		5	81
If flowing give rate (l/min / GPM)	10		10	79.5
	15		15	
	20		20	
Recommended pump depth (m/ft) 105	25		25	
Recommended pump rate (l/min / GPM) 12	30		30	
Well production (l/min / GPM) 60	40		40	
Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No	50		50	
	60	145	60	79.5

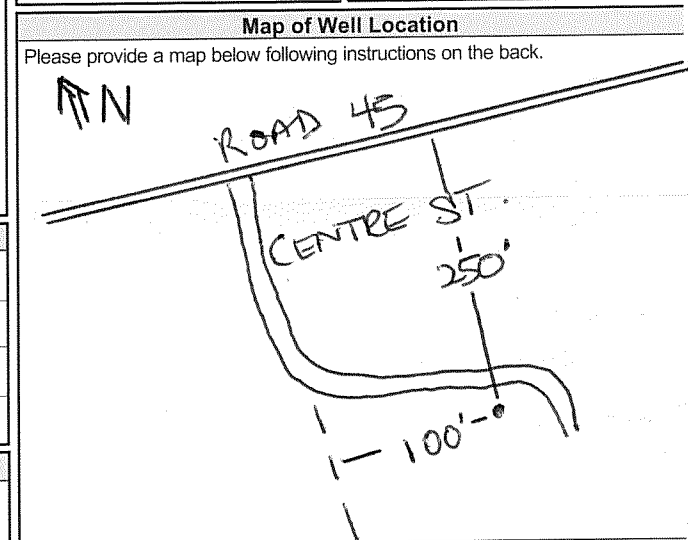
Method of Construction		Well Use	
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial
<input checked="" type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input checked="" type="checkbox"/> Domestic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

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<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 _____
			From	To	
6	STEEL	.188	+2	115	
6	OPENHOLE		115	197	

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 180 (m/ft) <input type="checkbox"/> Gas	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Other, specify _____	Depth (m/ft) From 0 To 115	Diameter (cm/in) 8 3/4
Water found at Depth 197 (m/ft) <input type="checkbox"/> Gas	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Other, specify _____	115 To 197	6 1/4
Water found at Depth (m/ft) <input type="checkbox"/> Gas	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Other, specify _____		

Well Contractor and Well Technician Information			
Business Name of Well Contractor Durl Hopper Ltd.		Well Contractor's Licence No. 2644	
Business Address (Street Number/Name) RR#7		Municipality St. Marys	
Province Ont.	Postal Code N4X1C9	Business E-mail Address hopper@cyg.net	
Bus. Telephone No. (inc. area code) 5192717860		Name of Well Technician (Last Name, First Name) HOPPER, SIMON	
Well Technician's Licence No. 3551	Signature of Technician and/or Contractor 	Date Submitted 8/8/2012	



Ministry Use Only	
Audit No. Z 149162	Received OCT 12 2012
Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered 8/1/2012 Date Work Completed 8/1/2012

Measurements recorded in:  Metric  Imperial

A121584

Address of Well Location (Street Number/Name) 7766 WELLINGTON ROAD 45		Township PEEL	Lot 6	Concession 2
County/District/Municipality WELLINGTON		City/Town/Village GLEN ALLEN	Province Ontario	Postal Code N0C1B2S0
UTM Coordinates	Zone NAD 83	Easting 17524230	Northing 4833446	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	SILTY SAND			0	2.7
BROWN	SANDY CLAY	STONES		2.7	19.8
GREY	CLAY	STONES		19.8	23.5
BROWN	GRAVEL	SAND		23.5	24.7
FINISHED AT 78 FEET					

**Annular Space**

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
From	To	
0	BENTONITE SLURRY	0.2

**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:  Pump intake set at (m/ft) 15m/50'	Static Level	8.99		11.24
	1	9.43	1	10.80
	2	9.56	2	10.74
	3	9.63	3	10.70
	4	9.70	4	10.67
	5	9.76	5	10.60
Pumping rate (l/min / GPM) 57LPM/156GPM	10	10.0	10	10.44
Duration of pumping 1 hrs + 0 min	15	10.20	15	10.30
Final water level end of pumping (m/ft) 11.24	20	10.38	20	10.24
If flowing give rate (l/min / GPM)	25	10.54	25	10.14
	30	10.67	30	10.07
	40	10.90	40	9.94
	50	11.11	50	9.80
	60	11.24	60	9.73
	Recommended pump depth (m/ft) 15m/50'			
Recommended pump rate (l/min / GPM) 45LPM/126GPM				
Well production (l/min / GPM)				
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

**Method of Construction**

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

**Construction Record - Casing**

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		Status of Well
			From	To	
16.0	STEEL	0.5	0.7	23.8	<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
	OPEN HOLE		23.8		

**Construction Record - Screen**

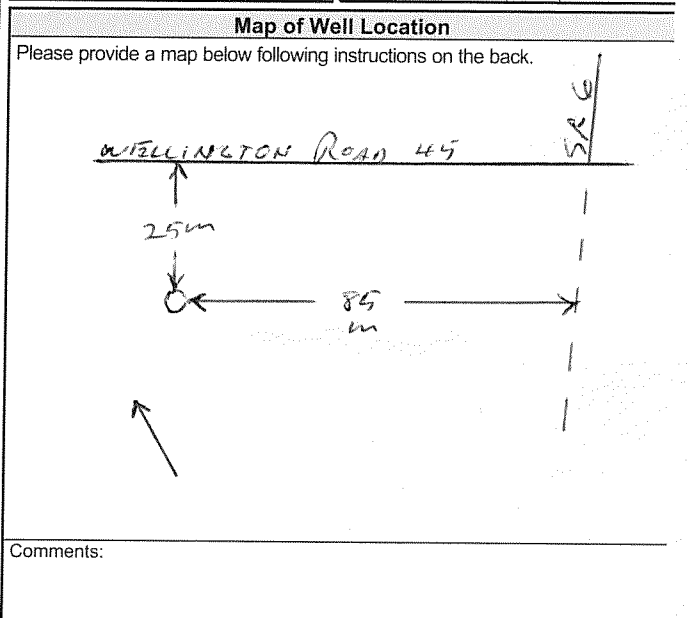
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)	
			From	To

**Water Details**

Water found at Depth (m/ft)	Kind of Water: <input type="checkbox"/> Fresh <input checked="" type="checkbox"/> Untested	Depth (m/ft)	Diameter (cm/in)
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	From	To
23.8		0	25.0
		0.7	20.0
		23.8	15.6

**Well Contractor and Well Technician Information**

Business Name of Well Contractor WELL INITIATIVES	Well Contractor's Licence No. 7 2 2 1
Business Address (Street Number/Name) 15 TOWNLINE	Municipality ORANGEVILLE
Province ONT	Postal Code L9W 3R4
Business E-mail Address	



**Well Contractor and Well Technician Information**

Business Name of Well Contractor WELL INITIATIVES	Well Contractor's Licence No. 7 2 2 1
Business Address (Street Number/Name) 15 TOWNLINE	Municipality ORANGEVILLE
Province ONT	Postal Code L9W 3R4
Business E-mail Address	

**Ministry Use Only**

Well owner's information package delivered <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Date Package Delivered Y Y Y Y M M D D 20120122	Audit No. Z 159333
Date Work Completed 20120122	Revised JAN 04 2013	



Measurements recorded in:  Metric  Imperial

Address of Well Location (Street Number/Name) Same As Above Township Maryborough Lot 13 Concession 3  
 County/District/Municipality Wellington City/Town/Village Wallenstein Province Ontario Postal Code NOB 2S0  
 UTM Coordinates Zone Easting Northing Municipal Plan and Sublot Number Other  
 NAD 83 17 523596 4833788

**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	15
Grey	Hardpan	Stones		15	87
Brown	Limestone			87	177

**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 95	Bentonite Slurry	22.80

**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)		Status of Well
			From	To	
6 1/4	Steel	.188	+2	95	<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 checked="" type="checkbox"/> Untested	Depth (m/ft)	Diameter (cm/in)
177	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	0 To 95	9
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	95 To 177	6

**Well Contractor and Well Technician Information**

Business Name of Well Contractor: Mc Leod Well Drilling Ltd Well Contractor's Licence No.: 3 5 6 3  
 Business Address (Street Number/Name): R R 4, 293810 Culloden Line Municipality: Ingersoll  
 Province: Ontario Postal Code: N5C 3J7 Business E-mail Address: N/A

Bus. Telephone No. (inc. area code): 519-485-4181 Name of Well Technician (Last Name, First Name): Mc Leod, Ralph  
 Well Technician's Licence No.: 0 0 7 3 Signature of Technician and/or Contractor: [Signature] Date Submitted: Y Y Y Y M M D D

**Results of Well Yield Testing**

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

If pumping discontinued, give reason: Clear

Pump intake set at (m/ft): 90

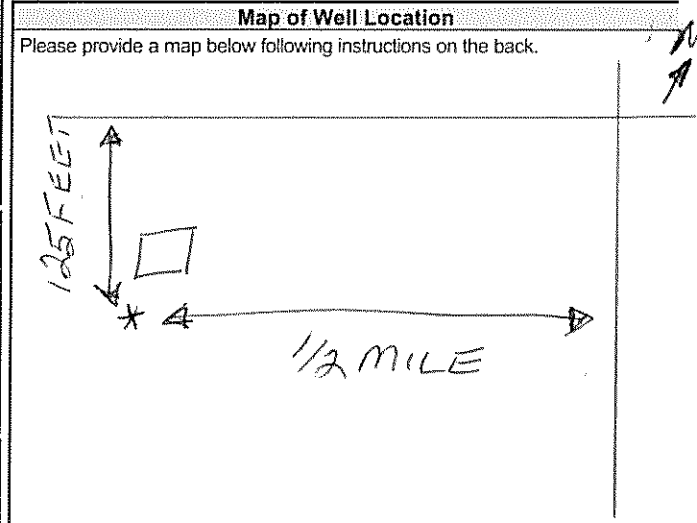
Pumping rate (l/min / GPM): 15

Duration of pumping: 1 hrs + 30 min

Final water level end of pumping (m/ft): 90

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

Time (min)	Draw Down		Recovery	
	Water Level (m/ft)	Time (min)	Water Level (m/ft)	Time (min)
Static Level	61			
1	70	1	90	
2	80	2	70	
3	90	3	61	
4		4		
5		5		
10		10		
15		15		
20		20		
25		25		
30		30		
40		40		
50		50		
60	90	60	61	



Comments:

Well owner's information package delivered:  Yes  No

Date Package Delivered: Y Y Y Y M M D D  
 Date Work Completed: 2013 05 01

**Ministry Use Only**

Audit No.: z 158908  
 Recd: MAY 28 2013



Measurements recorded in:  Metric  Imperial

N/A

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

Address of Well Location (Street Number/Name) Same As Above		Township Maryborough	Lot 13	Concession 3
County/District/Municipality Wellington		City/Town/Village Wallenstein	Province Ontario	Postal Code NOB 2S0
UTM Coordinates Zone NAD 83 17	Easting 523594	Northing 4833777	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
	Abandon Existing Old Stone Well, No Record Found at MOE			0 19

Annular Space			
Depth Set at (m/ft) From To	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )	
0 17	Topsoil & Sand	120.19	
17 19	Bentonite Slurry	14.14	

Results of Well Yield Testing				
After test of well yield, water was:	Draw Down		Recovery	
<input 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			
	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	
	20		20	
Recommended pump depth (m/ft)	25		25	
Recommended pump rate (l/min / GPM)	30		30	
Well production (l/min / GPM)	40		40	
Disinfected?	50		50	
<input type="checkbox"/> Yes <input type="checkbox"/> No	60		60	

Method of Construction		Well Use	
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input type="checkbox"/> Commercial <input type="checkbox"/> Not used
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input 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 checked="" 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 _____	

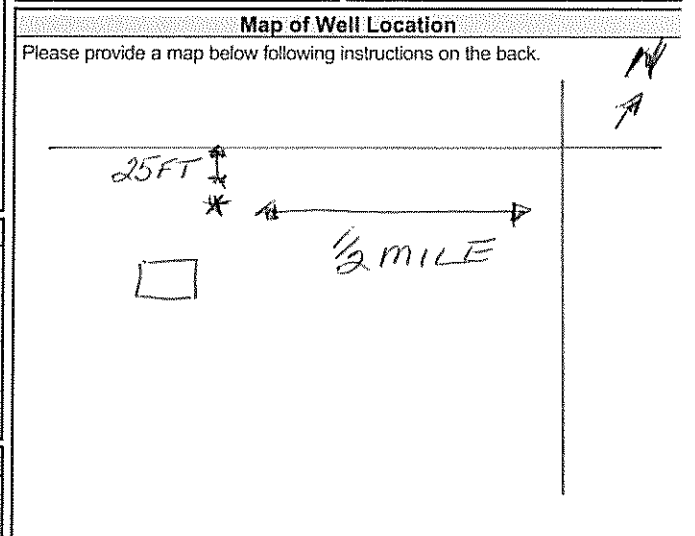
Construction Record - Casing			Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	
			From	To

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 type="checkbox"/> Other, specify _____	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		
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		

Well Contractor and Well Technician Information	
Business Name of Well Contractor Mc Leod Well Drilling Ltd	Well Contractor's Licence No. 3 5 6 3
Business Address (Street Number/Name) R R 4, 293810 Culloden Line	Municipality Ingersoll
Province Ontario	Postal Code N5C 3J7
Business E-mail Address N/A	

Bus. Telephone No. (inc. area code) 519-485-4181	Name of Well Technician (Last Name, First Name) Mc Leod, Ralph
Well Technician's Licence No. 01073	Signature of Technician and/or Contractor <i>Ralph McLeod</i>
Date Submitted Y Y Y Y M M D D	



Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered Y Y Y Y M M D D 2013 05 01	Date Work Completed Y Y Y Y M M D D
Ministry Use Only		Audit No. z 158909
Comments:		RECORDED MAY 28 2013

Measurements recorded in:  Metric  Imperial

Address of Well Location (Street Number/Name) **6534 ~~500~~ SIDEROAD 17** Township **MAPLETON** Lot **6** Concession **3**  
 County/District/Municipality **WELLINGTON** City/Town/Village **WALLENSTEIN** Province **Ontario** Postal Code **N0B2S0**  
 UTM Coordinates Zone Easting Northing Municipal Plan and Sublot Number Other  
 NAD 83 **175243494833494**

**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
			GRAVEL	0	0.50
			BENTONITE	0.50	1.80
			GRAVEL	1.80	8.8
			BENTONITE	8.8	9.1

**Annular Space**

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
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:  Pump intake set at (m/ft)	Static Level			
	1		1	
	2		2	
	3		3	
	4		4	
	5		5	
Pumping rate (l/min / GPM)	10		10	
Duration of pumping _____ hrs + _____ min	15		15	
Final water level end of pumping (m/ft)	20		20	
If flowing give rate (l/min / GPM)	25		25	
Recommended pump depth (m/ft)	30		30	
Recommended pump rate (l/min / GPM)	40		40	
Well production (l/min / GPM)	50		50	
Disinfected? <input type="checkbox"/> Yes <input type="checkbox"/> No	60		60	

**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	
					<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 _____

**Construction Record - Screen**

Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft)		Status of Well
			From	To	
					<input type="checkbox"/> Other, specify _____

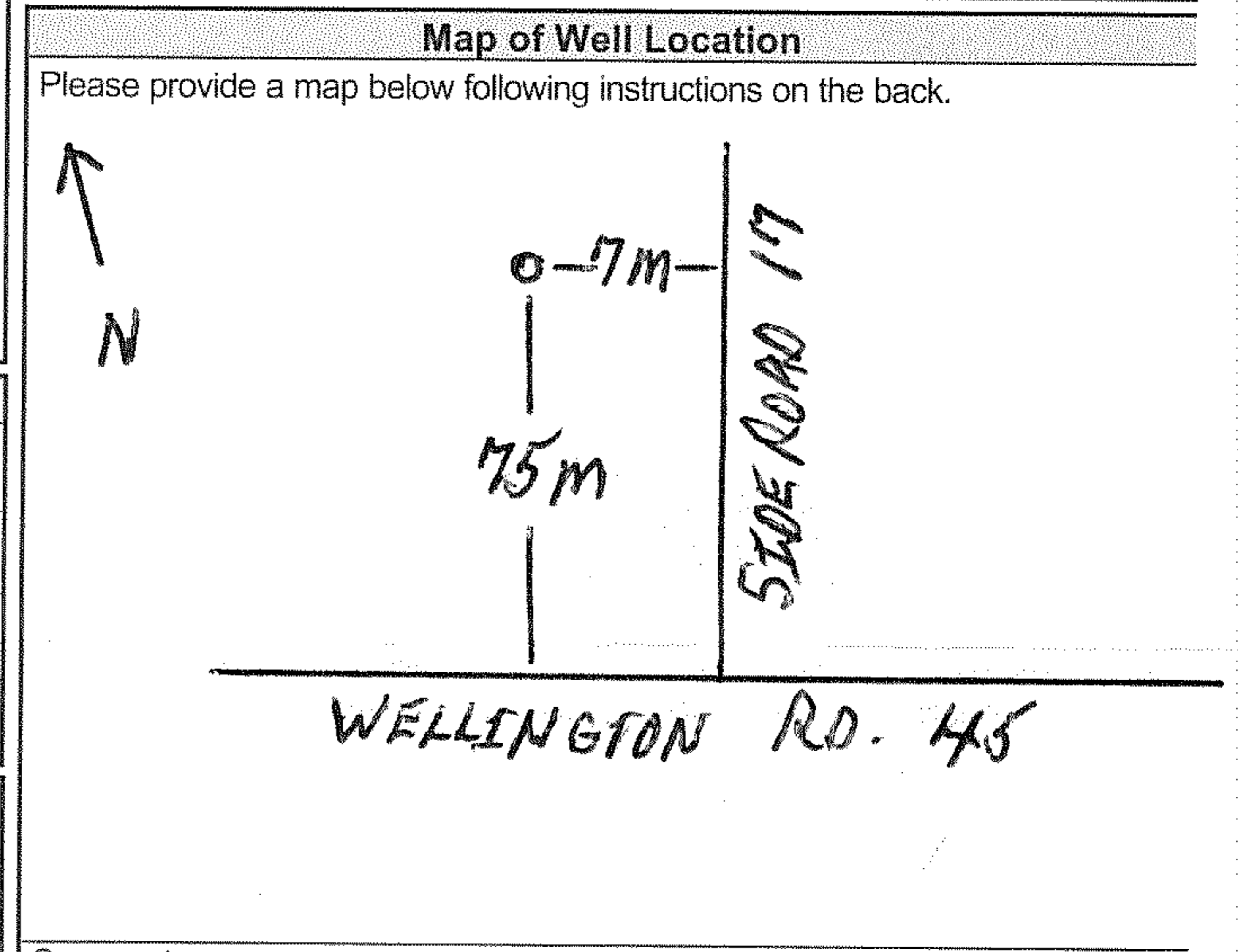
**Water Details**

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

**Well Contractor and Well Technician Information**

Business Name of Well Contractor **MARTIN'S WATER SYSTEMS LTD.** Well Contractor's Licence No. **6231**  
 Business Address (Street Number/Name) **3090 BRICKER SCHOOL LINE** Municipality **ELMIRA**  
 Province **ONT.** Postal Code **N3B2Z3** Business E-mail Address \_\_\_\_\_

Bus. Telephone No. (inc. area code) **5196642580** Name of Well Technician (Last Name, First Name) **LESTER MARTIN**  
 Well Technician's Licence No. **3529** Signature of Technician and/or Contractor *[Signature]* Date Submitted **20140416**



Comments:

Well owner's information package delivered  Yes  No

Date Package Delivered **20140408**

Date Work Completed **20140408**

**Ministry Use Only**  
 Audit No. **Z173003**  
 Received **APR 28 2014**

## Well ID

Well ID Number: 7265078

Well Audit Number: Z228719

Well Tag Number: A200133

*This table contains information from the original well record and any subsequent updates.*

## Well Location

<b>Address of Well Location</b>	7833 RR #45
<b>Township</b>	PEEL TOWNSHIP
<b>Lot</b>	
<b>Concession</b>	
<b>County/District/Municipality</b>	WELLINGTON
<b>City/Town/Village</b>	GLEN ALLAN
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 523370.00 Northing: 4833972.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

## Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
BRWN	LOAM			0 ft	1 ft
BRWN	CLAY	STNS	PCKD	1 ft	20 ft
BRWN	MSND		LOOS	20 ft	22 ft
BRWN	CLAY			22 ft	26 ft
BRWN	FSND		LOOS	26 ft	27 ft
GREY	CLAY	SAND		27 ft	40 ft

## Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
0 ft	8.5 ft	3/8 BENTONITE CHIPS	
8.5 ft	40 ft	FILTER SAND	

## Method of Construction & Well Use

Method of Construction	Well Use
Boring	Domestic

## Status of Well

Water Supply

## Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
36 inch	CONCRETE	-1.5 ft	40 ft

## Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
------------------	----------	------------	----------

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 7492

## Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	
Pump intake set at	35 ft
Pumping Rate	10 GPM
Duration of Pumping	1 h:0 m
Final water level	29.417 ft
If flowing give rate	
Recommended pump depth	35 ft
Recommended pump rate	5 GPM
Well Production	

**Disinfected?** Y

### Draw Down & Recovery

Draw Down Time (min)	Draw Down Water level	Recovery Time (min)	Recovery Water level
SWL	21.583 ft		
1		1	
2		2	
3		3	
4		4	
5		5	
10		10	
15	23.583 ft	15	29 ft
20		20	
25		25	
30	25.583 ft	30	28.583 ft
40		40	
45		45	
50		50	
60	29.417 ft	60	27.75 ft

### Water Details

Water Found at Depth	Kind
10 ft	Untested
20 ft	Untested
26 ft	Untested

### Hole Diameter

Depth From	Depth To	Diameter
0 ft	40 ft	48 inch

**Audit Number:** Z228719

**Date Well Completed:** May 06, 2016

**Date Well Record Received by MOE:** June 17, 2016

Updated: June 28, 2018

## Well ID

Well ID Number: 7268130

Well Audit Number: Z230331

Well Tag Number: A147774

*This table contains information from the original well record and any subsequent updates.*

## Well Location

<b>Address of Well Location</b>	7862 WELLINGTON ROAD 45
<b>Township</b>	PEEL TOWNSHIP
<b>Lot</b>	004
<b>Concession</b>	CON 02
<b>County/District/Municipality</b>	WELLINGTON
<b>City/Town/Village</b>	WALLENSTEIN
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 523049.00 Northing: 4833961.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

## Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
BLCK	LOAM		LOAM	0 ft	2 ft
BRWN	CLAY	STNS	HARD	2 ft	21 ft
GREY	CLAY	SILT	HARD	21 ft	224 ft
BLUE	SHLE		SOFT	224 ft	243 ft
BRWN	LMSN		LYRD	243 ft	257 ft

## Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
0 ft	24 ft	HIGH SOLIDS BENTONITE	
24 ft	243 ft	GEL/SAND SLURRY	

## Method of Construction & Well Use

Method of Construction	Well Use
Rotary (Convent.)	
AIR ROTARY	Other

## Status of Well

Water Supply

## Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
6 inch	STEEL	-2 ft	243 ft
6 inch	OPEN HOLE	243 ft	257 ft

## Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
------------------	----------	------------	----------

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 7090

## Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	CLEAR
Pump intake set at	150 ft
Pumping Rate	45 GPM
Duration of Pumping	1 h:0 m
Final water level	110 ft
If flowing give rate	
Recommended pump depth	150 ft
Recommended pump rate	20 GPM
<b>Well Production</b>	

**Disinfected?** Y

### Draw Down & Recovery

Draw Down Time (min)	Draw Down Water level	Recovery Time (min)	Recovery Water level
SWL	100 ft		
1	103 ft	1	106.5 ft
2	105.5 ft	2	103.667 ft
3	107 ft	3	102.833 ft
4	107.75 ft	4	102 ft
5	108 ft	5	101.667 ft
10	110 ft	10	100.5 ft
15	110 ft	15	100 ft
20	110 ft	20	100 ft
25	110 ft	25	100 ft
30	110 ft	30	100 ft
40	110 ft	40	100 ft
45		45	
50	110 ft	50	100 ft
60	110 ft	60	100 ft

### Water Details

Water Found at Depth	Kind
249 ft	Fresh

### Hole Diameter

Depth From	Depth To	Diameter
0 ft	243 ft	10 inch
243 ft	257 ft	6 inch

**Audit Number:** Z230331

**Date Well Completed:** July 18, 2016

**Date Well Record Received by MOE:** August 03, 2016

## Well ID

Well ID Number: 7281424

Well Audit Number: Z247091

Well Tag Number: A216952

*This table contains information from the original well record and any subsequent updates.*

## Well Location

<b>Address of Well Location</b>	7777 WELLINGTON ROAD 45
<b>Township</b>	PEEL TOWNSHIP
<b>Lot</b>	007
<b>Concession</b>	CON 03
<b>County/District/Municipality</b>	WELLINGTON
<b>City/Town/Village</b>	WALLENSTEIN
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 524398.00 Northing: 4833488.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

## Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
BRWN	CLAY	STNS		0 ft	18 ft
GREY	CLAY	STNS		18 ft	75 ft
GREY	HPAN			75 ft	170 ft
GREY	SHLE		SOFT	170 ft	210 ft
BLUE	SHLE			210 ft	223 ft
BRWN	LMSN			223 ft	230 ft
BLUE	SHLE			230 ft	239 ft
BRWN	LMSN			239 ft	245 ft
GREY	SHLE			245 ft	250 ft

## Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
0 ft	213 ft	BENTONITE SLURRY	

## Method of Construction & Well Use

Method of Construction	Well Use
Rotary (Convent.)	Livestock

## Status of Well

Water Supply

## Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
6 inch	STEEL	-2 ft	213 ft

## Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
------------------	----------	------------	----------

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 2644

## Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	
Pump intake set at	125 ft
Pumping Rate	30 GPM
Duration of Pumping	1 h:0 m
Final water level	116 ft

**If flowing give rate**

<b>Recommended pump depth</b>	105 ft
<b>Recommended pump rate</b>	15 GPM

**Well Production**

<b>Disinfected?</b>	Y
---------------------	---

**Draw Down & Recovery**

<b>Draw Down Time (min)</b>	<b>Draw Down Water level</b>	<b>Recovery Time (min)</b>	<b>Recovery Water level</b>
SWL	81 ft		
1	110 ft	1	89 ft
2	111 ft	2	83 ft
3	111 ft	3	82 ft
4	112 ft	4	81.6 ft
5	112 ft	5	81 ft
10	113 ft	10	81 ft
15	113 ft	15	81 ft
20	114 ft	20	81 ft
25	114 ft	25	81 ft
30	115 ft	30	81 ft
40	115 ft	40	81 ft
45		45	
50	116 ft	50	81 ft
60	116 ft	60	81 ft

**Water Details**

<b>Water Found at Depth</b>	<b>Kind</b>
230 ft	Fresh
245 ft	

**Hole Diameter**

<b>Depth From</b>	<b>Depth To</b>	<b>Diameter</b>
0 ft	213 ft	8.75 inch

213 ft 250 ft 6.25 inch

**Audit Number:** Z247091

**Date Well Completed:** December 29, 2016

**Date Well Record Received by MOE:** February 21, 2017

## Well ID

Well ID Number: 7288220

Well Audit Number: Z246696

Well Tag Number: A176915

*This table contains information from the original well record and any subsequent updates.*

## Well Location

<b>Address of Well Location</b>	18 MILL ST
<b>Township</b>	PEEL TOWNSHIP
<b>Lot</b>	006
<b>Concession</b>	CON 02
<b>County/District/Municipality</b>	WELLINGTON
<b>City/Town/Village</b>	
<b>Province</b>	ON
<b>Postal Code</b>	n/a
<b>UTM Coordinates</b>	NAD83 — Zone 17 Easting: 523548.00 Northing: 4833669.00
<b>Municipal Plan and Sublot Number</b>	
<b>Other</b>	

## Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
BLCK	LOAM		LOAM	0 ft	1 ft
BRWN	CLAY		HARD	1 ft	18 ft
GREY	CLAY	GRVL	HARD	18 ft	169 ft
BLUE	SHLE		SOFT	169 ft	197 ft
BRWN	LMSN		HARD	197 ft	221 ft
BRWN	LMSN		LYRD	221 ft	237 ft

## Annular Space/Abandonment Sealing Record

Depth From	Depth To	Type of Sealant Used (Material and Type)	Volume Placed
0 ft	22 ft	HIGH SOLIDS BENTONITE	
22 ft	199 ft	GEL / SAND SLURRY	

## Method of Construction & Well Use

Method of Construction	Well Use
Rotary (Convent.) AIR ROTARY	Domestic

## Status of Well

Water Supply

## Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
6 inch	STEEL	-2 ft	199 ft
6 inch	OPEN HOLE	199 ft	237 ft

## Construction Record - Screen

Outside Diameter	Material	Depth From	Depth To
------------------	----------	------------	----------

## Well Contractor and Well Technician Information

Well Contractor's Licence Number: 7090

## Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	CLEAR
Pump intake set at	170 ft
Pumping Rate	10 GPM
Duration of Pumping	1 h:30 m
Final water level	113 ft
If flowing give rate	
Recommended pump depth	170 ft
Recommended pump rate	12 GPM
<b>Well Production</b>	

**Disinfected?** Y

### Draw Down & Recovery

Draw Down Time (min)	Draw Down Water level	Recovery Time (min)	Recovery Water level
SWL	91 ft		
1	99 ft	1	106 ft
2	104 ft	2	100.333 ft
3	107.083 ft	3	96 ft
4	109 ft	4	92 ft
5	110 ft	5	91.417 ft
10	113.167 ft	10	91 ft
15	113 ft	15	91 ft
20	113 ft	20	91 ft
25	113 ft	25	91 ft
30	113 ft	30	91 ft
40	113 ft	40	91 ft
45		45	
50	113 ft	50	91 ft
60	113 ft	60	91 ft

### Water Details

Water Found at Depth	Kind
229 ft	Untested

### Hole Diameter

Depth From	Depth To	Diameter
0 ft	199 ft	9.75 inch
199 ft	237 ft	6 inch

**Audit Number:** Z246696

**Date Well Completed:** May 15, 2017

**Date Well Record Received by MOE:** June 14, 2017

Updated: June 28, 2018

**APPENDIX C:  
SITE PHOTOS**

## APPENDIX C: PHOTOS

All Photos taken April 23, 2018



1. Standing at northeast corner of property looking southwest



2. Standing at northeast corner of property looking west (90 degrees from photo 1)



**3. Standing at northwest corner of property looking southwest**



**4. Standing at middle of west property boundary looking southeast**



**5. Standing at middle of west property boundary looking southeast (other side of treeline from photo 4)**



**6. Standing at middle of west property boundary looking southwest (90 degrees from photo 5)**

**APPENDIX D:  
LABORATORY CERTIFICATES OF ANALYSIS**



Your Project #: 317033-2  
 Site Location: GLEN ALLAN-HYDROGEOLOGY  
 Your C.O.C. #: 695039-01-01

**Attention: Kate Camlis**  
 GM BluePlan Engineering Limited  
 975 Wallace Avenue North  
 Listowell, ON  
 Canada N4W 1M6

**Report Date: 2018/12/14**  
 Report #: R5525891  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**MAXXAM JOB #: B8W7975**  
**Received: 2018/12/07, 09:26**

Sample Matrix: Water  
 # Samples Received: 5

Analyses	Date		Laboratory Method	Reference
	Quantity	Extracted		
Alkalinity	4	N/A	2018/12/12 CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	4	N/A	2018/12/13 CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	4	N/A	2018/12/13 CAM SOP-00463	EPA 325.2 m
Conductivity	4	N/A	2018/12/12 CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	4	N/A	2018/12/12 CAM SOP-00446	SM 23 5310 B m
Petroleum Hydro. CCME F1 & BTEX in Water	1	N/A	2018/12/11 CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (2)	1	2018/12/12	2018/12/13 CAM SOP-00316	CCME PHC-CWS m
Hardness (calculated as CaCO3)	4	N/A	2018/12/12 CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	4	N/A	2018/12/12 CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	4	N/A	2018/12/13	
Anion and Cation Sum	4	N/A	2018/12/13	
Total Ammonia-N	4	N/A	2018/12/13 CAM SOP-00441	EPA GS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (3)	3	N/A	2018/12/12 CAM SOP-00440	SM 23 4500-NO3I/NO2B
Nitrate (NO3) and Nitrite (NO2) in Water (3)	1	N/A	2018/12/13 CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	4	N/A	2018/12/12 CAM SOP-00413	SM 4500H+ B m
Orthophosphate	4	N/A	2018/12/13 CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	4	N/A	2018/12/13	
Sat. pH and Langelier Index (@ 4C)	4	N/A	2018/12/13	
Sulphate by Automated Colourimetry	4	N/A	2018/12/13 CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	4	N/A	2018/12/13	

**Remarks:**

Maxxam Analytics' laboratories are accredited to ISO/IEC 17025:2005 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Maxxam are based upon recognized Provincial, Federal or US method compendia such as CCME, MDDELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Maxxam's profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Maxxam in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

Maxxam Analytics' liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed



Your Project #: 317033-2  
Site Location: GLEN ALLAN-HYDROGEOLOGY  
Your C.O.C. #: 695039-01-01

**Attention: Kate Camlis**  
GM BluePlan Engineering Limited  
975 Wallace Avenue North  
Listowell, ON  
Canada N4W 1M6

**Report Date: 2018/12/14**  
Report #: R5525891  
Version: 1 - Final

### CERTIFICATE OF ANALYSIS

**MAXXAM JOB #: B8W7975**

**Received: 2018/12/07, 09:26**

or implied. Maxxam has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Maxxam, unless otherwise agreed in writing. Maxxam is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by Maxxam, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(2) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Maxxam conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(3) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

#### Encryption Key

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ashton Gibson, Project Manager

Email: AGibson@maxxam.ca

Phone# (905) 817-5700

=====  
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Maxxam Job #: B8W7975  
Report Date: 2018/12/14

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Site Location: GLEN ALLAN-HYDROGEOLOGY  
Sampler Initials: KC

**RCAP - COMPREHENSIVE (WATER)**

Maxxam ID		IMM909		IMM910		IMM911	IMM912		
Sampling Date		2018/12/05		2018/12/05		2018/12/05	2018/12/05		
COC Number		695039-01-01		695039-01-01		695039-01-01	695039-01-01		
	UNITS	MW2	QC Batch	MW3	QC Batch	MW4	MW5	RDL	QC Batch
<b>Calculated Parameters</b>									
Anion Sum	me/L	8.97	5881997	10.9	5881997	7.64	8.08	N/A	5881997
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	390	5882002	510	5882002	320	330	1.0	5882002
Calculated TDS	mg/L	450	5882000	540	5882000	390	430	1.0	5882000
Carb. Alkalinity (calc. as CaCO3)	mg/L	3.2	5882002	5.2	5882002	2.8	2.9	1.0	5882002
Cation Sum	me/L	8.92	5881997	11.1	5881997	7.79	8.45	N/A	5881997
Hardness (CaCO3)	mg/L	400	5881953	470	5881953	360	390	1.0	5881953
Ion Balance (% Difference)	%	0.310	5881996	0.900	5881996	0.950	2.24	N/A	5881996
Langelier Index (@ 20C)	N/A	0.973	5881998	1.06	5881998	0.906	0.977		5881998
Langelier Index (@ 4C)	N/A	0.725	5881999	0.813	5881999	0.657	0.729		5881999
Saturation pH (@ 20C)	N/A	6.97	5881998	6.97	5881998	7.06	6.99		5881998
Saturation pH (@ 4C)	N/A	7.22	5881999	7.22	5881999	7.31	7.24		5881999
<b>Inorganics</b>									
Total Ammonia-N	mg/L	0.24	5884702	0.31	5884702	0.23	0.17	0.050	5884702
Conductivity	umho/cm	780	5884273	910	5884273	670	730	1.0	5884273
Dissolved Organic Carbon	mg/L	1.3	5883205	1.6	5883205	0.64	0.95	0.50	5883205
Orthophosphate (P)	mg/L	<0.010	5884929	<0.010	5884929	<0.010	<0.010	0.010	5884929
pH	pH	7.94	5884276	8.03	5884276	7.97	7.97		5884276
Dissolved Sulphate (SO4)	mg/L	33	5884927	22	5884927	35	44	1.0	5884927
Alkalinity (Total as CaCO3)	mg/L	390	5884270	510	5884270	330	330	1.0	5884270
Dissolved Chloride (Cl-)	mg/L	16	5884918	4.9	5884918	15	17	1.0	5884918
Nitrite (N)	mg/L	<0.010	5882903	0.017	5884293	<0.010	<0.010	0.010	5882903
Nitrate (N)	mg/L	0.24	5882903	0.25	5884293	<0.10	<0.10	0.10	5882903
Nitrate + Nitrite (N)	mg/L	0.24	5882903	0.26	5884293	<0.10	<0.10	0.10	5882903
<b>Metals</b>									
Dissolved Aluminum (Al)	ug/L	6.8	5883200	<5.0	5883200	48	<5.0	5.0	5883200
Dissolved Antimony (Sb)	ug/L	<0.50	5883200	<0.50	5883200	<0.50	<0.50	0.50	5883200
Dissolved Arsenic (As)	ug/L	<1.0	5883200	3.8	5883200	<1.0	5.4	1.0	5883200
Dissolved Barium (Ba)	ug/L	100	5883200	160	5883200	75	84	2.0	5883200
Dissolved Beryllium (Be)	ug/L	<0.50	5883200	<0.50	5883200	<0.50	<0.50	0.50	5883200
Dissolved Boron (B)	ug/L	28	5883200	63	5883200	14	21	10	5883200
Dissolved Cadmium (Cd)	ug/L	<0.10	5883200	<0.10	5883200	<0.10	<0.10	0.10	5883200
Dissolved Calcium (Ca)	ug/L	79000	5883200	62000	5883200	74000	86000	200	5883200
Dissolved Chromium (Cr)	ug/L	<5.0	5883200	<5.0	5883200	<5.0	<5.0	5.0	5883200
Dissolved Cobalt (Co)	ug/L	<0.50	5883200	0.62	5883200	<0.50	<0.50	0.50	5883200
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable									



Maxxam Job #: B8W7975  
 Report Date: 2018/12/14

GM BluePlan Engineering Limited  
 Client Project #: 317033-2  
 Site Location: GLEN ALLAN-HYDROGEOLOGY  
 Sampler Initials: KC

**RCAP - COMPREHENSIVE (WATER)**

Maxxam ID		IMM909		IMM910		IMM911	IMM912		
Sampling Date		2018/12/05		2018/12/05		2018/12/05	2018/12/05		
COC Number		695039-01-01		695039-01-01		695039-01-01	695039-01-01		
	UNITS	MW2	QC Batch	MW3	QC Batch	MW4	MW5	RDL	QC Batch
Dissolved Copper (Cu)	ug/L	6.6	5883200	11	5883200	1.9	10	1.0	5883200
Dissolved Iron (Fe)	ug/L	<100	5883200	350	5883200	<100	230	100	5883200
Dissolved Lead (Pb)	ug/L	<0.50	5883200	0.51	5883200	<0.50	<0.50	0.50	5883200
Dissolved Magnesium (Mg)	ug/L	50000	5883200	77000	5883200	43000	42000	50	5883200
Dissolved Manganese (Mn)	ug/L	95	5883200	110	5883200	22	42	2.0	5883200
Dissolved Molybdenum (Mo)	ug/L	5.9	5883200	8.9	5883200	1.1	4.4	0.50	5883200
Dissolved Nickel (Ni)	ug/L	2.7	5883200	1.4	5883200	<1.0	5.4	1.0	5883200
Dissolved Phosphorus (P)	ug/L	<100	5883200	110	5883200	<100	<100	100	5883200
Dissolved Potassium (K)	ug/L	2600	5883200	3500	5883200	1800	3800	200	5883200
Dissolved Selenium (Se)	ug/L	<2.0	5883200	<2.0	5883200	<2.0	<2.0	2.0	5883200
Dissolved Silicon (Si)	ug/L	8800	5883200	9500	5883200	7700	8900	50	5883200
Dissolved Silver (Ag)	ug/L	<0.10	5883200	<0.10	5883200	<0.10	<0.10	0.10	5883200
Dissolved Sodium (Na)	ug/L	18000	5883200	36000	5883200	11000	13000	100	5883200
Dissolved Strontium (Sr)	ug/L	620	5883200	1300	5883200	270	240	1.0	5883200
Dissolved Thallium (Tl)	ug/L	<0.050	5883200	<0.050	5883200	<0.050	<0.050	0.050	5883200
Dissolved Titanium (Ti)	ug/L	<5.0	5883200	<5.0	5883200	<5.0	<5.0	5.0	5883200
Dissolved Uranium (U)	ug/L	2.8	5883200	6.9	5883200	2.3	2.1	0.10	5883200
Dissolved Vanadium (V)	ug/L	0.50	5883200	<0.50	5883200	<0.50	0.60	0.50	5883200
Dissolved Zinc (Zn)	ug/L	8.6	5883200	11	5883200	<5.0	12	5.0	5883200
RDL = Reportable Detection Limit									
QC Batch = Quality Control Batch									



Maxxam Job #: B8W7975  
 Report Date: 2018/12/14

GM BluePlan Engineering Limited  
 Client Project #: 317033-2  
 Site Location: GLEN ALLAN-HYDROGEOLOGY  
 Sampler Initials: KC

**PETROLEUM HYDROCARBONS (CCME)**

<b>Maxxam ID</b>		IMM961		
<b>Sampling Date</b>		2018/12/05 10:30		
<b>COC Number</b>		695039-01-01		
	<b>UNITS</b>	<b>MW5</b>	<b>RDL</b>	<b>QC Batch</b>
<b>BTEX &amp; F1 Hydrocarbons</b>				
Benzene	ug/L	<0.20	0.20	5881457
Toluene	ug/L	0.27	0.20	5881457
Ethylbenzene	ug/L	<0.20	0.20	5881457
c-Xylene	ug/L	<0.20	0.20	5881457
p+m-Xylene	ug/L	<0.40	0.40	5881457
Total Xylenes	ug/L	<0.40	0.40	5881457
F1 (C6-C10)	ug/L	<25	25	5881457
F1 (C6-C10) - BTEX	ug/L	<25	25	5881457
<b>F2-F4 Hydrocarbons</b>				
F2 (C10-C16 Hydrocarbons)	ug/L	<100	100	5884830
F3 (C16-C34 Hydrocarbons)	ug/L	<200	200	5884830
F4 (C34-C50 Hydrocarbons)	ug/L	<200	200	5884830
Reached Baseline at C50	ug/L	Yes		5884830
<b>Surrogate Recovery (%)</b>				
1,4-Difluorobenzene	%	99		5881457
4-Bromofluorobenzene	%	101		5881457
D10-Ethylbenzene	%	94		5881457
D4-1,2-Dichloroethane	%	98		5881457
c-Terphenyl	%	108		5884830
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				



Maxxam Job #: B8W7975  
Report Date: 2018/12/14

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Site Location: GLEN ALLAN-HYDROGEOLOGY  
Sampler Initials: KC

### TEST SUMMARY

**Maxxam ID:** IMM909  
**Sample ID:** MW2  
**Matrix:** Water

**Collected:** 2018/12/05  
**Shipped:**  
**Received:** 2018/12/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	5884270	N/A	2018/12/12	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	5882002	N/A	2018/12/13	Automated Statchk
Chloride by Automated Colourimetry	KONE	5884918	N/A	2018/12/13	Alina Dobreanu
Conductivity	AT	5884273	N/A	2018/12/12	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	5883205	N/A	2018/12/12	Mandeep Kaur
Hardness (calculated as CaCO3)		5881953	N/A	2018/12/12	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	5883200	N/A	2018/12/12	Prempal Bhatti
Ion Balance (% Difference)	CALC	5881996	N/A	2018/12/13	Automated Statchk
Anion and Cation Sum	CALC	5881997	N/A	2018/12/13	Automated Statchk
Total Ammonia-N	LACH/NH4	5884702	N/A	2018/12/13	Charles Opcku-Ware
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	5882903	N/A	2018/12/12	Chandra Nandlal
pH	AT	5884276	N/A	2018/12/12	Surinder Rai
Orthophosphate	KONE	5884929	N/A	2018/12/13	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	5881998	N/A	2018/12/13	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5881999	N/A	2018/12/13	Automated Statchk
Sulphate by Automated Colourimetry	KONE	5884927	N/A	2018/12/13	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	5882000	N/A	2018/12/13	Automated Statchk

**Maxxam ID:** IMM910  
**Sample ID:** MW3  
**Matrix:** Water

**Collected:** 2018/12/05  
**Shipped:**  
**Received:** 2018/12/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	5884270	N/A	2018/12/12	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	5882002	N/A	2018/12/13	Automated Statchk
Chloride by Automated Colourimetry	KONE	5884918	N/A	2018/12/13	Alina Dobreanu
Conductivity	AT	5884273	N/A	2018/12/12	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	5883205	N/A	2018/12/12	Mandeep Kaur
Hardness (calculated as CaCO3)		5881953	N/A	2018/12/12	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	5883200	N/A	2018/12/12	Prempal Bhatti
Ion Balance (% Difference)	CALC	5881996	N/A	2018/12/13	Automated Statchk
Anion and Cation Sum	CALC	5881997	N/A	2018/12/13	Automated Statchk
Total Ammonia-N	LACH/NH4	5884702	N/A	2018/12/13	Charles Opcku-Ware
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	5884293	N/A	2018/12/13	Chandra Nandlal
pH	AT	5884276	N/A	2018/12/12	Surinder Rai
Orthophosphate	KONE	5884929	N/A	2018/12/13	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	5881998	N/A	2018/12/13	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5881999	N/A	2018/12/13	Automated Statchk
Sulphate by Automated Colourimetry	KONE	5884927	N/A	2018/12/13	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	5882000	N/A	2018/12/13	Automated Statchk



Maxxam Job #: B8W7975  
Report Date: 2018/12/14

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Site Location: GLEN ALLAN-HYDROGEOLOGY  
Sampler Initials: KC

### TEST SUMMARY

**Maxxam ID:** IMM911  
**Sample ID:** MW4  
**Matrix:** Water

**Collected:** 2018/12/05  
**Shipped:**  
**Received:** 2018/12/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	5884270	N/A	2018/12/12	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	5882002	N/A	2018/12/13	Automated Statchk
Chloride by Automated Colourimetry	KONE	5884918	N/A	2018/12/13	Alina Dobreanu
Conductivity	AT	5884273	N/A	2018/12/12	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	5883205	N/A	2018/12/12	Mandeep Kaur
Hardness (calculated as CaCO3)		5881953	N/A	2018/12/12	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	5883200	N/A	2018/12/12	Prempal Bhatti
Ion Balance (% Difference)	CALC	5881996	N/A	2018/12/13	Automated Statchk
Anion and Cation Sum	CALC	5881997	N/A	2018/12/13	Automated Statchk
Total Ammonia-N	LACH/NH4	5884702	N/A	2018/12/13	Charles Opcku-Ware
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	5882903	N/A	2018/12/12	Chandra Nandlal
pH	AT	5884276	N/A	2018/12/12	Surinder Rai
Orthophosphate	KONE	5884929	N/A	2018/12/13	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	5881998	N/A	2018/12/13	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5881999	N/A	2018/12/13	Automated Statchk
Sulphate by Automated Colourimetry	KONE	5884927	N/A	2018/12/13	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	5882000	N/A	2018/12/13	Automated Statchk

**Maxxam ID:** IMM912  
**Sample ID:** MW5  
**Matrix:** Water

**Collected:** 2018/12/05  
**Shipped:**  
**Received:** 2018/12/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	5884270	N/A	2018/12/12	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	5882002	N/A	2018/12/13	Automated Statchk
Chloride by Automated Colourimetry	KONE	5884918	N/A	2018/12/13	Alina Dobreanu
Conductivity	AT	5884273	N/A	2018/12/12	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	5883205	N/A	2018/12/12	Mandeep Kaur
Hardness (calculated as CaCO3)		5881953	N/A	2018/12/12	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	5883200	N/A	2018/12/12	Prempal Bhatti
Ion Balance (% Difference)	CALC	5881996	N/A	2018/12/13	Automated Statchk
Anion and Cation Sum	CALC	5881997	N/A	2018/12/13	Automated Statchk
Total Ammonia-N	LACH/NH4	5884702	N/A	2018/12/13	Charles Opcku-Ware
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	5882903	N/A	2018/12/12	Chandra Nandlal
pH	AT	5884276	N/A	2018/12/12	Surinder Rai
Orthophosphate	KONE	5884929	N/A	2018/12/13	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	5881998	N/A	2018/12/13	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	5881999	N/A	2018/12/13	Automated Statchk
Sulphate by Automated Colourimetry	KONE	5884927	N/A	2018/12/13	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	5882000	N/A	2018/12/13	Automated Statchk



Maxxam Job #: B8W7975  
Report Date: 2018/12/14

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Site Location: GLEN ALLAN-HYDROGEOLOGY  
Sampler Initials: KC

### TEST SUMMARY

**Maxxam ID:** IMM961  
**Sample ID:** MW5  
**Matrix:** Water

**Collected:** 2018/12/05  
**Shipped:**  
**Received:** 2018/12/07

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	5881457	N/A	2018/12/11	Abdi Mohamud
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	5884830	2018/12/12	2018/12/13	Zhiyue (Frank) Zhu



Maxxam Job #: B8W7975  
Report Date: 2018/12/14

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Site Location: GLEN ALLAN-HYDROGEOLOGY  
Sampler Initials: KC

#### GENERAL COMMENTS

Results relate only to the items tested.



Maxxam Job #: B8W7975  
Report Date: 2018/12/14

**QUALITY ASSURANCE REPORT**

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Site Location: GLEN ALLAN-HYDROGEOLOGY  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5881457	1,4-Difluorobenzene	2018/12/11	99	70 - 130	100	70 - 130	98	%		
5881457	4-Bromofluorobenzene	2018/12/11	103	70 - 130	103	70 - 130	103	%		
5881457	D10-Ethylbenzene	2018/12/11	97	70 - 130	99	70 - 130	94	%		
5881457	D4-1,2-Dichloroethane	2018/12/11	101	70 - 130	104	70 - 130	102	%		
5884830	o-Terphenyl	2018/12/13	112	60 - 130	110	60 - 130	107	%		
5881457	Benzene	2018/12/11	98	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
5881457	Ethylbenzene	2018/12/11	100	70 - 130	104	70 - 130	<0.20	ug/L	NC	30
5881457	F1 (C6-C10) - BTEX	2018/12/11					<25	ug/L	NC	30
5881457	F1 (C6-C10)	2018/12/11	88	70 - 130	96	70 - 130	<25	ug/L	NC	30
5881457	o-Xylene	2018/12/11	100	70 - 130	101	70 - 130	<0.20	ug/L	NC	30
5881457	p+m-Xylene	2018/12/11	93	70 - 130	95	70 - 130	<0.40	ug/L	NC	30
5881457	Toluene	2018/12/11	98	70 - 130	100	70 - 130	<0.20	ug/L	NC	30
5881457	Total Xylenes	2018/12/11					<0.40	ug/L	NC	30
5882903	Nitrate (N)	2018/12/12	97	80 - 120	101	80 - 120	<0.10	mg/L	NC	20
5882903	Nitrite (N)	2018/12/12	100	80 - 120	103	80 - 120	<0.010	mg/L	NC	20
5883200	Dissolved Aluminum (Al)	2018/12/12	112	80 - 120	106	80 - 120	<5.0	ug/L	1.9	20
5883200	Dissolved Antimony (Sb)	2018/12/12	113	80 - 120	100	80 - 120	<0.50	ug/L	1.8	20
5883200	Dissolved Arsenic (As)	2018/12/12	109	80 - 120	100	80 - 120	<1.0	ug/L	6.7	20
5883200	Dissolved Barium (Ba)	2018/12/12	111	80 - 120	101	80 - 120	<2.0	ug/L	0.84	20
5883200	Dissolved Beryllium (Be)	2018/12/12	108	80 - 120	101	80 - 120	<0.50	ug/L	NC	20
5883200	Dissolved Boron (B)	2018/12/12	102	80 - 120	98	80 - 120	<10	ug/L	4.6	20
5883200	Dissolved Cadmium (Cd)	2018/12/12	110	80 - 120	100	80 - 120	<0.10	ug/L	NC	20
5883200	Dissolved Calcium (Ca)	2018/12/12	116	80 - 120	101	80 - 120	<200	ug/L	1.8	20
5883200	Dissolved Chromium (Cr)	2018/12/12	111	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
5883200	Dissolved Cobalt (Co)	2018/12/12	114	80 - 120	102	80 - 120	<0.50	ug/L	4.4	20
5883200	Dissolved Copper (Cu)	2018/12/12	115	80 - 120	101	80 - 120	<1.0	ug/L	3.1	20
5883200	Dissolved Iron (Fe)	2018/12/12	110	80 - 120	99	80 - 120	<100	ug/L	NC	20
5883200	Dissolved Lead (Pb)	2018/12/12	107	80 - 120	102	80 - 120	<0.50	ug/L	NC	20
5883200	Dissolved Magnesium (Mg)	2018/12/12	109	80 - 120	101	80 - 120	<50	ug/L	0.053	20
5883200	Dissolved Manganese (Mn)	2018/12/12	113	80 - 120	95	80 - 120	<2.0	ug/L	1.0	20
5883200	Dissolved Molybdenum (Mo)	2018/12/12	119	80 - 120	103	80 - 120	<0.50	ug/L	1.1	20
5883200	Dissolved Nickel (Ni)	2018/12/12	107	80 - 120	97	80 - 120	<1.0	ug/L	1.8	20



Maxxam Job #: B8W7975  
Report Date: 2018/12/14

**QUALITY ASSURANCE REPORT(CONT'D)**

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Site Location: GLEN ALLAN-HYDROGEOLOGY  
Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5883200	Dissolved Phosphorus (P)	2018/12/12	106	80 - 120	113	80 - 120	<100	ug/L	NC	20
5883200	Dissolved Potassium (K)	2018/12/12	107	80 - 120	99	80 - 120	<200	ug/L	1.3	20
5883200	Dissolved Selenium (Se)	2018/12/12	114	80 - 120	106	80 - 120	<2.0	ug/L	NC	20
5883200	Dissolved Silicon (Si)	2018/12/12	105	80 - 120	99	80 - 120	<50	ug/L	0.52	20
5883200	Dissolved Silver (Ag)	2018/12/12	109	80 - 120	97	80 - 120	<0.10	ug/L	NC	20
5883200	Dissolved Sodium (Na)	2018/12/12	107	80 - 120	98	80 - 120	<100	ug/L	1.7	20
5883200	Dissolved Strontium (Sr)	2018/12/12	103	80 - 120	96	80 - 120	<1.0	ug/L	0.92	20
5883200	Dissolved Thallium (Tl)	2018/12/12	108	80 - 120	100	80 - 120	<0.050	ug/L	NC	20
5883200	Dissolved Titanium (Ti)	2018/12/12	107	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
5883200	Dissolved Uranium (U)	2018/12/12	109	80 - 120	100	80 - 120	<0.10	ug/L	0.74	20
5883200	Dissolved Vanadium (V)	2018/12/12	113	80 - 120	99	80 - 120	<0.50	ug/L	2.1	20
5883200	Dissolved Zinc (Zn)	2018/12/12	109	80 - 120	100	80 - 120	<5.0	ug/L	2.0	20
5883205	Dissolved Organic Carbon	2018/12/12	95	80 - 120	97	80 - 120	<0.50	mg/L	0.81	20
5884270	Alkalinity (Total as CaCO3)	2018/12/12			96	85 - 115	<1.0	mg/L	0.45	20
5884273	Conductivity	2018/12/12			101	85 - 115	<1.0	umho/cm	0	25
5884276	pH	2018/12/12			102	98 - 103			0.27	N/A
5884293	Nitrate (N)	2018/12/13	98	80 - 120	101	80 - 120	<0.10	mg/L	NC	20
5884293	Nitrite (N)	2018/12/13	101	80 - 120	103	80 - 120	<0.010	mg/L	NC	20
5884702	Total Ammonia-N	2018/12/13	97	75 - 125	98	80 - 120	<0.050	mg/L	12 (1)	20
5884830	F2 (C10-C16 Hydrocarbons)	2018/12/13	114	50 - 130	104	60 - 130	<100	ug/L	NC	30
5884830	F3 (C16-C34 Hydrocarbons)	2018/12/13	106	50 - 130	96	60 - 130	<200	ug/L	NC	30
5884830	F4 (C34-C50 Hydrocarbons)	2018/12/13	98	50 - 130	89	60 - 130	<200	ug/L	NC	30
5884918	Dissolved Chloride (Cl-)	2018/12/13	NC	80 - 120	104	80 - 120	<1.0	mg/L	0.057	20
5884927	Dissolved Sulphate (SO4)	2018/12/13	NC	75 - 125	107	80 - 120	<1.0	mg/L	0.57	20



Maxxam Job #: B8W7975  
 Report Date: 2018/12/14

**QUALITY ASSURANCE REPORT(CONT'D)**

GM BluePlan Engineering Limited  
 Client Project #: 317033-2  
 Site Location: GLEN ALLAN-HYDROGEOLOGY  
 Sampler Initials: KC

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
5884929	Orthophosphate (P)	2018/12/13	98	75 - 125	99	80 - 120	<0.010	mg/L	NC	25

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) TKN < NH4: Both values fall within acceptable RPD limits for duplicates and are likely equivalent.



Maxxam Job #: B8W7975  
Report Date: 2018/12/14

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Site Location: GLEN ALLAN-HYDROGEOLOGY  
Sampler Initials: KC

#### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

\_\_\_\_\_  
Anastasia Hamanov, Scientific Specialist

---

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.





Your Project #: 317033-2  
 Your C.O.C. #: 610131-06-01

**Attention: Reporting Contacts**

GM BluePlan Engineering Limited  
 1260 - 2nd Ave E  
 Unit 1  
 Owen Sound, ON  
 CANADA N4K 2J3

**Report Date: 2020/10/02**  
 Report #: R6355272  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: C006959**

**Received: 2020/09/23, 09:23**

Sample Matrix: Water  
 # Samples Received: 2

<b>Analyses</b>	<b>Quantity</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Laboratory Method</b>	<b>Analytical Method</b>
Alkalinity	2	N/A	2020/09/24	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	2	N/A	2020/09/25	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	2	N/A	2020/09/30	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	2	N/A	2020/09/24	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	2	N/A	2020/09/25	CAM SOP-00446	SM 23 5310 B m
Hardness (calculated as CaCO3)	2	N/A	2020/09/25	CAM SOP 00102/00408/00447	SM 2340 B
Lab Filtered Metals by ICPMS	2	2020/09/24	2020/09/25	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS	2	N/A	2020/09/28	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	2	N/A	2020/09/30		
Anion and Cation Sum	2	N/A	2020/09/25		
Total Coliforms/ E. coli, CFU/100mL	2	N/A	2020/09/23	CAM SOP-00551	MOE E3407
Total Ammonia-N	2	N/A	2020/09/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (2)	2	N/A	2020/09/25	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	2	2020/09/24	2020/09/24	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	2	N/A	2020/10/02	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	2	N/A	2020/09/30		Auto Calc
Sat. pH and Langelier Index (@ 4C)	2	N/A	2020/09/30		Auto Calc
Sulphate by Automated Colourimetry	2	N/A	2020/09/30	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	2	N/A	2020/09/30		Auto Calc

**Remarks:**

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.



Your Project #: 317033-2  
Your C.O.C. #: 610131-06-01

**Attention: Reporting Contacts**

GM BluePlan Engineering Limited  
1260 - 2nd Ave E  
Unit 1  
Owen Sound, ON  
CANADA N4K 2J3

**Report Date: 2020/10/02**  
Report #: R6355272  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: C006959**

**Received: 2020/09/23, 09:23**

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ashton Gibson, Project Manager

Email: Ashton.Gibson@bvlabs.com

Phone# (905)817-5765

=====

This report has been generated and distributed using a secure automated process.

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



BUREAU  
VERITAS

BV Labs Job #: CO06959  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

**RCAP - COMPREHENSIVE (LAB FILTERED)**

BV Labs ID		NRV486	NRV487		
Sampling Date		2020/09/21 08:40	2020/09/21 14:10		
COC Number		610131-06-01	610131-06-01		
	<b>UNITS</b>	<b>PW2(START)</b>	<b>PW2(END)</b>	<b>RDL</b>	<b>QC Batch</b>
<b>Calculated Parameters</b>					
Anion Sum	me/L	8.64	8.59	N/A	6960325
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	200	200	1.0	6959797
Calculated TDS	mg/L	500	500	1.0	6960334
Carb. Alkalinity (calc. as CaCO3)	mg/L	1.9	1.8	1.0	6959797
Cation Sum	me/L	8.00	8.24	N/A	6960325
Hardness (CaCO3)	mg/L	330	340	1.0	6959981
Ion Balance (% Difference)	%	3.83	2.04	N/A	6960321
Langelier Index (@ 20C)	N/A	0.755	0.756		6960328
Langelier Index (@ 4C)	N/A	0.507	0.508		6960331
Saturation pH (@ 20C)	N/A	7.24	7.23		6960328
Saturation pH (@ 4C)	N/A	7.48	7.47		6960331
<b>Inorganics</b>					
Total Ammonia-N	mg/L	0.57	0.57	0.050	6963220
Conductivity	umho/cm	770	780	1.0	6962567
Dissolved Organic Carbon	mg/L	1.3	1.3	0.40	6965785
Orthophosphate (P)	mg/L	<0.010	<0.010	0.010	6963459
pH	pH	7.99	7.98		6962570
Dissolved Sulphate (SO4)	mg/L	210	210	1.0	6963457
Alkalinity (Total as CaCO3)	mg/L	210	200	1.0	6962562
Dissolved Chloride (Cl-)	mg/L	2.0	2.1	1.0	6963453
Nitrite (N)	mg/L	<0.010	<0.010	0.010	6962606
Nitrate (N)	mg/L	<0.10	<0.10	0.10	6962606
Nitrate + Nitrite (N)	mg/L	<0.10	<0.10	0.10	6962606
<b>Metals</b>					
Dissolved Aluminum (Al)	ug/L	<4.9	<4.9	4.9	6963248
Dissolved Antimony (Sb)	ug/L	<0.50	<0.50	0.50	6963248
Dissolved Arsenic (As)	ug/L	<1.0	<1.0	1.0	6963248
Dissolved Barium (Ba)	ug/L	41	41	2.0	6963248
Dissolved Beryllium (Be)	ug/L	<0.40	<0.40	0.40	6963248
Dissolved Boron (B)	ug/L	62	64	10	6963248
Dissolved Cadmium (Cd)	ug/L	<0.090	<0.090	0.090	6963248
Dissolved Calcium (Ca)	ug/L	83000	86000	200	6963248
Dissolved Chromium (Cr)	ug/L	<5.0	<5.0	5.0	6963248
Dissolved Cobalt (Co)	ug/L	<0.50	<0.50	0.50	6963248
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable					



**RCAP - COMPREHENSIVE (LAB FILTERED)**

BV Labs ID		NRV486	NRV487		
Sampling Date		2020/09/21 08:40	2020/09/21 14:10		
COC Number		610131-06-01	610131-06-01		
	UNITS	PW2(START)	PW2(END)	RDL	QC Batch
Dissolved Copper (Cu)	ug/L	<0.90	<0.90	0.90	6963248
Dissolved Iron (Fe)	ug/L	<100	<100	100	6963248
Dissolved Lead (Pb)	ug/L	<0.50	<0.50	0.50	6963248
Dissolved Magnesium (Mg)	ug/L	30000	31000	50	6963248
Dissolved Manganese (Mn)	ug/L	20	16	2.0	6963248
Dissolved Molybdenum (Mo)	ug/L	3.5	3.6	0.50	6963248
Dissolved Nickel (Ni)	ug/L	<1.0	<1.0	1.0	6963248
Dissolved Phosphorus (P)	ug/L	110	110	100	6963248
Dissolved Potassium (K)	ug/L	830	860	200	6963248
Dissolved Selenium (Se)	ug/L	<2.0	<2.0	2.0	6963248
Dissolved Silicon (Si)	ug/L	5200	5400	50	6963248
Dissolved Silver (Ag)	ug/L	<0.090	<0.090	0.090	6963248
Dissolved Sodium (Na)	ug/L	31000	32000	100	6963248
Dissolved Strontium (Sr)	ug/L	2300	2400	1.0	6963248
Dissolved Thallium (Tl)	ug/L	<0.050	<0.050	0.050	6963248
Dissolved Titanium (Ti)	ug/L	<5.0	<5.0	5.0	6963248
Dissolved Uranium (U)	ug/L	<0.10	<0.10	0.10	6963248
Dissolved Vanadium (V)	ug/L	<0.50	<0.50	0.50	6963248
Dissolved Zinc (Zn)	ug/L	<5.0	<5.0	5.0	6963248
RDL = Reportable Detection Limit QC Batch = Quality Control Batch					



BUREAU  
VERITAS

BV Labs Job #: CO06959  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		NRV486		NRV487	NRV487		
Sampling Date		2020/09/21 08:40		2020/09/21 14:10	2020/09/21 14:10		
COC Number		610131-06-01		610131-06-01	610131-06-01		
	UNITS	PW2(START)	QC Batch	PW2(END)	PW2(END) Lab-Dup	RDL	QC Batch
<b>Metals</b>							
Total Aluminum (Al)	ug/L	24	6968422	<4.9	<4.9	4.9	6967425
Total Antimony (Sb)	ug/L	<0.50	6968422	<0.50	<0.50	0.50	6967425
Total Arsenic (As)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6967425
Total Barium (Ba)	ug/L	44	6968422	44	44	2.0	6967425
Total Beryllium (Be)	ug/L	<0.40	6968422	<0.40	<0.40	0.40	6967425
Total Bismuth (Bi)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6967425
Total Boron (B)	ug/L	71	6968422	66	66	10	6967425
Total Cadmium (Cd)	ug/L	<0.090	6968422	<0.090	<0.090	0.090	6967425
Total Calcium (Ca)	ug/L	82000	6968422	87000	88000	200	6967425
Total Chromium (Cr)	ug/L	<5.0	6968422	<5.0	<5.0	5.0	6967425
Total Cobalt (Co)	ug/L	<0.50	6968422	<0.50	<0.50	0.50	6967425
Total Copper (Cu)	ug/L	<0.90	6968422	<0.90	<0.90	0.90	6967425
Total Iron (Fe)	ug/L	1300	6968422	1300	1300	100	6967425
Total Lead (Pb)	ug/L	<0.50	6968422	<0.50	<0.50	0.50	6967425
Total Lithium (Li)	ug/L	14	6968422	15	14	5.0	6967425
Total Magnesium (Mg)	ug/L	30000	6968422	30000	31000	50	6967425
Total Manganese (Mn)	ug/L	19	6968422	17	17	2.0	6967425
Total Molybdenum (Mo)	ug/L	3.6	6968422	3.5	3.6	0.50	6967425
Total Nickel (Ni)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6967425
Total Potassium (K)	ug/L	840	6968422	880	880	200	6967425
Total Selenium (Se)	ug/L	<2.0	6968422	<2.0	<2.0	2.0	6967425
Total Silicon (Si)	ug/L	5400	6968422	5200	5200	50	6967425
Total Silver (Ag)	ug/L	<0.090	6968422	<0.090	<0.090	0.090	6967425
Total Sodium (Na)	ug/L	31000	6968422	31000	31000	100	6967425
Total Strontium (Sr)	ug/L	2300	6968422	2500	2500	1.0	6967425
Total Tellurium (Te)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6967425
Total Thallium (Tl)	ug/L	<0.050	6968422	<0.050	<0.050	0.050	6967425
Total Tin (Sn)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6967425
Total Titanium (Ti)	ug/L	<5.0	6968422	<5.0	<5.0	5.0	6967425
Total Tungsten (W)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6967425
Total Uranium (U)	ug/L	<0.10	6968422	<0.10	<0.10	0.10	6967425
Total Vanadium (V)	ug/L	<0.50	6968422	<0.50	<0.50	0.50	6967425
Total Zinc (Zn)	ug/L	<5.0	6968422	<5.0	<5.0	5.0	6967425
Total Zirconium (Zr)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6967425
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BUREAU  
VERITAS

BV Labs Job #: COO6959  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

### MICROBIOLOGY (WATER)

BV Labs ID		NRV486	NRV487	
Sampling Date		2020/09/21 08:40	2020/09/21 14:10	
COC Number		610131-06-01	610131-06-01	
	UNITS	PW2(START)	PW2(END)	QC Batch
<b>Microbiological</b>				
Background	CFU/100mL	3	1	6960841
Total Coliforms	CFU/100mL	0	0	6960841
Escherichia coli	CFU/100mL	0	0	6960841
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

BV Labs Job #: CO06959  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

### TEST SUMMARY

**BV Labs ID:** NRV486  
**Sample ID:** PW2(START)  
**Matrix:** Water

**Collected:** 2020/09/21  
**Shipped:**  
**Received:** 2020/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6962562	N/A	2020/09/24	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6959797	N/A	2020/09/25	Automated Statchk
Chloride by Automated Colourimetry	KONE	6963453	N/A	2020/09/30	Deonarine Ramnarine
Conductivity	AT	6962567	N/A	2020/09/24	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6965785	N/A	2020/09/25	Nimarta Singh
Hardness (calculated as CaCO3)		6959981	N/A	2020/09/25	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	6963248	2020/09/24	2020/09/25	Arefa Dabhad
Total Metals Analysis by ICPMS	ICP/MS	6968422	N/A	2020/09/28	Daniel Teclu
Ion Balance (% Difference)	CALC	6960321	N/A	2020/09/30	Automated Statchk
Anion and Cation Sum	CALC	6960325	N/A	2020/09/25	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	6960841	N/A	2020/09/23	Sirimathie Aluthwala
Total Ammonia-N	LACH/NH4	6963220	N/A	2020/09/28	Alina Dobreanu
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6962606	N/A	2020/09/25	Amanpreet Sappal
pH	AT	6962570	2020/09/24	2020/09/24	Surinder Rai
Orthophosphate	KONE	6963459	N/A	2020/10/02	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	6960328	N/A	2020/09/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	6960331	N/A	2020/09/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	6963457	N/A	2020/09/30	Deonarine Ramnarine
Total Dissolved Solids (TDS calc)	CALC	6960334	N/A	2020/09/30	Automated Statchk

**BV Labs ID:** NRV487  
**Sample ID:** PW2(END)  
**Matrix:** Water

**Collected:** 2020/09/21  
**Shipped:**  
**Received:** 2020/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6962562	N/A	2020/09/24	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6959797	N/A	2020/09/25	Automated Statchk
Chloride by Automated Colourimetry	KONE	6963453	N/A	2020/09/30	Deonarine Ramnarine
Conductivity	AT	6962567	N/A	2020/09/24	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6965785	N/A	2020/09/25	Nimarta Singh
Hardness (calculated as CaCO3)		6959981	N/A	2020/09/25	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	6963248	2020/09/24	2020/09/25	Arefa Dabhad
Total Metals Analysis by ICPMS	ICP/MS	6967425	N/A	2020/09/28	Arefa Dabhad
Ion Balance (% Difference)	CALC	6960321	N/A	2020/09/30	Automated Statchk
Anion and Cation Sum	CALC	6960325	N/A	2020/09/25	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	6960841	N/A	2020/09/23	Sirimathie Aluthwala
Total Ammonia-N	LACH/NH4	6963220	N/A	2020/09/28	Alina Dobreanu
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6962606	N/A	2020/09/25	Amanpreet Sappal
pH	AT	6962570	2020/09/24	2020/09/24	Surinder Rai
Orthophosphate	KONE	6963459	N/A	2020/10/02	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	6960328	N/A	2020/09/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	6960331	N/A	2020/09/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	6963457	N/A	2020/09/30	Deonarine Ramnarine
Total Dissolved Solids (TDS calc)	CALC	6960334	N/A	2020/09/30	Automated Statchk



BUREAU  
VERITAS

BV Labs Job #: COO6959  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

### TEST SUMMARY

**BV Labs ID:** NRV487 Dup  
**Sample ID:** PW2(END)  
**Matrix:** Water

**Collected:** 2020/09/21  
**Shipped:**  
**Received:** 2020/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Metals Analysis by ICPMS	ICP/MS	6967425	N/A	2020/09/28	Arefa Dabhad



**BUREAU  
VERITAS**

BV Labs Job #: COO6959  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

### GENERAL COMMENTS

**Results relate only to the items tested.**



BUREAU  
VERITAS

BV Labs Job #: C006959  
Report Date: 2020/10/02

### QUALITY ASSURANCE REPORT

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6962562	Alkalinity (Total as CaCO3)	2020/09/24			97	85 - 115	<1.0	mg/L	2.0	20
6962567	Conductivity	2020/09/24			102	85 - 115	<1.0	umho/cm	3.7	25
6962570	pH	2020/09/24			101	98 - 103			0.42	N/A
6962606	Nitrate (N)	2020/09/25	95	80 - 120	96	80 - 120	<0.10	mg/L	0.30	20
6962606	Nitrite (N)	2020/09/25	98	80 - 120	101	80 - 120	<0.010	mg/L	NC	20
6963220	Total Ammonia-N	2020/09/28	99	75 - 125	99	80 - 120	<0.050	mg/L	NC	20
6963248	Dissolved Aluminum (Al)	2020/09/25	97	80 - 120	99	80 - 120	<4.9	ug/L		
6963248	Dissolved Antimony (Sb)	2020/09/25	100	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
6963248	Dissolved Arsenic (As)	2020/09/25	96	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
6963248	Dissolved Barium (Ba)	2020/09/25	95	80 - 120	96	80 - 120	<2.0	ug/L	2.2	20
6963248	Dissolved Beryllium (Be)	2020/09/25	94	80 - 120	94	80 - 120	<0.40	ug/L	NC	20
6963248	Dissolved Boron (B)	2020/09/25	89	80 - 120	91	80 - 120	<10	ug/L	0.49	20
6963248	Dissolved Cadmium (Cd)	2020/09/25	99	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
6963248	Dissolved Calcium (Ca)	2020/09/25	NC	80 - 120	97	80 - 120	<200	ug/L		
6963248	Dissolved Chromium (Cr)	2020/09/25	93	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
6963248	Dissolved Cobalt (Co)	2020/09/25	94	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
6963248	Dissolved Copper (Cu)	2020/09/25	95	80 - 120	96	80 - 120	<0.90	ug/L	9.7	20
6963248	Dissolved Iron (Fe)	2020/09/25	94	80 - 120	97	80 - 120	<100	ug/L		
6963248	Dissolved Lead (Pb)	2020/09/25	95	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
6963248	Dissolved Magnesium (Mg)	2020/09/25	NC	80 - 120	99	80 - 120	<50	ug/L		
6963248	Dissolved Manganese (Mn)	2020/09/25	94	80 - 120	98	80 - 120	<2.0	ug/L		
6963248	Dissolved Molybdenum (Mo)	2020/09/25	95	80 - 120	93	80 - 120	<0.50	ug/L	5.6	20
6963248	Dissolved Nickel (Ni)	2020/09/25	92	80 - 120	98	80 - 120	<1.0	ug/L	5.4	20
6963248	Dissolved Phosphorus (P)	2020/09/25	96	80 - 120	113	80 - 120	<100	ug/L		
6963248	Dissolved Potassium (K)	2020/09/25	97	80 - 120	100	80 - 120	<200	ug/L		
6963248	Dissolved Selenium (Se)	2020/09/25	96	80 - 120	99	80 - 120	<2.0	ug/L	NC	20
6963248	Dissolved Silicon (Si)	2020/09/25	94	80 - 120	97	80 - 120	<50	ug/L		
6963248	Dissolved Silver (Ag)	2020/09/25	90	80 - 120	93	80 - 120	<0.090	ug/L	NC	20
6963248	Dissolved Sodium (Na)	2020/09/25	NC	80 - 120	100	80 - 120	<100	ug/L	1.8	20
6963248	Dissolved Strontium (Sr)	2020/09/25	93	80 - 120	95	80 - 120	<1.0	ug/L		
6963248	Dissolved Thallium (Tl)	2020/09/25	99	80 - 120	100	80 - 120	<0.050	ug/L	NC	20



BUREAU  
VERITAS

BV Labs Job #: C006959  
Report Date: 2020/10/02

### QUALITY ASSURANCE REPORT(CONT'D)

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6963248	Dissolved Titanium (Ti)	2020/09/25	97	80 - 120	97	80 - 120	<5.0	ug/L		
6963248	Dissolved Uranium (U)	2020/09/25	98	80 - 120	97	80 - 120	<0.10	ug/L	0.93	20
6963248	Dissolved Vanadium (V)	2020/09/25	91	80 - 120	95	80 - 120	<0.50	ug/L	2.9	20
6963248	Dissolved Zinc (Zn)	2020/09/25	94	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
6963453	Dissolved Chloride (Cl-)	2020/09/30	121 (1)	80 - 120	104	80 - 120	<1.0	mg/L	8.1	20
6963457	Dissolved Sulphate (SO4)	2020/09/30	NC	75 - 125	104	80 - 120	<1.0	mg/L	2.2	20
6963459	Orthophosphate (P)	2020/10/02	116	75 - 125	102	80 - 120	<0.010	mg/L	3.2	25
6965785	Dissolved Organic Carbon	2020/09/25	97	80 - 120	100	80 - 120	<0.40	mg/L	5.4	20
6967425	Total Aluminum (Al)	2020/09/28	96	80 - 120	100	80 - 120	<4.9	ug/L	NC	20
6967425	Total Antimony (Sb)	2020/09/28	105	80 - 120	105	80 - 120	<0.50	ug/L	NC	20
6967425	Total Arsenic (As)	2020/09/28	103	80 - 120	104	80 - 120	<1.0	ug/L	NC	20
6967425	Total Barium (Ba)	2020/09/28	100	80 - 120	100	80 - 120	<2.0	ug/L	0.93	20
6967425	Total Beryllium (Be)	2020/09/28	95	80 - 120	96	80 - 120	<0.40	ug/L	NC	20
6967425	Total Bismuth (Bi)	2020/09/28	97	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
6967425	Total Boron (B)	2020/09/28	92	80 - 120	93	80 - 120	<10	ug/L	0.95	20
6967425	Total Cadmium (Cd)	2020/09/28	100	80 - 120	100	80 - 120	<0.090	ug/L	NC	20
6967425	Total Calcium (Ca)	2020/09/28	NC	80 - 120	101	80 - 120	<200	ug/L	1.7	20
6967425	Total Chromium (Cr)	2020/09/28	95	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
6967425	Total Cobalt (Co)	2020/09/28	99	80 - 120	100	80 - 120	<0.50	ug/L	NC	20
6967425	Total Copper (Cu)	2020/09/28	92	80 - 120	94	80 - 120	<0.90	ug/L	NC	20
6967425	Total Iron (Fe)	2020/09/28	101	80 - 120	100	80 - 120	<100	ug/L	0.036	20
6967425	Total Lead (Pb)	2020/09/28	98	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
6967425	Total Lithium (Li)	2020/09/28	103	80 - 120	112	80 - 120	<5.0	ug/L	2.8	20
6967425	Total Magnesium (Mg)	2020/09/28	NC	80 - 120	102	80 - 120	<50	ug/L	1.7	20
6967425	Total Manganese (Mn)	2020/09/28	97	80 - 120	98	80 - 120	<2.0	ug/L	1.6	20
6967425	Total Molybdenum (Mo)	2020/09/28	98	80 - 120	96	80 - 120	<0.50	ug/L	1.3	20
6967425	Total Nickel (Ni)	2020/09/28	95	80 - 120	96	80 - 120	<1.0	ug/L	NC	20
6967425	Total Potassium (K)	2020/09/28	102	80 - 120	104	80 - 120	<200	ug/L	0.62	20
6967425	Total Selenium (Se)	2020/09/28	103	80 - 120	104	80 - 120	<2.0	ug/L	NC	20
6967425	Total Silicon (Si)	2020/09/28	97	80 - 120	98	80 - 120	<50	ug/L	0.90	20
6967425	Total Silver (Ag)	2020/09/28	96	80 - 120	96	80 - 120	<0.090	ug/L	NC	20



BUREAU  
VERITAS

BV Labs Job #: C006959  
Report Date: 2020/10/02

### QUALITY ASSURANCE REPORT(CONT'D)

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6967425	Total Sodium (Na)	2020/09/28	NC	80 - 120	100	80 - 120	<100	ug/L	0.85	20
6967425	Total Strontium (Sr)	2020/09/28	NC	80 - 120	100	80 - 120	<1.0	ug/L	2.3	20
6967425	Total Tellurium (Te)	2020/09/28	103	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
6967425	Total Thallium (Tl)	2020/09/28	100	80 - 120	99	80 - 120	<0.050	ug/L	NC	20
6967425	Total Tin (Sn)	2020/09/28	103	80 - 120	103	80 - 120	<1.0	ug/L	NC	20
6967425	Total Titanium (Ti)	2020/09/28	97	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
6967425	Total Tungsten (W)	2020/09/28	100	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
6967425	Total Uranium (U)	2020/09/28	102	80 - 120	101	80 - 120	<0.10	ug/L	NC	20
6967425	Total Vanadium (V)	2020/09/28	99	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
6967425	Total Zinc (Zn)	2020/09/28	100	80 - 120	102	80 - 120	<5.0	ug/L	NC	20
6967425	Total Zirconium (Zr)	2020/09/28	101	80 - 120	102	80 - 120	<1.0	ug/L	NC	20
6968422	Total Aluminum (Al)	2020/09/28	115	80 - 120	93	80 - 120	<4.9	ug/L	10	20
6968422	Total Antimony (Sb)	2020/09/28	99	80 - 120	95	80 - 120	<0.50	ug/L	9.2	20
6968422	Total Arsenic (As)	2020/09/28	99	80 - 120	95	80 - 120	<1.0	ug/L	7.9	20
6968422	Total Barium (Ba)	2020/09/28	97	80 - 120	92	80 - 120	<2.0	ug/L	10	20
6968422	Total Beryllium (Be)	2020/09/28	104	80 - 120	93	80 - 120	<0.40	ug/L	NC	20
6968422	Total Bismuth (Bi)	2020/09/28	91	80 - 120	94	80 - 120	<1.0	ug/L	NC	20
6968422	Total Boron (B)	2020/09/28	NC	80 - 120	91	80 - 120	<10	ug/L	1.1	20
6968422	Total Cadmium (Cd)	2020/09/28	95	80 - 120	95	80 - 120	<0.090	ug/L	8.2	20
6968422	Total Calcium (Ca)	2020/09/28	102	80 - 120	91	80 - 120	<200	ug/L	5.3	20
6968422	Total Chromium (Cr)	2020/09/28	95	80 - 120	89	80 - 120	<5.0	ug/L	9.0	20
6968422	Total Cobalt (Co)	2020/09/28	93	80 - 120	92	80 - 120	<0.50	ug/L	6.8	20
6968422	Total Copper (Cu)	2020/09/28	98	80 - 120	91	80 - 120	<0.90	ug/L	4.2	20
6968422	Total Iron (Fe)	2020/09/28	94	80 - 120	91	80 - 120	<100	ug/L	20	20
6968422	Total Lead (Pb)	2020/09/28	90	80 - 120	92	80 - 120	<0.50	ug/L	5.8	20
6968422	Total Lithium (Li)	2020/09/28	105	80 - 120	92	80 - 120	<5.0	ug/L	1.8	20
6968422	Total Magnesium (Mg)	2020/09/28	99	80 - 120	92	80 - 120	<50	ug/L	1.9	20
6968422	Total Manganese (Mn)	2020/09/28	94	80 - 120	90	80 - 120	<2.0	ug/L	4.6	20
6968422	Total Molybdenum (Mo)	2020/09/28	99	80 - 120	93	80 - 120	<0.50	ug/L	0.24	20
6968422	Total Nickel (Ni)	2020/09/28	91	80 - 120	92	80 - 120	<1.0	ug/L	4.2	20
6968422	Total Potassium (K)	2020/09/28	NC	80 - 120	93	80 - 120	<200	ug/L	1.3	20



BUREAU  
VERITAS

BV Labs Job #: C006959  
Report Date: 2020/10/02

### QUALITY ASSURANCE REPORT(CONT'D)

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: AN

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6968422	Total Selenium (Se)	2020/09/28	98	80 - 120	99	80 - 120	<2.0	ug/L	NC	20
6968422	Total Silicon (Si)	2020/09/28	105	80 - 120	93	80 - 120	<50	ug/L	5.3	20
6968422	Total Silver (Ag)	2020/09/28	90	80 - 120	94	80 - 120	<0.090	ug/L	NC	20
6968422	Total Sodium (Na)	2020/09/28	NC	80 - 120	93	80 - 120	<100	ug/L	0.42	20
6968422	Total Strontium (Sr)	2020/09/28	91	80 - 120	88	80 - 120	<1.0	ug/L	1.9	20
6968422	Total Tellurium (Te)	2020/09/28	98	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
6968422	Total Thallium (Tl)	2020/09/28	94	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
6968422	Total Tin (Sn)	2020/09/28	98	80 - 120	94	80 - 120	<1.0	ug/L	NC	20
6968422	Total Titanium (Ti)	2020/09/28	100	80 - 120	92	80 - 120	<5.0	ug/L	40 (1)	20
6968422	Total Tungsten (W)	2020/09/28	95	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
6968422	Total Uranium (U)	2020/09/28	95	80 - 120	96	80 - 120	<0.10	ug/L	0.85	20
6968422	Total Vanadium (V)	2020/09/28	100	80 - 120	93	80 - 120	<0.50	ug/L	2.6	20
6968422	Total Zinc (Zn)	2020/09/28	92	80 - 120	96	80 - 120	<5.0	ug/L	2.6	20
6968422	Total Zirconium (Zr)	2020/09/28	101	80 - 120	96	80 - 120	<1.0	ug/L	19	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU  
VERITAS

BV Labs Job #: C006959

Report Date: 2020/10/02

GM BluePlan Engineering Limited

Client Project #: 317033-2

Sampler Initials: AN

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

\_\_\_\_\_  
Anastassia Hamanov, Scientific Specialist

\_\_\_\_\_  
Sirimathie Aluthwala, Campobello Micro

---

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



Your Project #: 317033-2  
 Your C.O.C. #: 610131-05-01

**Attention: Reporting Contacts**

GM BluePlan Engineering Limited  
 1260 - 2nd Ave E  
 Unit 1  
 Owen Sound, ON  
 CANADA N4K 2J3

**Report Date: 2020/10/02**  
 Report #: R6355275  
 Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: C006954**

**Received: 2020/09/23, 09:50**

Sample Matrix: Water  
 # Samples Received: 2

<b>Analyses</b>	<b>Quantity</b>	<b>Date Extracted</b>	<b>Date Analyzed</b>	<b>Laboratory Method</b>	<b>Analytical Method</b>
Alkalinity	1	N/A	2020/09/24	CAM SOP-00448	SM 23 2320 B m
Alkalinity	1	N/A	2020/09/25	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	1	N/A	2020/09/25	CAM SOP-00102	APHA 4500-CO2 D
Carbonate, Bicarbonate and Hydroxide	1	N/A	2020/09/28	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	2	N/A	2020/09/30	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	1	N/A	2020/09/24	CAM SOP-00414	SM 23 2510 m
Conductivity	1	N/A	2020/09/25	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2020/09/25	CAM SOP-00446	SM 23 5310 B m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2020/09/26	CAM SOP-00446	SM 23 5310 B m
Hardness (calculated as CaCO3)	2	N/A	2020/09/25	CAM SOP 00102/00408/00447	SM 2340 B
Lab Filtered Metals by ICPMS	2	2020/09/24	2020/09/25	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS	1	N/A	2020/09/25	CAM SOP-00447	EPA 6020B m
Total Metals Analysis by ICPMS	1	N/A	2020/09/28	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	2	N/A	2020/09/30		
Anion and Cation Sum	1	N/A	2020/09/25		
Anion and Cation Sum	1	N/A	2020/09/28		
Total Coliforms/ E. coli, CFU/100mL	2	N/A	2020/09/23	CAM SOP-00551	MOE E3407
Total Ammonia-N	2	N/A	2020/09/28	CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (2)	2	N/A	2020/09/25	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	1	2020/09/24	2020/09/24	CAM SOP-00413	SM 4500H+ B m
pH	1	2020/09/24	2020/09/25	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	2	N/A	2020/10/02	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	2	N/A	2020/09/30		Auto Calc
Sat. pH and Langelier Index (@ 4C)	2	N/A	2020/09/30		Auto Calc
Sulphate by Automated Colourimetry	2	N/A	2020/09/30	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	2	N/A	2020/09/30		Auto Calc

**Remarks:**

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used



Your Project #: 317033-2  
Your C.O.C. #: 610131-05-01

**Attention: Reporting Contacts**

GM BluePlan Engineering Limited  
1260 - 2nd Ave E  
Unit 1  
Owen Sound, ON  
CANADA N4K 2J3

**Report Date: 2020/10/02**  
Report #: R6355275  
Version: 1 - Final

**CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: C006954**

**Received: 2020/09/23, 09:50**

by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

This Certificate shall not be reproduced except in full, without the written approval of the laboratory.

Reference Method suffix "m" indicates test methods incorporate validated modifications from specific reference methods to improve performance.

\* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(2) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

**Encryption Key**

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ashton Gibson, Project Manager  
Email: Ashton.Gibson@bvlab.com  
Phone# (905)817-5765

=====  
This report has been generated and distributed using a secure automated process.

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.



**RCAP - COMPREHENSIVE (LAB FILTERED)**

BV Labs ID		NRV471			NRV471			NRV472		
Sampling Date		2020/09/22 08:35			2020/09/22 08:35			2020/09/22 13:40		
COC Number		610131-05-01			610131-05-01			610131-05-01		
	UNITS	PW-3(START)	RDL	QC Batch	PW-3(START) Lab-Dup	RDL	QC Batch	PW-3(END)	RDL	QC Batch
<b>Calculated Parameters</b>										
Anion Sum	me/L	8.08	N/A	6960325				8.09	N/A	6960325
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	200	1.0	6959797				200	1.0	6959797
Calculated TDS	mg/L	470	1.0	6960334				470	1.0	6960334
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.0	1.0	6959797				2.4	1.0	6959797
Cation Sum	me/L	7.72	N/A	6960325				7.76	N/A	6960325
Hardness (CaCO3)	mg/L	310	1.0	6959981				320	1.0	6959981
Ion Balance (% Difference)	%	2.27	N/A	6960321				2.06	N/A	6960321
Langelier Index (@ 20C)	N/A	0.763		6960328				0.851		6960328
Langelier Index (@ 4C)	N/A	0.514		6960331				0.603		6960331
Saturation pH (@ 20C)	N/A	7.25		6960328				7.25		6960328
Saturation pH (@ 4C)	N/A	7.50		6960331				7.49		6960331
<b>Inorganics</b>										
Total Ammonia-N	mg/L	0.52	0.050	6963220				0.53	0.050	6963220
Conductivity	umho/cm	730	1.0	6962567				680	1.0	6962588
Dissolved Organic Carbon	mg/L	1.3	0.40	6965785				1.3	0.40	6965777
Orthophosphate (P)	mg/L	0.011	0.010	6963459	0.012	0.010	6963459	<0.010	0.010	6963459
pH	pH	8.02		6962570				8.10		6962590
Dissolved Sulphate (SO4)	mg/L	190	1.0	6963457	180	1.0	6963457	190	1.0	6963457
Alkalinity (Total as CaCO3)	mg/L	210	1.0	6962562				210	1.0	6962573
Dissolved Chloride (Cl-)	mg/L	2.2	1.0	6963453	2.0	1.0	6963453	2.2	1.0	6963453
Nitrite (N)	mg/L	<0.010	0.010	6962606				<0.010	0.010	6962606
Nitrate (N)	mg/L	<0.10	0.10	6962606				<0.10	0.10	6962606
Nitrate + Nitrite (N)	mg/L	<0.10	0.10	6962606				<0.10	0.10	6962606
<b>Metals</b>										
Dissolved Aluminum (Al)	ug/L	<4.9	4.9	6963248				<4.9	4.9	6963248
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	6963248				<0.50	0.50	6963248
Dissolved Arsenic (As)	ug/L	<1.0	1.0	6963248				<1.0	1.0	6963248
Dissolved Barium (Ba)	ug/L	53	2.0	6963248				53	2.0	6963248
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	6963248				<0.40	0.40	6963248
Dissolved Boron (B)	ug/L	61	10	6963248				60	10	6963248
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	6963248				<0.090	0.090	6963248
Dissolved Calcium (Ca)	ug/L	78000	200	6963248				79000	200	6963248
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	6963248				<5.0	5.0	6963248
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable										



BUREAU  
VERITAS

BV Labs Job #: CO06954  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

**RCAP - COMPREHENSIVE (LAB FILTERED)**

BV Labs ID		NRV471			NRV471			NRV472		
Sampling Date		2020/09/22 08:35			2020/09/22 08:35			2020/09/22 13:40		
COC Number		610131-05-01			610131-05-01			610131-05-01		
	UNITS	PW-3(START)	RDL	QC Batch	PW-3(START) Lab-Dup	RDL	QC Batch	PW-3(END)	RDL	QC Batch
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	6963248				<0.50	0.50	6963248
Dissolved Copper (Cu)	ug/L	<0.90	0.90	6963248				<0.90	0.90	6963248
Dissolved Iron (Fe)	ug/L	<100	100	6963248				<100	100	6963248
Dissolved Lead (Pb)	ug/L	<0.50	0.50	6963248				<0.50	0.50	6963248
Dissolved Magnesium (Mg)	ug/L	29000	50	6963248				28000	50	6963248
Dissolved Manganese (Mn)	ug/L	17	2.0	6963248				15	2.0	6963248
Dissolved Molybdenum (Mo)	ug/L	3.6	0.50	6963248				3.8	0.50	6963248
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	6963248				<1.0	1.0	6963248
Dissolved Phosphorus (P)	ug/L	120	100	6963248				130	100	6963248
Dissolved Potassium (K)	ug/L	890	200	6963248				870	200	6963248
Dissolved Selenium (Se)	ug/L	<2.0	2.0	6963248				<2.0	2.0	6963248
Dissolved Silicon (Si)	ug/L	5200	50	6963248				5100	50	6963248
Dissolved Silver (Ag)	ug/L	<0.090	0.090	6963248				<0.090	0.090	6963248
Dissolved Sodium (Na)	ug/L	32000	100	6963248				32000	100	6963248
Dissolved Strontium (Sr)	ug/L	2000	1.0	6963248				1900	1.0	6963248
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	6963248				<0.050	0.050	6963248
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	6963248				<5.0	5.0	6963248
Dissolved Uranium (U)	ug/L	<0.10	0.10	6963248				<0.10	0.10	6963248
Dissolved Vanadium (V)	ug/L	<0.50	0.50	6963248				<0.50	0.50	6963248
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	6963248				<5.0	5.0	6963248

RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch  
Lab-Dup = Laboratory Initiated Duplicate

BV Labs ID		NRV472		
Sampling Date		2020/09/22 13:40		
COC Number		610131-05-01		
	UNITS	PW-3(END) Lab-Dup	RDL	QC Batch

Inorganics				
Conductivity	umho/cm	710	1.0	6962588
pH	pH	8.03		6962590
Alkalinity (Total as CaCO3)	mg/L	210	1.0	6962573

RDL = Reportable Detection Limit  
QC Batch = Quality Control Batch  
Lab-Dup = Laboratory Initiated Duplicate



BUREAU  
VERITAS

BV Labs Job #: CO06954  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

### ELEMENTS BY ATOMIC SPECTROSCOPY (WATER)

BV Labs ID		NRV471		NRV472	NRV472		
Sampling Date		2020/09/22 08:35		2020/09/22 13:40	2020/09/22 13:40		
COC Number		610131-05-01		610131-05-01	610131-05-01		
	UNITS	PW-3(START)	QC Batch	PW-3(END)	PW-3(END) Lab-Dup	RDL	QC Batch
<b>Metals</b>							
Total Aluminum (Al)	ug/L	950	6968422	35	37	4.9	6965248
Total Antimony (Sb)	ug/L	<0.50	6968422	<0.50	<0.50	0.50	6965248
Total Arsenic (As)	ug/L	1.0	6968422	<1.0	<1.0	1.0	6965248
Total Barium (Ba)	ug/L	63	6968422	52	55	2.0	6965248
Total Beryllium (Be)	ug/L	<0.40	6968422	<0.40	<0.40	0.40	6965248
Total Bismuth (Bi)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6965248
Total Boron (B)	ug/L	73	6968422	74	70	10	6965248
Total Cadmium (Cd)	ug/L	<0.090	6968422	<0.090	<0.090	0.090	6965248
Total Calcium (Ca)	ug/L	91000	6968422	82000	78000	200	6965248
Total Chromium (Cr)	ug/L	<5.0	6968422	<5.0	<5.0	5.0	6965248
Total Cobalt (Co)	ug/L	0.55	6968422	<0.50	<0.50	0.50	6965248
Total Copper (Cu)	ug/L	1.9	6968422	<0.90	<0.90	0.90	6965248
Total Iron (Fe)	ug/L	2500	6968422	1300	1300	100	6965248
Total Lead (Pb)	ug/L	0.93	6968422	<0.50	<0.50	0.50	6965248
Total Lithium (Li)	ug/L	13	6968422	9.5	9.5	5.0	6965248
Total Magnesium (Mg)	ug/L	34000	6968422	29000	29000	50	6965248
Total Manganese (Mn)	ug/L	35	6968422	16	15	2.0	6965248
Total Molybdenum (Mo)	ug/L	3.9	6968422	3.9	4.0	0.50	6965248
Total Nickel (Ni)	ug/L	1.9	6968422	<1.0	<1.0	1.0	6965248
Total Potassium (K)	ug/L	1300	6968422	900	890	200	6965248
Total Selenium (Se)	ug/L	<2.0	6968422	<2.0	<2.0	2.0	6965248
Total Silicon (Si)	ug/L	7300	6968422	5300	5200	50	6965248
Total Silver (Ag)	ug/L	<0.090	6968422	<0.090	<0.090	0.090	6965248
Total Sodium (Na)	ug/L	33000	6968422	32000	32000	100	6965248
Total Strontium (Sr)	ug/L	2000	6968422	1800	1800	1.0	6965248
Total Tellurium (Te)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6965248
Total Thallium (Tl)	ug/L	<0.050	6968422	<0.050	<0.050	0.050	6965248
Total Tin (Sn)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6965248
Total Titanium (Ti)	ug/L	41	6968422	<5.0	<5.0	5.0	6965248
Total Tungsten (W)	ug/L	<1.0	6968422	<1.0	<1.0	1.0	6965248
Total Uranium (U)	ug/L	0.13	6968422	<0.10	<0.10	0.10	6965248
Total Vanadium (V)	ug/L	1.8	6968422	<0.50	<0.50	0.50	6965248
Total Zinc (Zn)	ug/L	<5.0	6968422	<5.0	<5.0	5.0	6965248
Total Zirconium (Zr)	ug/L	1.1	6968422	<1.0	<1.0	1.0	6965248
RDL = Reportable Detection Limit							
QC Batch = Quality Control Batch							
Lab-Dup = Laboratory Initiated Duplicate							



BUREAU  
VERITAS

BV Labs Job #: COO6954  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

### MICROBIOLOGY (WATER)

<b>BV Labs ID</b>		NRV471	NRV472	
<b>Sampling Date</b>		2020/09/22 08:35	2020/09/22 13:40	
<b>COC Number</b>		610131-05-01	610131-05-01	
	<b>UNITS</b>	<b>PW-3(START)</b>	<b>PW-3(END)</b>	<b>QC Batch</b>
<b>Microbiological</b>				
Background	CFU/100mL	8	0	6960440
Total Coliforms	CFU/100mL	0	0	6960440
Escherichia coli	CFU/100mL	0	0	6960440
QC Batch = Quality Control Batch				



BUREAU  
VERITAS

BV Labs Job #: CO06954  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

### TEST SUMMARY

**BV Labs ID:** NRV471  
**Sample ID:** PW-3(START)  
**Matrix:** Water

**Collected:** 2020/09/22  
**Shipped:**  
**Received:** 2020/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6962562	N/A	2020/09/24	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6959797	N/A	2020/09/25	Automated Statchk
Chloride by Automated Colourimetry	KONE	6963453	N/A	2020/09/30	Deonarine Ramnarine
Conductivity	AT	6962567	N/A	2020/09/24	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6965785	N/A	2020/09/25	Nimarta Singh
Hardness (calculated as CaCO3)		6959981	N/A	2020/09/25	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	6963248	2020/09/24	2020/09/25	Arefa Dabhad
Total Metals Analysis by ICPMS	ICP/MS	6968422	N/A	2020/09/28	Daniel Teclu
Ion Balance (% Difference)	CALC	6960321	N/A	2020/09/30	Automated Statchk
Anion and Cation Sum	CALC	6960325	N/A	2020/09/25	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	6960440	N/A	2020/09/23	Sirimathie Aluthwala
Total Ammonia-N	LACH/NH4	6963220	N/A	2020/09/28	Alina Dobreanu
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6962606	N/A	2020/09/25	Amanpreet Sappal
pH	AT	6962570	2020/09/24	2020/09/24	Surinder Rai
Orthophosphate	KONE	6963459	N/A	2020/10/02	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	6960328	N/A	2020/09/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	6960331	N/A	2020/09/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	6963457	N/A	2020/09/30	Deonarine Ramnarine
Total Dissolved Solids (TDS calc)	CALC	6960334	N/A	2020/09/30	Automated Statchk

**BV Labs ID:** NRV471 Dup  
**Sample ID:** PW-3(START)  
**Matrix:** Water

**Collected:** 2020/09/22  
**Shipped:**  
**Received:** 2020/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Chloride by Automated Colourimetry	KONE	6963453	N/A	2020/09/30	Deonarine Ramnarine
Orthophosphate	KONE	6963459	N/A	2020/10/02	Alina Dobreanu
Sulphate by Automated Colourimetry	KONE	6963457	N/A	2020/09/30	Deonarine Ramnarine

**BV Labs ID:** NRV472  
**Sample ID:** PW-3(END)  
**Matrix:** Water

**Collected:** 2020/09/22  
**Shipped:**  
**Received:** 2020/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6962573	N/A	2020/09/25	Yogesh Patel
Carbonate, Bicarbonate and Hydroxide	CALC	6959797	N/A	2020/09/28	Automated Statchk
Chloride by Automated Colourimetry	KONE	6963453	N/A	2020/09/30	Deonarine Ramnarine
Conductivity	AT	6962588	N/A	2020/09/25	Yogesh Patel
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6965777	N/A	2020/09/26	Nimarta Singh
Hardness (calculated as CaCO3)		6959981	N/A	2020/09/25	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	6963248	2020/09/24	2020/09/25	Arefa Dabhad
Total Metals Analysis by ICPMS	ICP/MS	6965248	N/A	2020/09/25	Azita Fazaali
Ion Balance (% Difference)	CALC	6960321	N/A	2020/09/30	Automated Statchk
Anion and Cation Sum	CALC	6960325	N/A	2020/09/28	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	6960440	N/A	2020/09/23	Sirimathie Aluthwala



BUREAU  
VERITAS

BV Labs Job #: CO06954  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

### TEST SUMMARY

**BV Labs ID:** NRV472  
**Sample ID:** PW-3(END)  
**Matrix:** Water

**Collected:** 2020/09/22  
**Shipped:**  
**Received:** 2020/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Ammonia-N	LACH/NH4	6963220	N/A	2020/09/28	Alina Dobreanu
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6962606	N/A	2020/09/25	Amanpreet Sappal
pH	AT	6962590	2020/09/24	2020/09/25	Yogesh Patel
Orthophosphate	KONE	6963459	N/A	2020/10/02	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	6960328	N/A	2020/09/30	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	6960331	N/A	2020/09/30	Automated Statchk
Sulphate by Automated Colourimetry	KONE	6963457	N/A	2020/09/30	Deonarine Ramnarine
Total Dissolved Solids (TDS calc)	CALC	6960334	N/A	2020/09/30	Automated Statchk

**BV Labs ID:** NRV472 Dup  
**Sample ID:** PW-3(END)  
**Matrix:** Water

**Collected:** 2020/09/22  
**Shipped:**  
**Received:** 2020/09/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6962573	N/A	2020/09/25	Yogesh Patel
Conductivity	AT	6962588	N/A	2020/09/25	Yogesh Patel
Total Metals Analysis by ICPMS	ICP/MS	6965248	N/A	2020/09/25	Azita Fazaeli
pH	AT	6962590	2020/09/24	2020/09/25	Yogesh Patel



**BUREAU  
VERITAS**

BV Labs Job #: COO6954  
Report Date: 2020/10/02

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

### GENERAL COMMENTS

Results relate only to the items tested.



BUREAU  
VERITAS

BV Labs Job #: C006954  
Report Date: 2020/10/02

### QUALITY ASSURANCE REPORT

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6962562	Alkalinity (Total as CaCO3)	2020/09/24			97	85 - 115	<1.0	mg/L	2.0	20
6962567	Conductivity	2020/09/24			102	85 - 115	<1.0	umho/cm	3.7	25
6962570	pH	2020/09/24			101	98 - 103			0.42	N/A
6962573	Alkalinity (Total as CaCO3)	2020/09/25			96	85 - 115	<1.0	mg/L	0.74	20
6962588	Conductivity	2020/09/25			101	85 - 115	<1.0	umho/cm	4.6	25
6962590	pH	2020/09/25			102	98 - 103			0.80	N/A
6962606	Nitrate (N)	2020/09/25	95	80 - 120	96	80 - 120	<0.10	mg/L	0.30	20
6962606	Nitrite (N)	2020/09/25	98	80 - 120	101	80 - 120	<0.010	mg/L	NC	20
6963220	Total Ammonia-N	2020/09/28	99	75 - 125	99	80 - 120	<0.050	mg/L	NC	20
6963248	Dissolved Aluminum (Al)	2020/09/25	97	80 - 120	99	80 - 120	<4.9	ug/L		
6963248	Dissolved Antimony (Sb)	2020/09/25	100	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
6963248	Dissolved Arsenic (As)	2020/09/25	96	80 - 120	100	80 - 120	<1.0	ug/L	NC	20
6963248	Dissolved Barium (Ba)	2020/09/25	95	80 - 120	96	80 - 120	<2.0	ug/L	2.2	20
6963248	Dissolved Beryllium (Be)	2020/09/25	94	80 - 120	94	80 - 120	<0.40	ug/L	NC	20
6963248	Dissolved Boron (B)	2020/09/25	89	80 - 120	91	80 - 120	<10	ug/L	0.49	20
6963248	Dissolved Cadmium (Cd)	2020/09/25	99	80 - 120	98	80 - 120	<0.090	ug/L	NC	20
6963248	Dissolved Calcium (Ca)	2020/09/25	NC	80 - 120	97	80 - 120	<200	ug/L		
6963248	Dissolved Chromium (Cr)	2020/09/25	93	80 - 120	96	80 - 120	<5.0	ug/L	NC	20
6963248	Dissolved Cobalt (Co)	2020/09/25	94	80 - 120	99	80 - 120	<0.50	ug/L	NC	20
6963248	Dissolved Copper (Cu)	2020/09/25	95	80 - 120	96	80 - 120	<0.90	ug/L	9.7	20
6963248	Dissolved Iron (Fe)	2020/09/25	94	80 - 120	97	80 - 120	<100	ug/L		
6963248	Dissolved Lead (Pb)	2020/09/25	95	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
6963248	Dissolved Magnesium (Mg)	2020/09/25	NC	80 - 120	99	80 - 120	<50	ug/L		
6963248	Dissolved Manganese (Mn)	2020/09/25	94	80 - 120	98	80 - 120	<2.0	ug/L		
6963248	Dissolved Molybdenum (Mo)	2020/09/25	95	80 - 120	93	80 - 120	<0.50	ug/L	5.6	20
6963248	Dissolved Nickel (Ni)	2020/09/25	92	80 - 120	98	80 - 120	<1.0	ug/L	5.4	20
6963248	Dissolved Phosphorus (P)	2020/09/25	96	80 - 120	113	80 - 120	<100	ug/L		
6963248	Dissolved Potassium (K)	2020/09/25	97	80 - 120	100	80 - 120	<200	ug/L		
6963248	Dissolved Selenium (Se)	2020/09/25	96	80 - 120	99	80 - 120	<2.0	ug/L	NC	20
6963248	Dissolved Silicon (Si)	2020/09/25	94	80 - 120	97	80 - 120	<50	ug/L		
6963248	Dissolved Silver (Ag)	2020/09/25	90	80 - 120	93	80 - 120	<0.090	ug/L	NC	20



BUREAU  
VERITAS

BV Labs Job #: C006954  
Report Date: 2020/10/02

### QUALITY ASSURANCE REPORT(CONT'D)

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6963248	Dissolved Sodium (Na)	2020/09/25	NC	80 - 120	100	80 - 120	<100	ug/L	1.8	20
6963248	Dissolved Strontium (Sr)	2020/09/25	93	80 - 120	95	80 - 120	<1.0	ug/L		
6963248	Dissolved Thallium (Tl)	2020/09/25	99	80 - 120	100	80 - 120	<0.050	ug/L	NC	20
6963248	Dissolved Titanium (Ti)	2020/09/25	97	80 - 120	97	80 - 120	<5.0	ug/L		
6963248	Dissolved Uranium (U)	2020/09/25	98	80 - 120	97	80 - 120	<0.10	ug/L	0.93	20
6963248	Dissolved Vanadium (V)	2020/09/25	91	80 - 120	95	80 - 120	<0.50	ug/L	2.9	20
6963248	Dissolved Zinc (Zn)	2020/09/25	94	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
6963453	Dissolved Chloride (Cl-)	2020/09/30	121 (1)	80 - 120	104	80 - 120	<1.0	mg/L	8.1	20
6963457	Dissolved Sulphate (SO4)	2020/09/30	NC	75 - 125	104	80 - 120	<1.0	mg/L	2.2	20
6963459	Orthophosphate (P)	2020/10/02	116	75 - 125	102	80 - 120	<0.010	mg/L	3.2	25
6965248	Total Aluminum (Al)	2020/09/25	100	80 - 120	100	80 - 120	<4.9	ug/L	5.8	20
6965248	Total Antimony (Sb)	2020/09/25	98	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
6965248	Total Arsenic (As)	2020/09/25	98	80 - 120	96	80 - 120	<1.0	ug/L	NC	20
6965248	Total Barium (Ba)	2020/09/25	91	80 - 120	94	80 - 120	<2.0	ug/L	4.9	20
6965248	Total Beryllium (Be)	2020/09/25	97	80 - 120	97	80 - 120	<0.40	ug/L	NC	20
6965248	Total Bismuth (Bi)	2020/09/25	90	80 - 120	92	80 - 120	<1.0	ug/L	NC	20
6965248	Total Boron (B)	2020/09/25	95	80 - 120	99	80 - 120	<10	ug/L	5.1	20
6965248	Total Cadmium (Cd)	2020/09/25	95	80 - 120	96	80 - 120	<0.090	ug/L	NC	20
6965248	Total Calcium (Ca)	2020/09/25	NC	80 - 120	100	80 - 120	<200	ug/L	4.2	20
6965248	Total Chromium (Cr)	2020/09/25	97	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
6965248	Total Cobalt (Co)	2020/09/25	94	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
6965248	Total Copper (Cu)	2020/09/25	96	80 - 120	98	80 - 120	<0.90	ug/L	NC	20
6965248	Total Iron (Fe)	2020/09/25	95	80 - 120	96	80 - 120	<100	ug/L	0.047	20
6965248	Total Lead (Pb)	2020/09/25	94	80 - 120	95	80 - 120	<0.50	ug/L	NC	20
6965248	Total Lithium (Li)	2020/09/25	95	80 - 120	95	80 - 120	<5.0	ug/L	0.011	20
6965248	Total Magnesium (Mg)	2020/09/25	NC	80 - 120	98	80 - 120	<50	ug/L	0.14	20
6965248	Total Manganese (Mn)	2020/09/25	91	80 - 120	95	80 - 120	<2.0	ug/L	1.8	20
6965248	Total Molybdenum (Mo)	2020/09/25	100	80 - 120	98	80 - 120	<0.50	ug/L	2.1	20
6965248	Total Nickel (Ni)	2020/09/25	93	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
6965248	Total Potassium (K)	2020/09/25	95	80 - 120	96	80 - 120	<200	ug/L	0.85	20
6965248	Total Selenium (Se)	2020/09/25	100	80 - 120	102	80 - 120	<2.0	ug/L	NC	20



BUREAU  
VERITAS

BV Labs Job #: C006954  
Report Date: 2020/10/02

### QUALITY ASSURANCE REPORT(CONT'D)

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6965248	Total Silicon (Si)	2020/09/25	95	80 - 120	98	80 - 120	<50	ug/L	2.1	20
6965248	Total Silver (Ag)	2020/09/25	94	80 - 120	95	80 - 120	<0.090	ug/L	NC	20
6965248	Total Sodium (Na)	2020/09/25	NC	80 - 120	99	80 - 120	<100	ug/L	0.22	20
6965248	Total Strontium (Sr)	2020/09/25	NC	80 - 120	91	80 - 120	<1.0	ug/L	0.14	20
6965248	Total Tellurium (Te)	2020/09/25	97	80 - 120	98	80 - 120	<1.0	ug/L	NC	20
6965248	Total Thallium (Tl)	2020/09/25	93	80 - 120	94	80 - 120	<0.050	ug/L	NC	20
6965248	Total Tin (Sn)	2020/09/25	96	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
6965248	Total Titanium (Ti)	2020/09/25	94	80 - 120	95	80 - 120	<5.0	ug/L	NC	20
6965248	Total Tungsten (W)	2020/09/25	98	80 - 120	97	80 - 120	<1.0	ug/L	NC	20
6965248	Total Uranium (U)	2020/09/25	98	80 - 120	98	80 - 120	<0.10	ug/L	NC	20
6965248	Total Vanadium (V)	2020/09/25	96	80 - 120	96	80 - 120	<0.50	ug/L	NC	20
6965248	Total Zinc (Zn)	2020/09/25	95	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
6965248	Total Zirconium (Zr)	2020/09/25	97	80 - 120	97	80 - 120	<1.0	ug/L	NC	20
6965777	Dissolved Organic Carbon	2020/09/25	95	80 - 120	99	80 - 120	<0.40	mg/L	1.5	20
6965785	Dissolved Organic Carbon	2020/09/25	97	80 - 120	100	80 - 120	<0.40	mg/L	5.4	20
6968422	Total Aluminum (Al)	2020/09/28	115	80 - 120	93	80 - 120	<4.9	ug/L	10	20
6968422	Total Antimony (Sb)	2020/09/28	99	80 - 120	95	80 - 120	<0.50	ug/L	9.2	20
6968422	Total Arsenic (As)	2020/09/28	99	80 - 120	95	80 - 120	<1.0	ug/L	7.9	20
6968422	Total Barium (Ba)	2020/09/28	97	80 - 120	92	80 - 120	<2.0	ug/L	10	20
6968422	Total Beryllium (Be)	2020/09/28	104	80 - 120	93	80 - 120	<0.40	ug/L	NC	20
6968422	Total Bismuth (Bi)	2020/09/28	91	80 - 120	94	80 - 120	<1.0	ug/L	NC	20
6968422	Total Boron (B)	2020/09/28	NC	80 - 120	91	80 - 120	<10	ug/L	1.1	20
6968422	Total Cadmium (Cd)	2020/09/28	95	80 - 120	95	80 - 120	<0.090	ug/L	8.2	20
6968422	Total Calcium (Ca)	2020/09/28	102	80 - 120	91	80 - 120	<200	ug/L	5.3	20
6968422	Total Chromium (Cr)	2020/09/28	95	80 - 120	89	80 - 120	<5.0	ug/L	9.0	20
6968422	Total Cobalt (Co)	2020/09/28	93	80 - 120	92	80 - 120	<0.50	ug/L	6.8	20
6968422	Total Copper (Cu)	2020/09/28	98	80 - 120	91	80 - 120	<0.90	ug/L	4.2	20
6968422	Total Iron (Fe)	2020/09/28	94	80 - 120	91	80 - 120	<100	ug/L	20	20
6968422	Total Lead (Pb)	2020/09/28	90	80 - 120	92	80 - 120	<0.50	ug/L	5.8	20
6968422	Total Lithium (Li)	2020/09/28	105	80 - 120	92	80 - 120	<5.0	ug/L	1.8	20
6968422	Total Magnesium (Mg)	2020/09/28	99	80 - 120	92	80 - 120	<50	ug/L	1.9	20



BUREAU  
VERITAS

BV Labs Job #: C006954  
Report Date: 2020/10/02

### QUALITY ASSURANCE REPORT(CONT'D)

GM BluePlan Engineering Limited  
Client Project #: 317033-2  
Sampler Initials: ANW

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
6968422	Total Manganese (Mn)	2020/09/28	94	80 - 120	90	80 - 120	<2.0	ug/L	4.6	20
6968422	Total Molybdenum (Mo)	2020/09/28	99	80 - 120	93	80 - 120	<0.50	ug/L	0.24	20
6968422	Total Nickel (Ni)	2020/09/28	91	80 - 120	92	80 - 120	<1.0	ug/L	4.2	20
6968422	Total Potassium (K)	2020/09/28	NC	80 - 120	93	80 - 120	<200	ug/L	1.3	20
6968422	Total Selenium (Se)	2020/09/28	98	80 - 120	99	80 - 120	<2.0	ug/L	NC	20
6968422	Total Silicon (Si)	2020/09/28	105	80 - 120	93	80 - 120	<50	ug/L	5.3	20
6968422	Total Silver (Ag)	2020/09/28	90	80 - 120	94	80 - 120	<0.090	ug/L	NC	20
6968422	Total Sodium (Na)	2020/09/28	NC	80 - 120	93	80 - 120	<100	ug/L	0.42	20
6968422	Total Strontium (Sr)	2020/09/28	91	80 - 120	88	80 - 120	<1.0	ug/L	1.9	20
6968422	Total Tellurium (Te)	2020/09/28	98	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
6968422	Total Thallium (Tl)	2020/09/28	94	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
6968422	Total Tin (Sn)	2020/09/28	98	80 - 120	94	80 - 120	<1.0	ug/L	NC	20
6968422	Total Titanium (Ti)	2020/09/28	100	80 - 120	92	80 - 120	<5.0	ug/L	40 (1)	20
6968422	Total Tungsten (W)	2020/09/28	95	80 - 120	95	80 - 120	<1.0	ug/L	NC	20
6968422	Total Uranium (U)	2020/09/28	95	80 - 120	96	80 - 120	<0.10	ug/L	0.85	20
6968422	Total Vanadium (V)	2020/09/28	100	80 - 120	93	80 - 120	<0.50	ug/L	2.6	20
6968422	Total Zinc (Zn)	2020/09/28	92	80 - 120	96	80 - 120	<5.0	ug/L	2.6	20
6968422	Total Zirconium (Zr)	2020/09/28	101	80 - 120	96	80 - 120	<1.0	ug/L	19	20

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

(1) Recovery or RPD for this parameter is outside control limits. The overall quality control for this analysis meets acceptability criteria.



BUREAU  
VERITAS

BV Labs Job #: C006954

Report Date: 2020/10/02

GM BluePlan Engineering Limited

Client Project #: 317033-2

Sampler Initials: ANW

### VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

---

Anastassia Hamanov, Scientific Specialist

---

Sirimathie Aluthwala, Campobello Micro

---

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

**APPENDIX E:  
TESTHOLE LOGS AND WELL RECORDS FOR ONSITE WELLS**

# BOREHOLE 1

Date Drilled: August 30, 2018  
 Rig: Geoprobe 7822DT  
 Contractor: CMT Drilling Inc.  
 Drilling Method: SPT

Elevation: 405.48 m  
 Logged by: SW

Project No.: 18-462  
 Project: Residential Subdivision  
 Location: South Mill Street,  
 Glen Allan, Ontario

Depth (ft/m)	Sample Type	Recovery (%)	Sample Number	Symbols	SOIL DESCRIPTION	Well Installation	Moisture Content % Wp [----X----] Wl	Pocket Penetrometer kPa		
								100	200 300 400	
							SPT (N)			
							Blows/0.3 m			
							10 20 30 40	20 40 60 80		
0					Ground Surface (m) 405.48					
0					0.00					
1	SS		1		<b>TOPSOIL</b> Loose, dark brown, silty, organic topsoil, moist (170 mm)		15.5	6	375	
2					405.02					
2					0.46					
3	SS		2		<b>CLAYEY SILT</b> Firm, brown clayey silt, some sand, trace gravel, with trace organics and rootlets, drier than the plastic limit		17.4	22	400	
4										
5										
6	SS		3		Becoming very stiff, no organics or rootlets		12.2	29	400	
7										
8										
8	SS		4		Becoming hard, cobbles present		18.9		25050(6")	
9										
10										
10					403.19					
11					2.29					
11	SS		5		About the plastic limit		19.2	17	200	
12										
12					402.43					
13					3.05					
13										
13										
14	MC5		6		<b>SILT AND CLAY</b> Very stiff, grey silt and clay, trace sand and gravel, about the plastic limit		19.0		150	
15										
16	SS		7				20.2	21	150	
17										
18	SS		9				21.2		100	
19									25	
19					399.69					
20					5.79					
20					End of Borehole					
21										
22										
23										
24										
25					Cave at 3.30 m below ground surface. No accumulated groundwater encountered upon completion.					
26										
27										
28										
29										

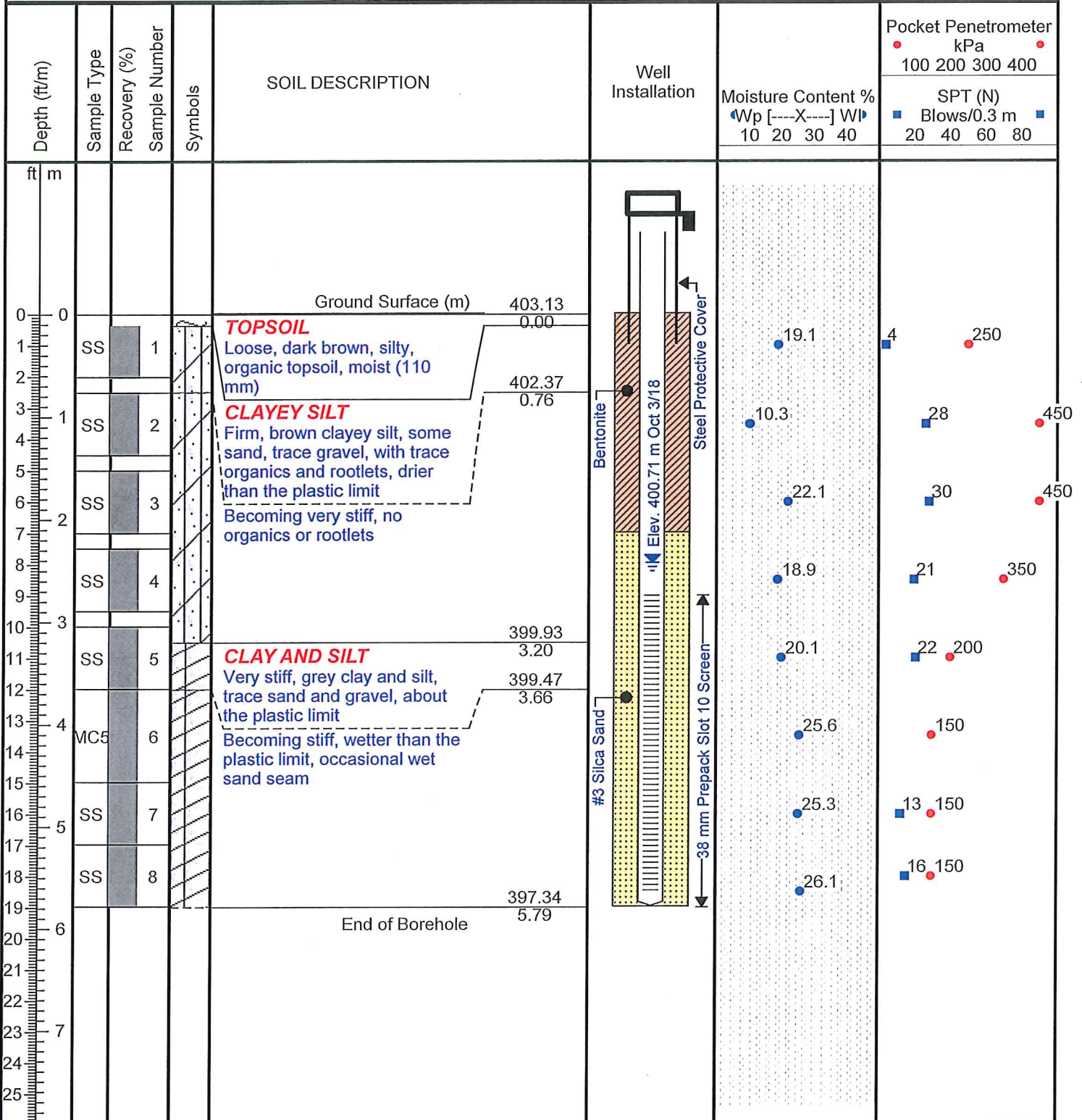


# BOREHOLE 2

Date Drilled: August 29, 2018  
 Rig: Geoprobe 7822DT  
 Contractor: CMT Drilling Inc.  
 Drilling Method: SPT

Elevation: 403.13 m  
 Logged by: SW

Project No.: 18-462  
 Project: Residential Subdivision  
 Location: South Mill Street,  
 Glen Allan, Ontario



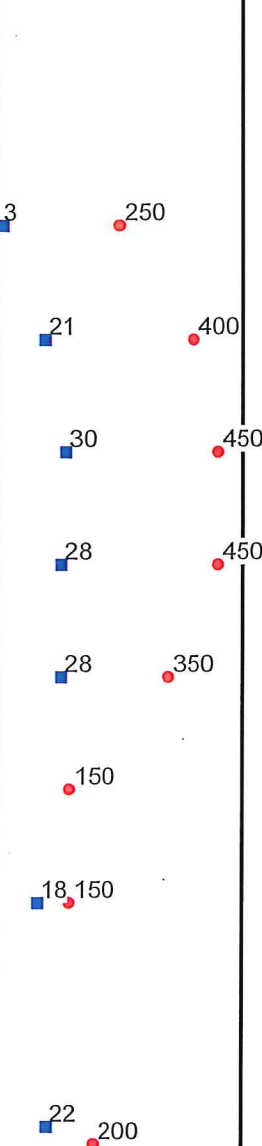
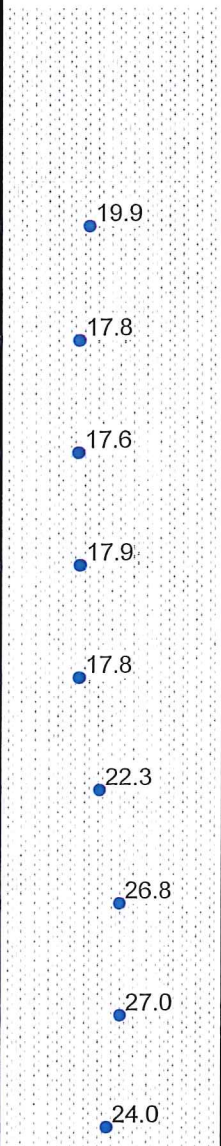
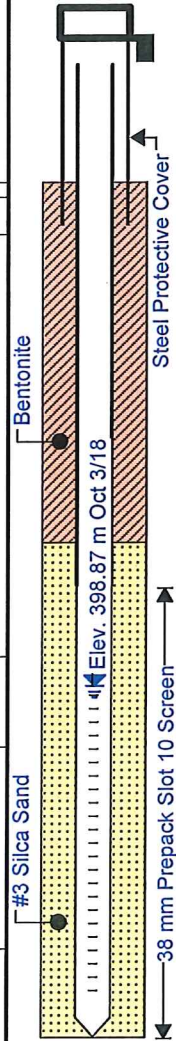
# BOREHOLE 3

Date Drilled: August 29, 2018  
 Rig: Geoprobe 7822DT  
 Contractor: CMT Drilling Inc.  
 Drilling Method: SPT

Elevation: 402.27 m  
 Logged by: SW

Project No.: 18-462  
 Project: Residential Subdivision  
 Location: South Mill Street,  
 Glen Allan, Ontario

Depth (ft/m)	Sample Type	Recovery (%)	Sample Number	Symbols	SOIL DESCRIPTION	Well Installation	Moisture Content %		Pocket Penetrometer	
							Wp [---X---] Wl	SPT (N)	kPa	Blows/0.3 m
							10 20 30 40	20 40 60 80	100 200 300 400	
0					Ground Surface (m) 402.27					
0					0.00					
1	SS		1		<b>TOPSOIL</b> Very loose, dark brown, silty, organic topsoil, moist (100 mm)					
1					401.92					
2					0.35					
3	SS		2		<b>CLAYEY SILT</b> Soft, brown clayey silt, some sand, trace gravel, with trace organics and rootlets, drier than the plastic limit					
4										
5	SS		3		Becoming very stiff, no organics or rootlets					
6										
7	SS		4							
8										
9	SS		5		<b>CLAY AND SILT</b> Very stiff, grey clay and silt, trace sand and gravel, about the plastic limit					
10										
11	SS		6		Becoming about the plastic limit, occasional wet sand seams					
12										
13	MC5		7							
14										
15	SS		8		<b>SILT</b> Compact, grey silt, some sand and clay, wet					
16										
17	MC5		9							
18										
19	SS		10		<b>CLAY AND SILT</b> Very stiff, grey clay and silt, some sand, trace gravel, about the plastic limit					
20										
21										
22										
23										
24					End of Borehole					

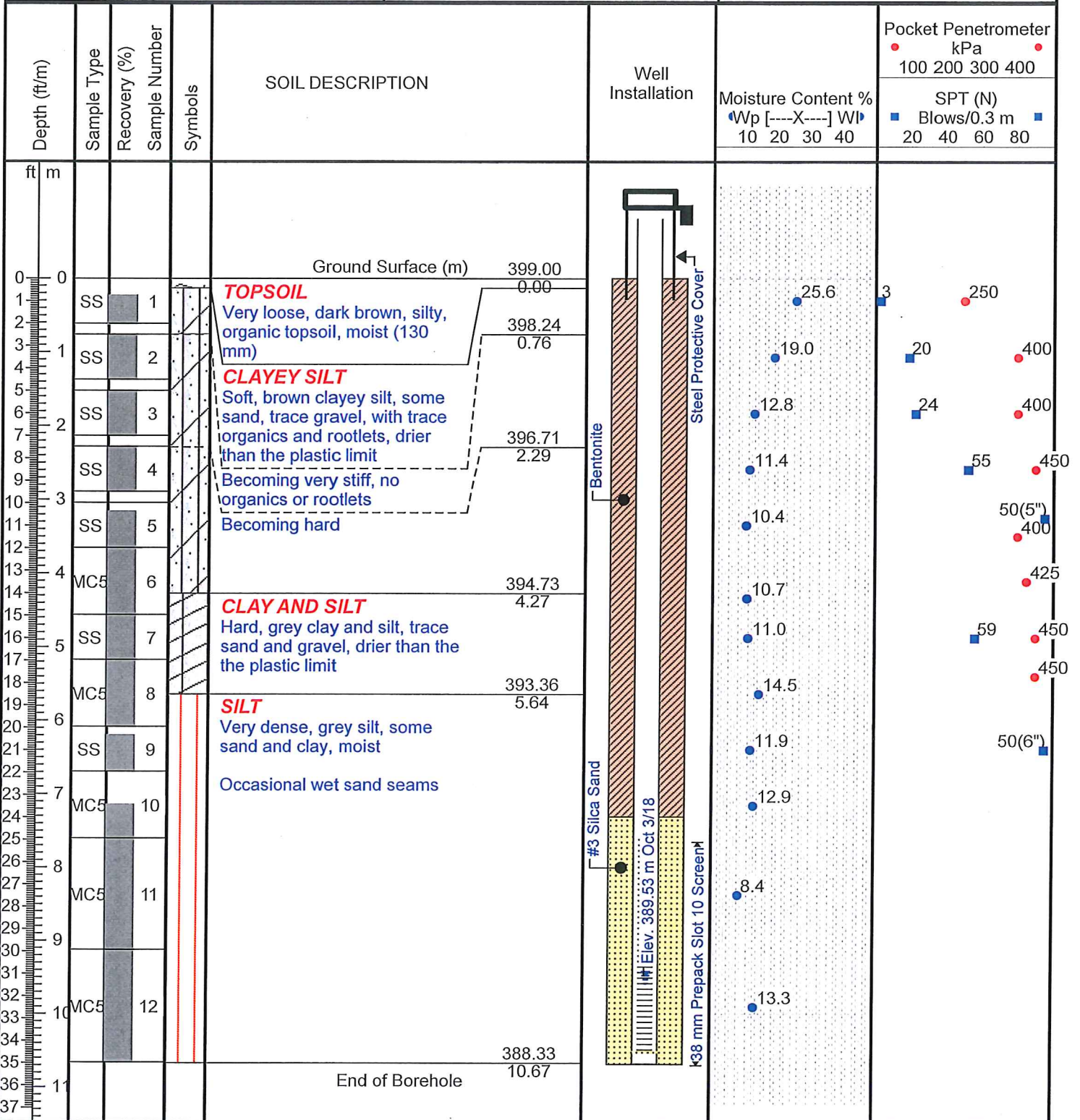


# BOREHOLE 4

Date Drilled: August 29, 2018  
 Rig: Geoprobe 7822DT  
 Contractor: CMT Drilling Inc.  
 Drilling Method: SPT

Elevation: 399.00 m  
 Logged by: SW

Project No.: 18-462  
 Project: Residential Subdivision  
 Location: South Mill Street,  
 Glen Allan, Ontario



CMT ENGINEERING INC.  
 1011 Industrial Crescent, Unit 1  
 St. Clements, Ontario N0B 2M0  
 phone 519-699-5775 fax 519-699-4664  
 www.cmtinc.net

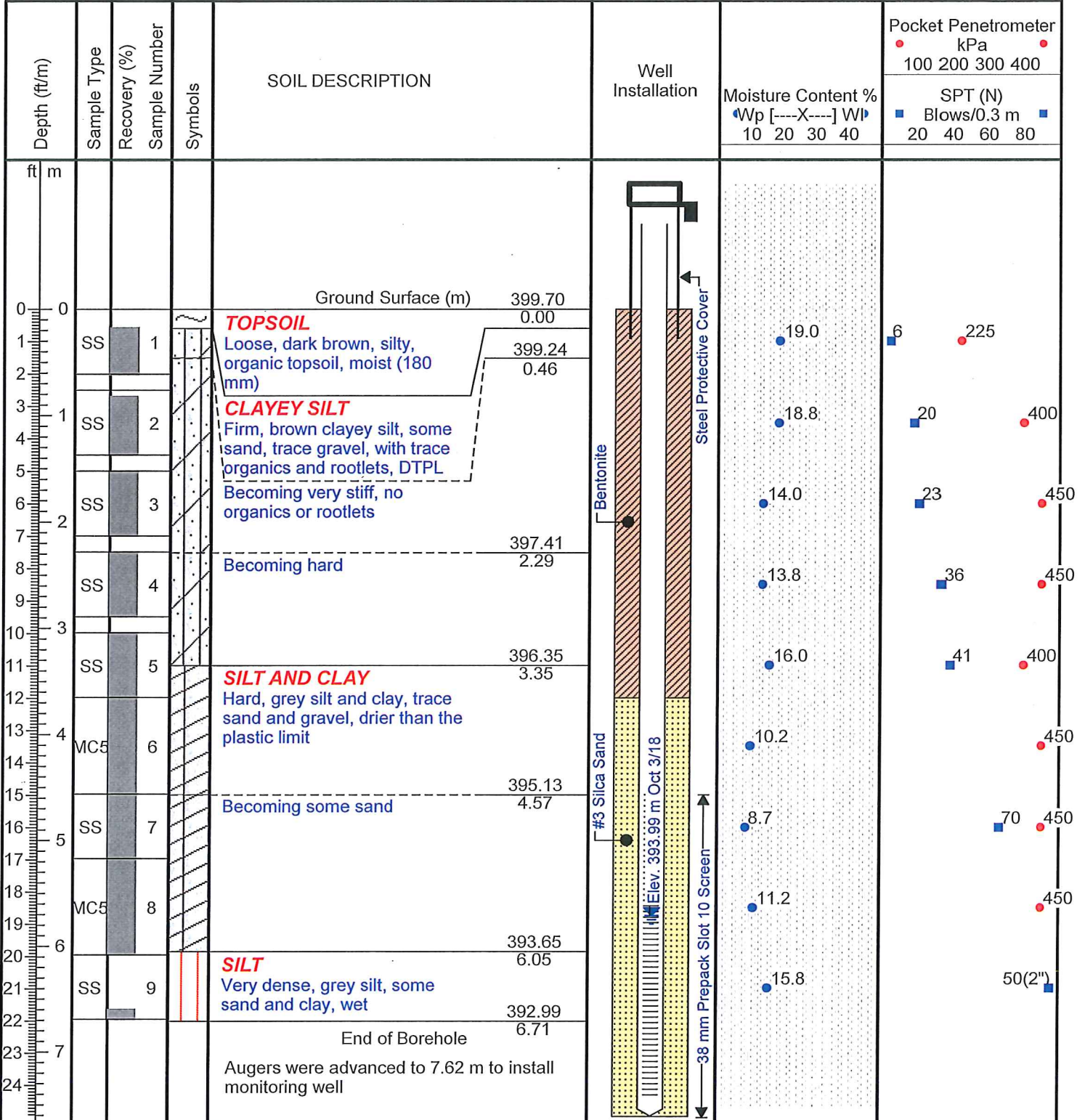


# BOREHOLE 5

Date Drilled: August 29, 2018  
 Rig: Geoprobe 7822DT  
 Contractor: CMT Drilling Inc.  
 Drilling Method: SPT

Elevation: 399.70 m  
 Logged by: SW

Project No.: 18-462  
 Project: Residential Subdivision  
 Location: South Mill Street,  
 Glen Allan, Ontario

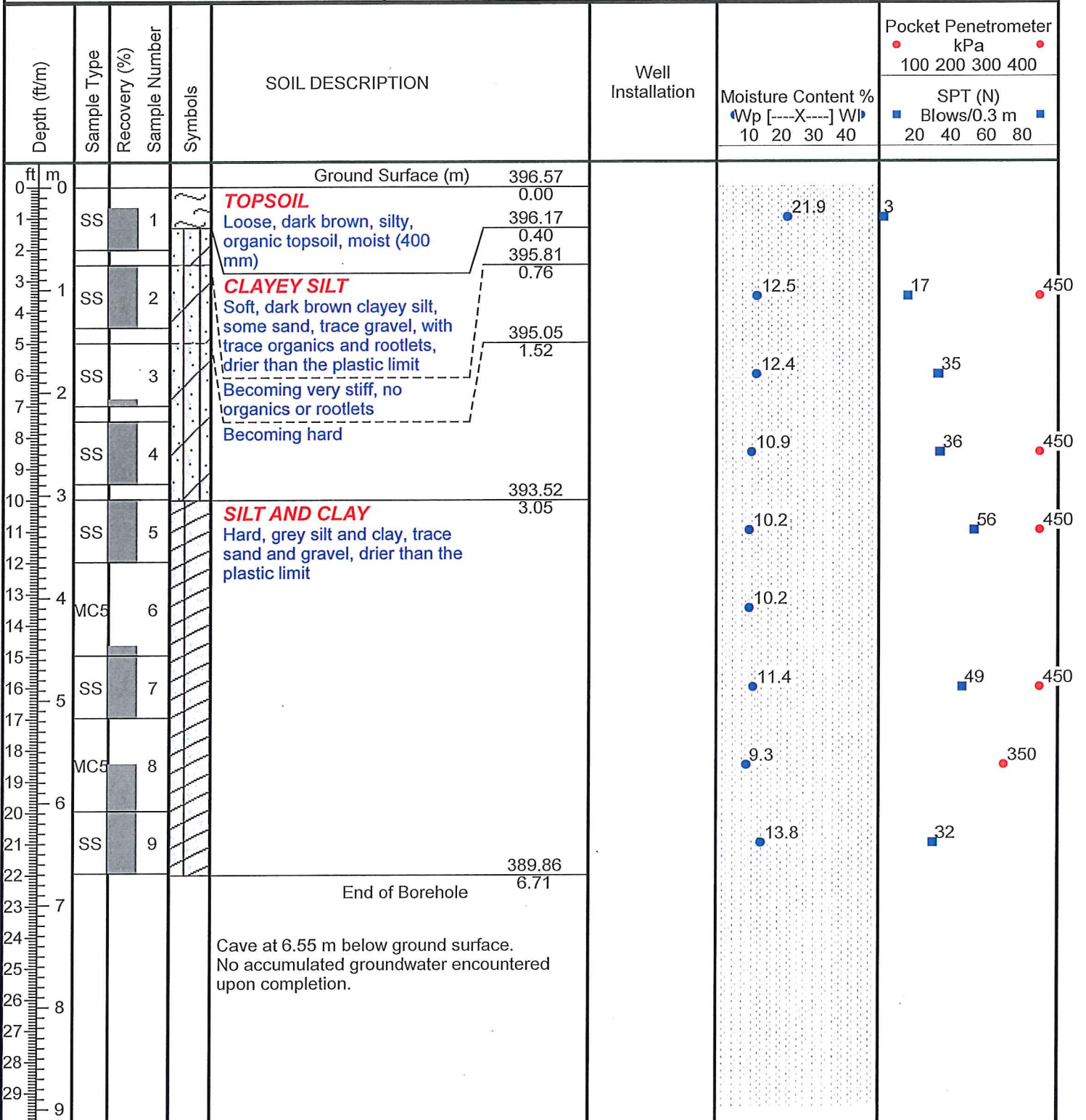


# BOREHOLE 6

Date Drilled: August 30, 2018  
 Rig: Geoprobe 7822DT  
 Contractor: CMT Drilling Inc.  
 Drilling Method: SPT

Elevation: 396.57 m  
 Logged by: SW

Project No.: 18-462  
 Project: Residential Subdivision  
 Location: South Mill Street,  
 Glen Allan, Ontario





Measurements recorded in:  Metric  Imperial

A249022

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

Well Owner's Information

First Name: Murray, Last Name / Organization: Martin, E-mail Address: [blank], Mailing Address: 58 Hill St, Municipality: Walkenstein, Province: ON, Postal Code: N0B2S0

Well Location

Address of Well Location: Hill St. S., Township: [blank], Lot: [blank], Concession: [blank], City/Town/Village: Glen Allan, Province: Ontario, Postal Code: [blank]

Overburden and Bedrock Materials/Abandonment Sealing Record

Table with 5 columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From/To. Rows include Black topsoil, Brown silt, and Brown silt.

Annular Space table with 3 columns: Depth Set at (m/ft) From/To, Type of Sealant Used, Volume Placed (m³/ft³). Rows show 0-2.4m and 2.4-5.7m depths.

Method of Construction and Well Use checkboxes. Includes options for Cable Tool, Rotary, Boring, etc.

Construction Record - Casing table with 4 columns: Inside Diameter, Open Hole OR Material, Wall Thickness, Depth (m/ft) From/To. Row shows 3.8m diameter plastic casing from 0 to 2.7m.

Construction Record - Screen table with 4 columns: Outside Diameter, Material, Slot No., Depth (m/ft) From/To. Row shows 4m diameter plastic screen from 2.7 to 5.7m.

Water Details and Hole Diameter tables. Water found at various depths, Hole Diameter table shows 0-5.7m depth with 10cm diameter.

Well Contractor and Well Technician Information. Business Name: CMI Drilling Inc, Well Contractor's Licence No: 7131616.

Well owner's information package delivered, Date Package Delivered, Date Work Completed, Well Technician's Licence No, Signature of Technician and/or Contractor.

Results of Well Yield Testing table with 4 columns: Draw Down (Time, Water Level), Recovery (Time, Water Level). Shows draw down from 1 to 60 minutes.

Map of Well Location section with instructions: Please provide a map below following instructions on the back. Includes handwritten note: SEE ATTACHED MAP FOR MW2.



Ontario

Ministry of the Environment and Climate Change

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

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in:  Metric  Imperial

A249003

Page 1 of 1

Well Owner's Information

First Name: MURRAY, Last Name / Organization: MARTIN, Mailing Address: 58 HILL ST, Municipality: WALLENSTEIN, Province: ON, Postal Code: N0B2S0

Well Location

Address of Well Location: HILL ST S, Township: GLEN ALLAN, City/Town/Village: GLEN ALLAN, Province: Ontario

Overburden and Bedrock Materials/Abandonment Sealing Record

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth From, Depth To. Includes entries for BLACK TOPSOIL, BROWN SILT, and BROWN SAND.

Annular Space table with columns: Depth Set at From, To, Type of Sealant Used, Volume Placed. Includes entries for 0-2.1m and 2.1-6.1m.

Method of Construction and Well Use section with checkboxes for Cable Tool, Rotary, Boring, etc.

Construction Record - Casing table with columns: Inside Diameter, Open Hole OR Material, Wall Thickness, Depth From, To, Status of Well.

Construction Record - Screen table with columns: Outside Diameter, Material, Slot No., Depth From, To.

Water Details and Hole Diameter section with columns for water found at depth and hole diameter.

Well Contractor and Well Technician Information section with fields for Business Name, Address, and Technician Name.

Results of Well Yield Testing table with columns: Draw Down, Recovery, Time, Water Level. Includes a table for static levels and pumping rates.

Map of Well Location

Please provide a map below following instructions on the back. SEE ATTACHED MAP FOR MW3

Bus. Telephone No., Name of Well Technician (Chris Black), Signature of Technician, Date Submitted (2/17/18).

Ministry Use Only section with Audit No. 2288449 and Date Work Completed (2/18/18).



Measurements recorded in:  Metric  Imperial

A249035

Page 1 of 1

Well Owner's Information

First Name: Murray, Last Name / Organization: Martin, Mailing Address: 58 Hill St., Municipality: Walerstein, Province: ON, Postal Code: N0B2L3C0

Well Location

Address of Well Location: Mill St. S, Township: Glen Allan, City/Town/Village: Glen Allan, Province: Ontario, UTM Coordinates: NAD 83 17A 923192181483351618

Overburden and Bedrock Materials/Abandonment Sealing Record

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To. Rows include Topsoil, silt, clay, sand.

Annular Space table with columns: Depth Set at (m/ft) From, To, Type of Sealant Used, Volume Placed (m³/ft³). Rows show sealant types like 3/8 Helocaulk and #2 sand.

Method of Construction and Well Use checkboxes. Includes options for Cable Tool, Rotary, Boring, etc.

Construction Record - Casing table with columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From, To. Row shows 38 cm plastic casing from 0 to 45 m.

Construction Record - Screen table with columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From, To. Row shows 4 cm plastic screen from 45 to 7.6 m.

Water Details and Hole Diameter table. Columns include Water found at Depth (m/ft), Kind of Water, Depth (m/ft) From, To, Diameter (cm/in).

Well Contractor and Well Technician Information. Business Name: CMT Drilling Inc, Well Contractor's Licence No: 7131616, Business Address: 1711 Industrial Cross, Walerstein.

Signature and Date Submitted section. Signature: Chris Black, Date Submitted: 2013/09/20.

Results of Well Yield Testing table. Columns: Draw Down (Time, Water Level), Recovery (Time, Water Level). Includes pumping rate and duration information.

Map of Well Location

Please provide a map below following instructions on the back. SEE ATTACHED MAP FOR MW4

Ministry Use Only section. Audit No: 2288450, Date Package Delivered: YYY YMM DD, Date Work Completed: 2013/09/20.



Measurements recorded in:  Metric  Imperial

A249033

Well Owner's Information

First Name: MURRAY, Last Name / Organization: MARTIN, Mailing Address: 58 Hill St., Municipality: WALLENSTEIN, Province: ON, Postal Code: N0B2S0

Well Location

Address of Well Location: Hill St S, Township: GLEN ALLAN, City/Town/Village: GLEN ALLAN, Province: Ontario, UTM Coordinates: Zone 17E, Easting 123510, Northing 48336918

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

Table with 5 columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From/To. Rows include BLACK TOPSOIL, BROWN SILT, BROWN SILT.

Annular Space table with 4 columns: Depth Set at (m/ft) From/To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Rows include 0-7.3m 3/8 INCAUG and 7.3-10.9m #2 SAND.

Method of Construction and Well Use checkboxes. Includes options for Cable Tool, Rotary, Boring, etc., and Well Use for Public, Commercial, Municipal, etc.

Construction Record - Casing table with 5 columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From/To, Status of Well. Row includes 38cm RASTIC casing from 0 to 7.9m.

Construction Record - Screen table with 5 columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From/To, Status of Well. Row includes 4cm RASTIC screen from 7.9 to 10.9m.

Water Details and Hole Diameter tables. Water found at depths of 0, 7.3, and 10.9m. Hole diameter is 12cm.

Well Contractor and Well Technician Information. Business Name: CH7 Drilling Inc., Business Address: 1011 Industrial cres, Well Contractor's Licence No: 7131616, Well Technician: Chris Black.

Results of Well Yield Testing table with 4 columns: Draw Down Time (min), Water Level (m/ft), Recovery Time (min), Water Level (m/ft). Includes data for static level and pumping rate.

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

SEE ATTACHED MAP FOR MW1

Ministry Use Only section. Audit No: 2288451, Date Work Completed: 20180829.

Measurements recorded in:  Metric  Imperial

Page 1 of 3

Well Owner's Information

First Name: MURRAY Last Name / Organization: MARTIN E-mail Address:  Well Constructed by Well Owner

Mailing Address (Street Number/Name): Municipality: GLEN ALLEN Province: ONT Postal Code: Telephone No. (inc. area code):

Well Location

Address of Well Location (Street Number/Name): Township: PEEL Lot: 5 Concession: 2

County/District/Municipality: WELLINGTON City/Town/Village: Province: Ontario Postal Code:

UTM Coordinates Zone: Easting: Northing: Municipal Plan and Sublot Number: Other:

NAD 83 17 523459 4833578

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 & STONES			0 15ft
BROWN	CLAY & GRAVEL STONES			15ft 26ft
GRAY	CLAY			26ft 146ft
GRAY	CLAY & STONES			146ft 203ft
GRAY	LIMESTONE SOFT			203ft 210ft

Annular Space

Depth Set at (m/ft) From To	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0 207ft	BENTONITE SLURRY	300gal

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

Well Use:  Domestic  Commercial  Municipal  Test Hole  Cooling & Air Conditioning  Not used  Dewatering  Monitoring  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	Status of Well
6 1/2	steel	.188	0 207ft	<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
6in	open hole		207ft 210ft	

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 <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Hole Diameter Depth (m/ft) From To	Diameter (cm/in)
208ft		0 207ft	9in
		207ft 210ft	6in

Well Contractor and Well Technician Information

Business Name of Well Contractor: KEITH LANG WELL DRILLING INC Well Contractor's Licence No.: 7154

Business Address (Street Number/Name): 251 ELDON ST GODERICH Municipality:

Province: ONT Postal Code: N7A3R9 Business E-mail Address:

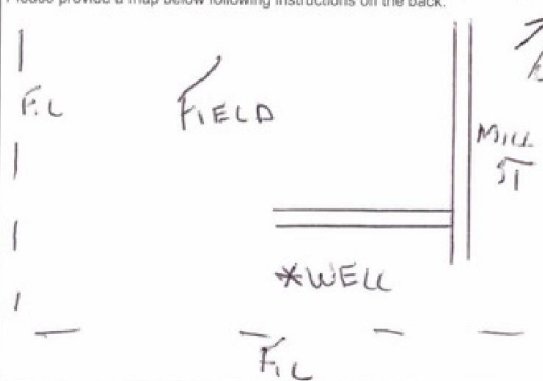
Bus. Telephone No. (inc. area code): 519 524 8159 Name of Well Technician (Last Name, First Name): KEITH LANG

Well Technician's Licence No.: T446 Signature of Technician and/or Contractor: Date Submitted: 2020/10/15

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 Time (min)	Water Level (m/ft)	Recovery Time (min)	Water Level (m/ft)
		97ft		
Pump intake set at (m/ft): 140ft	1	98.7	1	100.5
Pumping rate (l/min / GPM): 26gpm	2	98.8	2	99.9ft
Duration of pumping: 6 hrs + 25 min	3	98.8	3	99.8ft
Final water level end of pumping (m/ft): 100.5ft	4	98.8	4	99.8ft
If flowing give rate (l/min / GPM):	5	98.9	5	99.7ft
Recommended pump depth (m/ft): 140ft	10	99ft	10	99.6ft
Recommended pump rate (l/min / GPM): 15gpm	15	99.1	15	99.5ft
Well production (l/min / GPM):	20	99.2	20	99.4ft
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No 150ppm	25	99.3	25	99.3ft
	30	99.3	30	99.3ft
	40	99.5	40	99.1ft
	50	99.5	50	99ft
	60	99.6ft	60	98.9ft

Map of Well Location



Comments:

Well owner's information package delivered:  Yes  No

Date Package Delivered: 2020/10/05

Date Work Completed: 2020 8 25

Ministry Use Only: Audit No. 320258

Received:

Measurements recorded in:  Metric  Imperial

**Well Owner's Information**

First Name <b>BOOMER CREEK INC</b>	Last Name / Organization	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name) <b>64 ADELAIDE ST</b>	Municipality <b>UNWIND</b>	Province <b>ONT</b>	Postal Code <b>N0B2A0</b>

**Well Location**

Address of Well Location (Street Number/Name)	Township <b>PEEL</b>	Lot <b>5</b>	Concession <b>2</b>
County/District/Municipality <b>WELLINGTON</b>	City/Town/Village	Province <b>Ontario</b>	Postal Code
UTM Coordinates Zone <b>NAD 83 17</b>	Easting <b>523449</b>	Northing <b>4833671</b>	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	CLAY & STONES			0 32ft
BROWN	CLAY			32ft 46ft
GRAY	CLAY			46ft 137ft
GRAY	CLAY & STONES			137ft 191ft
GRAY	BROCKEN ROCK SOFT			191ft 200ft
BROWN	LIMESTONES			200ft 222ft

Annular Space			
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )	
From To			
0 201ft	BENTONITE SLURRY	300gal	

Method of Construction	Well Use
<input type="checkbox"/> Cable Tool <input checked="" type="checkbox"/> Rotary (Conventional) <input type="checkbox"/> Rotary (Reverse) <input type="checkbox"/> Boring <input type="checkbox"/> Air percussion <input type="checkbox"/> Other, specify	<input type="checkbox"/> Public <input checked="" type="checkbox"/> Domestic <input type="checkbox"/> Livestock <input type="checkbox"/> Industrial <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 1/2	steel	.188	0 201ft	<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	
6in	open hole		201ft 222ft	<input type="checkbox"/> Other, specify	

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

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Depth (m/ft)	Diameter (cm/in)
		From To	
216ft		0 201ft	9in
		201ft 222ft	6in

Well Contractor and Well Technician Information			
Business Name of Well Contractor <b>KEITH LANG WELL DRILLING INC</b>	Well Contractor's Licence No. <b>7154</b>		
Business Address (Street Number/Name) <b>251 ELDON ST GODERICH</b>	Municipality		
Province <b>ONT</b>	Postal Code <b>N7A3R9</b>	Business E-mail Address	

Bus. Telephone No. (inc. area code) <b>519 524 8159</b>	Name of Well Technician (Last Name, First Name) <b>KEITH LANG</b>	Date Submitted <b>20201015</b>
Well Technician's Licence No. <b>T446</b>	Signature of Technician and/or Contractor <i>[Signature]</i>	

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	91.6		
	1	97.7	1	98.4
	Pump intake set at (m/ft) <b>140ft</b>		2	96.1
	Pumping rate (l/min / GPM) <b>10gpm</b>		3	94.4
	Duration of pumping <b>6 hrs + 0 min</b>		4	94.4
	Final water level end of pumping (m/ft) <b>103.7ft</b>		5	93
If flowing give rate (l/min / GPM)	10	104.3	10	92.2
	15	104.4	15	92.1
	20	104.4	20	92
	Recommended pump depth (m/ft) <b>140ft</b>		25	92ft
	Recommended pump rate (l/min / GPM) <b>15gpm</b>		30	91.9ft
	Well production (l/min / GPM)		40	91.8
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <b>150ppm</b>	50	104.2	50	91.8
	60	104.2	60	91.7ft

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

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<b>20201009</b> Date Work Completed <b>2020 9 16</b>	Audit No. <b>7320252</b>
Y Y Y Y M M D D		Received

Measurements recorded in:  Metric  Imperial

**Well Owner's Information**

First Name <b>HEATHER</b>	Last Name / Organization <b>SMITH</b>	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name)		Municipality <b>GLEN ALLEN</b>	Province <b>ONT</b>
		Postal Code	Telephone No. (inc. area code)

**Well Location**

Address of Well Location (Street Number/Name)		Township <b>PEEL</b>	Lot <b>5</b>	Concession <b>2</b>
County/District/Municipality <b>WELLINGTON</b>		City/Town/Village	Province <b>Ontario</b>	Postal Code
UTM Coordinates Zone NAD 83	Eastings <b>17 523385</b>	Northing <b>4833671</b>	Municipal Plan and Sublot Number	
		Other		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
BROWN	CLAY & STONES			0	35ft
GRAY	CLAY			35ft	154ft
GRAY	CLAY & STONES			154ft	224ft
GRAY	SOFT LIMESTONE			224ft	236ft
BROWN	LIMESTONE			236ft	242ft

Annular Space			
Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m <sup>3</sup> /ft <sup>3</sup> )
0	230ft	BENTONITE SLURRY	300gal

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

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To	
6 1/4	steel	.188	0	230ft	<input checked="" type="checkbox"/> Water Supply
6in	open hole		230ft	242ft	<input type="checkbox"/> Replacement Well

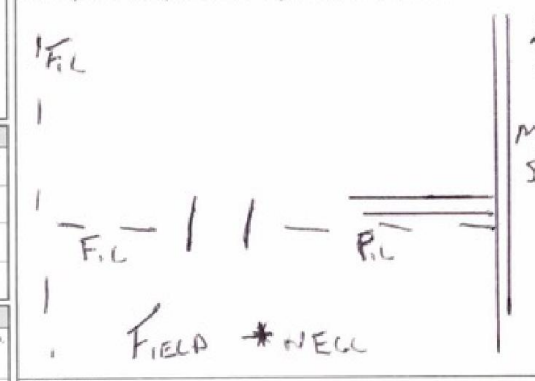
Construction Record - Screen				
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From	To

Water Details		Hole Diameter	
Water found at Depth (m/ft)	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Depth (m/ft) From	To
238ft		0	230ft
		230ft	242ft

Well Contractor and Well Technician Information			
Business Name of Well Contractor <b>KEITH LANG WELL DRILLING INC</b>		Well Contractor's Licence No. <b>7154</b>	
Business Address (Street Number/Name) <b>251 ELDON ST GODERICH</b>		Municipality	
Province <b>ONT</b>	Postal Code <b>N7A3R9</b>	Business E-mail Address	

Bus. Telephone No. (inc. area code) <b>519 524 8159</b>	Name of Well Technician (Last Name, First Name) <b>KEITH LANG</b>
Well Technician's Licence No. <b>T446</b>	Signature of Technician and/or Contractor <i>K. Lang</i>
	Date Submitted <b>20201015</b>

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	104.6		
Pump intake set at (m/ft) <b>140ft</b>		1	111.5	1	107ft
Pumping rate (l/min / GPM) <b>16gpm</b>		2	111.8	2	105.9
Duration of pumping <b>6 hrs + 0 min</b>		3	111.3	3	105.6
Final water level end of pumping (m/ft) <b>112ft</b>		4	111.1	4	105.6
If flowing give rate (l/min / GPM)		5	111ft	5	105.5
Recommended pump depth (m/ft) <b>140ft</b>		10	111.1	10	105.5
Recommended pump rate (l/min / GPM) <b>15gpm</b>		15	111.2ft	15	105.4
Well production (l/min / GPM)		20	111.2	20	105.3
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <b>150ppm</b>		25	111.3	25	105.3
		30	111.3	30	105.2
		40	111.4	40	105.2
		50	111.5	50	105.1
		60	111.5	60	105.1

**Map of Well Location**


Comments:

Well owner's information package delivered	Date Package Delivered <b>20201009</b>	Ministry Use Only Audit No. <b>2320253</b>
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Work Completed <b>2020 9 15</b>	
Received		

**APPENDIX F:  
AQUIFER TEST REPORTS**

**Site Plan**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Scale 1:2500

Map Origin [m] X: 523270.25 Y: 4833364.75



**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 1

Pumping Well: DW-1 A300134

Test Conducted by: Andrea Nelson

Test Date: 9/18/2020

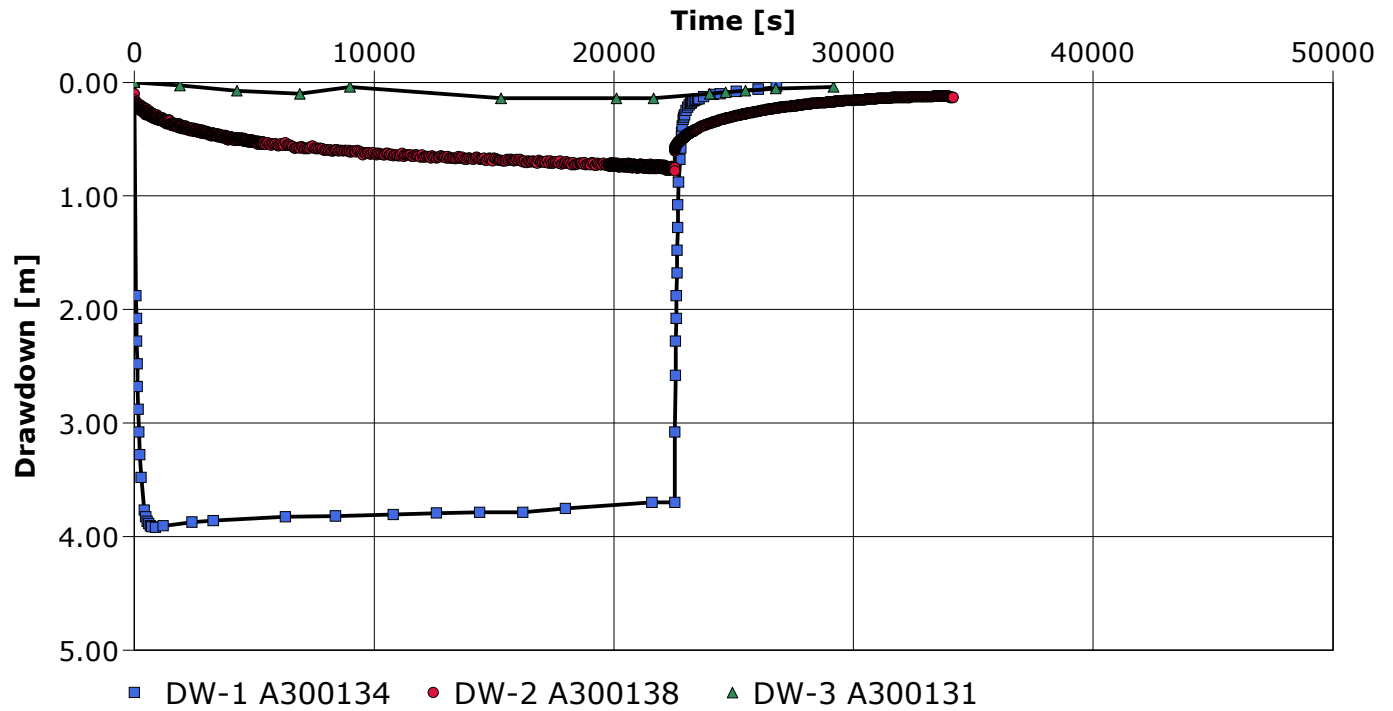
Analysis Performed by: Jen Swiger

Time-Drawdown

Analysis Date: 10/21/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0006838 [m<sup>3</sup>/s]



**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 1

Pumping Well: DW-1 A300134

Test Conducted by: Andrea Nelson

Test Date: 9/18/2020

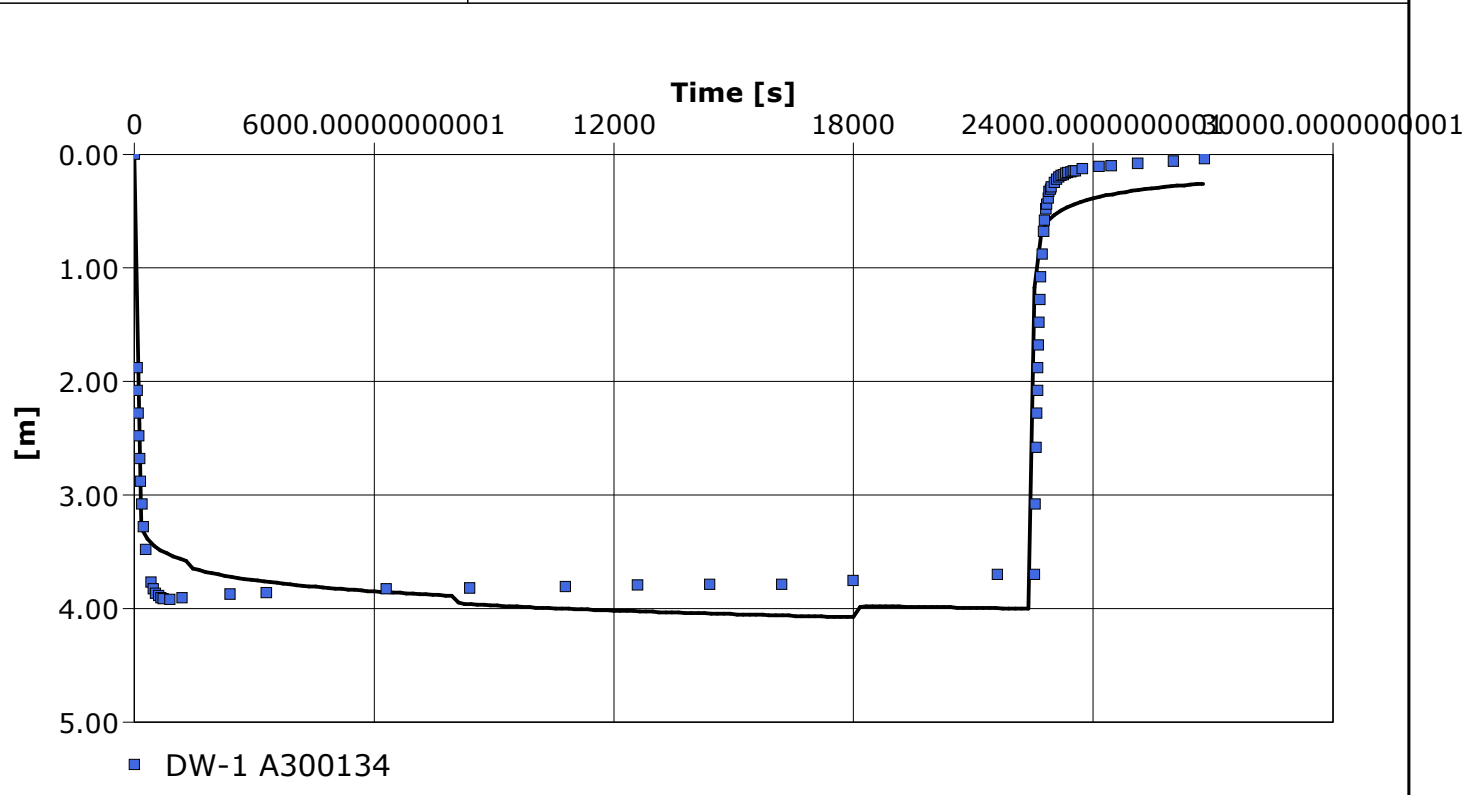
Analysis Performed by: Jen Swiger

Theis DW-1

Analysis Date: 10/21/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0006838 [m<sup>3</sup>/s]



Calculation using Theis

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Radial Distance to PW [m]
DW-1 A300134	$3.91 \times 10^{-4}$	$3.91 \times 10^{-5}$	$7.94 \times 10^{-10}$	0.08

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 1

Pumping Well: DW-1 A300134

Test Conducted by: Andrea Nelson

Test Date: 9/18/2020

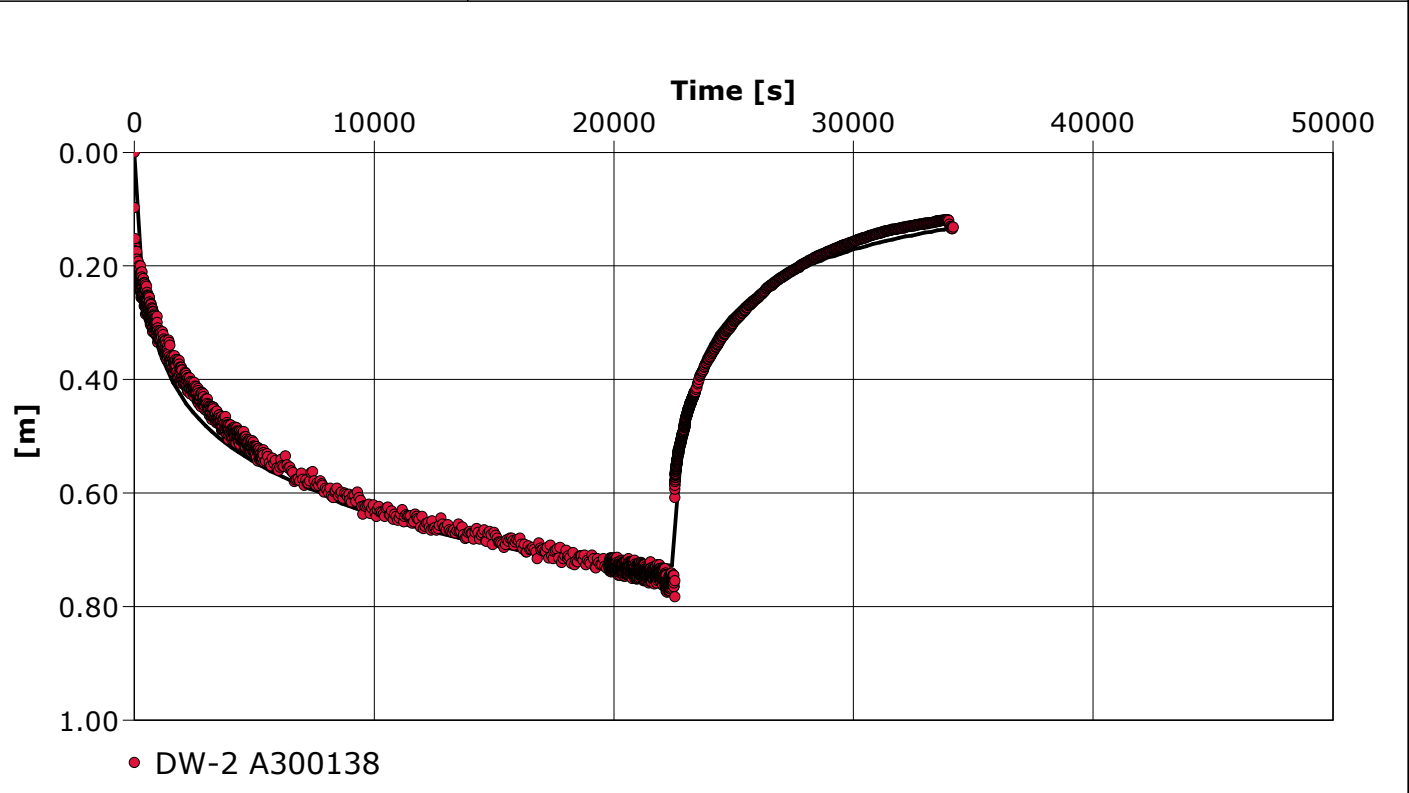
Analysis Performed by: Jen Swiger

Theis OW-2

Analysis Date: 10/21/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0006838 [m<sup>3</sup>/s]



Calculation using Theis

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Radial Distance to PW [m]
DW-2 A300138	$4.40 \times 10^{-4}$	$4.40 \times 10^{-5}$	$1.43 \times 10^{-5}$	64.0

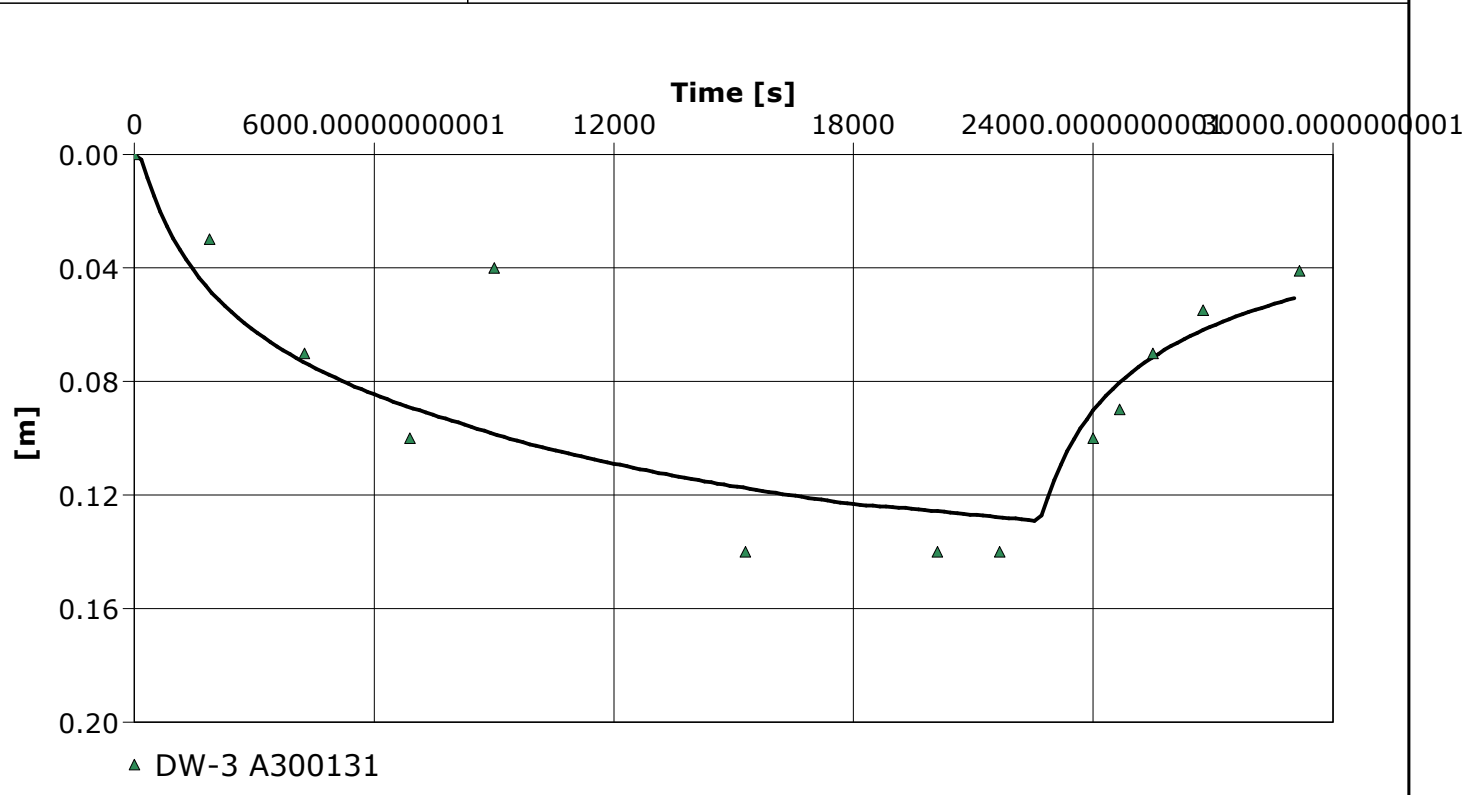
**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan	Pumping Test: Pumping Test 1	Pumping Well: DW-1 A300134
Test Conducted by: Andrea Nelson		Test Date: 9/18/2020
Analysis Performed by: Jen Swiger	Theis OW-3	Analysis Date: 10/23/2020
Aquifer Thickness: 10.00 m	Discharge: variable, average rate 0.0006838 [m <sup>3</sup> /s]	



Calculation using Theis

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Radial Distance to PW [m]
DW-3 A300131	$1.57 \times 10^{-3}$	$1.57 \times 10^{-4}$	$1.35 \times 10^{-4}$	118.85

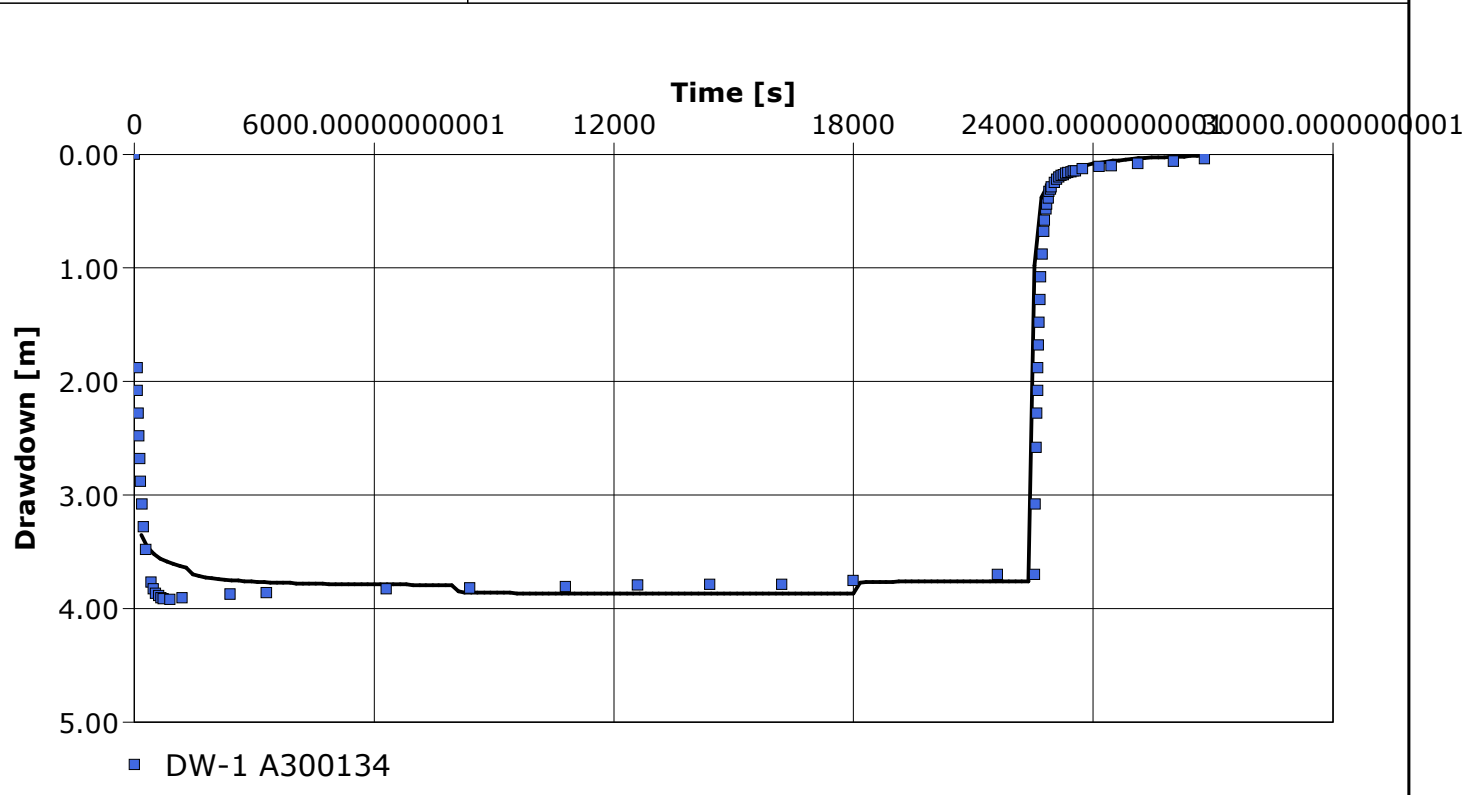
**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan	Pumping Test: Pumping Test 1	Pumping Well: DW-1 A300134
Test Conducted by: Andrea Nelson		Test Date: 9/18/2020
Analysis Performed by: Jen Swiger	Hantush (leaky)	Analysis Date: 10/27/2020
Aquifer Thickness: 10.00 m	Discharge: variable, average rate 0.0006838 [m <sup>3</sup> /s]	



Calculation using Hantush

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Hydr. resistance [s]	Leakage factor [m]	Radial Distance to PW [m]
DW-1 A300134	$3.15 \times 10^{-4}$	$3.15 \times 10^{-5}$	$4.63 \times 10^{-8}$	$5.51 \times 10^{10}$	$4.17 \times 10^3$	0.08

		<b>Pumping Test Analysis Report</b>	
		Project: Glen Allan	
		Number: 317033-2	
		Client:	

Location: Glen Allan		Pumping Test: Pumping Test 1	Pumping Well: DW-1 A300134
Test Conducted by: Andrea Nelson			Test Date: 9/18/2020

Aquifer Thickness: 10.00 m		Discharge: variable, average rate 0.0006838 [m <sup>3</sup> /s]	
----------------------------	--	-----------------------------------------------------------------	--

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m <sup>2</sup> /s]	K [m/s]	S
1	Theis DW-1	Jen Swiger	10/21/2020	Theis	DW-1 A300134	$3.91 \times 10^{-4}$	$3.91 \times 10^{-5}$	$7.94 \times 10^{-10}$
2	Theis OW-2	Jen Swiger	10/21/2020	Theis	DW-2 A300138	$4.40 \times 10^{-4}$	$4.40 \times 10^{-5}$	$1.43 \times 10^{-5}$
3	Theis OW-3	Jen Swiger	10/23/2020	Theis	DW-3 A300131	$1.57 \times 10^{-3}$	$1.57 \times 10^{-4}$	$1.35 \times 10^{-4}$
4	Hantush (leaky)	Jen Swiger	10/27/2020	Hantush	DW-1 A300134	$3.15 \times 10^{-4}$	$3.15 \times 10^{-5}$	$4.63 \times 10^{-8}$

--	--	--	--	--	--	--	--	--

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 2

Pumping Well: DW-2 A300138

Test Conducted by: Andrea Nelson

Test Date: 9/20/2020

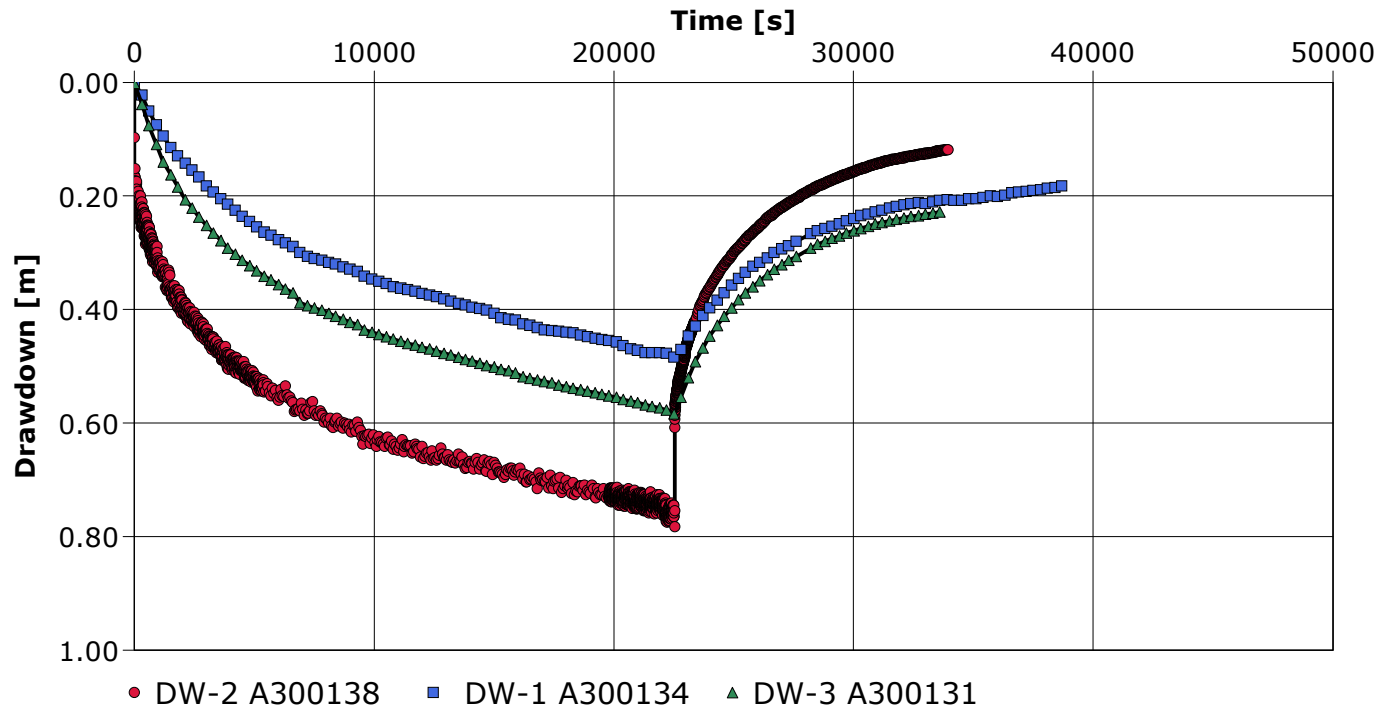
Analysis Performed by:

Time-Drawdown

Analysis Date: 10/21/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0016662 [m<sup>3</sup>/s]



**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 2

Pumping Well: DW-2 A300138

Test Conducted by: Andrea Nelson

Test Date: 9/20/2020

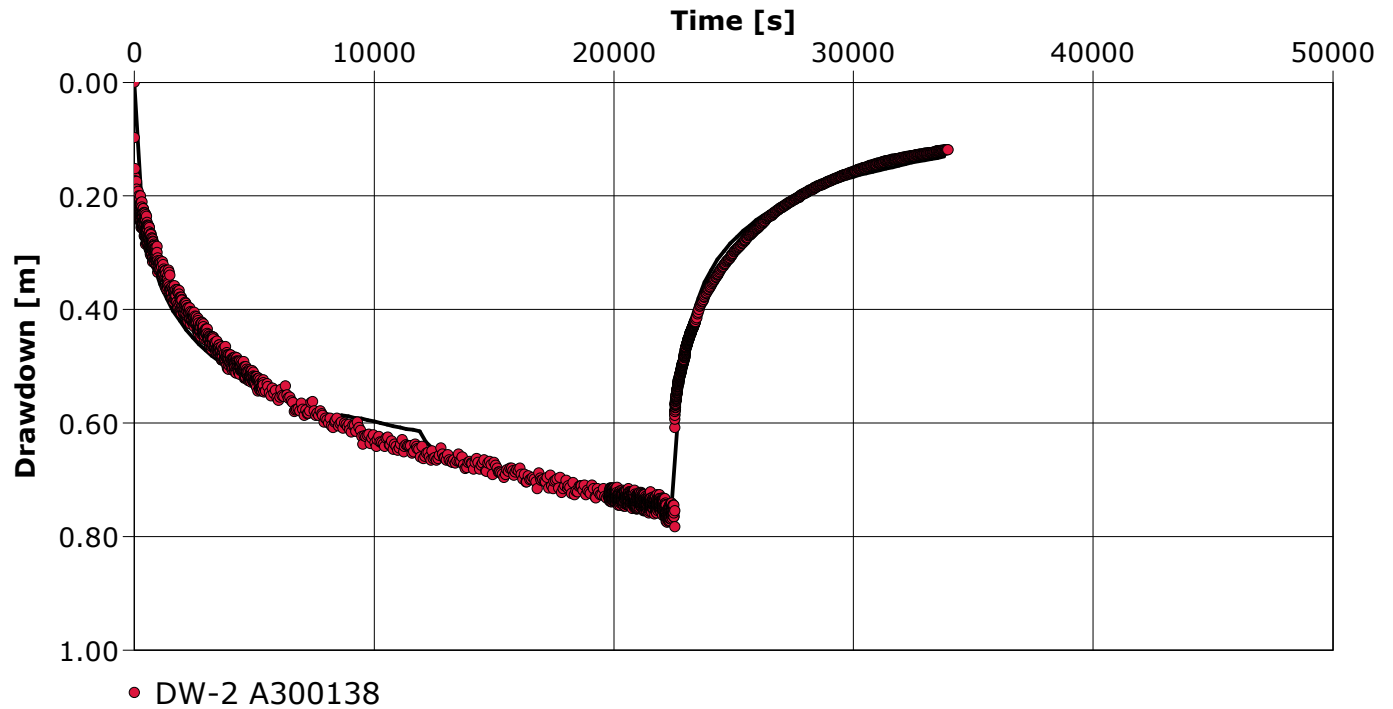
Analysis Performed by: Jen Swiger

Theis

Analysis Date: 10/16/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0016662 [m<sup>3</sup>/s]



Calculation using Theis

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Radial Distance to PW [m]
DW-2 A300138	$1.12 \times 10^{-3}$	$1.12 \times 10^{-4}$	$2.29 \times 10^1$	0.08

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 2

Pumping Well: DW-2 A300138

Test Conducted by: Andrea Nelson

Test Date: 9/20/2020

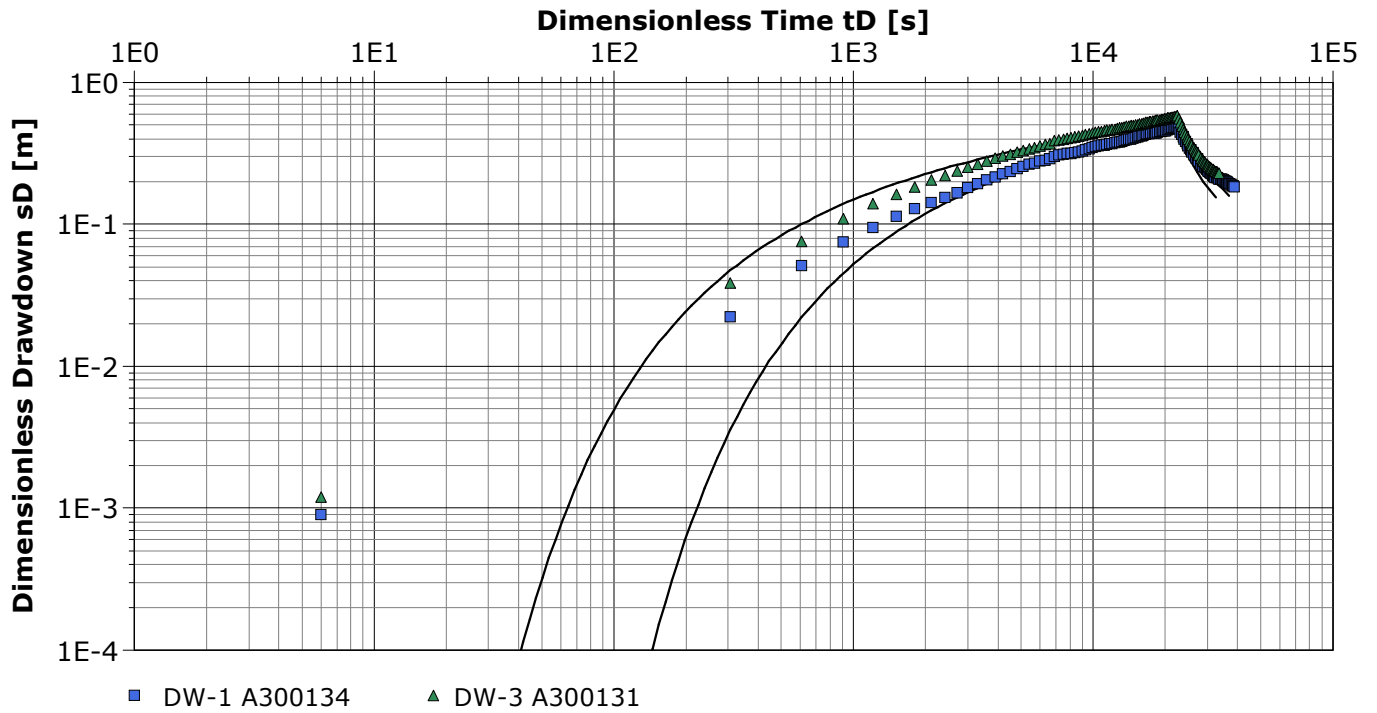
Analysis Performed by: Jen Swiger

Theis - OW1 & OW3

Analysis Date: 10/21/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0016662 [m<sup>3</sup>/s]



Calculation using Theis

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Radial Distance to PW [m]
DW-1 A300134	$7.62 \times 10^{-4}$	$7.62 \times 10^{-5}$	$6.00 \times 10^{-4}$	64.0
DW-3 A300131	$1.00 \times 10^{-3}$	$1.00 \times 10^{-4}$	$1.00 \times 10^{-4}$	93.54
Average	$8.81 \times 10^{-4}$	$8.81 \times 10^{-5}$	$3.50 \times 10^{-4}$	

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 2

Pumping Well: DW-2 A300138

Test Conducted by: Andrea Nelson

Test Date: 9/20/2020

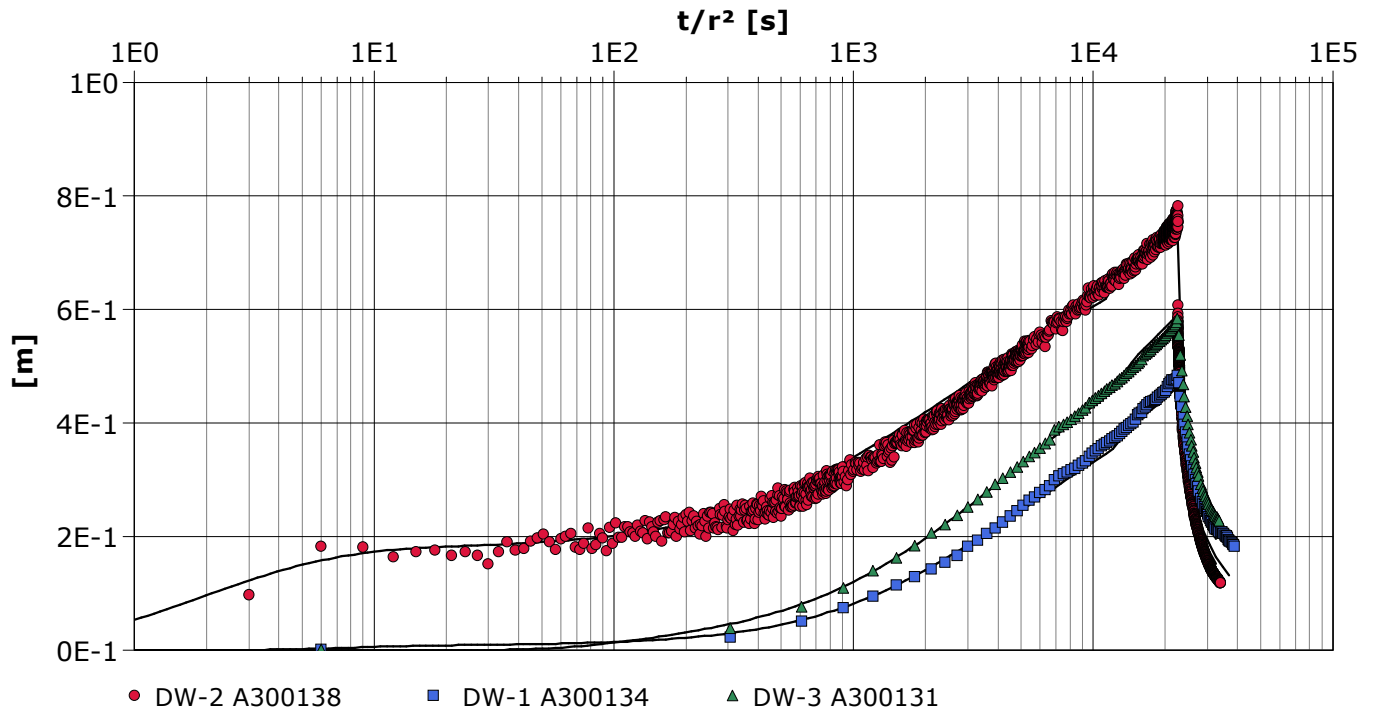
Analysis Performed by: Jen Swiger

Double Porosity

Analysis Date: 11/11/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0016662 [m<sup>3</sup>/s]



Calculation using Double Porosity

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Sigma	Lambda	Radial Distance to PW [m]
DW-2 A300138	$1.03 \times 10^{-3}$	$1.03 \times 10^{-4}$	$4.28 \times 10^{-1}$	$6.96 \times 10^1$	$4.25 \times 10^{-1}$	0.08
DW-1 A300134	$9.24 \times 10^{-4}$	$9.24 \times 10^{-5}$	$1.08 \times 10^{-5}$	$4.44 \times 10^1$	$1.00 \times 10^1$	64.0
DW-3 A300131	$7.78 \times 10^{-4}$	$7.78 \times 10^{-5}$	$4.77 \times 10^{-5}$	$2.21 \times 10^0$	$4.29 \times 10^0$	93.54
Average	$9.11 \times 10^{-4}$	$9.11 \times 10^{-5}$	$1.43 \times 10^{-1}$	$3.87 \times 10^1$	$4.90 \times 10^0$	

		<b>Pumping Test Analysis Report</b>	
		Project: Glen Allan	
		Number: 317033-2	
		Client:	

Location: Glen Allan		Pumping Test: Pumping Test 2	Pumping Well: DW-2 A300138
Test Conducted by: Andrea Nelson			Test Date: 9/20/2020

Aquifer Thickness: 10.00 m		Discharge: variable, average rate 0.0016662 [m³/s]	
----------------------------	--	----------------------------------------------------	--

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m²/s]	K [m/s]	S
1	Theis	Jen Swiger	10/16/2020	Theis	DW-2 A300138	$1.12 \times 10^{-3}$	$1.12 \times 10^{-4}$	$2.29 \times 10^{-1}$
2	Theis - OW1 & OW3	Jen Swiger	10/21/2020	Theis	DW-1 A300134	$7.62 \times 10^{-4}$	$7.62 \times 10^{-5}$	$6.00 \times 10^{-4}$
3	Theis - OW1 & OW3	Jen Swiger	10/21/2020	Theis	DW-3 A300131	$1.00 \times 10^{-3}$	$1.00 \times 10^{-4}$	$1.00 \times 10^{-4}$
4	Double Porosity	Jen Swiger	11/11/2020	Double Porosity	DW-2 A300138	$1.03 \times 10^{-3}$	$1.03 \times 10^{-4}$	$4.28 \times 10^{-1}$
5	Double Porosity	Jen Swiger	11/11/2020	Double Porosity	DW-1 A300134	$9.24 \times 10^{-4}$	$9.24 \times 10^{-5}$	$1.08 \times 10^{-5}$
6	Double Porosity	Jen Swiger	11/11/2020	Double Porosity	DW-3 A300131	$7.78 \times 10^{-4}$	$7.78 \times 10^{-5}$	$4.77 \times 10^{-5}$

--	--	--	--	--	--	--	--	--

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 3

Pumping Well: DW-3 A300131

Test Conducted by: Andrea Nelson

Test Date: 10/19/2020

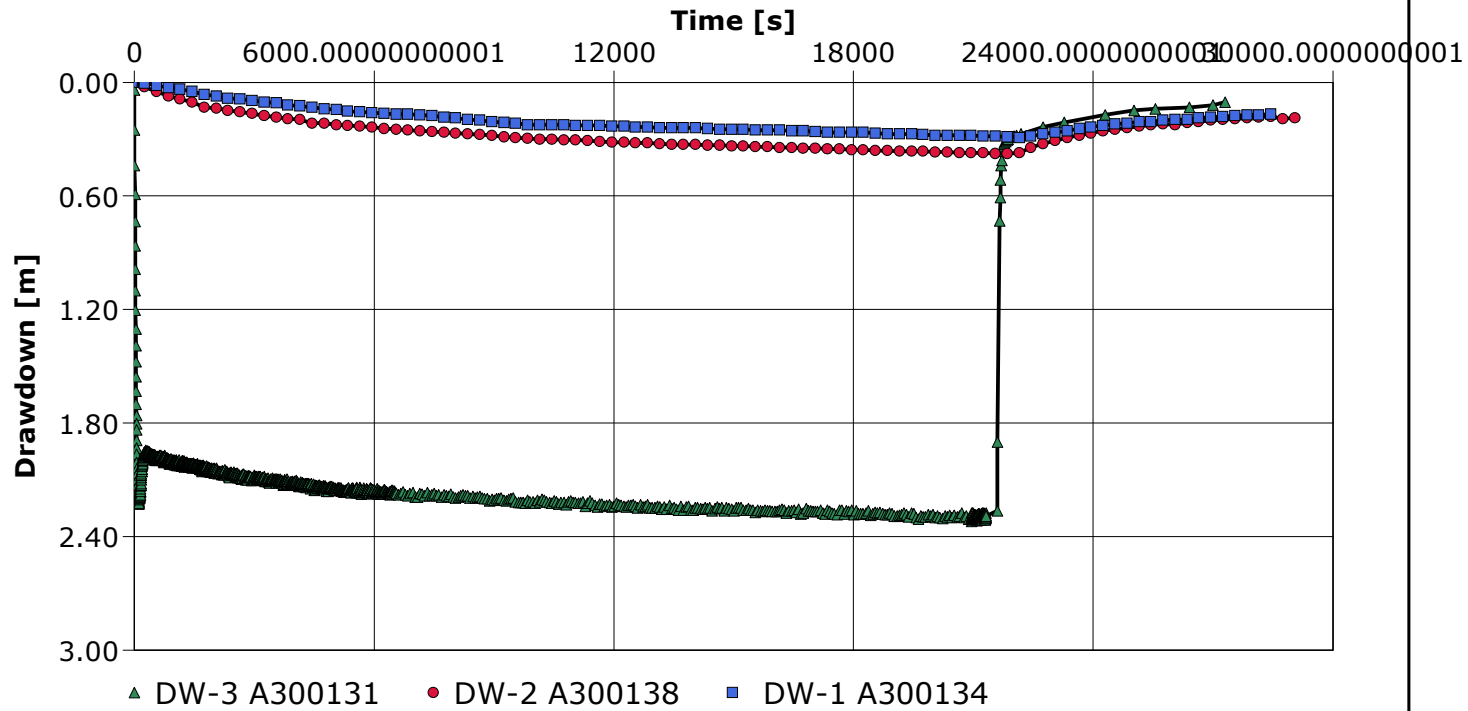
Analysis Performed by: Jen Swiger

Time-Drawdown

Analysis Date: 10/21/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0010458 [m<sup>3</sup>/s]



**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 3

Pumping Well: DW-3 A300131

Test Conducted by: Andrea Nelson

Test Date: 10/19/2020

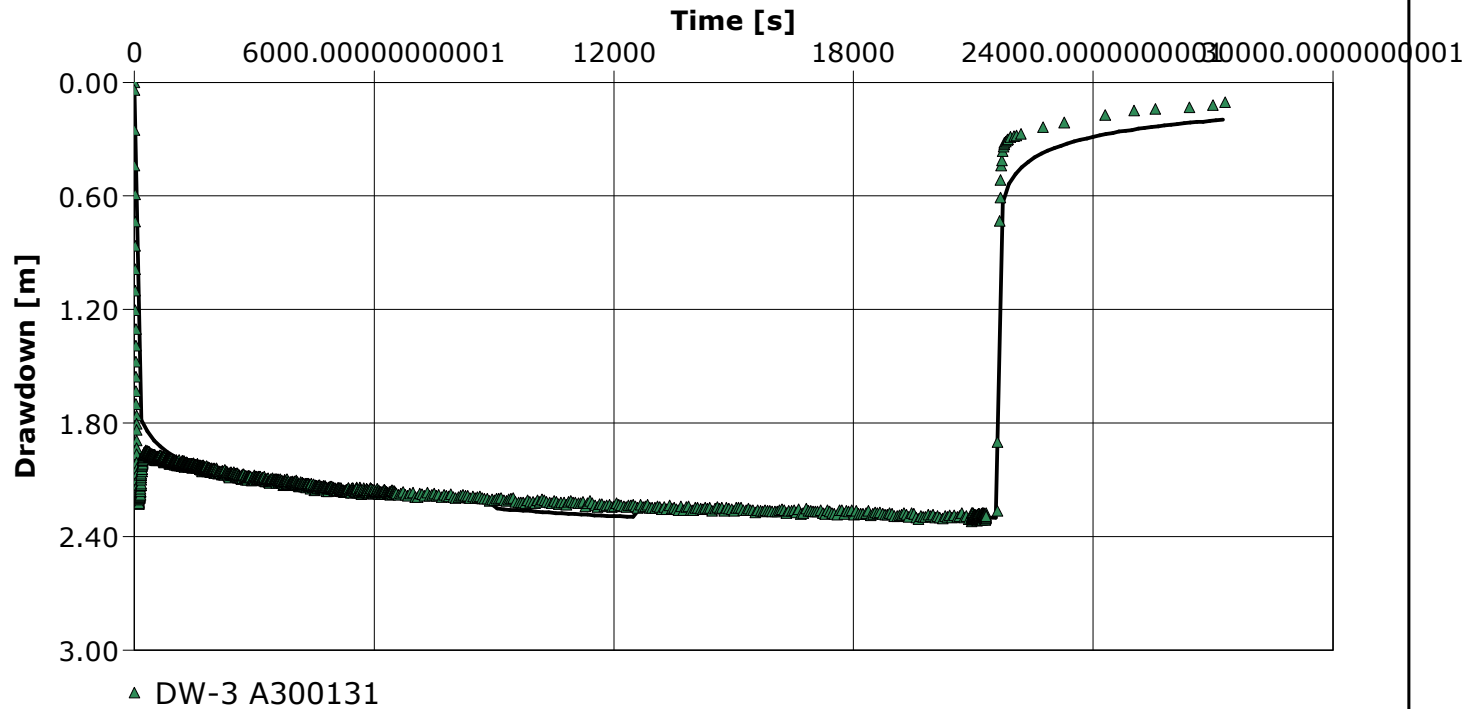
Analysis Performed by: Jen Swiger

Theis

Analysis Date: 10/19/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0010458 [m<sup>3</sup>/s]



Calculation using Theis

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Radial Distance to PW [m]
DW-3A300131	$6.61 \times 10^{-4}$	$6.61 \times 10^{-5}$	$5.02 \times 10^{-5}$	0.08

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 3

Pumping Well: DW-3 A300131

Test Conducted by: Andrea Nelson

Test Date: 10/19/2020

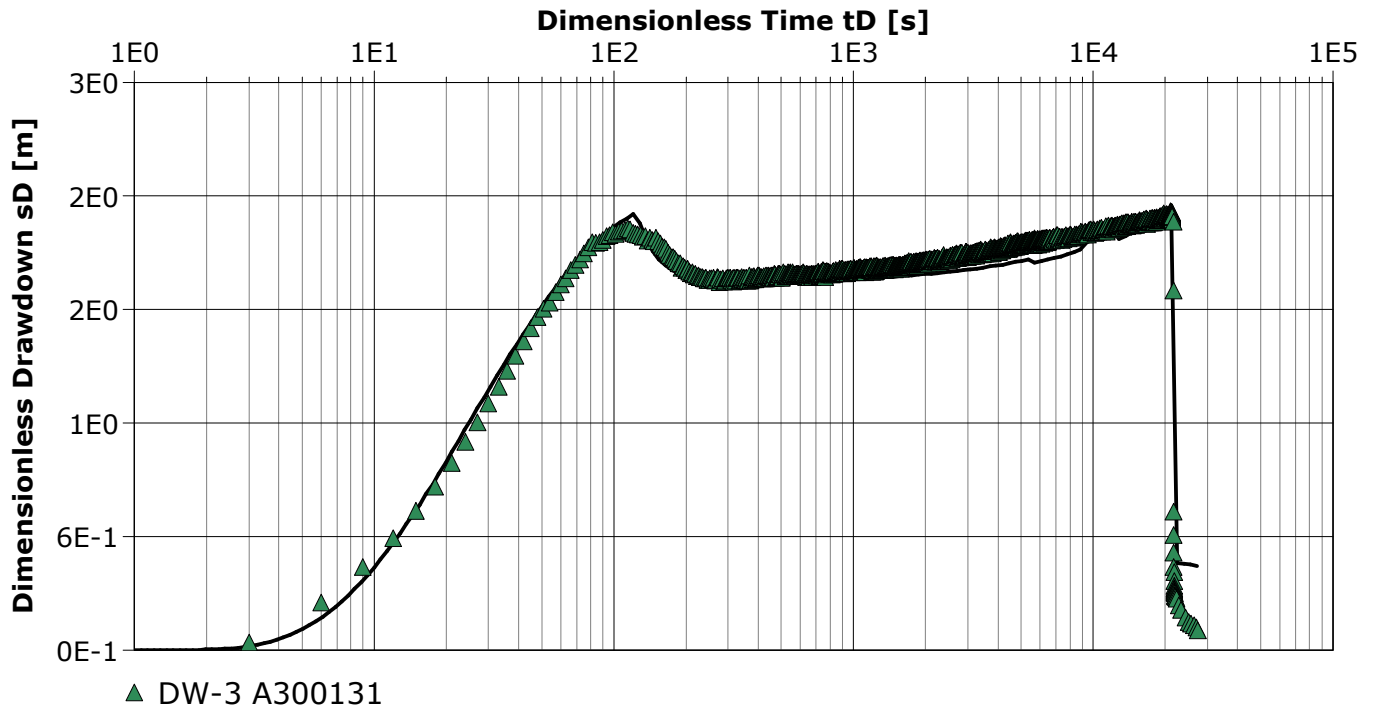
Analysis Performed by: Jen Swiger

Double Porosity

Analysis Date: 10/23/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0010458 [m<sup>3</sup>/s]



Calculation using Double Porosity

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Sigma	Lambda	Radial Distance to PW [m]
DW-3 A300131	$5.40 \times 10^{-5}$	$5.40 \times 10^{-6}$	$3.58 \times 10^{-1}$	$6.90 \times 10^2$	$5.45 \times 10^{-1}$	0.08

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 3

Pumping Well: DW-3 A300131

Test Conducted by: Andrea Nelson

Test Date: 10/19/2020

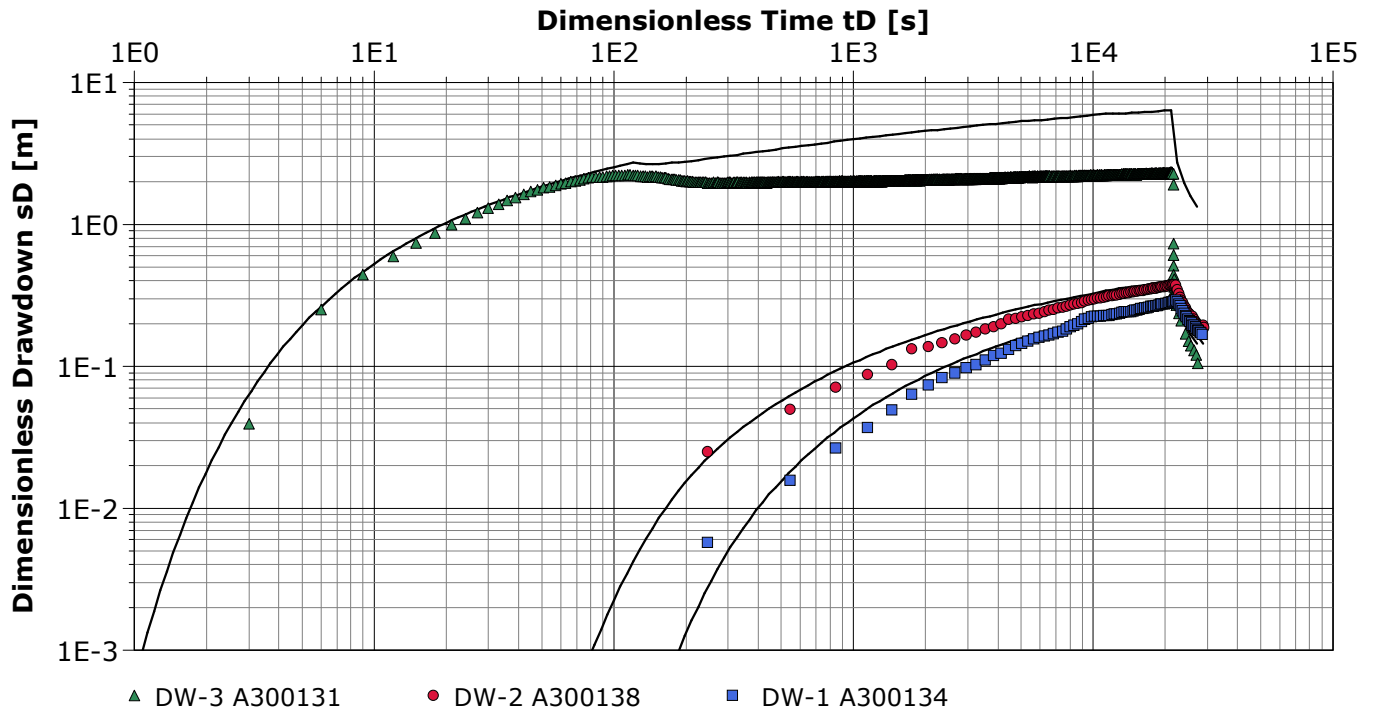
Analysis Performed by: Jen Swiger

Theis Early Time Fit

Analysis Date: 10/23/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0010458 [m<sup>3</sup>/s]



Calculation using Theis

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Radial Distance to PW [m]
DW-3 A300131	$9.87 \times 10^{-5}$	$9.87 \times 10^{-6}$	$3.92 \times 10^{-1}$	0.08
DW-2 A300138	$7.78 \times 10^{-4}$	$7.78 \times 10^{-5}$	$1.00 \times 10^{-4}$	93.54
DW-1 A300134	$8.69 \times 10^{-4}$	$8.69 \times 10^{-5}$	$1.55 \times 10^{-4}$	118.85
Average	$5.82 \times 10^{-4}$	$5.82 \times 10^{-5}$	$1.31 \times 10^{-1}$	

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 3

Pumping Well: DW-3 A300131

Test Conducted by: Andrea Nelson

Test Date: 10/19/2020

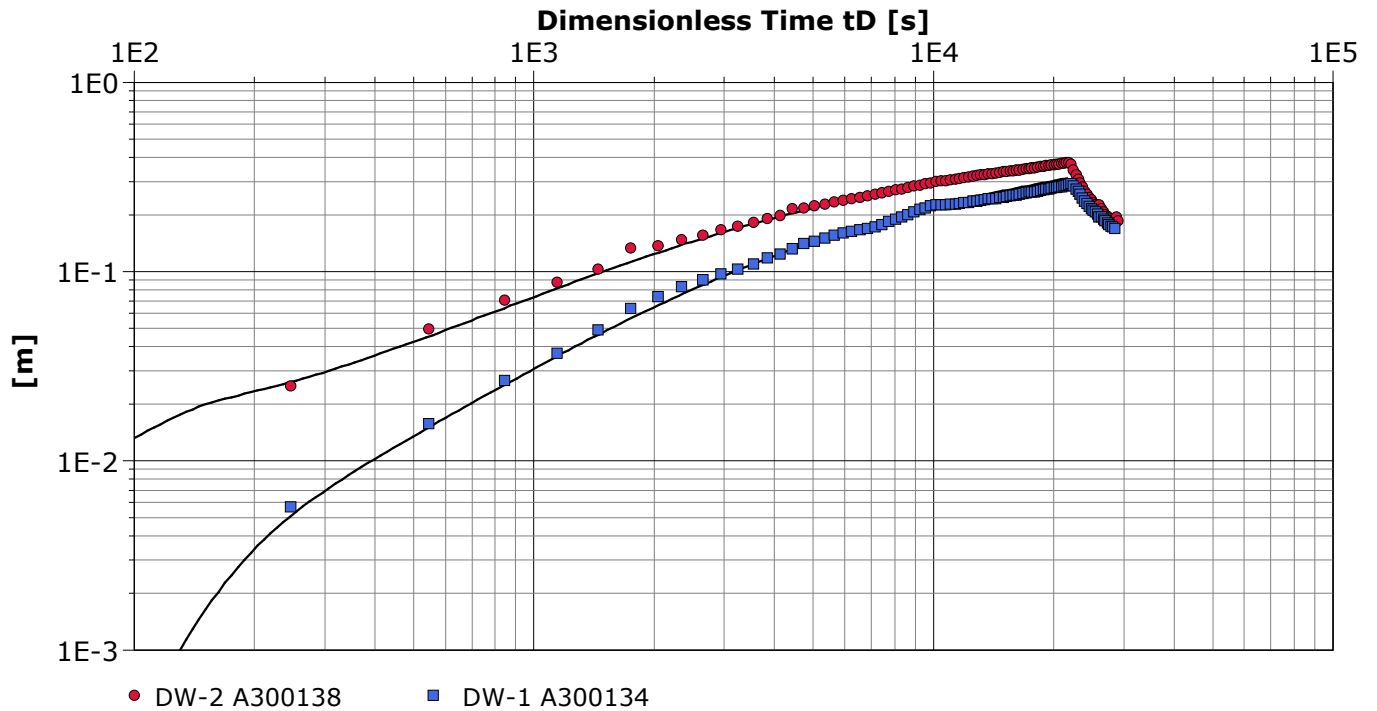
Analysis Performed by: Jen Swiger

Double Porosity - OW 1 and OW 2

Analysis Date: 10/23/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0010458 [m<sup>3</sup>/s]



Calculation using Double Porosity

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Sigma	Lambda	Radial Distance to PW [m]
DW-2 A300138	$6.55 \times 10^{-4}$	$6.55 \times 10^{-5}$	$3.21 \times 10^{-5}$	$4.52 \times 10^0$	$6.17 \times 10^0$	93.54
DW-1 A300134	$6.16 \times 10^{-4}$	$6.16 \times 10^{-5}$	$7.22 \times 10^{-5}$	$2.07 \times 10^0$	$1.00 \times 10^1$	118.85
Average	$6.35 \times 10^{-4}$	$6.35 \times 10^{-5}$	$5.21 \times 10^{-5}$	$3.30 \times 10^0$	$8.09 \times 10^0$	

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 3

Pumping Well: DW-3 A300131

Test Conducted by: Andrea Nelson

Test Date: 10/19/2020

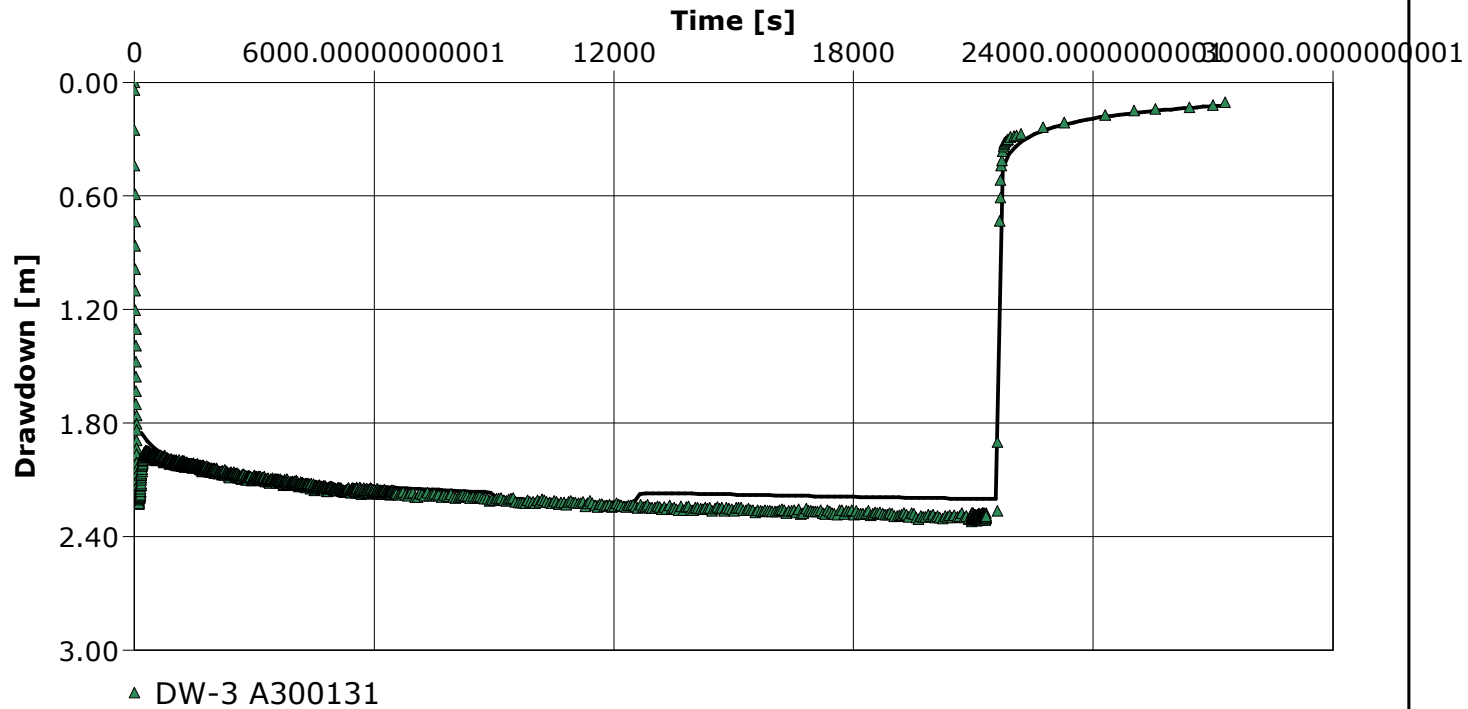
Analysis Performed by: Jen Swiger

Hantush (leaky)

Analysis Date: 10/27/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0010458 [m<sup>3</sup>/s]



Calculation using Hantush

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Hydr. resistance [s]	Leakage factor [m]	Radial Distance to PW [m]
DW-3 A300131	$8.74 \times 10^{-4}$	$8.74 \times 10^{-5}$	$3.59 \times 10^{-7}$	$1.98 \times 10^{11}$	$1.32 \times 10^4$	0.08

**Pumping Test Analysis Report**

Project: Glen Allan

Number: 317033-2

Client:

Location: Glen Allan

Pumping Test: Pumping Test 3

Pumping Well: DW-3 A300131

Test Conducted by: Andrea Nelson

Test Date: 10/19/2020

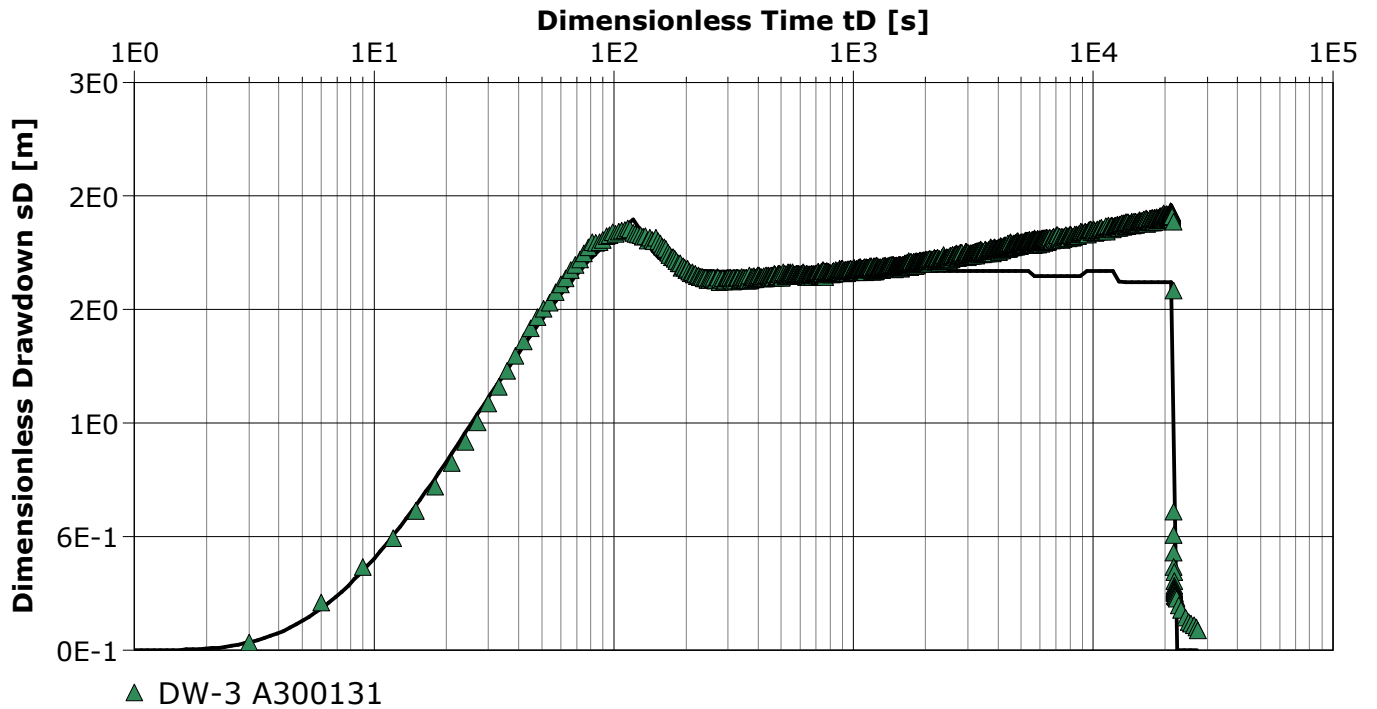
Analysis Performed by: Jen Swiger

Hantush - Early Time Fit

Analysis Date: 10/27/2020

Aquifer Thickness: 10.00 m

Discharge: variable, average rate 0.0010458 [m<sup>3</sup>/s]



Calculation using Hantush

Observation Well	Transmissivity [m <sup>2</sup> /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Hydr. resistance [s]	Leakage factor [m]	Radial Distance to PW [m]
DW-3 A300131	$7.44 \times 10^{-5}$	$7.44 \times 10^{-6}$	$3.79 \times 10^{-1}$	$2.74 \times 10^2$	$1.43 \times 10^{-1}$	0.08

		<b>Pumping Test Analysis Report</b>	
		Project: Glen Allan	
		Number: 317033-2	
		Client:	

Location: Glen Allan	Pumping Test: Pumping Test 3	Pumping Well: DW-3 A300131
----------------------	------------------------------	----------------------------

Test Conducted by: Andrea Nelson	Test Date: 10/19/2020
----------------------------------	-----------------------

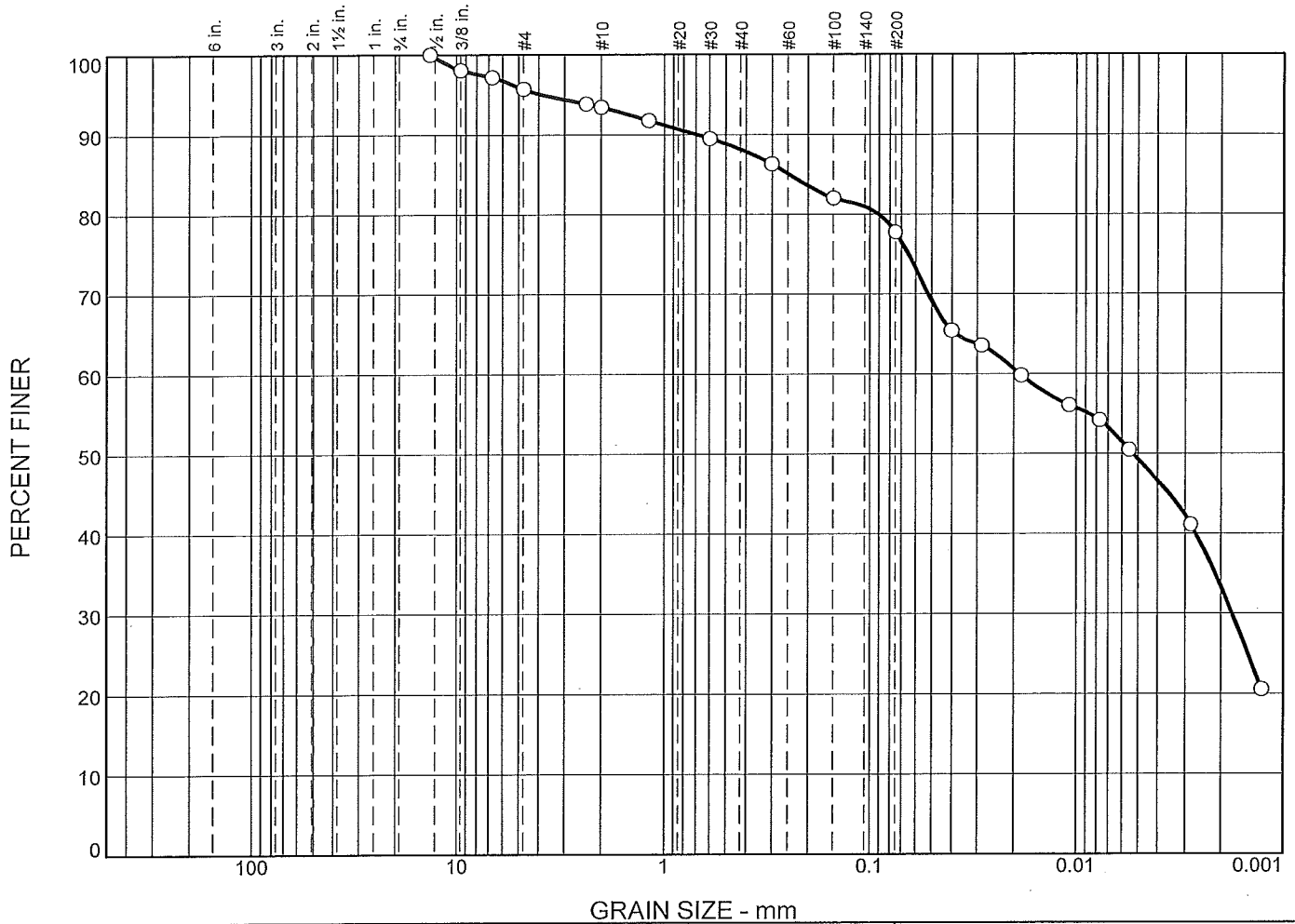
Aquifer Thickness: 10.00 m	Discharge: variable, average rate 0.0010458 [m <sup>3</sup> /s]
----------------------------	-----------------------------------------------------------------

	Analysis Name	Analysis Performed by	Analysis Date	Method name	Well	T [m <sup>2</sup> /s]	K [m/s]	S
1	Theis	Jen Swiger	10/19/2020	Theis	DW-3 A300131	$6.61 \times 10^{-4}$	$6.61 \times 10^{-5}$	$5.02 \times 10^{-5}$
2	Double Porosity	Jen Swiger	10/23/2020	Double Porosity	DW-3 A300131	$5.40 \times 10^{-5}$	$5.40 \times 10^{-6}$	$3.58 \times 10^{-1}$
3	Theis Early Time Fit	Jen Swiger	10/23/2020	Theis	DW-3 A300131	$9.87 \times 10^{-5}$	$9.87 \times 10^{-6}$	$3.92 \times 10^{-1}$
4	Theis Early Time Fit	Jen Swiger	10/23/2020	Theis	DW-2 A300138	$7.78 \times 10^{-4}$	$7.78 \times 10^{-5}$	$1.00 \times 10^{-4}$
5	Theis Early Time Fit	Jen Swiger	10/23/2020	Theis	DW-1 A300134	$8.69 \times 10^{-4}$	$8.69 \times 10^{-5}$	$1.55 \times 10^{-4}$
6	Double Porosity - OW	Jen Swiger 2	10/23/2020	Double Porosity	DW-2 A300138	$6.55 \times 10^{-4}$	$6.55 \times 10^{-5}$	$3.21 \times 10^{-5}$
7	Double Porosity - OW	Jen Swiger 2	10/23/2020	Double Porosity	DW-1 A300134	$6.16 \times 10^{-4}$	$6.16 \times 10^{-5}$	$7.22 \times 10^{-5}$
8	Hantush (leaky)	Jen Swiger	10/27/2020	Hantush	DW-3 A300131	$8.74 \times 10^{-4}$	$8.74 \times 10^{-5}$	$3.59 \times 10^{-7}$
9	Hantush - Early Time	Jen Swiger	10/27/2020	Hantush	DW-3 A300131	$7.44 \times 10^{-5}$	$7.44 \times 10^{-6}$	$3.79 \times 10^{-1}$

--	--	--	--	--	--	--	--	--

**APPENDIX G:  
SOIL GRAIN-SIZE ANALYSES**

# Particle Size Distribution Report



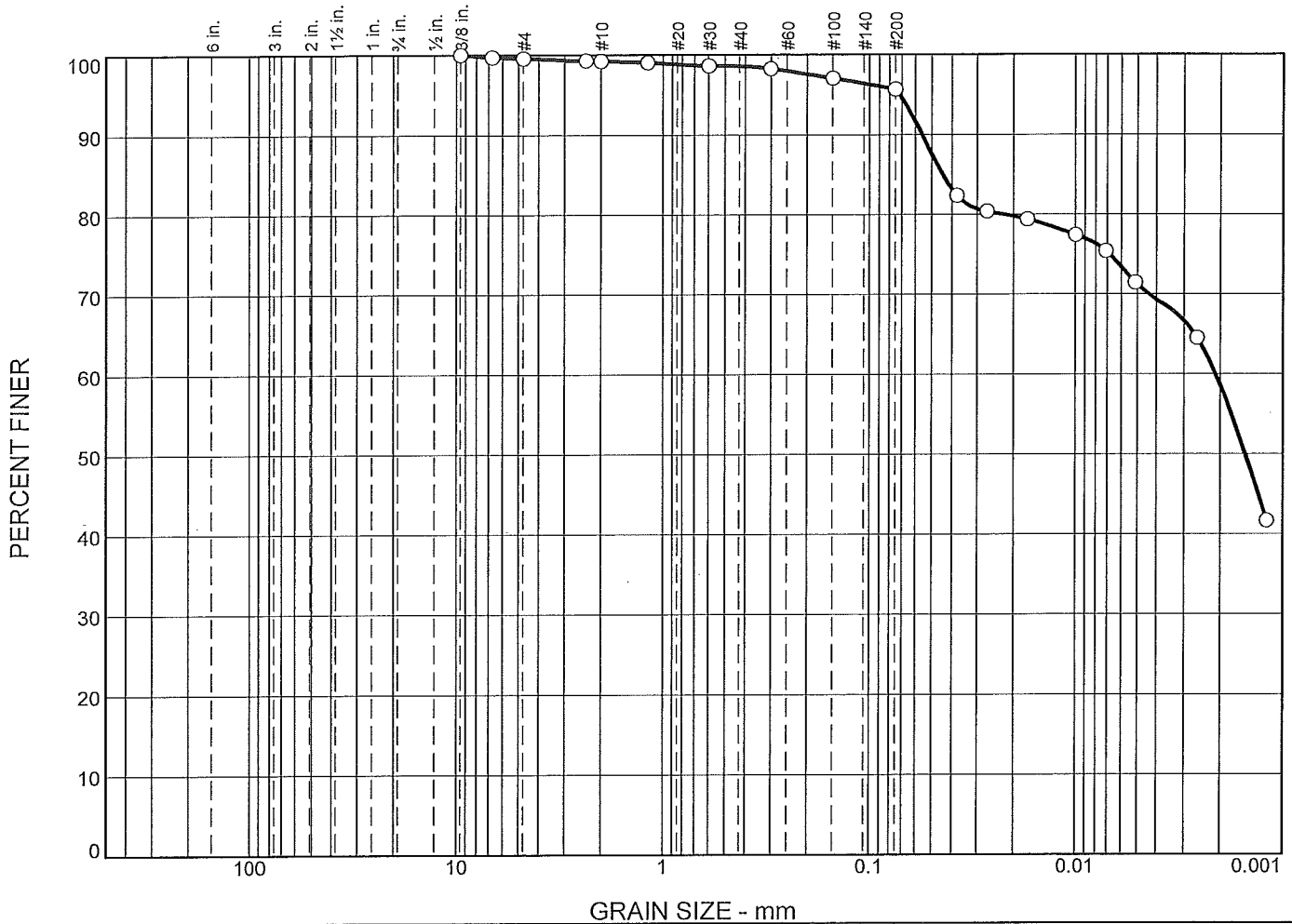
	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	4.3	2.3	5.2	10.5	44.3	33.4

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH1	5	0.76-1.37m	clayey silt, some sand, trace gravel	ML
				Tested by MS of CMT Engineering Inc., September 6, 2018	
				Coefficient of Permeability $k < 1.0 \times 10^{-6}$ cm/s	
				$T = 50$ min/cm	

**CMT Engineering Inc.**  
**St. Clements, ON**

**Client:** Mr. Murray Martin  
**Project:** Residential Subdivision  
 South Mill Street, Glen Allan, Ontario  
**Project No.:** 18-462

# Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.4	0.4	0.6	2.9	37.1	58.6

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH2	7	4.57-5.18m	clay and silt, trace sand and gravel	CL
				Tested by MS of CMT Engineering Inc., September 6, 2018	
				Coefficient of Permeability $k < 1.0 \times 10^{-6}$ cm/s	
				$T = 50$ min/cm	

**CMT Engineering Inc.**

**St. Clements, ON**

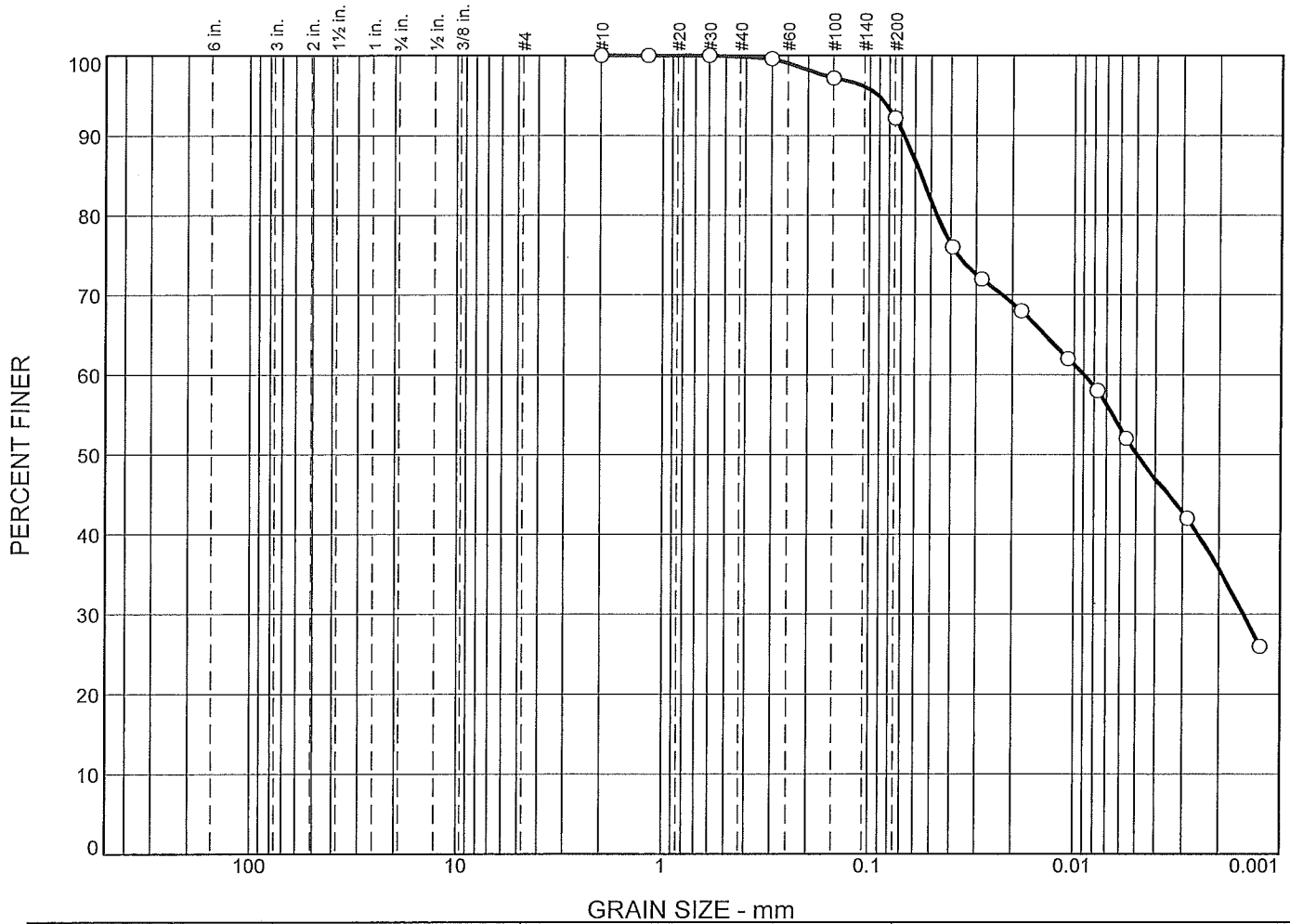
**Client:** Mr. Murray Martin  
**Project:** Residential Subdivision  
 South Mill Street, Glen Allan, Ontario  
**Project No.:** 18-462

**Figure 2**





# Particle Size Distribution Report



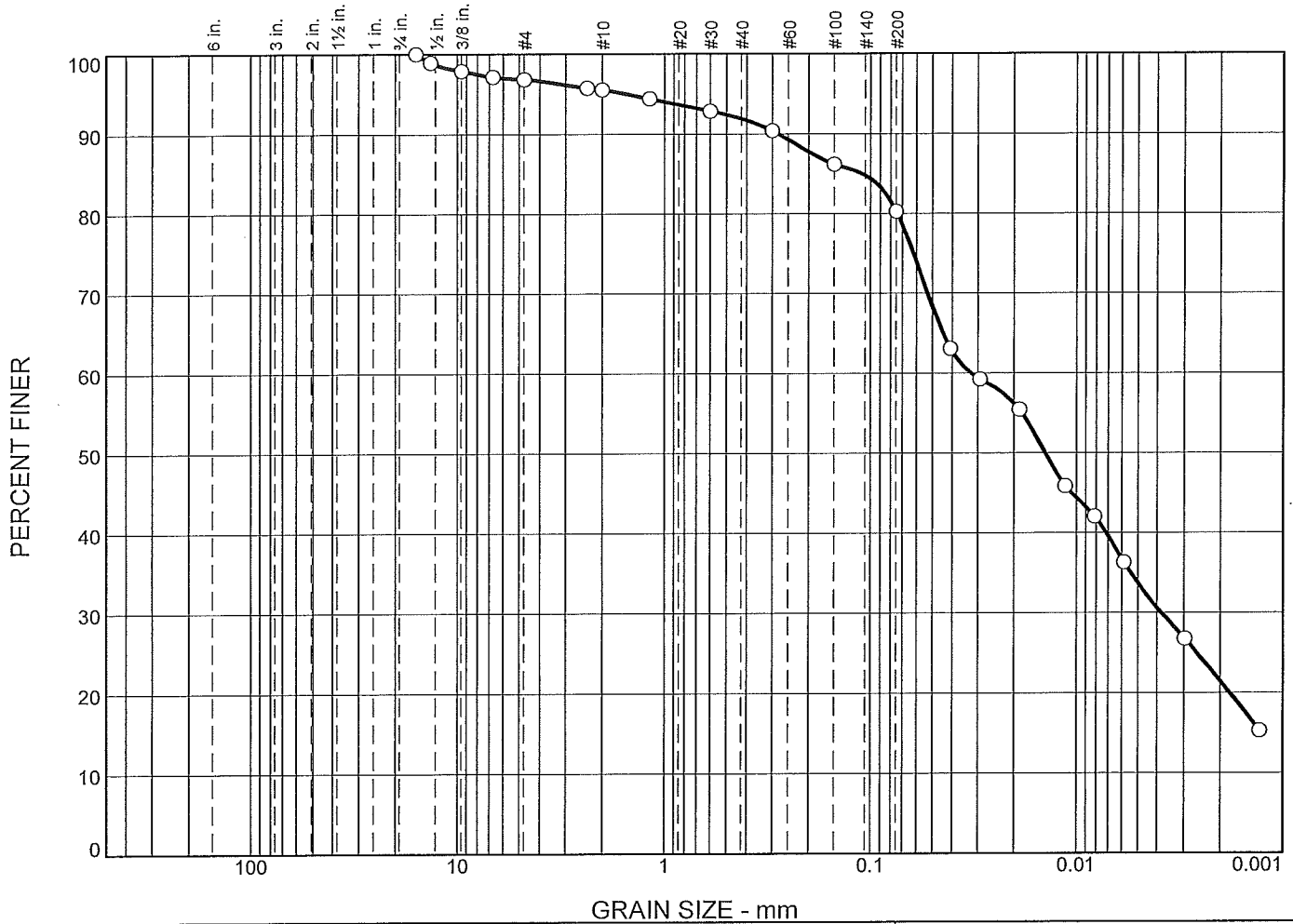
	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.0	0.1	7.7	56.5	35.7

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH5	8	5.18-6.10m	silt and clay, trace sand	ML
				Tested by MS of CMT Engineering Inc., September 6, 2018	
				Coefficient of Permeability $k < 1.0 \times 10^{-6}$ cm/s	
				$T = 50$ min/cm	

**CMT Engineering Inc.**  
**St. Clements, ON**

**Client:** Mr. Murray Martin  
**Project:** Residential Subdivision  
South Mill Street, Glen Allan, Ontario  
**Project No.:** 18-462

# Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	3.1	1.3	3.7	11.6	58.8	21.5

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH6	4	2.29-2.90m	Clayey Silt, some sand, trace gravel	ML
				Tested by MS of CMT Engineering Inc., September 6, 2018	
				Coefficient of Permeability $k < 1.0 \times 10^{-6}$ cm/s	
				$T = 50$ min/cm	

**CMT Engineering Inc.**  
**St. Clements, ON**

**Client:** Mr. Murray Martin  
**Project:** Residential Subdivision  
South Mill Street, Glen Allan, Ontario  
**Project No.:** 18-462