



Hydrogeological Study 5782 6 Line East, Township of Guelph/Eramosa (Ariss)

GMBP File: 420099-2

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**HYDROGEOLOGICAL STUDY
5782 6 LINE EAST, TOWNSHIP OF GUELPH/ERAMOSA (ARISS)**

WILL-O-HOMES INC.

JULY 2024

GMBP FILE: 420099-2

1. INTRODUCTION

Will-O-Homes Inc. (the Client) has retained GM BluePlan Engineering Ltd. (GMBP) to perform a hydrogeological study to support Draft Plan Approval for a residential development on a property located at 5782 6 Line E, Ariss. The subject property (the Site) is approximately 7.79 ha (19.25 acres) and is located within Lot 17, Concession 4 of the Geographic Township of Pilkington (Figure 1). It is our understanding that the development is anticipated to comprise of 16 residential lots, associated easements and roadways. The residential lots are proposed to be serviced by private on-site sewage systems and individual private water supply wells. 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 hydrogeological system.

1.1 PURPOSE AND SCOPE

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 study is based on *Procedure D-5-4: Technical Guideline for Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment* (MOE August 1996) and *Procedure D-5-5: Technical Guideline for Private Wells: Water Supply Assessment* (MOE August 1996) and our experience with similar projects. To gather the necessary information for the required assessment, both desktop (e.g., review of records on file) and field investigation work were performed. In general, the scope of work includes:

1. Background study regarding the geological and physiographic setting of the Site;
2. Search of provincial MECP records for wells within 500 m of the Site boundaries;
3. Completion of overburden boreholes, complete with monitoring wells, for characterization of overburden materials and groundwater;
4. Door-to-door survey of properties within 500 m of the Site for information on water wells and usage;
5. Installation and aquifer performance testing (i.e. pumping tests) of water supply test wells on-Site;
6. Water quality testing of samples taken from monitoring wells and water supply test wells installed on-Site;
7. Water quality testing of samples collected from domestic wells at neighbouring properties near to the Site;
8. Estimation of the nitrate attenuation capacity of the proposed development (as per Procedure D-5-4); and
9. Assessment for adequate water supply as per Procedure D-5-5.

A more detailed description of the investigation activities is given in Section 3.1 (Methodology).

2. BACKGROUND

For the purposes of this report, the term “north” shall be taken to mean the direction along 6th Line East toward Sideroad 16 (i.e., compass northwest). Figure 1 shows the location of the Site on a regional scale and Figure 2 shows an aerial view of the Site.

2.1 SITE LOCATION AND SETTING

The Site is situated in the vicinity of the hamlet area of Ariss in the Township of Guelph/Eramosa (refer to Figure 1). The Site occupies an area of approximately 7.77 ha and is located along 6 Line E, 300 m north of its intersection with Wellington County Road 51. The property is described as Part of Lot 17, Concession 4, Geographic Township of Pilkington. The Site is currently undeveloped land with no existing structures and is used for agricultural purposes. The property is intersected through the center by a municipal drainage feature known as Branch C of Kurtz Drain (runs north-south across the Site). The Kurtz Drain conveys surface flows to Hopewell Creek which lies approximately 1.5 kilometres south of the Site.

The western half of the Site is currently bounded to the north by Branch F of the Kurtz Drain, which spans east-west and connects with Branch C; while the eastern half of the Site is bounded to the north and east by residential and agricultural properties. Along the southeastern property line, Branch E of the Kurtz Drain exists which spans east-west and conveys flows southward via a culvert. The Usher’s Creek Subdivision also bounds the Site to the South as well the residential property 5760 6 Line East. The Site is bounded to the west by the Kissing Bridge Trailway.

An aerial photo of the layout of the Site is provided in Figure 2.

2.2 PROPOSED DEVELOPMENT

The proposed draft plan (Appendix A) shows a design with 16 residential lots for single-family detached homes and associated amenities and services including roadways. Stormwater generated on-site is to be directed to the Kurtz Drain. An open space block is to be provided to allow for Branch C of Kurtz Drain to intersect the Site through the center, between proposed lots 7 and 8.

Each individual lot is proposed to be serviced with a private on-site sewage system and private water supply well.

2.3 LOCAL RELIEF AND DRAINAGE

According to topographic maps available through the Grand River Conservation Authority (GRCA 2023), the Site generally has a gentle relief with minor undulations and elevations ranging from 350 masl to 344.5 masl. The highest elevations are observed at the east and west portions of the Site and the low point at the Site is located at the center of the Site where Branch C of Kurtz Drain intersects.

The west half of the Site features a gradual east-southeast slope trending toward Branch C.

The eastern half of the Site is divided by a hill feature located along the north boundary: west of the hill, the slope trends gradually westward towards Branch C; and east of the hill, the slope trends gradually southward towards Branch E of Kurtz Drain located along the southeast of the Site.

2.4 GEOLOGY AND PHYSIOGRAPHY

The site is located within the physiographic regions known as the Guelph Drumlin Field, where local soils generally consist of stony tills and deep gravel terraces typical of drumlins and melt water spillways. In this region, natural gravel deposits tend to be overlain with a layer of silty loam (Chapman and Putnam, 1984). In terms of physiographic landforms, the Site is predominately located on a till plain feature with a single drumlin feature intersecting the Site from the north coinciding with the location of the hill feature (Chapman and Putnam 2007). The physiographic region and landform mapping of the Site is illustrated in Figure 3a and 3b.

The surficial materials underlying the site are predominately silty sand to sandy silt till of the Wentworth Till deposit (Ontario Geological Survey 2010). The center of the Site is intersected by a Kame and Esker deposit that is characterized by poorly-sorted coarse materials deposited by glacial meltwaters. The illustration of the surficial geological materials is presented in Figure 4.

Review of well records from lands adjacent to the Site corroborates the general distribution of surficial materials as indicated in the mapping provided by the Ontario Geological Survey (i.e., predominately till).

The Site is underlain at depth by the subcrop of the Guelph Formation (OGS 2011). Locally significant aquifers include the Guelph Formation and the deeper Gasport Formation (Brunton 2009), both of which are typically capable of supporting high-demand flows as would be required by municipal systems (e.g., the City of Guelph). Beneath the Guelph Formation is an aquitard known as the Eramosa Formation, which contains argillaceous and bituminous material, which in turn is underlain by the Goat Island Formation, an aquifer of lower transmissivity which is noted for distinctive geochemistry with elevated sulphate and halite (Brunton 2009). The Goat Island Formation is underlain by the Gasport Formation.

Water well records indicate the subcrop (i.e., the upper surface of the bedrock) generally lies at a depth between 12 m and 28 m below ground surface, depending on location.

2.5 LOCAL USE OF GROUNDWATER

The Site lies within the Grand River Source Protection Area, a part of the Lake Erie Source Protection Region. According to the Source Protection Information Atlas (MECP, 2023), the Site overlaps the following types of vulnerable areas:

- Wellhead Protection Area: No
- Groundwater Under Direct Influence (GUDI): No
- Issue Contributing Area: No
- Significant Groundwater Recharge Area: Yes
 - Attributed to the eastern half of the Site.
- Highly Vulnerable Aquifer: No
- Intake Protection Zone: No
- Event Based Area: No.

These designations will be used to assess the proposed development, in the context of the local Source Protection Plan, for significant threats to drinking water and to determine, if required, suitable monitoring and/or mitigation activities for the protection of drinking water sources.

A desktop survey of water wells via the MECP Water Well Information System indicates numerous water well records attributable to locations on-site and properties within 500 m of the Site. Table 1 provides select details given by these water well records. Copies of the water well records are included in Appendix B. A brief summary of the water well records is given here:

- A total of 76 water well records were identified within the search area
 - 68 of these were installed to bedrock
 - 8 were installed in the overburden
 - 7 records were for monitoring wells (6 of which are located on-site)
 - 1 record for an overburden water supply well attributed to the address 5767 Wellington County Road 86
- The uses of the water wells is broken down as follows:
 - 68 domestic wells
 - 7 monitoring wells
 - 1 commercial well
 - 1 abandonment record
- Hydraulic parameters of bedrock wells used for domestic purposes (67 records)
 - Average static water level 6.3 m below ground surface
 - Average depth of penetration into bedrock is 17.8 m
 - Average pumping rate (as recommended on the well record) of 13 gallons per minute (49. L/min)

Figure 5 shows the locations of the water well records according to the coordinates given by the MECP. It is noted that one of the wells in the study area (MECP Well ID: 6702205) has been identified as an overburden well for domestic use. The record appears to be associated with the address 5767 Wellington Road 86 which neighbours the Site to west, just beyond the Kissing Bridge Trail.

2.6 RELEVANT LOCAL AND SITE-SPECIFIC REPORTS

2.6.1 CMT Geotechnical Investigation – 2021

A geotechnical investigation of the Site was conducted by CMT Engineering Inc. (CMT) in 2021, concurrently with this hydrogeological investigation. Borehole placement was coordinated between CMT and GM BluePlan to meet the needs of each study. The drilling program involved the drilling of six (6) boreholes with all six (6) being installed with monitoring wells.

Figure 6 shows the location of the boreholes/monitoring wells on-Site and the borehole logs from the geotechnical investigation are provided in Appendix C.

A generalized summary of the stratigraphy encountered during drilling is as follows:

- Sand and Gravel Fill
 - Only observed at BH-6 and is likely attributed to backfill used from a nearby field drain
- Native Sand and gravel
 - Observed underlying the topsoil at BH-4 and interbedded within the sandy silt at BH-2 and BH-5
- Sandy Silt
 - Observed in all boreholes extending to termination of boreholes.

The predominant soil type on Site, Sandy Silt, was observed to be very loose to very dense in consistency and was considered to be moist to wet with moisture content ranging from 5.5% to 17.6%.

The sand and gravel fill underlying the topsoil and overlying the sandy silt observed at BH-6 was reported to be 1.68 m thick and 0.77 m of the thickness was saturated. This borehole was observed to have the highest groundwater level on-site.

The native sand and gravel seams interbedded between the sandy silt at BH-2 and BH-5 were observed to be wet to saturated. Based on the limited number of boreholes, it is unclear whether these sand and gravel seams are laterally-extensive, or whether they have substantial capacity to convey groundwater flows laterally.

To assist in the determination of hydraulic conductivity of the predominant soil type encountered at the Site, CMT collected one sample of the sandy silt material from each borehole (i.e., a total of six (6) samples) and subjected them to grain size analyses. The grain size analyses are provided in Appendix D for reference.

Based on the results of these grain size analyses, CMT estimated select hydraulic parameters to be as follows:

- Hydraulic conductivity (k): between 1.2×10^{-8} m/s and 4.1×10^{-8} m/s.
- Percolation time ("T"-time): between 20 min/cm and 30 min/cm.

2.7 RECEPTORS

In the vicinity of the Site, the following potential receptors (i.e., entities or parties which may be affected by potential groundwater impacts) have been identified:

- Groundwater users: approximately 80 residences have been identified to lie within 500 m of the Site and, due to the lack of municipal water services, it is reasonable to assume that all or most obtain their water supply from water wells.
- Surface water features: Kurtz Drain, which ultimately conveys flows to Hopewell Creek approximately 1.5 m south of the Site.

With respect to Source Water Protection policy areas, such as Intake Protection Zones and Wellhead Protection Zones, the nearest such area is approximately 1.3 km to the southeast and is associated with the municipal system for the City

of Guelph. As such, an impact assessment with respect to the policies and Source Protection Plans under the *Clean Water Act (2006)* is not anticipated to be required.

3. FIELD INVESTIGATION

In order to collect site-specific information about the hydrogeological conditions on-site, a field investigation was conducted as part of this hydrogeological study. This information was combined with the existing geotechnical and geological information to establish the site conceptual model.

3.1 METHODOLOGY

The scope of the hydrogeological study involved the completion of multiple investigative activities, including the following:

1. Undertake a field investigation to support individual private sewage servicing (i.e., D-5-4 Individual On-Site Sewage Systems Water Quality Impact Risk Assessment) including:
 - a. Water level monitoring to confirm groundwater levels
 - b. Topographical survey of all monitoring well installations (position and elevation)
 - c. Groundwater sampling (one from each monitoring well) and laboratory analysis to determine existing nitrate concentrations and general groundwater quality
 - d. Site reconnaissance to observe existing natural features on-site and on adjacent lands.
2. Undertake a field investigation to support individual private water well servicing (i.e. D-5-5 Private Wells: Water Supply Assessment) including:
 - a. *Completion of a door-to-door well survey of residents within 500 m of the Site, including the hand-delivery of well survey forms and postage-paid return envelopes.
 - b. Arrangement of a water well drilling contractor to drill three (3) test wells and one observation well to an anticipated depth of 48 m.
 - i. All wells will be approximately 6" diameter wells intended to be suitable for future domestic use by homeowners in the new development.
 - c. Completion of three (3) 6-hour pumping tests, one on each test well, including manual and electronic (using pressure transducer dataloggers) monitoring of water levels.
 - d. Collection of a total of 6 well water samples (two from each test well during their respective pumping tests) and laboratory analysis of a suite of drinking water parameters, including sodium, sulphate, hardness, iron, turbidity, microbiological parameters and others.
 - e. Topographical survey of all test well and observation well installations (position and elevation).

A fulsome door-to-door water well survey (i.e., addressed to all residences within 500 m of the proposed development) is proposed to be completed in a subsequent submission of this Hydrogeological Study (e.g., at Site Plan Approval).

The general layout of site investigation activities is given in Figure 6.

3.2 GROUNDWATER LEVELS

On June 18, 2021, a datalogging pressure transducer (i.e., Solinst Levellogger) was installed at all six monitoring wells to record change in groundwater level and temperature on a frequent basis over a period of time (ideally multiple seasons). A topographic survey was also completed on the monitoring wells to translate the data recorded by the datalogger into actual elevations (i.e., meters above sea level, masl). The groundwater level data was collected beginning June 18, 2021 with the most recent data being collected on June 19, 2024.

Table 2 provides a summary of the groundwater level measurements collected from monitoring wells BH-1 to BH-6; Charts 1 to 6 provide hydrographs of the datalogger data collected; and Figure 7 shows the seasonal high groundwater levels observed at the Site.

From the data collected, the following observations have been made regarding the trends in groundwater level:

- The groundwater was generally observed to be at higher elevations at the east and west boundaries of the Site, trending downwards towards the municipal drain feature at the centre of the Site.
- Throughout the monitoring period, the seasonal high groundwater level observed was approximately 349 masl at the east and west extremities of the Site, and 345 masl at the center (i.e., at BH-3 which is located directly adjacent to the on-site municipal drain feature).
- The groundwater table was typically highest during the fall and winter and was sustained through the spring months. The groundwater table then declined through the summer months.
 - Comparing low-season (i.e., summer and fall) water levels between the monitoring years, it is noted that the summer/fall of 2022 was an exceptionally dry season resulting in water levels being approximately 1 to 1.5 m lower than other dry seasons.
- Periods of sharp rise in the groundwater table and a gradual decline are observed at all boreholes (with the exception of BH-4).

Notably the groundwater levels observed at the monitoring well BH-3 were visually observed to be at similar elevations as the surface of the drainage feature (i.e., Branch C of the Kurtz Drain), which indicates that the water level in Kurtz Drain is an expression of the groundwater table and that it likely receives interflow and/or groundwater discharge from the surrounding soils.

3.3 DOOR-TO-DOOR WELL SURVEY

A door-to-door water well survey of nearby residences within 500 m of the subject Site is proposed to be conducted at a later date to support subsequent submissions of this hydrogeological study.

In the interim, a limited door-to-door well survey was completed at nearby neighbouring properties within 100 m of the subject Site to identify private water well users and to invite those users to be monitored during the on-site pumping tests of test wells to support the water supply assessment. A survey questionnaire was delivered to 12 residents, of which only five responses were received from residents who were interested in being monitored during the pumping tests. Figure 8 displays the locations of the residents who agreed to participate. The five respondents were as follows:

- 54 Ariss Glen Drive
- 50 Ariss Glen Drive
- 46 Ariss Glen Drive
- 42 Ariss Glen Drive
- 5763 6 Line East

The survey responses from the residents reported the water quality from their wells as clear and odourless, with some residents reporting high levels of iron and that they use domestic water treatment systems to reduce iron concentrations. The responses from residents did not specify whether the wells were advanced into bedrock; however, based on the abundance of well records in the area available on the MECP Water Well Records database of domestic water wells finished in the bedrock and the typical absence of a suitable overburden aquifer based on the stratigraphic logs provided in those well records, it is inferred that these water wells are also finished within the bedrock.

A site visit was scheduled with each of the respondents to assess the suitability/accessibility of their wells, collect a manual water level measurement, and the installation of a datalogger to record the trend in groundwater during the on-site pumping tests. The findings of the pumping test monitoring are discussed in the following section.

3.4 SHALLOW GROUNDWATER QUALITY

Groundwater samples were collected from 5 out of the 6 overburden monitoring wells on-site. Monitoring well BH-3 could not be sampled due to damage that had occurred to the well during grading work associated with the re-alignment of Kurtz Drain. Samples were collected according to industry-accepted practices with the use of a dedicated Waterra inertial pump to purge the well of at least three well-volumes or until dry prior to sampling. After purging, the inertial pump was used to collect samples into laboratory supplied bottles appropriate for the required analyses. The samples were

submitted to an accredited laboratory for analysis of a suite of routine groundwater quality parameters, including major anions and metals/cations and other index parameters (e.g., hardness, alkalinity, pH). The results of the groundwater quality analyses are summarized in Tables 3a and 3b, and the Certificate of Analysis for this sample submission is included in Appendix E.

The results from the laboratory were compared against the Provincial Water Quality Objectives (PWQO) criteria. The PWQO are established by the government of Ontario and are used in the assessment of chemical and physical indicators of surface water and groundwater that is to be discharged to the surface. These criteria were established to protect aquatic life and all aspects of the aquatic life cycles during indefinite exposure to the water (Ontario 1994).

Generally, the reported results indicate that the shallow groundwater on-site is considered to be moderately mineralized as indicated by the elevated concentrations of dissolved calcium and magnesium. This result can be expected due to the Site's geological environment: the local overburden, which is largely derived from regional bedrock materials such as dolostone and limestone of the Guelph Formation.

Elevated concentrations of dissolved sodium and chloride were observed at the monitoring wells BH-2 and BH-6 which are located adjacent to the Ariss Glen Drive Cul-de-Sac and 6 Line E, respectively. These elevated concentrations are believed to be as a result of road salt application occurring at these nearby rights-of-way. Elevated concentrations of dissolved potassium were also observed in all samples and this is believed to be associated with the agricultural activity that has occurred on-site. Potassium is a common nutrient used to fertilize soil and its benefits to plant growth are well known and documented.

Ultimately, the results of the analyses indicate that the groundwater on-site meets the PWQO (or would meet the PWQO if sediment capture is provided) and would be suitable to be discharged to the surface in the event that construction dewatering is required.

In consideration for the proposed on-site private sewage systems, the existing nitrate concentration were also analyzed. The results indicate that at BH-4 and BH-5 the nitrate concentrations are below laboratory detection limits. At BH-2 and BH-5 the nitrate was reported to be very similar to each other with concentrations of 0.27 mg/L and 0.25 mg/L, respectively. BH-1 reported slightly higher with a concentration of 2.16 mg/L, which is still well below the Ontario Drinking Water Standard (ODWS) of 10 mg/L.

3.5 PUMPING TESTS

In support of the water supply assessment (in accordance with MECP Procedure D-5-5), a total of three (3) test wells and one (1) observation well were advanced on-site by Keith Lang Water Well Drilling Inc. The wells were installed at points distributed across the Site, with consideration for the on-site features such as the municipal drains that intersect the Site, and for the potential future use by residents post-development. Please see Figure 8 for the location of the test wells (TW-01, TW-02, TW-03) and observation well (OW-01).

The wells were completed with a 6" steel casing from approximately 0.6 m (2 ft) above the ground surface to between 0.6 to 1.8 m into the bedrock formation. Following installation, wells were developed by the well drilling contractor using surging and pumping techniques.

A separate water well record was submitted for each of these wells and is provided in Appendix F. The records contain details about the geological material encountered, total depth, well construction and other pertinent information.

Two pumping tests were completed for the purposes of establishing aquifer characteristics (i.e., transmissivity, storage) and water supply capacity, as well as to collect samples to characterize groundwater quality in the bedrock aquifer.

Pumping Test 1 involved the concurrent pumping of test wells TW-01 and TW-03, each at a constant discharge rate of 76 L/min (or 152 L/min combined, which equates to 218,900 L/day). Both of these wells were pumped for a period of 6 hours, though pumping was begun at TW-03 an hour later than at TW-01.

Pumping Test 2 involved pumping of TW-02, which was initially pumped at 76 L/min (109,400 L/day) for the first 50 minutes of the test; however, after significant drawdown was observed in the well such that the water level approached the depth of the pump intake, the flow rate was stepped down to 57 L/min (82,100 L/day) which was maintained for the remainder of the test.

During each pumping test, water levels were monitored in OW-1, the dormant test well(s), and four water supply wells belonging to residences along Ariss Glen Drive (42, 46, 50 and 54).

Compared to the estimated water demand of up to 36,000 L/day for the proposed 16-lot subdivision (see Section 5.1.1 for background on this estimate), these pumping rates are considered to be sufficient for the purposes of assessment of water supply.

3.5.1 Bedrock Aquifer Water Quality

During the pumping tests at test wells TW-01, TW-02, and TW-03, water quality samples were collected from the pumping well discharge at each well during the first hour and the last hour of the pumping tests. The samples were submitted to a CALA-SCC accredited laboratory to be analyzed for the following: routine comprehensive analysis (including major anions, cations, nutrients, hardness, and other parameters), colour, turbidity, metals (total), and microbiological parameters (e.coli, total coliforms, fecal coliforms). The laboratory certificates of Analyses are included in Appendix G.

The results of the water quality analyses are presented in Tables 4a and 4b and were compared to the standards set forth in O.Reg. 169/03 Ontario Drinking Water Standards (ODWS) for the maximum acceptable concentrations (MAC) and the Aesthetic Objectives (A/O). The reported results indicate an exceedance of the ODWS Aesthetic Objective for the parameter hardness in all six samples, from all three test wells. This is typical of the bedrock formation (i.e., Guelph/Amabel) as it is known to be high in dissolved minerals associated with the calcareous nature of limestone bedrock. The reported hardness concentrations can be readily treated through the use of conventional water softener treatment systems.

Nitrate concentrations were reported at concentrations below the detection limit (<0.10 mg/L) in all samples collected from the test wells.

A single exceedance of the ODWS maximum acceptable concentrations standard was reported for the microbiological parameter Total Coliforms (reported as 1 CFU/100mL, vs. standard of 0 CFU/100mL) at TW-01. The reported exceedance was for the second sample that was collected near the end of the test, whereas the first sample collected at the beginning was reported as zero. It is possible that the reported exceedance is a result of a sample handling and/or collection error rather than representative of the actual aquifer condition. Furthermore, Procedure D-5-5 states,

“For the purposes of the assessment described by this Guideline, Total Coliform counts of less than 6 per 100 ml of sample (and 0 for E. Coli and fecal coliforms) shall be considered as indicative of acceptable water quality”.

As such, based on the guidance provided in Procedure D-5-5, the detection of total coliforms at TW-01 is not considered to constitute an obstacle to the proposed development.

It is recommended that prior to the commissioning of the test well TW-01 by future residents, the well should be chlorinated and retested for microbiological parameters. It is also recommended that all proposed houses be furnished with domestic water treatment systems capable of disinfection (e.g., UV irradiation units).

3.5.2 Bedrock Aquifer Water Quantity

To assess water quantity in the bedrock aquifer, drawdown data was collected during the pumping tests through the use of dataloggers that were installed in the pumping wells and the observation wells located on-site and off-site (i.e., nearby private water wells). Refer to Appendix H for the pumping data of the test wells presented on drawdown vs. time graphs.

The drawdown data was then analyzed using curve-matching techniques facilitated by AquiferTest software. The pumping test data collected from observations wells OW-01, 5763 6 Line, and TW-03 (during pumping of TW-02) were analyzed using the Theis (1935) method. The Theis model fit the data well and indicate that the assumption of confined conditions is reasonable. The aquifer parameters were determined as follows:

- Geometric mean of transmissivity of 3.93×10^{-4} m²/s (or 34.0 m²/day)
- Geometric mean of storage of 3.24×10^{-4} (dimensionless)

These values are typical of bedrock systems where a network of fractures permits considerable well discharge but have a relatively limited porosity. Appendix I provides the report output from the Aquifer Test program and Table 5 provides a summary of the observations made during the pumping tests and subsequent recovery.

Recovery rates were rapid for TW-01 and TW-02 with full recovery of these wells occurring within 1 hour. TW-03 exhibited a slower recovery, taking approximately 8.5 hours to full recovery.

The data collected from the nearby residents during the two days of pumping tests are presented on a hydrograph in Chart 7. The maximum interference drawdown recorded during each pumping test at each well is summarized below:

- 54 Ariss Glen Drive
 - Pumping Test 1: 0.61 m
 - Pumping Test 2: 0.39 m
- 50 Ariss Glen Drive
 - Pumping Test 1: 0.58 m
 - Pumping Test 2: 0.38 m
- 46 Ariss Glen Drive
 - Pumping Test 1: 0.51m
 - Pumping Test 2: 0.46 m
- 42 Ariss Glen Drive
 - Pumping Test 1: 0.58 m
 - Pumping Test 2: 0.49 m
- 5763 6 Line East
 - Pumping Test 1: 0.54 m
 - Pumping Test 2: 0.01 m

During the first pumping test, the average of the maximum interference drawdowns recorded at the neighbouring wells was approximately 0.56 m. During the second pumping test the average was approximately 0.43 among the properties located on Ariss Glen Drive, while negligible drawdown was observed at 5763 6 Line.

When considering that the typical available drawdown in local water wells installed in the Guelph Formation (i.e., bedrock) is roughly 10 m, the highest observed interference drawdown at the neighbouring wells is only approximately 6% of the available drawdown in the well.

It is noted that monitoring data collected prior to the start of the pumping tests indicates that water level fluctuations of 0.5 to 1 m over the course of a day is a typical occurrence. It is also noted that immediately prior to the start of Pumping Test 1 a decreasing trend in water levels appears to have already been present (see Chart 7).

Despite this, for the purposes of making a conservative assessment, it is generally assumed that the recorded drawdowns in the neighbouring wells were due to the action of the pumping tests, with the exception of a portion of the drawdown observed at 5763 6 Line East during the latter part of Pumping Test 1. The drawdown data at 5763 6 Line East shows a rapid drawdown of about 0.5 m occurring between the time 4 pm to approximately 5 pm, after which recovery is observed before the end of pumping at TW-03, which is the closest test well to this property. This additional drawdown is likely a result of increased water usage occurring at the 5763 6 Line East well (e.g., for irrigation of gardens) and not as a result of the water taking occurring on-Site: therefore this additional 0.5 m of drawdown is not included in the estimated 0.54 m interference reported above for that well.

4. HYDROGEOLOGICAL CONCEPTUAL SITE MODEL

A hydrogeological conceptual model describes the key hydrogeological features and functions of the Site and also provides a basis for evaluation of potential impacts to the Site. The conceptual model is synthesized from the data and information collected during desktop study and field investigation. To support the visualization of the conceptual model, two geological cross sections have been prepared (see Figure 9, 9a and 9b for a plan view of the section layout and the sections themselves).

Topographically, the site is generally flat with minor undulations and a gentle relief towards Branch C of Kurtz Drain. The Site is generally at similar elevations to surrounding lands. However, adjacent lands to the north (and a small northern portion of the Site) exhibit some undulating terrain consistent with physiographic mapping that shows drumlin landforms in these areas, and the remaining areas as till plains.

The soils encountered during the geotechnical investigation were reported as sandy silt with trace clay that extended to termination in all boreholes (i.e., > 6 mbgs). A small layer of sand and gravel was observed interbedded between the sandy silt at two boreholes (i.e., BH2 and BH5) with thicknesses of 0.3 m and 0.44 m, which are likely laterally-discontinuous based on the separation distance and other boreholes located between these two boreholes that did not encounter this layer.

The sandy silt material was subjected to grain size analyses and was characterized as having a relatively low hydraulic conductivity (i.e., on the order of 10^{-8} m/s), and thus are considered to form an aquitard, generally impeding the rate of groundwater flow. Based on groundwater levels measured across the Site within this sandy silt aquitard, it appears that there is some potential for lateral groundwater seepage through this stratum in the direction of Branch C of the Kurtz Drain. This indicates that groundwater is at least occasionally contributing to the flow of this drain (i.e., groundwater discharge conditions) as nearby groundwater levels were observed at higher elevations than the Branch C Drain with a recorded water level of 344.60 masl. However, these contributions are limited by the low hydraulic conductivity of the overburden materials.

The peak seasonal groundwater level at the Site approaches ground surface across much of the Site, a phenomenon that is often observed in surficial till aquitards in the Guelph area. As the soils are “tight”, groundwater flow through these soils occurs slowly. As a result, during periods of frequent precipitation or snow melt (e.g., late winter and spring), water infiltrates into the ground faster than it can be drained through the deeper strata: during these periods groundwater levels approach ground surface and remain elevated for extended periods of time. During the summer and fall, when evapotranspiration rates are high, groundwater levels decrease steadily by as much as 2 to 4 metres. In late fall, as precipitation increases and evapotranspiration decreases, groundwater levels increase to seasonal high levels. During these periods groundwater levels would be expected to rise. Sustained periods where water levels remain near the seasonal high may be exacerbated by overland flows contributed by the uplands to the north of the Site and the presence of closed depressions, which may prevent runoff and encourage groundwater infiltration.

The existing groundwater chemistry in the shallow overburden is reported as moderately mineralized but is suitable for discharge to surface during any potential construction dewatering activities. Existing nitrate concentrations were reported to be well below the ODWS of 10 mg/L, indicating that pre-existing nitrate concentrations pose no obstacle to the proposed use of Class 4 (leaching bed-type) sewage systems.

With the advancement of test wells on-Site and the subsequent completion of pumping tests, the test water wells have been found to be suitably productive for household use. The subcrop of the bedrock formation at the test well locations was encountered between 18.9 mbgs to 22.9 mbgs and is described as gray/brown limestone. The test wells were observed to have an available drawdown ranging from 12.0 m to 17.0 m, and the piezometric head was observed to be highest at the east of the Site (TW-03 = 343.6 masl approx.) and lowest at the west (TW-01 = 339.9 masl approx.). Based on the linear configuration of the test wells, the bedrock groundwater flow direction can not be confirmed definitely, however it is inferred that groundwater flow direction within the bedrock aquifer is generally toward the west to southwest in the direction of the Grand River. The groundwater quality from the test wells was deemed suitable for domestic consumption.

The overlying overburden is described as clay and stones (inferred to be till) to surface. Due to the thickness and fine texture of this overburden material, it is interpreted that there is a significant hydraulic separation between the surface and bedrock.

5. IMPACT ASSESSMENT

Hydrogeological impacts generally concern either impacts to the quantity of groundwater or the quality of groundwater. Both of these types of impacts must be considered in the context of the potential receptors. The proposed development for the Site is anticipated to utilize private water wells and septic systems which present the potential for impacts to groundwater quantity and quality, respectively. As such, this assessment will consider both types of impacts.

5.1 WATER SUPPLY ASSESSMENT

5.1.1 Estimation of Allowable Flows

The results of the pumping tests indicate transmissivity and storage similar to those found at other subdivisions also serviced by water wells installed in the Guelph Formation. However, the suitability of an aquifer to meet the needs of a particular development depends on the water demands of that development.

Regarding the proposed development, a design flow of 2,250 L/lot/day will be used, which represents the peak flow demand rate of 450 L/person/day (as stipulated in D-5-5) for a four-bedroom house with 5 residents. Although this is considered a conservative estimate as the peak flow rate is an overestimate of the average consumption rate, it

nonetheless serves the function of being an indicator of aquifer performance and sustainability. For a 16-lot subdivision, this results in a total demand of 36,000 L/day.

The Modified Moell Method (Maathuis and Van Der Kamp, 2006) was used to determine an estimated sustainable flow based on the pumping test data. In conceptual terms, this method allows for the calculation of the estimated flow rate that a well can sustain for a period of 20 years (Q_{20}).

This method of calculation is as follows:

$$Q_{20} = Q_t \frac{H_A}{s_{100} + 5\Delta s}$$

Where

Q_{20} is the sustainable flow rate of the well (L/min)

Q_t is the pumping rate used during the pumping test (L/min)

H_A is the height of the water column above the top of the aquifer (m)

s_{100} is the drawdown measured at a time of 100 minutes into the pumping test (m)

Δs is the drawdown per log cycle of time (m)

For the purposes of providing a more conservative estimate, a safety factor of 0.7 was applied to the Modified Moell method result.

Table 6 provides a summary of the long-term allowable flows (Q_{20}) estimated for each test well. The average of these Q_{20} flow rates is just over 49,000 L/d (geometric mean of about 47,400 L/d), with individual test wells ranging from 35,800 L/day (TW-02) to 67,800 L/day (TW-03).

Considering that the estimated demand of a single lot will be up to 2,250 L/d and the demand of the entire subdivision is about 36,000 L/d, this demonstrates that the local bedrock aquifer is more than capable of supporting private wells for long-term domestic usage.

5.1.2 Zone of Influence and Drawdown Effects

The pumping of water from one well may influence the groundwater levels in another well, and hence water supply available to other nearby water well users may be affected. As a result, it is important to determine whether a proposed development is likely to cause a significant reduction in water supply for existing water well users.

Drawdown Influence on Existing Off-Site Wells

To determine long-term drawdown influence effects, a Theis (1935) analysis was conducted using the aquifer properties obtained through the AquiferTest analyses from TW-01, TW-02, and TW-03 pumping tests:

- transmissivity (geometric mean) = 3.93×10^{-4} m²/s
- storage (geometric mean) = 3.24×10^{-4} .

The Theis analysis was applied assuming:

- the subdivision is serviced by 16 identical pumping wells (one for each of the proposed lots) equally spaced along the length of the Site, located in the anticipated rear-yard area of the lots (with consideration for the Ontario Building Code minimum set-backs from the property line);
- each well will be pumped continuously at a rate of 2,250 L/day for a period of 20 years; and
- that the principle of superposition holds (i.e., the influence on a subject well can be calculated by summing the individual drawdowns imparted by each of the 16 wells pumping on-site).

Computations were completed to determine the estimated potential interference drawdown that would be experienced by a series of existing off-site wells. Of the wells that were subject to these calculations, the highest estimated potential interference drawdown was approximately 0.87 m (see Table 7a). Noting that the typical available drawdown (i.e., height of water column above the top of the aquifer) in water wells within the study area is typically larger than 10 m, this estimated interference drawdown represents about 8% of the available drawdown at this well, which is considered to be acceptably small for a time horizon of 20 years.

Furthermore, the design pumping rate of 2,250 L/day from each of the 16 pumping wells used in the analysis is considered to be an overly conservative estimate of the daily water taking. It assumes that the peak flow rate stipulated in Procedure D-5-5 (i.e., 2,250 L/day, for a four-bedroom lot) is maintained continuously over the period of 20 years. Please refer to Table 7a for a summary of Theis (1935) analysis conducted using the peak flow rate.

For purposes of comparison, the interference drawdowns were estimated again assuming an average usage rate of 1,000 L/lot/day. From these calculations, the maximum interference drawdown was estimated to be approximately 0.39 m, which is approximately 3% of the available drawdown. Based on this analysis, it is anticipated that the water taking on-Site will have minimal drawdown effects at nearby water wells.

Drawdown Influence Between Proposed On-Site Wells

A similar estimation method was undertaken to determine the anticipated effect that the wells of the proposed subdivision may have on each other. Please refer to Table 7c for a summary of Theis (1935) analysis conducted to determine drawdown between on-Site wells.

Due to its location near the centre of the proposed development, lot 8 is expected to experience the largest interference drawdown among all proposed lots in the subdivision. Assuming that the other 15 wells are being pumped at a typical usage rate of approximately 1000 L/lot/day continuously for a period of 20 years, the expected long-term drawdown at this well is calculated to be approximately 0.38 m. In comparison to the available drawdown observed at the test wells on-Site (average $H_A = 15$ m), the estimated interference drawdown is less than 3% of the available drawdown in the well. This is a relatively small amount of drawdown and falls within the range already accounted for by the factor of safety (0.7) applied in the Modified Moell Method calculation for long-term allowable flow.

Therefore, these interference analyses demonstrate that the proposed development is expected to have minimal impact on the quantity of water available to existing and proposed water well users.

5.2 WATER QUALITY

5.2.1 Private Sewage Systems and Nitrogen Attenuation Calculations

With respect to on-site sewage systems, the chemical species of primary concern for environmental impacts is nitrogen, particularly in the form of nitrate, which can cause adverse impacts to potable groundwater supply and receiving surface waters.

As such, it is necessary to ensure that the nitrogen output of the proposed development will be attenuated to less than 10 mg/L or lower as per the health-based Ontario Drinking Water Standard (2002). Procedure D-5-4 (MOEE 1996) provides a method of estimating attenuation by dilution and that only sewage effluent and local infiltration (i.e., net precipitation going to groundwater recharge) are eligible to be used as diluents. This procedure is considered to be conservative as it does not account for natural attenuation mechanisms that occur within the on-site sewage system and receiving soil, nor does it account for dilution with groundwater.

The nitrogen attenuation calculations have been completed with the understanding that: sixteen (16) lots are proposed to be developed, each with a single-detached house equipped with four (4) bedrooms.

For the residential development, the attenuated nitrogen concentration will be calculated using the following formula, which is based on the predictive assessment approach established in Procedure D-5-4 (MECP 1996):

$$C = \frac{N\Delta t}{(P - E)(1 - r)A + Q\Delta t}$$

Where:

C is the attenuated nitrogen concentration (mg/L)

N is the nitrogen loading (16 lots by 40,000 mg/day/lot)

Δt is the time interval (365 days/year)

P is annual precipitation (917 mm/year, Environment Canada Climate Normals for Shand Dam)

E is annual evapotranspiration (550 mm/year, Ministry of Natural Resources, 1984)

r is the runoff coefficient (0.3, MTO)

A is the gross area of the lots (77,700 m², total)

Q is the rate of sewage effluent generation (16,000 L/d total, based on 1,000 L/lot/day per Procedure D-5-4)

Based on the proposed development plan for sixteen residential lots to be serviced by on-site sewage systems, the total nitrogen loading for the proposed development is approximately 640,000 mg/d. This is based on a value of 40,000 mg/lot/d set by Procedure D-5-4 (MECP 1996).

Procedure D-5-4 also sets a maximum allowable quantity of sewage effluent that may be used in the attenuation calculation (1,000 L/lot/d) and so the total rate of sewage effluent generation used in the calculation is 16,000 L/d.

The effective hydrologic water input, accounting for evapotranspiration and runoff is estimated to be about 19,968.9 m³/yr based on an infiltration rate of 257 mm/yr. This infiltration rate was obtained by taking the difference between precipitation (946 mm/yr, Environment Canada 2018) and evapotranspiration (550 mm/yr, Ontario Ministry of Natural Resources 1984) and discounting the result by 30% due to losses to runoff (Ontario Ministry of Transportation 1997).

Working through the above equation using these values results in an attenuated nitrogen concentration of 9.05 mg/L (see below):

$$C = \frac{N\Delta t}{(P - E)(1 - r)A + Q\Delta t} = \frac{16(40,000)(365)}{(917 - 550)(1 - 0.3)(77,700) + 16,000(365)} = 9.05 \text{ mg/L}$$

This concentration remains below the 10 mg/L limit for specified by the Ontario Drinking Water Standards for nitrate.

It is noted that the Procedure D-5-4 nitrogen attenuation predictive assessment is generally conservative as it only accounts for attenuation of nitrogen by dilution with groundwater recharge. It does not include other natural processes, such as denitrification, assimilation by plants, or sorption to soil media, all of which would have an attenuating affect on nitrogen concentration.

Therefore, based on this predictive assessment of nitrogen attenuation, the proposal to develop 16 residential lots on the Site is considered to be feasible: the impact of the sewage system on local groundwater resources is expected to be within acceptable limits.

5.2.2 Potential Water Quality Effects on Surface Water

Branch C of Kurtz Drain intersects the Site, crossing north-south through its center, and discharges to Hopewell Creek approximately 1.5 m south of the Site.

With respect to the potential impact of sewage systems on surface water, the main parameter of interest is ammonia. However, in domestic septic system applications the ammonia in sewage effluent readily undergoes nitrification to form nitrate and so the risk of impact to Kurtz Drain is considered to be very low. In the case of the Site, the risk is also reduced because of the relatively fine-textured soil materials, which will impede groundwater seepage and promote adsorption and sequestration of other parameters of potential concern (e.g., phosphorus).

Kurtz Drain will be further protected by ensuring that the septic systems are constructed in accordance with the clearance distances specified in the *Ontario Building Code: Table 8.2.1.6.B.* which states that a minimum clearance distance of 15 m must be maintained between any proposed distribution piping (i.e., in the tile bed) and a stream. As described in Section 6 of this report, tile bed construction will be designed such that these clearance distances are maintained.

Therefore, water quality impacts to Kurtz Drain (and by extension, Hopewell Creek) are not expected.

5.2.3 Potential Water Quality Effects on Well Users

It has previously been identified that, though the Site does not lie within a Source Water Protection policy area, numerous water well records are attributable to the properties within 500 metres of the subject Site. As such, the existing water well users near the Site have been identified as receptors.

It is noted that the predictive assessment for nitrogen attenuation (see Section 5.2.1) has identified that the sewage uses on the proposed development are not expected to cause concentrations of nitrate in the shallow groundwater to exceed 10 mg/L, which is the Ontario Drinking Water Standard maximum acceptable concentration for nitrate.

In addition, many of the well users have water wells that are constructed to bedrock: due to the significant depth to bedrock (i.e., on average 20 mbgs) and the presence of a thick layer of till overburden extending to surface, there is limited hydraulic connection between the near surface and the underlying bedrock aquifer. Thus, the potential for the on-site sewage systems to impact the bedrock aquifer is considered limited.

The MECP well record search identified a single record of an overburden water supply well (MECP Well ID: 6702205) attributed to the address 5767 Wellington County Road 86 which neighbours the Site to the west, separated by the existing Kissing Bridge trailway. Impacts to this well by the proposed development are considered to be unlikely because of the relatively low hydraulic conductivity of the intervening soil, the distance from the proposed development (over 120 m from the nearest proposed lot), and its location upgradient (groundwater flow direction in the western part of the Site is southeasterly).

Therefore, the risk for water quality impacts associated with the proposed private sewage systems to affect private water wells in the vicinity of the Site is considered to be low.

6. SEWAGE SYSTEM FEASIBILITY

The *Ontario Building Code* (OBC) specifies the way in which an on-site sewage system (flows under 10,000 L/d) is to be designed and constructed. The size of such a system will depend on many factors, including sewage effluent load, the “T-time” of the underlying soil, and what level of treatment is provided prior to discharge to the septic bed. It is worthwhile to perform preliminary sizing of on-site sewage systems to determine whether they will be feasible for a proposed development.

In the geotechnical report for the Site, CMT Engineering Inc. provides estimated “T-time” values for different types of soils encountered in the subsurface investigation. Because the septic system will be installed near the surface, it is desirable to choose a “T-time” that corresponds to shallow soils and which provides an upper bound (i.e., conservative) estimate of the “T-time” that might be encountered in the location where the septic bed will be installed.

As discussed in Section 2.6.1, CMT estimated the “T”-time for three samples taken from the predominant shallow soil material encountered (i.e., sandy silt). Among these estimates, the highest “T”-time was 30 min/cm.

Assuming that the proposed lots will be constructed with 4-bedroom houses, Part 8 of the OBC specifies a sewage generation rate of 2,000 L/d.

Based on these parameters, a preliminary sizing of the leaching bed can be undertaken. Assuming construction as a filter bed (see Article 8.7.5 of the *Ontario Building Code*), the leaching bed will involve a stone layer and a filter medium layer of areas as follows:

$$A_{stone} = \frac{Q}{75}$$

$$A_{filter} = \frac{QT}{850}$$

Where:

Q is the sewage design flow for the proposed dwelling (assumed 2,000 L/day for a 4-bedroom dwelling)

T is the “T”-time of the native soil (30 min/cm)

Based on the equations above, the stone layer must be at least 27 m² in size and the filter medium must be at least 71 m² in size.

In addition to this, to ensure effective transfer of effluent into the underlying soil, a “mantle” must be provided (see Article 8.7.5.2(2) and 8.7.4.2(1)) such that the surface loading rate on the area comprising the mantle and filter medium layer is

no greater than 8 L/m²/d and that the mantle extends for a distance of at least 15 m downgradient from the edge of the stone layer.

To determine the appropriate size of the mantle, the dimensions of the stone layer and filter medium layer must be determined. Accounting for clearances from property line (3 m) and structures (5 m) as well as the need to raise the filter bed by 1.5 m to provide sufficient clearance from seasonal high groundwater levels (3 m each side of the bed), the maximum filter bed length will be 14 m less than the length of the area available. Assuming a typical setback of 24 m between the proposed dwelling and the front property line, the maximum allowable length of the filter bed will be 10 m. This assumes that the distribution pipe in the filter bed is oriented north-south (i.e., running from the house to the front property line).

Therefore, the dimensions of the components of the filter bed are as follows:

- Stone Layer: 10 m long by 2.7 m wide (27 m²)
- Filter Medium Layer: 10 m long by 7.1 m wide (71 m²)

The surface loading on the mantle plus filter medium layer must be no greater than 8 L/m²/d. Taking the sewage flow rate of 2,000 L/d, dividing by the maximum surface loading rate of 8 L/m²/d and then subtracting the 71 m² already accounted for in the filter medium layer, the required mantle area is 179 m². Dividing this by the length of the stone layer, the mantle must extend for another 17.9 m beyond the edge of the filter medium layer. Coincidentally, this will also satisfy the requirement for the mantle to extend 15 m beyond the edge of the stone layer.

The overall dimensions of the leaching bed are therefore 10 m long by 25 m wide (250 m² overall). A filter bed of this size is expected to be accommodated in the front yard area of the proposed lots while respecting the required clearances from property lines, structures, and wells (which will be located in the rear yard area).

Therefore, the servicing of the proposed dwellings with *Ontario Building Code*-compliant Class 4 sewage systems Class 4 sewage systems is considered to be feasible.

It is noted that this preliminary sizing exercise only serves to indicate the feasibility of providing private sewage servicing to the proposed dwelling. There may be a variety of designs and leaching bed types that will be feasible to construct on a given lot in the proposed development. Some lots may have unique dimensions or geometry that will require a different layout than what is presented in this section.

It is therefore the responsibility of the builder or homeowner to have the septic systems designed and installed by a competent party (e.g., licensed sewage system installer) based on a site-specific investigation to confirm soil and groundwater conditions.

7. CONSTRUCTION DEWATERING

Groundwater control is a key factor to consider when entering into the construction phase of any project, as it can result in unforeseen project delays and substantial costs if not adequately addressed. The construction of the proposed development will include the excavation of basements at each of the lots. In local residential construction, basement floors are typically situated approximately 1.2 to 1.8 mbgs.

The CMT geotechnical investigation conducted grain size analyses on the prevalent soil material on-Site (i.e. sandy silt) to characterize the hydraulic conductivity of these materials. The analyses provided hydraulic conductivity (k) values ranging from 4.1x10⁻⁸ m/s to 1.2x10⁻⁸ m/s.

Seasonal groundwater levels on-site have been observed to be as high as ground surface as some of the monitoring wells. However, based on the characteristics and prevalence of the sandy silt material on-site which is considered to be an aquitard (i.e., provides significant resistance to the movement of groundwater), and the shallow excavation depths required for the construction of the basements, it is not anticipated that a water taking approval in the form of an Environmental Activity Sector Registry (EASR) registration will be required (i.e., discharge flows < 50,000 L/d).

However, due to the presence of the surface water feature on-Site (i.e., the Kurtz Drain), erosion and sediment control facilities shall be deployed to prevent the release of sediment-laden water into Kurtz Drain via overland flow from the Site. Erosion and sediment control facilities (e.g., check dams, geotextile filter bags) are to be sized, selected and installed by the contractor. Where practicable, it is recommended that the discharge location (i.e., end-of-pipe) be placed

at least 30 m away from Kurtz Drain: where this is not practicable, it is recommended that the discharge location be chosen to maximize the distance between Kurtz Drain and the discharge location.

8. BASEMENTS OF RESIDENCES

Municipalities in the Wellington-Waterloo area typically require that basement elevations for houses be set above the seasonal high groundwater level (SHGWL) by some clearance height (typically 0.3 m to 0.5 m). For the purposes of this assessment, the SHGWL is taken to coincide with the maximum groundwater level recorded (or that would be recorded) by a monitoring well at that location.

Based on data collected from June 2021 to June 2024 (see Charts 1-6, and Figure 7), the water levels measured on-Site indicated SHGWL ranging from about ground surface (e.g., at BH1, BH5, and BH6) to nearly 2 m below ground surface (e.g., BH-4). In local residential construction, basement floors are typically situated approximately 1.2 to 1.8 mbgs. As such, it appears that there is potential for basement floors to be set at elevations below the seasonal groundwater levels.

It is recommended that, where feasible, the area grading design be adapted to raise basements such that the basement floor elevation is at least 0.5 m above the interpreted SHGWL.

In cases where grading is constrained by the existing adjacent developments and drainage features such that this clearance cannot be achieved, the recommended approach will depend on the soil types encountered during basement excavation.

In cases where only silty till soils are encountered, foundation drainage (i.e., weeping tile) as specified in the *Ontario Building Code* is expected to be suitable to mitigate potential impacts to basements. This is because rate of seepage through the silty soils is expected to be low and typical foundation drains would be expected to provide sufficient drainage capacity to mitigate potential for groundwater seepage into basements.

The rate of drainage required to protect basements can be estimated by assuming steady-state flow conditions entering into the foundation drains. Typical flows were modeled as flow to a one-sided trench which has length equal to the perimeter of the house (a house with dimensions of 20 m by 20 m was assumed) using the closed-form equation below based on the Dupuit-Forchheimer assumption of horizontal flow in an unconfined aquifer:

$$Q = \frac{xk(H^2 - h^2)}{R_0}$$

Where

x is the total perimeter of the excavation (120 m, from a 30 m by 30 m excavation)

k is the hydraulic conductivity of the soil (4×10^{-8} m/s)

H is the initial height of the groundwater level above an impermeable layer at depth (assumed to be 3.6 m)

h is the target height of the groundwater level above an impermeable layer at depth (assumed to be 1.8 m)

R_0 is the radius of influence, determined using the Sichardt equation, $R_0 = 3000(H-h)(k^{0.5})$

The target drawdown (H-h) was taken as 1.8 m which reflects a condition in which the assumed groundwater level is at surface and the foundation drain is located at 1.8 mbgs. Because there is no well-defined depth to an impermeable boundary (i.e., silt till is extensive and predominant), and the silt till material forms a very thick layer, the height of groundwater H is taken to be twice the drawdown.

The resulting volume of water entering into the foundation drains was determined to be about 2,500 L/d. Assuming a sump pump output of 20 L/min, a sump pump would have to run approximately 5 minutes per hour during periods of high groundwater in winter and spring. This is considered an upper estimate for sump pump running time because in the post-development condition there are many factors which tend to reduce groundwater recharge and increase runoff at the lot level, such as the increase in impermeable surfaces (e.g., roads, rooftops) and the provision of consistent surface drainage by grading. These factors would provide further reduction of risk to basements. Furthermore, the equation above tends to yield an over-estimate in fine-textured soils because it does not account for the development of capillary suction in the gravity drainage of fine-textured soils: these suction effects can significantly limit the amount of water that

can drain out from the formation and lead to much reduced seepage rates, especially in unconfined conditions under low differential head.

Based on the estimate given by the Sichardt equation, the zone of influence of the foundation drainage will be very limited, extending to only about 1.1 m from the foundation drain. This is due to the relatively low hydraulic conductivity of the soils being addressed in this assessment. Therefore, the long-term operation of foundation drains in these silt/till soil conditions is not expected to affect the water supply available to nearby wells.

However, where the basement excavation encounters sand and/or gravel soils below the SHGWL, the rates of seepage may be much higher and so it is recommended that such houses be constructed with waterproofed foundations according to the *Ontario Building Code* to protect against seepage and to resist hydrostatic pressures.

Due to the importance of soil conditions in this determination, it is recommended that foundation excavations be inspected by a professional geotechnical engineer at the time of construction to determine whether waterproofing will be required or whether foundation drainage will be sufficient.

To mitigate noise associated with regular sump pump operation during periods of high groundwater, the building designer may consider constructing a separate sump pit outside the basement (i.e., on the exterior of the foundation wall).

9. GROUNDWATER MONITORING PROGRAM

Based on GM BluePlan's experience at nearby developments, it is expected that a groundwater monitoring program will be required by the Township of Guelph/Eramosa to confirm that the proposed on-site private sewage systems are not negatively impacting local groundwater resources or nearby water wells. Therefore, the following monitoring program is proposed.

An invitation letter will be hand-delivered to residences within 100 m of the proposed development inviting water well users to join the monitoring program. The monitoring program would consist of monitoring for both quality (sampling and analysis of untreated water from the residence well) and quantity (i.e., water level). Water levels will be monitored continuously by a datalogger installed in the well (if accessible).

Monitoring events are proposed to be semi-annually (spring/fall) as follows:

- **Baseline:** one spring and one fall monitoring event before construction begins.
- **During Construction:** semi-annual monitoring events until 90% buildout is achieved.
- **Post-Construction:** semi-annual monitoring events until 3 years have passed since 90% buildout (i.e., a total of six events)

At each monitoring event, the groundwater level data will be downloaded from the datalogger and a sample of untreated well water will be collected and analyzed for the following parameters:

- Sodium and chloride,
- nitrate, nitrite, and ammonia,
- turbidity,
- and microbiological parameters (E.coli, fecal coliforms, total coliforms).

10. SUMMARY

A hydrogeological study has been completed to support a draft plan application for a proposed development consisting of 16 residential lots on a 7.79 ha parcel described with the civic address 5782 6 Line E, Ariss, ON; and further described as Part of Lot 17, Concession 4, Geographic Township of Pilkington. The study comprised of several aspects, including desktop study of available geological and hydrogeological information, field activities such as groundwater monitoring, groundwater sampling and groundwater quality analyses.

The findings of the Study are as follows:

- A conceptual site plan indicates that the development may contain 16 residential lots, each to be serviced with private on-site sewage systems, and private water supply wells.
- Topographically, the Site is relatively flat with minor undulations observed along the northeast.

- Hydrologically, surface drainage on the western portion of the Site tends toward the Branch C of the Kurtz Drain. The Eastern portion of the Site partially tends to towards Branch C, while other portions tend towards the south where Branch E of the Kurtz Drain exists.
- The stratigraphy of the geological materials encountered on-site tend to follow the following sequence:
 - Sand and Gravel Fill (only at BH-6)
 - Native Sand and gravel (only at BH-4)
 - Sandy Silt (with occasional sand and gravel lenses, such as at BH-2)
- Information from the MECP Water Well Information System indicates 68 domestic water supply wells within 500 m of the Site. The average depth of penetration into bedrock is approximately 20 m, and the average pumping rate from the wells is 49.2 L/min.
- The Site is not within a Wellhead Protection Area (WHPA).
- The shallow groundwater on-site is moderately mineralized and typical of the hydrogeological environment of the Site with elevated calcium and magnesium. Elevated sodium and chloride concentrations were observed at the boreholes BH-2 and BH-6 inferred to be attributed to nearby road salt application. Elevated concentrations of potassium were also observed which are commonly associated with agricultural practices (e.g. soil fertilization).
- Nitrate concentrations in the shallow groundwater ranged from 0.25 mg/L to 2.16 mg/L and are a result of historical/current agricultural practices. The reported concentrations are well below the 10 mg/L limit of existing background nitrate levels in the shallow groundwater stipulated in the MECP's Procedure D-5-4.
- Groundwater in the bedrock aquifer was found to be moderately mineralized with elevated concentrations of calcium and magnesium, typical of the Guelph Formation bedrock aquifer. Nitrate concentrations were below the laboratory detection limit. Though one sample from TW-01 indicated a Total Coliform count of 1 CFU/100 m. Though this is an exceedance of the applicable Ontario Drinking Water Quality Standard, based on the guidance provided in D-5-5 this is not considered to be an obstacle for the development of private servicing by wells.
- A nitrogen attenuation calculation was performed for the proposed development as per MECP's Procedure D-5-4. Based on a preliminary draft plan with 16 lots, the proposed development is anticipated to meet the 10 mg/L requirement for attenuated nitrogen.
- The estimated percolation ("T"-times) for the soils on-site ranged from 20 min/cm to 30 min/cm.
- Preliminary estimates of on-site sewage system sizing indicate that the lot sizes presently proposed by the draft plan are suitable to accommodate on-site sewage systems built in accordance with the *Ontario Building Code (OBC)*.
- Groundwater levels have been observed as shallow as ground surface in some locations on-site. As such, the septic beds may be required to be raised up to 1.5 m above ground to achieve the required separation distance from the groundwater table outlined in *Section 8* of the *OBC*.
- Based on available nearby well records, the thickness of the overburden and the predominance of fine-textured till materials is considered to provide significant separation between the underlying bedrock aquifer and the proposed on-site sewage systems.
- Pumping test results indicate that the bedrock aquifer has an average transmissivity on the order of 3.9×10^{-4} m²/s and average storage coefficient on the order of 3.2×10^{-4} (dimensionless). Analysis of pumping test data indicates that the bedrock aquifer is generally highly productive has confirmed that the aquifer is suitable for domestic supply in the long-term.
- The effect of drawdown influence caused by the pumping of the proposed pumping wells is expected to be minor and will not cause significant impacts to water supply availability at wells on neighbouring properties or between lots within the subdivision proposed for the Site.
- Due to the nature of the development (i.e., residential, private septic systems built according to *OBC*), surface water impacts to Kurtz Drain via groundwater are not anticipated.
- It has been identified that seasonal high groundwater levels are relatively shallow in some parts of the Site and may intersect basement elevations. Though the predominant soil type (i.e., silt till) means that the potential risk to basements is relatively low if protected by *OBC*-compliant foundation drainage, there is elevated risk where basements would intersect saturated sand and gravel soils (e.g., in the easterly part of the Site).
- It is not anticipated that a water taking approval in the form of an Environmental Activity Sector Registry (EASR) registration will be required for construction dewatering activities.

11. CONCLUSIONS AND RECOMMENDATIONS

A hydrogeological study has been conducted in respect of a residential development proposed for a 7.77-ha parcel at 5782 6 Line E, Ariss, Township of Guelph-Eramosa Township.

The study concludes that the proposed development of 16 lots, privately serviced for both water (private wells) and sewage (septic systems), can be supported by the local hydrogeological system.

Respecting the proposed development, we recommend that:

1. The proposed development be constructed with individual private servicing for water (i.e., private wells) and for sewage (i.e., Class 4 septic systems).
2. Private water wells for the proposed subdivision are recommended to be:
 - constructed in accordance with O.Reg. 903 by a licensed water well driller
 - installed to draw from the bedrock aquifer
 - constructed with watertight casing and continuous annular seal extending from the surface and seated in the bedrock and
 - sampled prior to plumbing connection so that homeowners can make informed decisions on which treatment systems are appropriate for their well and the expected usage.
3. Household drinking water systems should include disinfection units (e.g., UV irradiation units) to provide protection against microbiological pathogens.
4. A door-to-door water well survey be completed for all properties within 500 m of the Site prior to application for Site Plan Approval.
5. Groundwater monitoring in the overburden monitoring wells continue until the Site Plan stage and the data collected to that point be used to develop an interpreted seasonal high groundwater level for each proposed lot;
6. The overburden monitoring wells, once monitoring has concluded and they are no longer needed, be decommissioned by a licensed well drilling contractor in accordance with O.Reg. 903;
7. The site grading be designed such that, where feasible, each basement floor will achieve a clearance of at least 0.5 m above the seasonal high groundwater level;
8. Where grading cannot feasibly achieve the 0.5 m clearance between basement floor and seasonal high groundwater level, an inspection of the soils at that location shall be conducted by a professional geotechnical engineer to determine whether the basement of that lot shall be of waterproof construction (per the requirements of the *Ontario Building Code*).
9. Septic systems shall be constructed by a licensed septic system installer in accordance with
 - the results of a site-specific investigation to confirm soil (i.e., "T"-time) and groundwater (i.e., raised bed height or clearance requirements);
 - the requirements of Part 8 of the *Ontario Building Code*.
10. Any existing field tile at the subject Site should be removed during area grading activities and backfilled appropriately with soil of texture similar to the native soil.
11. Any construction dewatering shall be accompanied by appropriate erosion and sediment controls to prevent discharge-related impacts and that the point of construction dewatering discharge (i.e., end of pipe) be located at least 30 m from any surface water body (e.g., Kurtz Drain or any of its branches). Where it is not practicable to achieve 30 m separation from Kurtz Drain or its branches, the discharge location shall be selected with the intent of maximizing the separation distance from surface water.
12. A well monitoring program be implemented in accordance with the details provided in Section 9 of this report.

12. STATEMENT OF LIMITATIONS

The information in this report is intended for the sole use of Will-O-Homes Inc. and its successors or assigns. 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.

This report is considered to reflect the conditions of the Site as of June 19, 2024.

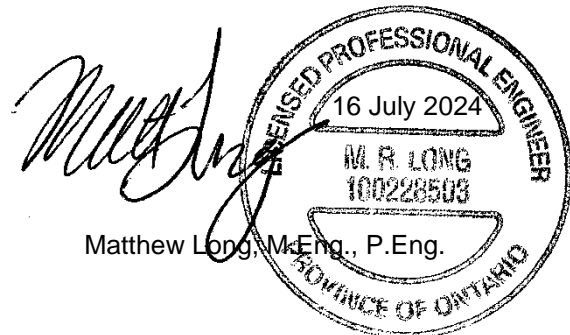
All of which is respectfully submitted.

GM BLUEPLAN ENGINEERING LIMITED

Per:

A handwritten signature in black ink, appearing to read 'A Faarah'.

Abdirahman Faarah, P.Geo., Hons B.Sc.



Matthew Long, M.Eng., P.Eng.

13. REFERENCES

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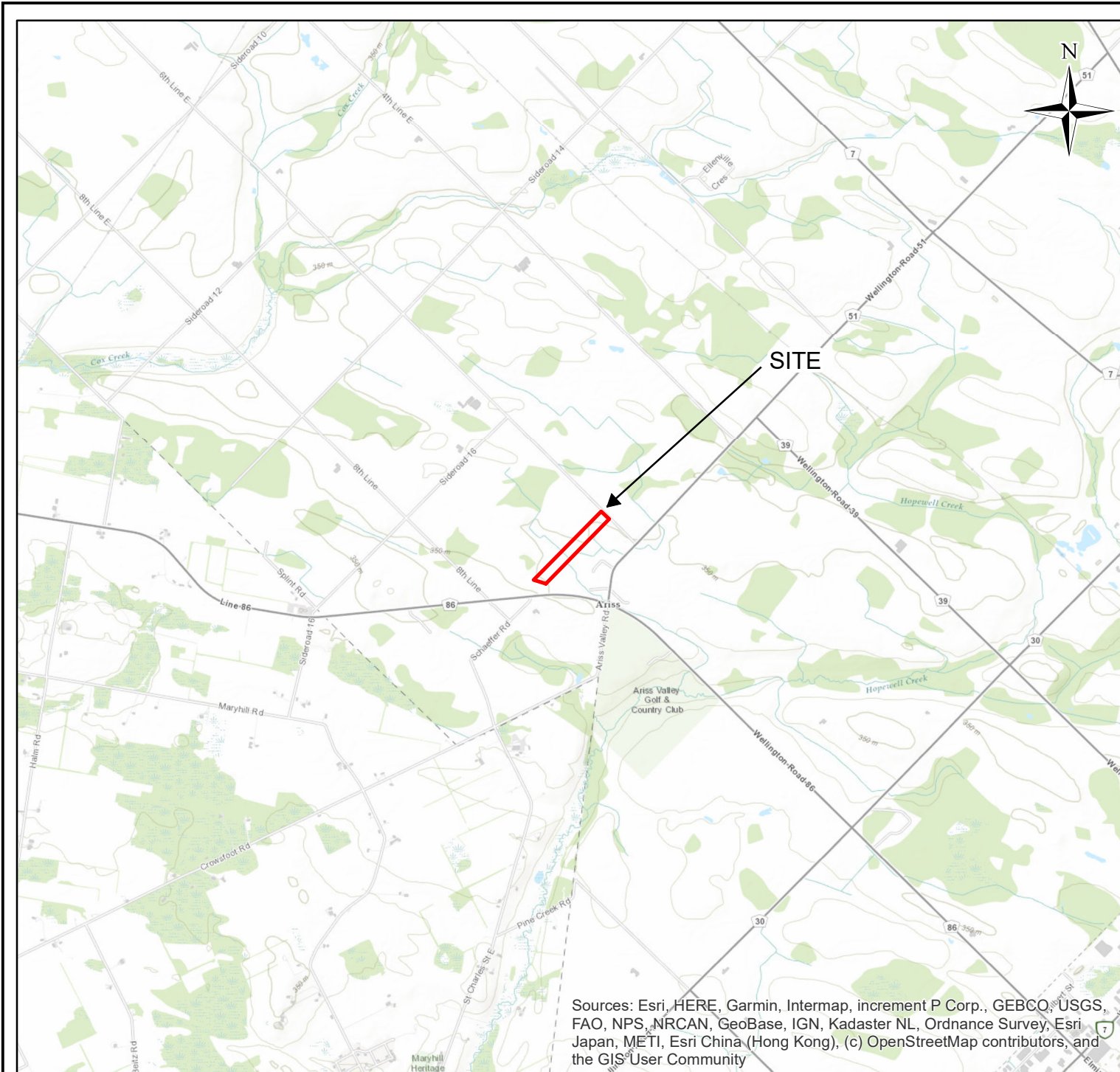
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FIGURES



Project: 420099-2
 Hydrogeological Study
 5782 6th Line
 Ariss, ON

Part of Lot 17,
 Concession 4,
 Geo. Twp. of Pilkington

SITE

 Site Boundary

Scale: 1: 50,000
 January 2023

Figure 1:
 Site Location

Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), (c) OpenStreetMap contributors, and the GIS User Community





Project: 420099-2
 Hydrogeological Study
 5782 6th Line
 Ariss, ON

Part of Lot 17,
 Concession 4,
 Geo. Twp. of Pilkington

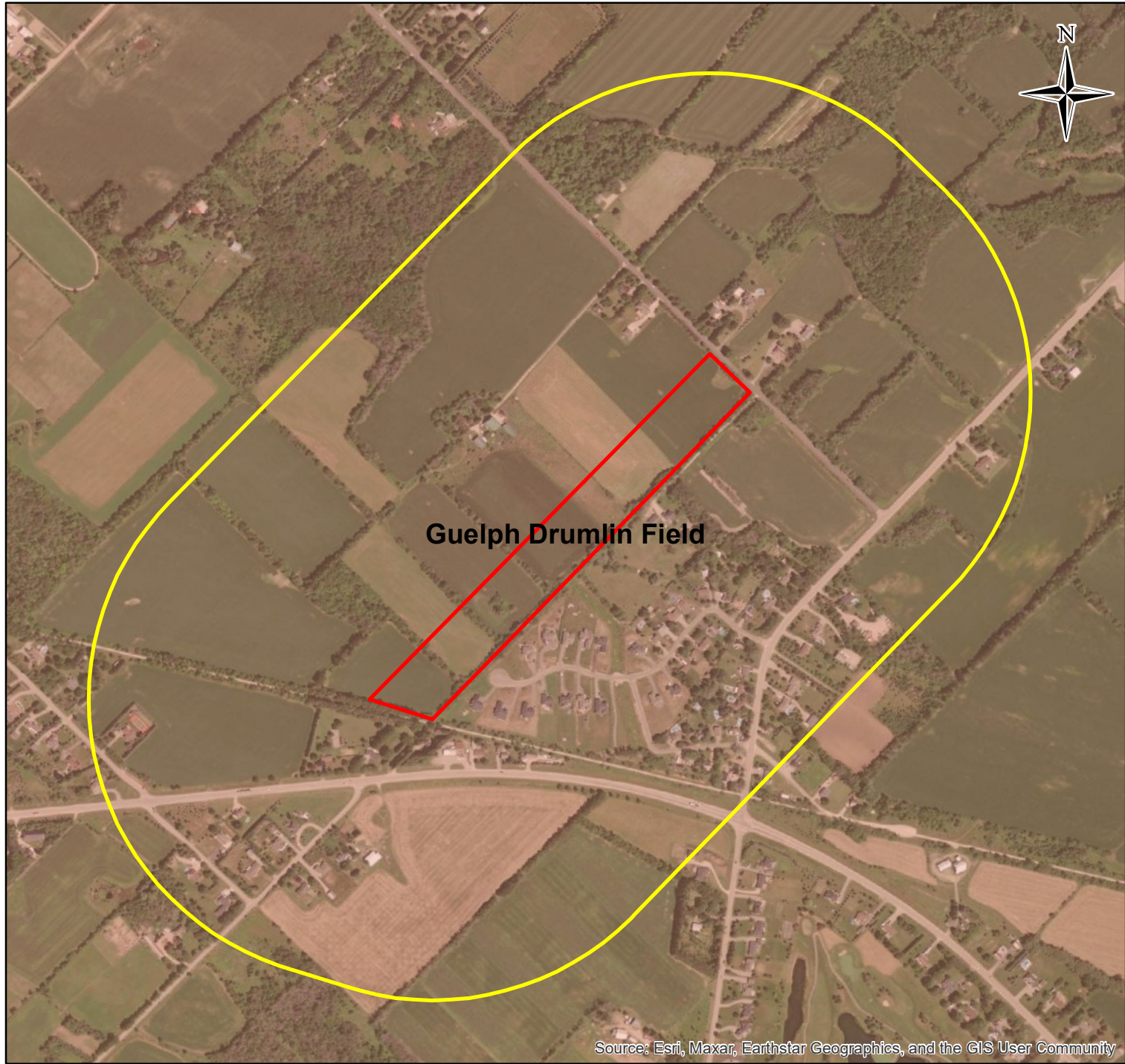
- == Roads
- Study Area (500m)
- Site Boundary

Scale: 1: 10,000
 January 2023

Figure 2:
 Study Area Layout






Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Project: 420099-2
Hydrogeological Study
5782 6th Line
Ariss, ON

Part of Lot 17,
Concession 4,
Geo. Twp. of Pilkington

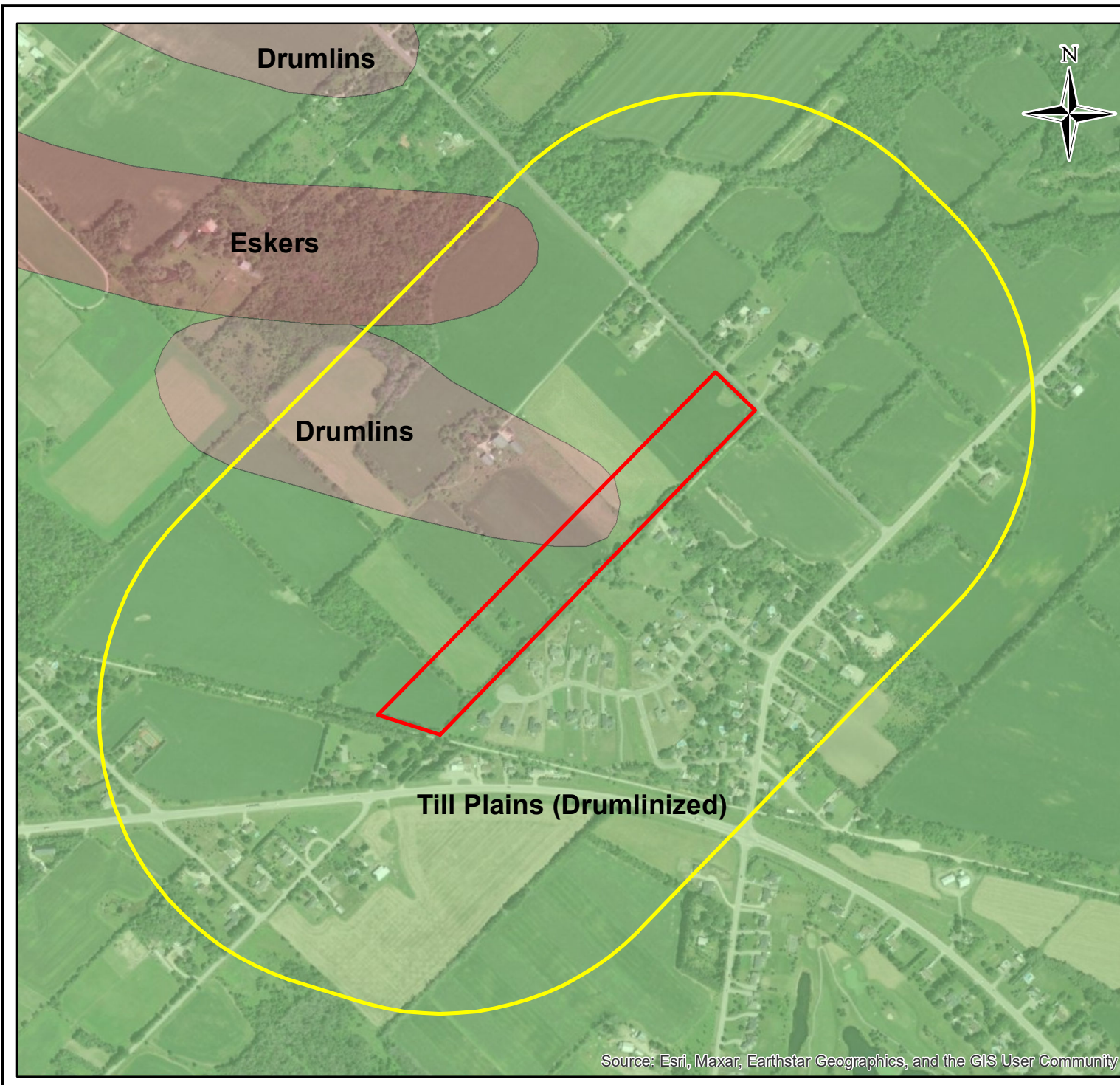
-  Study Area (500m)
-  Site Boundary
- Physiographic Regions**
- UNIT, REGION**
-  11, Guelph Drumlin Field

Scale: 1: 10,000
January 2023

Figure 3a:
Physiographic Regions



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Project: 420099-2
 Hydrogeological Study
 5782 6th Line
 Ariss, ON

Part of Lot 17,
 Concession 4,
 Geo. Twp. of Pilkington

- Study Area (500m)
- Site Boundary
- Physiography of Southern Ontario**
- Drumlins
- Eskers
- Till Plains (Drumlinized)

Scale: 1: 10,000
 January 2023

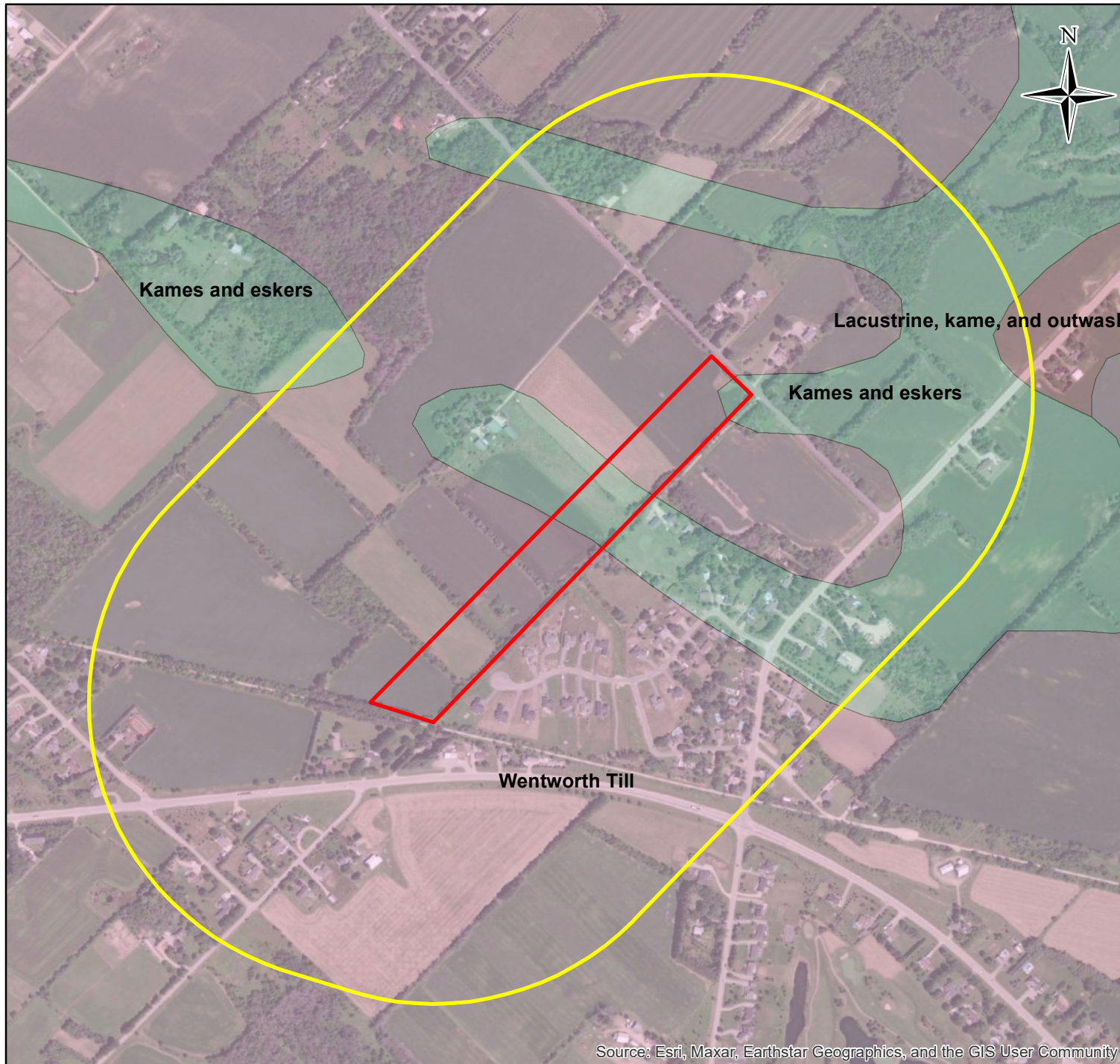
Figure 3b:
Physiographic Landforms



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Project: 420099-2
Hydrogeological Study
5782 6th Line
Ariss, ON

Part of Lot 17,
Concession 4,
Geo. Twp. of Pilkington



Study Area (500m)

Site Boundary

Surficial Geology of Ontario

Kames and eskers

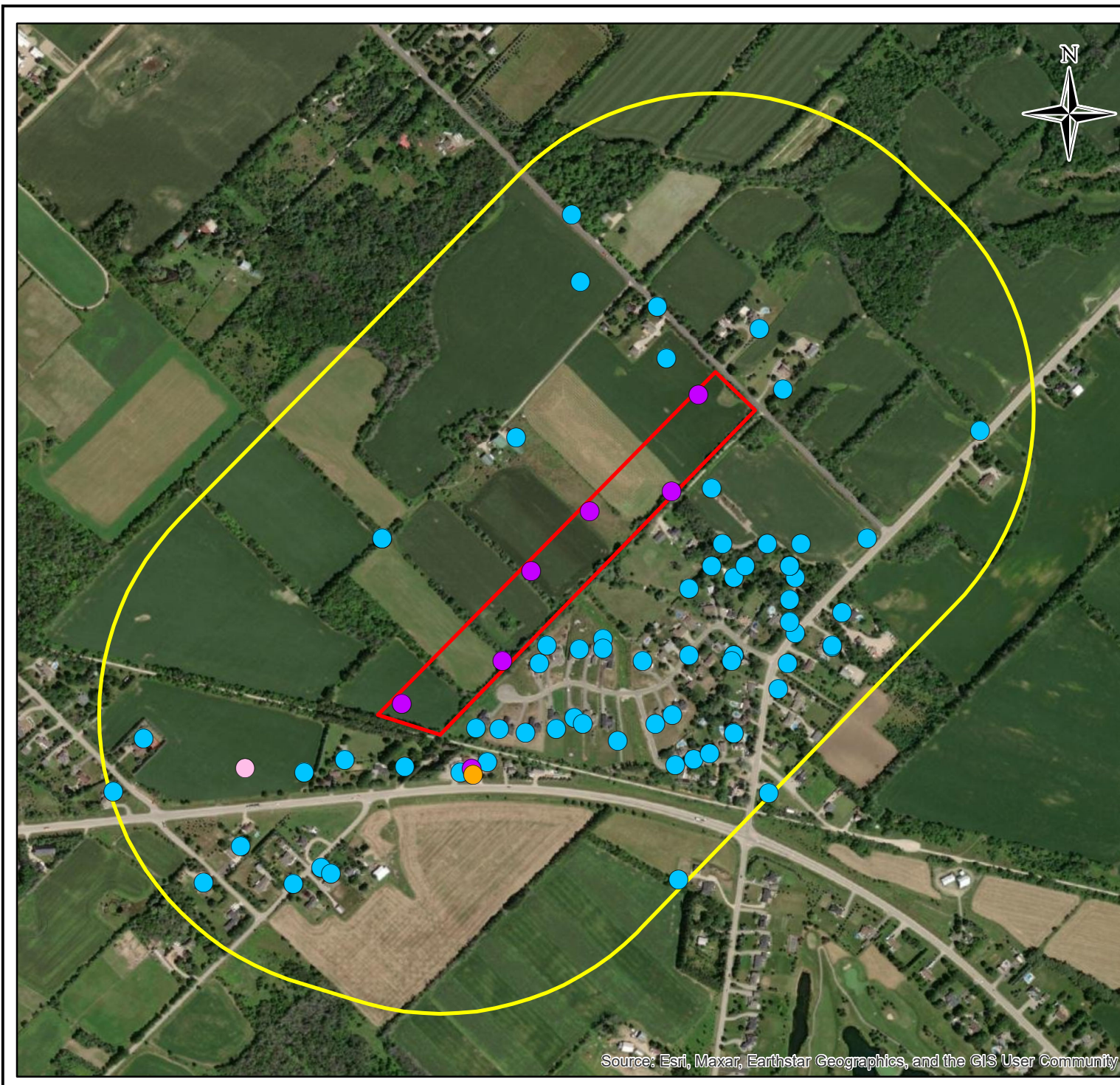
Lacustrine, kame, and outwash

Wentworth Till

Scale: 1: 10,000
January 2023

Figure 4:
Surficial Geology





Project: 420099-2
 Hydrogeological Study
 5782 6th Line
 Ariss, ON

Part of Lot 17,
 Concession 4,
 Geo. Twp. of Pilkington

Well Use

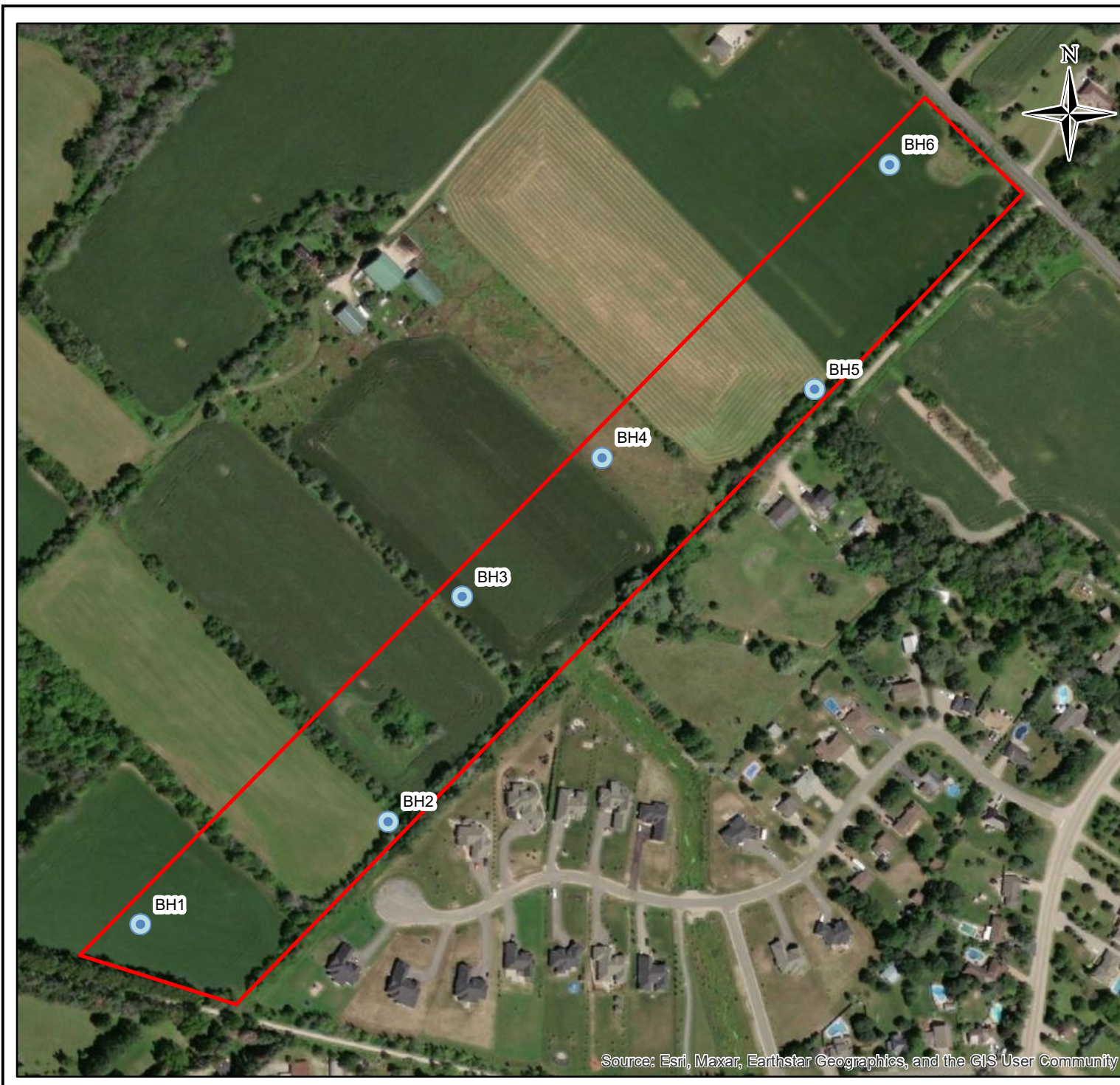
- Abandonment
- Commercial
- Domestic
- Monitoring
- Study Area (500m)
- Site Boundary

Scale: 1: 10,000
 January 2023

Figure 5:
 MECP Water Well Records



Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community



Project: 420099-2
Hydrogeological Study
5782 6th Line
Ariss, ON

Part of Lot 17,
Concession 4,
Geo. Twp. of Pilkington

- Monitoring Wells (CMT 2021)
- Site Boundary

Scale: 1: 4,000
February 2023

Figure 6:
Site Investigation
Locations






Source: Esri, Maxar, Earthstar Geographics, and the GIS User Community

Project: 420099-2
 Hydrogeological Study
 5782 6th Line
 Ariss, ON

Part of Lot 17,
 Concession 4,
 Geo. Twp. of Pilkington

Well ID	Water Level		
	Depth (--)	Elev. (mbsg)	Date
BH-1	0.01	349.22	Mar-19-2022
BH-2	0.69	345.02	Feb-22-2022
BH-3	0.36	345.14	Mar-07-2022
BH-4	1.79	348.49*	Apr-03-2023
BH-5	0.05	347.05	Mar-07-2022
BH-6	0.06	349.11	Feb-22-2022

-  Monitoring Wells (CMT 2021)
-  SHGWL Contours (max GWLs)
-  Site Boundary

Scale: 1: 5,000
 July 2024

Figure 7:
 Interpreted Seasonal
 High Groundwater Level



Project: 420099-2
Hydrogeological Study
5782 6th Line
Ariss, ON

Part of Lot 17,
Concession 4,
Geo. Twp. of Pilkington



- Residents Wells (Monitored)
- Test Wells
- Site Boundary
- Roads

Scale: 1: 5,000
July 2023



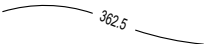
Figure 8:
Bedrock Wells Involved
in Pumping Tests

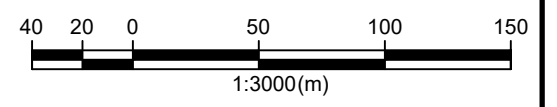


HYDROGEOLOGICAL STUDY FOR
5782 6TH LINE
TOWNSHIP OF GUELPH/ERAMOSA
(ARISS)



LEGEND

-  SITE BOUNDARY
-  WATER WELL RECORD
-  EX. CONTOURS



PLAN OF
SECTIONS
Figure No. 9



420099-2
JUNE 2024
NAD 1983 UTM Zone 17N

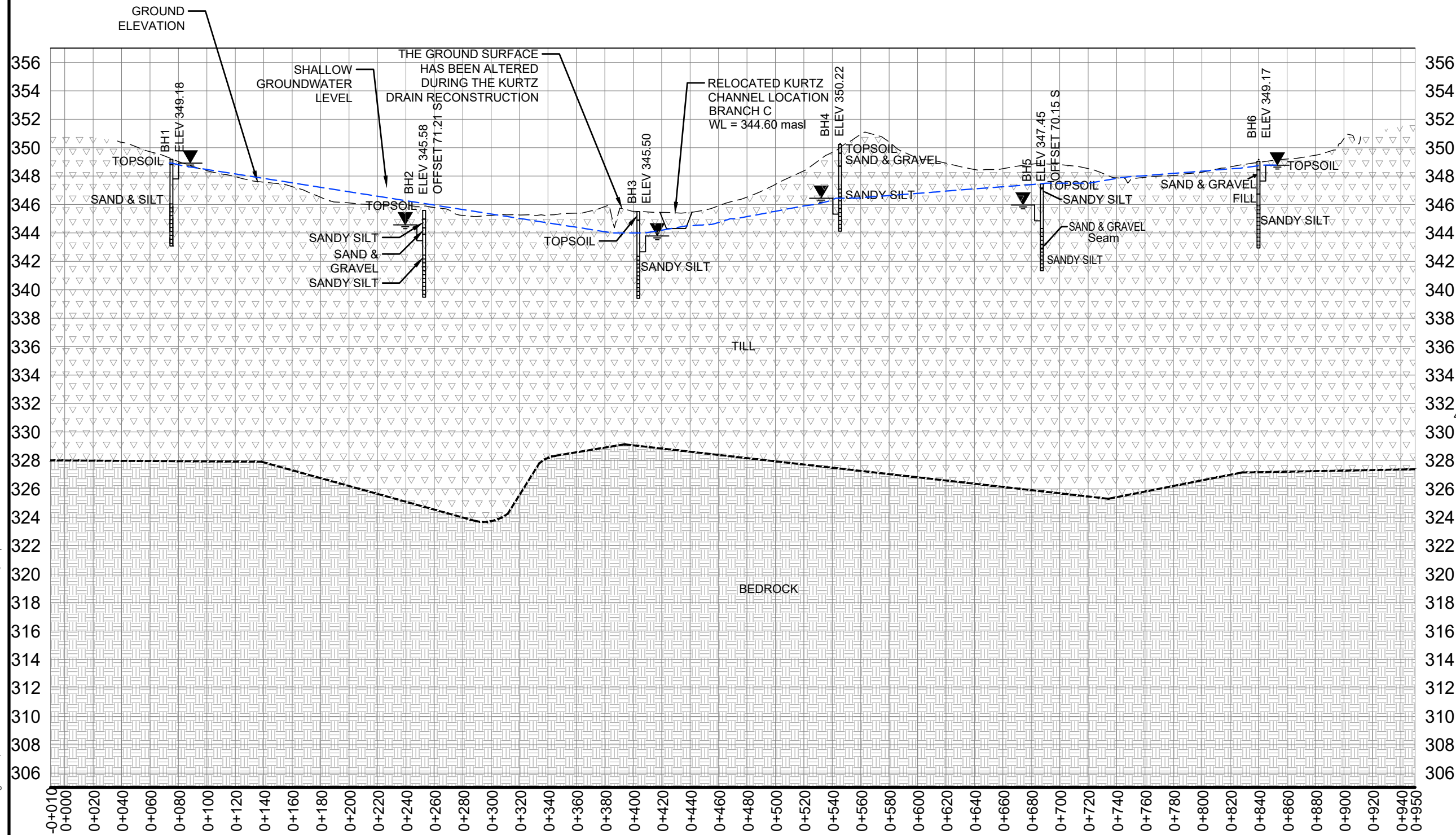
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HYDROGEOLOGICAL STUDY FOR 5782 6TH LINE TOWNSHIP OF GUELPH/ERAMOSA (ARISS)

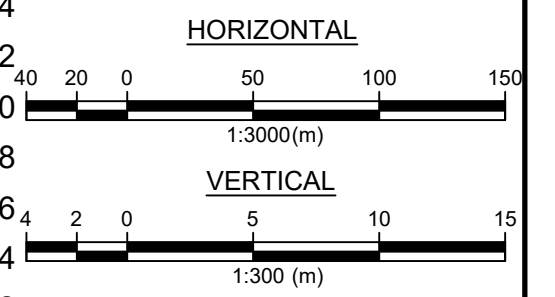
SECTION A - A'

NOTE: MONITORING WELLS WHERE THE GROUNDWATER SURFACE DOES NOT INTERSECT THE MEASURED WATER LEVEL ARE OFFSET FROM THE CROSS-SECTION LINE.



GROUND WATER LEVELS
(NOV. 15, 2023)

BH-1 = 348.91 masl
 BH-2 = 344.57 masl
 BH-3 = 343.79 masl
 BH-4 = 346.44 masl
 BH-5 = 345.96 masl
 BH-6 = 348.77 masl



HYDROGEOLOGICAL
CROSS-SECTION
A-A'

Figure No. 9A

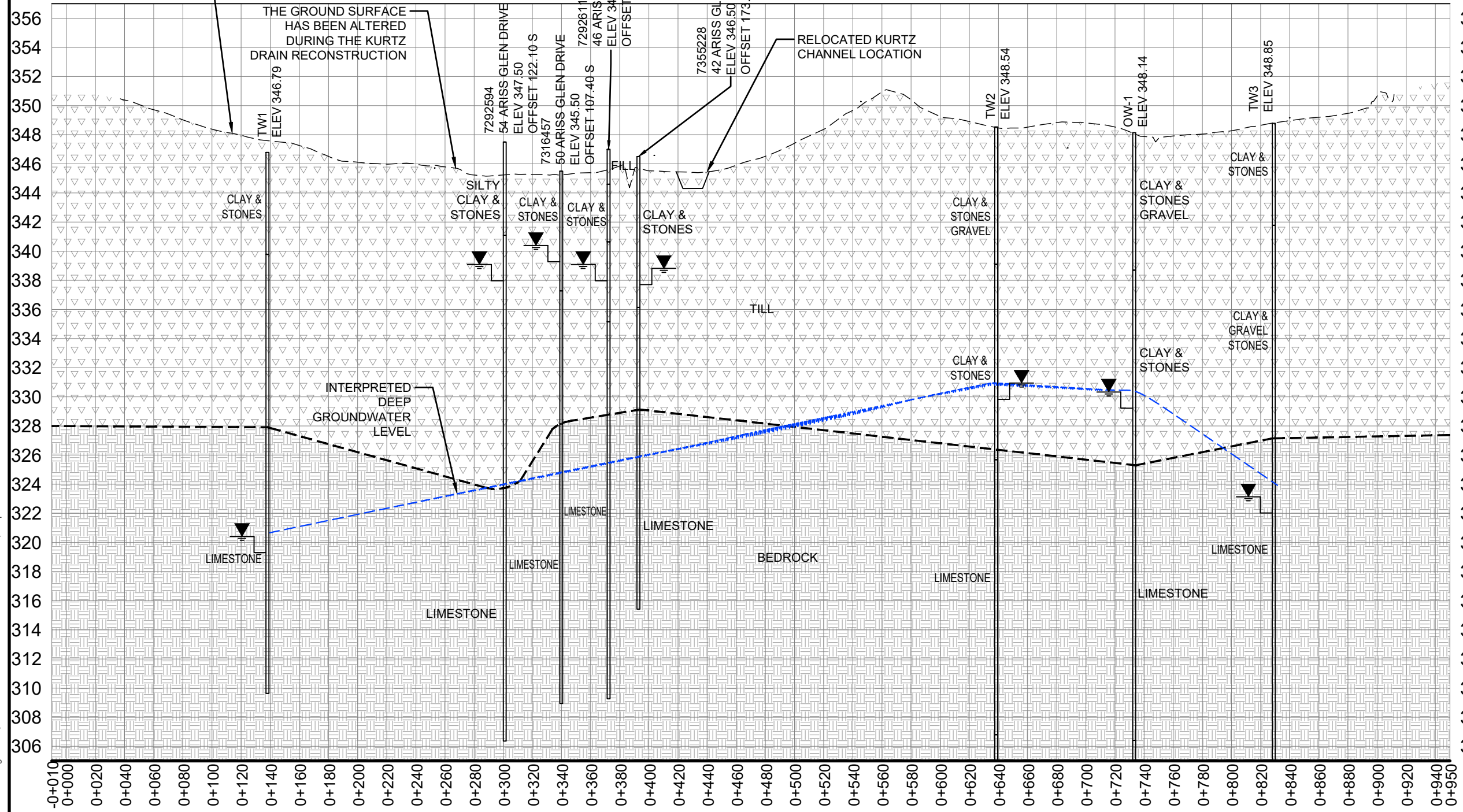


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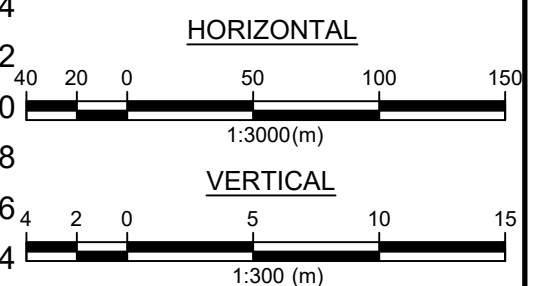
SECTION A - A'

NOTE: MONITORING WELLS WHERE THE GROUNDWATER SURFACE DOES NOT INTERSECT THE MEASURED WATER LEVEL ARE OFFSET FROM THE CROSS-SECTION LINE



GROUND WATER LEVELS
(JUNE 20, 2023)

54 ARISS GLENN	= 339.08 masl
46 ARISS GLENN	= 339.09 masl
5763 6th LINE E.	= 346.55 masl
50 ARISS GLENN	= 339.28 masl
42 ARISS GLENN	= 328.82 masl
OW-1	= 330.34 masl
TW-1	= 320.42 masl
TW-2	= 330.92 masl
TW-3	= 323.13 masl



HYDROGEOLOGICAL
CROSS-SECTION
A-A'

Figure No. 9B



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TABLES

Table 1: Summary of Water Well Records

MOECC Well ID	Address	Lot	Conc.	Easting	Northing	Township	County/Municipality	Well Use	Bedrock/Overburden	Depth to Bedrock (m)	Penetration Into Bedrock (m)	Total Depth of Well (m)	Static Water Level (m)	Pumping Test Duration (hr)	Pumping Rate During Test (LPM)	Recommended Pumping Rate (GPM)	Date Drilled	Notes	
Wells on-Site																			
7390669	5782 6 Line E	17	4	550559	4825097	Guelph/Eramosa	Wellington	Monitoring	Overburden	-	-	6.1	-	-	-	-	-	5/13/2021	Monitoring wells drilled as part of this hydrogeological study.
7390670	5782 6 Line E	17	4	550739	4825173	Guelph/Eramosa	Wellington	Monitoring	Overburden	-	-	6.1	-	-	-	-	-	5/13/2021	
7390683	5782 6 Line E	17	4	550896	4825441	Guelph/Eramosa	Wellington	Monitoring	Overburden	-	-	6.1	-	-	-	-	-	5/13/2021	
7390684	5782 6 Line E	17	4	550791	4825334	Guelph/Eramosa	Wellington	Monitoring	Overburden	-	-	6.1	-	-	-	-	-	5/13/2021	
7390685	5782 6 Line E	17	4	551042	4825477	Guelph/Eramosa	Wellington	Monitoring	Overburden	-	-	6.1	-	-	-	-	-	5/26/2021	
7390686	5782 6 Line E	17	4	551091	4825650	Guelph/Eramosa	Wellington	Monitoring	Overburden	-	-	6.1	-	-	-	-	-	5/26/2021	
Wells within Study Area (500m)																			
6701348	-	29	5	551595	4825586	Guelph/Eramosa	Wellington	Domestic	Bedrock	21.7	8.8	30.5	4.3	3.0	45.4	-	-	8/19/1958	
6702203	-	18	4	550712	4824992	Guelph/Eramosa	Wellington	Domestic	Bedrock	21.1	9.4	30.5	4.0	4.0	45.4	7	-	4/3/1965	
6702205	-	17	4	550456	4824996	Guelph/Eramosa	Wellington	Domestic	Overburden	-	-	16.5	9.2	24.0	18.9	5	-	8/6/1967	
6702207	-	18	4	551055	4824781	Guelph/Eramosa	Wellington	Domestic	Bedrock	19.5	7.0	26.5	8.2	2.0	56.8	10	-	3/30/1967	
6702208	-	18	4	551049	4824987	Guelph/Eramosa	Wellington	Domestic	Bedrock	19.8	6.7	26.5	0.0	3.0	56.8	10	-	12/7/1967	Reportedly artesian conditions.
6703143	-	29	6	551264	4825223	Guelph/Eramosa	Wellington	Domestic	Bedrock	16.8	10.0	26.8	3.7	2.0	45.4	10	-	10/3/1968	
6703612	-	18	4	550564	4824983	Guelph/Eramosa	Wellington	Domestic	Bedrock	22.0	10.9	32.9	5.2	5.0	18.9	5	-	10/23/1969	
6704404	-	17	4	550384	4824973	Guelph/Eramosa	Wellington	Domestic	Bedrock	25.0	12.8	37.8	10.7	3.0	45.4	10	-	9/25/1972	
6704663	-	24	1	551217	4824937	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.4	23.7	41.1	1.5	3.0	30.3	6	-	5/28/1973	
6704860	-	18	4	550414	4824803	Guelph/Eramosa	Wellington	Domestic	Bedrock	21.1	17.0	38.1	6.1	1.0	56.8	15	-	10/15/1973	
6705013	-	17	4	550879	4825853	Guelph/Eramosa	Wellington	Domestic	Bedrock	21.9	26.0	47.9	6.1	2.0	37.9	10	-	3/18/1974	
6705105	-	17	3	550864	4825973	Guelph/Eramosa	Wellington	Domestic	Bedrock	28.4	12.7	41.1	5.5	2.0	37.9	10	-	5/23/1974	
6705809	-	18	4	550364	4824773	Guelph/Eramosa	Wellington	Domestic	Bedrock	22.3	32.6	54.9	6.1	2.0	30.3	8	-	10/2/1975	
6706182	-	18	4	550664	4824973	Guelph/Eramosa	Wellington	Domestic	Bedrock	21.4	10.6	32.0	4.6	1.0	56.8	15	-	4/29/1976	
6706743	-	17	4	550764	4825573	Guelph/Eramosa	Wellington	Domestic	Bedrock	25.3	14.3	39.6	9.2	1.0	37.9	10	-	7/19/1978	
6706744	-	18	4	551264	4825323	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.3	13.1	31.4	4.9	1.0	37.9	10	-	7/21/1978	
6707327	-	29	6	551234	4825123	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.1	11.6	28.7	3.1	1.0	49.2	15	-	7/17/1980	
6707435	-	18	4	551154	4825043	Guelph/Eramosa	Wellington	Domestic	Bedrock	16.8	12.8	29.6	3.1	6.0	45.4	15	-	7/4/1980	
6707451	-	18	4	551074	4825303	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.3	12.2	30.5	30.5	1.0	567.8	150	-	6/17/1981	Recommended pumping rate appears to be a data entry error in the record and is maybe 150 GPM
6707452	-	18	4	551214	4825383	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.0	12.5	30.5	3.1	2.0	1135.6	150	-	6/19/1981	
6707453	-	18	4	551154	4825323	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.1	13.4	30.5	3.1	2.0	75.7	15	-	6/10/1981	
6707506	-	18	4	551154	4825183	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.4	10.0	27.4	4.0	1.0	113.6	30	-	8/1/1981	
6707507	-	18	4	551154	4825183	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.1	10.3	27.4	3.7	1.0	113.6	30	-	8/1/1981	
6707508	-	18	4	551114	4825343	Guelph/Eramosa	Wellington	Domestic	Bedrock	19.8	10.7	30.5	4.3	1.0	56.8	12	-	9/3/1981	
6707909	-	18	4	551254	4825243	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.0	13.1	31.1	4.6	2.0	75.7	15	-	6/4/1984	
6707993	-	18	4	551114	4825483	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.3	12.2	30.5	5.5	2.0	30.3	8	-	7/20/1984	
6708014	-	18	4	551254	4825283	Guelph/Eramosa	Wellington	Domestic	Bedrock	19.5	10.7	30.2	4.6	2.0	30.3	8	-	5/18/1983	
6708015	-	18	4	551074	4825183	Guelph/Eramosa	Wellington	Domestic	Bedrock	16.8	13.1	29.9	18.3	2.0	30.3	8	-	4/24/1983	
6708108	-	18	4	551254	4825343	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.3	11.3	29.6	3.7	2.0	454.2	15	-	9/11/1984	
6708201	-	18	4	551134	4825383	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.3	14.0	32.3	4.9	3.0	45.4	10	-	4/24/1985	
6708202	-	18	4	551254	4825343	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.0	15.5	33.5	3.4	2.0	30.3	7	-	4/25/1985	
6708203	-	18	4	551174	4825343	Guelph/Eramosa	Wellington	Domestic	Bedrock	16.8	13.7	30.5	3.7	2.0	113.6	15	-	5/18/1985	
6708204	-	18	4	551254	4825343	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.0	10.0	28.0	4.6	1.0	113.6	15	-	6/5/1985	
6708263	-	18	4	551082	4824997	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.0	11.6	29.6	3.7	2.0	56.8	15	-	6/17/1985	
6708379	-	17	4	551274	4825383	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.3	11.3	29.6	3.1	2.0	94.6	20	-	9/2/1983	
6708453	-	18	4	551150	4825173	Guelph/Eramosa	Wellington	Domestic	Bedrock	19.2	8.8	28.0	3.7	1.0	94.6	25	-	5/9/1986	
6708587	-	17	4	550203	4824776	Guelph/Eramosa	Wellington	Domestic	Bedrock	22.3	13.1	35.4	3.1	1.0	37.9	10	-	11/18/1986	
6709196	-	17	4	551033	4825716	Guelph/Eramosa	Wellington	Domestic	Bedrock	16.8	12.5	29.3	6.1	2.0	45.4	10	-	10/16/1987	
6709905	-	17	4	550096	4825034	Guelph/Eramosa	Wellington	Domestic	Bedrock	24.4	7.9	32.3	14.3	1.0	34.1	9	-	8/18/1989	
6712028	-	17	3	551242	4825660	Guelph/Eramosa	Wellington	Domestic	Bedrock	22.9	6.4	29.3	2.4	1.0	37.9	10	-	7/30/1996	
6712315	-	29	6	551348	4825260	Guelph/Eramosa	Wellington	Domestic	Bedrock	22.3	20.4	42.7	6.4	1.0	22.7	6	-	7/31/1997	
6712486	-	17	4	550523	4825393	Guelph/Eramosa	Wellington	Domestic	Bedrock	21.4	15.5	36.9	9.2	1.0	56.8	15	-	3/6/1998	
6712529	-	17	4	550523	4825393	Guelph/Eramosa	Wellington	Domestic	Bedrock	24.7	18.0	42.7	24.4	1.0	37.9	10	-	5/14/1998	
6712873	-	29	6	551251	4825169	Guelph/Eramosa	Wellington	Domestic	Bedrock	20.7	9.8	30.5	9.2	1.0	56.8	15	-	10/26/1998	

Table 1: Summary of Water Well Records

MOECC Well ID	Address	Lot	Conc.	Easting	Northing	Township	County/ Municipality	Well Use	Bedrock/ Overburden	Depth to Bedrock (m)	Penetration Into Bedrock (m)	Total Depth of Well (m)	Static Water Level (m)	Pumping Test Duration (hr)	Pumping Rate During Test (LPM)	Recommended Pumping Rate (GPM)	Date Drilled	Notes
Wells within Study Area (500m)																		
6712876	~	18		551393	4825393	Guelph/Eramosa	Wellington	Domestic	Bedrock	15.9	78.3	94.2	6.1	1.0	26.5	7	11/13/1998	
6713334	~	17	5	550042	4824939	Guelph/Eramosa	Wellington	Domestic	Bedrock	24.4	66.4	90.8	3.7	1.0	45.4	12	4/26/2000	
6713945	~	7		551111	4825007	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.7	13.4	31.1	5.2	1.0	75.7	20	12/7/2001	
6714027	~	29	6	551330	4825198	Guelph/Eramosa	Wellington	Domestic	Bedrock	19.5	11.6	31.1	8.2	1.0	94.6	25	2/16/2002	
6715079	~	29	6	551330	4825201	Guelph/Eramosa	Wellington	Domestic	Bedrock	20.1	22.5	42.6	2.2	1.0	136.3	36	7/3/2004	
6715174	~	17	3	551017	4825809	Guelph/Eramosa	Wellington	Domestic	Bedrock	25.0	5.5	30.5	7.6	3.0	37.9	10	11/1/2004	
6715185	~	17	4	550270	4824841	Guelph/Eramosa	Wellington	Domestic	Bedrock	22.9	26.5	49.4	8.5	1.0	56.8	15	9/15/2004	
6715466	~			550684	4824980	Guelph/Eramosa	Wellington	Monitoring	Overburden	~	~	4.5	~	~	~	~	7/14/2005	
7166048	~	18	4	550432	4824792	Guelph/Eramosa	Wellington	Domestic	Bedrock	22.9	33.5	56.4	8.5	1.0	56.8	15.0	7/21/2011	
7173695	~	18	4	550687	4824970	Guelph/Eramosa	Wellington	Commerical	Bedrock	21.4	9.1	30.5	7.9	1.0	37.9	10.0	7/12/2011	
7195806	~	17	3	551200	4825769	Guelph/Eramosa	Wellington	Domestic	Bedrock	22.6	37.1	59.7	1.9	1.0	37.9	10.0	1/16/2013	
7249482	~	17	4	550278	4824981	Guelph/Eramosa	Wellington	Abandonment	~	~	~	~	2.4	~	~	~	9/18/2015	
7268886	~	18	4	550946	4825030	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.7	25.0	42.7	6.7	2.0	30.3	8.0	6/27/2016	
7292593	~	18	4	550920	4825213	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.7	17.0	34.7	7.0	1.0	56.8	15.0	7/26/2017	
7292594	~	18	4	550805	4825169	Guelph/Eramosa	Wellington	Domestic	Bedrock	23.8	14.3	38.1	7.0	1.0	56.8	15.0	7/28/2017	
7292595	~	18	4	550836	4825052	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.7	25.6	43.3	6.7	1.0	56.8	15.0	7/31/2017	
7292611	~	18	4	550877	4825194	Guelph/Eramosa	Wellington	Domestic	Bedrock	11.9	25.9	37.8	6.1	1.0	45.4	12.0	6/21/2017	
7307963	~	18	4	551014	4825060	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.9	18.9	37.8	4.3	1.0	37.9	10.0	3/6/2018	
7307964	~	18	4	550868	4825071	Guelph/Eramosa	Wellington	Domestic	Bedrock	18.3	25.6	43.9	7.0	1.0	45.4	12.0	2/28/2018	
7307965	~	18	4	550883	4825061	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.7	25.6	43.3	5.5	1.0	45.4	12.0	3/5/2018	
7316456	~	18	4	550692	4825053	Guelph/Eramosa	Wellington	Domestic	Bedrock	20.7	65.3	86.0	7.3	1.0	45.4	12.0	6/14/2018	
7316457	~	18	4	550819	4825201	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.4	19.2	36.6	5.8	1.0	56.8	15.0	6/18/2018	
7316458	~	18	4	550991	4825173	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.7	18.9	36.6	6.7	1.0	56.8	15.0	6/15/2018	
7355225	~	18	4	550781	4825044	Guelph/Eramosa	Wellington	Domestic	Bedrock	19.2	24.1	43.3	6.7	1.0	45.4	12.0	11/2/2018	
7355226	~	18	4	550733	4825051	Guelph/Eramosa	Wellington	Domestic	Bedrock	19.8	17.4	37.2	6.4	1.0	37.9	10.0	11/14/2018	
7355227	~	18	4	551044	4825076	Guelph/Eramosa	Wellington	Domestic	Bedrock	20.1	11.0	31.1	6.1	1.0	56.8	15.0	11/13/2018	
7355228	~	18	4	550920	4825195	Guelph/Eramosa	Wellington	Domestic	Bedrock	17.4	13.7	31.1	5.5	1.0	56.8	15.0	11/12/2018	

~ - indicates data unavailable

Table 2: Monitoring Well Details and Water Level Observations

Well ID	Ground Elev. (-)	TOC Elev. (masl)	Water Level																		
			Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)	Depth (mbTOC)	Elev. (masl)			
Date Measured:			18-Jun-21		26-Nov-21		3-Jun-22		9-Dec-22		10-Feb-23		20-Jun-23		15-Nov-23		24-May-24		19-Jun-24		
BH-1	349.23	350.22	2.438	347.78	1.155	349.07	2.001	348.22	~	~	1.27	348.95	1.89	348.33	1.31	348.91	1.96	348.27	2.24	347.98	
BH-2	345.71	346.62	2.401	344.22	1.876	344.75	2.171	344.45	2.99	343.63	1.90	344.73	2.35	344.27	2.05	344.57	2.11	348.11	2.34	347.89	
BH-3	345.50	346.57	2.5	344.07	1.969	344.60	2.309	344.26	~	~	~	~	~	~	~	2.78	343.79	2.87	347.36	3.06	347.16
BH-4	350.28	351.30	4.302	347.00	3.824	347.48	4.094	347.21	5.95	345.35	5.19	346.11	4.07	347.23	4.86	346.44	3.81	346.42	4.10	346.13	
BH-5	347.10	348.10	2.762	345.34	1.488	346.61	2.42	345.68	4.786	343.31	1.72	346.38	2.533	345.57	2.144	345.96	2.088	348.13	2.317	347.90	
BH-6	349.17	350.12	1.67	348.44	1.15	348.96	1.62	348.50	2.63	347.49	1.12	349.00	1.63	348.48	1.35	348.77	1.58	348.64	1.69	348.53	

m bTOC - metres below top of casing of well.

TOC - Top of Casing

m ASL - metres above Sea Level

Elev. - Elevation

~ - Not Measured

Table 3a: Results of Shallow Groundwater Quality Analyses - General Chemistry and Organic Parameters

	Sample ID	BH-1	BH-2	BH-4	BH-5	BH-6
	Sample Description	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Sampling Date	2023-02-10	2023-02-10	2023-02-10	2023-02-10	2023-02-10
Parameters	Criteria 1	Concentration				
	PWQO					
Bicarb. Alkalinity (calc. as CaCO3) (mg/L)		270	280	270	260	240
Calculated TDS (mg/L)		370	320	370	370	510
Carb. Alkalinity (calc. as CaCO3) (mg/L)		2.8	3.1	2.6	2.7	2.3
Hardness (CaCO3) (mg/L)		330	220	330	310	360
Conductivity (umho/cm)		640	550	610	640	990
Orthophosphate (P) (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
pH	6.5:8.5	8.06	8.08	8.02	8.04	8.00
Dissolved Sulphate (SO4) (mg/L)		58	7.6	71	68	32
Alkalinity (Total as CaCO3) (mg/L)		270	280	270	270	250
Dissolved Chloride (Cl-) (mg/L)		11	17	2.8	13	140
Nitrite (N) (mg/L)		<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate (N) (mg/L)		2.16	0.27	<0.10	0.25	<0.10
Nitrate + Nitrite (N) (mg/L)		2.16	0.27	<0.10	0.25	<0.10
Total Ammonia-N (mg/L)		<0.050	<0.050	<0.050	<0.050	<0.050
Dissolved Organic Carbon (mg/L)		0.69	2.1	0.95	0.87	1.20

Notes:

1. Criteria are from the Ontario Provincial Water Quality Objectives (Criteria 1). Criteria are indicated by: **White Text**
2. Criteria and concentrations are given in units consistent with the units listed for the associated parameter.
3. Concentrations with bold, italic, or underlined text in shaded cells exceed the corresponding criteria.
4. ---- represents sample parameters that were not analyzed; ~ = No value specified.
5. BV Labs Job Number: C343999

Table 3b: Results of Groundwater Quality Analyses - Metals Parameters

Parameters	Sample ID	BH-1	BH-2	BH-4	BH-5	BH-6
	Sample Description	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Sampling Date	2023-02-10	2023-02-10	2023-02-10	2023-02-10	2023-02-10
	Criteria 1	Concentration				
	PWQO					
Dissolved Aluminum (Al) (ug/L)		5.2	5.7	<4.9	6.4	<4.9
Dissolved Antimony (Sb) (ug/L)	20	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Arsenic (As) (ug/L)	100	<1.0	<1.0	<1.0	<1.0	<1.0
Dissolved Barium (Ba) (ug/L)		67	43	84	110	110
Dissolved Beryllium (Be) (ug/L)	11	<0.40	<0.40	<0.40	<0.40	<0.40
Dissolved Boron (B) (ug/L)	200	26	71	17	67	48
Dissolved Cadmium (Cd) (ug/L)	0.2	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Calcium (Ca) (ug/L)		65,000	41,000	77,000	62,000	75,000
Dissolved Chromium (Cr) (ug/L)		<5.0	<5.0	<5.0	<5.0	<5.0
Dissolved Cobalt (Co) (ug/L)	0.9	<0.50	<0.50	<0.50	<0.50	<0.50
Dissolved Copper (Cu) (ug/L)	5	1.2	1	1.6	0.99	1.7
Dissolved Iron (Fe) (ug/L)	300	<100	<100	<100	<100	<100
Dissolved Lead (Pb) (ug/L)	5	<0.50	<0.50	<0.50	1.1	<0.50
Dissolved Magnesium (Mg) (ug/L)		40,000	29,000	34,000	37,000	42,000
Dissolved Manganese (Mn) (ug/L)		<2.0	9	<2.0	7.8	3.3
Dissolved Molybdenum (Mo) (ug/L)	40	6.7	15	21	5.6	14
Dissolved Nickel (Ni) (ug/L)	25	<1.0	1.5	1	<1.0	<1.0
Dissolved Phosphorus (P) (ug/L)		<100	<100	<100	<100	<100
Dissolved Potassium (K) (ug/L)		2,600	2,800	1,800	2,400	1,800
Dissolved Selenium (Se) (ug/L)	100	<2.0	<2.0	<2.0	<2.0	<2.0
Dissolved Silicon (Si) (ug/L)		6,200	6,600	5,000	4,900	6,700
Dissolved Silver (Ag) (ug/L)	0.1	<0.090	<0.090	<0.090	<0.090	<0.090
Dissolved Sodium (Na) (ug/L)		12,000	40,000	4,100	19,000	64,000
Dissolved Strontium (Sr) (ug/L)		300	300	130	550	550
Dissolved Thallium (Tl) (ug/L)	0.3	<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
Dissolved Uranium (U) (ug/L)	5	2.4	0.92	1.5	2.5	0.64
Dissolved Vanadium (V) (ug/L)	6	1	0.55	0.55	0.77	0.5
Dissolved Zinc (Zn) (ug/L)	30	<5.0	<5.0	<5.0	<5.0	<5.0

Table 4a: Results of Water Quality Analyses from Test Water Wells - General Chemistry and Microbiological Parameters

	Sample ID	TW-01-S1	TW-01-S2	TW-02-S1	TW-02-S2	TW-03-S1	TW-03-S2	
	Sample Description	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	
	Screened Interval (m asl)	309.48 - 326.05	309.48 - 326.05	300.35 - 325.05	300.35 - 325.05	300.66 - 326.59	300.66 - 326.59	
	Sampling Date	2023-06-19	2023-06-19	2023-06-20	2023-06-20	2023-06-19	2023-06-19	
Parameters	Criteria 1	Criteria 2	Concentration					
	ODWS - MAC	OWDS - A/O						
Bicarb. Alkalinity (calc. as CaCO ₃) (mg/L)			180	180	180	180	200	200
Calculated TDS (mg/L)		<u>500</u>	190	190	190	190	220	220
Carb. Alkalinity (calc. as CaCO ₃) (mg/L)			2.4	2.3	2.5	2.6	2.2	2.7
Hardness (CaCO ₃) (mg/L)		80:100	120	120	130	130	170	170
Colour (TCU)		<u>5</u>	<2	<2	<2	<2	<2	<2
Conductivity (umho/cm)			390	350	350	350	410	400
Orthophosphate (P) (mg/L)			<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
pH (pH)		6.5:8.5	8.17	8.15	8.17	8.18	8.07	8.15
Dissolved Sulphate (SO ₄) (mg/L)		<u>500</u>	4.2	3.9	3.6	3.4	6.9	5.2
Turbidity (NTU)		<u>5</u>	0.8	0.1	0.6	0.36	1.9	0.4
Alkalinity (Total as CaCO ₃) (mg/L)		30:500	180	180	180	180	200	210
Dissolved Chloride (Cl) (mg/L)		<u>250</u>	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
Nitrite (N) (mg/L)	1		<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Nitrate (N) (mg/L)	10		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Total Ammonia-N (mg/L)			0.090	0.10	0.19	0.19	0.31	0.28
Dissolved Organic Carbon (mg/L)			0.56	0.5	0.9	0.81	1.2	1.2
Fecal coliform (CFU/100mL)			0	0	0	0	0	0
Background (CFU/100mL)			550	28	450	59	280	6
Total Coliforms (CFU/100mL)	0		0	1	0	0	0	0
Escherichia coli (CFU/100mL)	0		0	0	0	0	0	0

Notes:

- Criteria are from the *Ontario Drinking Water Standards Maximum Acceptable Concentration* (Criteria 1) and *Aesthetic Objectives* (Criteria 2). Criteria are indicated by:
White Text for Criteria 1, Underlined for Criteria 2.
- Criteria and concentrations are given in units consistent with the units listed for the associated parameter.
- Concentrations with bold, italic, or underlined text in shaded cells exceed the corresponding criteria.
- Screened well intervals presented are approximate.
- represents sample parameters that were not analyzed; ~ = No value specified.
- Bureau Veritas Laboratory job number: C3I0050, C3I1767

Table 4b: Results of Water Quality Analyses from Test Water Wells - Metals Parameters

Parameters	Sample ID		TW-01-S1	TW-01-S2	TW-02-S1	TW-02-S2	TW-03-S1	TW-03-S2
	Sample Description		Groundwater	Groundwater	Groundwater	Groundwater	Groundwater	Groundwater
	Screened Interval (m asl)		309.48 - 326.05	309.48 - 326.05	300.35 - 325.05	300.35 - 325.05	300.66 - 326.59	300.66 - 326.59
	Sampling Date		2023-06-19	2023-06-19	2023-06-20	2023-06-20	2023-06-19	2023-06-19
Parameters	Criteria 1	Criteria 2	Concentration					
	ODWS - MAC	ODWS - A/O						
. Aluminum (Al) (ug/L)			22	<4.9	5.5	<4.9	6.9	<4.9
. Antimony (Sb) (ug/L)	6		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
. Arsenic (As) (ug/L)	10		1.8	1.7	1	<1.0	<1.0	<1.0
. Barium (Ba) (ug/L)	1000		34	32	39	41	40	43
. Beryllium (Be) (ug/L)			<0.40	<0.40	<0.40	<0.40	<0.40	<0.40
. Boron (B) (ug/L)	5000		68	68	61	62	59	57
. Cadmium (Cd) (ug/L)	5		<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
. Calcium (Ca) (ug/L)			27000	26000	28000	28000	40000	39000
. Chromium (Cr) (ug/L)	50		<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
. Cobalt (Co) (ug/L)			<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
. Copper (Cu) (ug/L)		<u>1000</u>	<0.90	<0.90	1.1	<0.90	<0.90	<0.90
. Iron (Fe) (ug/L)		<u>300</u>	110	<100	120	110	340	<100
. Lead (Pb) (ug/L)	10		<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
. Magnesium (Mg) (ug/L)			13000	13000	15000	14000	17000	17000
. Manganese (Mn) (ug/L)		<u>50</u>	12	9.5	5.1	4.2	15	7.2
. Molybdenum (Mo) (ug/L)			4.6	4.5	4.6	4.1	1.2	0.81
. Nickel (Ni) (ug/L)			<1.0	<1.0	<1.0	<1.0	<1.0	<1.0
. Phosphorus (P) (ug/L)			<100	<100	<100	<100	<100	<100
. Potassium (K) (ug/L)			710	690	770	770	1000	1100
. Selenium (Se) (ug/L)	50		<2.0	<2.0	<2.0	<2.0	<2.0	<2.0
. Silicon (Si) (ug/L)			5500	5400	5600	5600	5400	5400
. Silver (Ag) (ug/L)			<0.090	<0.090	<0.090	<0.090	<0.090	<0.090
. Sodium (Na) (ug/L)		<u>200000</u>	30000	30000	26000	26000	24000	24000
. Strontium (Sr) (ug/L)			240	230	310	310	580	640
. Thallium (Tl) (ug/L)			<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
. Titanium (Ti) (ug/L)			<5.0	<5.0	<5.0	<5.0	<5.0	<5.0
. Uranium (U) (ug/L)	20		0.33	0.31	0.43	0.38	0.12	0.1
. Vanadium (V) (ug/L)			<0.50	<0.50	<0.50	<0.50	<0.50	<0.50
. Zinc (Zn) (ug/L)		<u>5000</u>	<5.0	<5.0	<5.0	<5.0	<5.0	<5.0

Notes:

- Criteria are from the *Ontario Drinking Water Standards Maximum Acceptable Concentration (Criteria 1) and Aesthetic Objectives (Criteria 2)*. Criteria are indicated by:
White Text for Criteria 1, Underlined for Criteria 2.
- Criteria and concentrations are given in units consistent with the units listed for the associated parameter.
- Concentrations with bold, italic, or underlined text in shaded cells exceed the corresponding criteria.
- Screened well intervals presented are approximate.
- represents sample parameters that were not analyzed; ~ = No value specified.
- Bureau Veritas Laboratory job number: C310050, C311767

Table 5: Summary of Observations from Pumping Tests

Pumping Well	Elevations			H_A	Average Test Flow	Pumping Duration	Maximum Δs	$\Delta s/\log$ cycle	Recovery Time
	Ground	Static WL ^t	Top of Aquifer						
(--)	(masl)	(masl)	(masl)	(m)	(L/min)	(hours)	(m)	(m)	(minutes)
TW-01*	346.8	339.9	327.9	12.0	76	6	12.72	1.8	60
TW-02	348.5	340.9	325.7	15.3	57	6	15.6 ^y	2	40
TW-03*	348.1	343.6	326.5	17.1	76	6	8.94	1	523

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

masl: metres above sea level

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

Recovery Time: Time for well to recover 90% of its maximum drawdown.

Q_t : Well discharge (or pumping) rate during the test.

**-Denotes wells that were tested concurrently*

^t - assumes a stickup well casing of 0.61 m.

^y -drawdown near end of test where $Q = 57$ L/min

Table 6: Estimated Allowable Flow Rates for Water Supply Wells in the Bedrock Aquifer

Well ID	Test Flow (L/min)	Duration of Pumping (hours)	H _A (m)	s ₁₀₀ (m)	Δs/log cycle (m)	Volume Discharged (L)	Recovery Time (min)	Estimated Allowable Flow	
								Long-Term Flow (L/d)	Service Capacity (# of Lots ³)
TW-01 ¹	76	6	12.0	11.9	1.8	27,360	60	43,900	19.5
TW-02	57	6	15.3	14.5	2.0	20,520	40	35,800	15.9
TW-03 ¹	76	6	17.1	14.3	1.00	27,360	523	67,800	30.1

1- Denotes wells that were tested concurrently

2- Assuming 16 lots

3- Assuming a design domestic usage rate of 2,250 L/lot/day

Italics - Estimated by extrapolation

Table 7a: Estimated Interference Drawdown on an Existing Off-Site Well due to Long-Term Well Usage by Proposed Development at Peak Flows

Unit Flow =	2.25	m ³ /lot/day
# of Lots =	16	lots
Design Flow =	36	m ³ /day
Time =	7300	days
T (geomean) =	33.955	m ² /day
S (geomean) =	3.24E-04	unitless

$$u = \frac{r^2 S}{4Tt} \quad s = \frac{Q}{4\pi T} w(u)$$

Lot # Pumping Well	Distance to Observation Well (m)	Drawdown (m)
6	110	0.0626
16	535.4	0.0459
2	263.9	0.0521
9	168.4	0.0568
1	305.4	0.0518
3	211.5	0.0557
4	168.1	0.0581
5	135.8	0.0603
7	111.3	0.0624
8	134	0.0605
10	212.2	0.0556
11	264.1	0.0533
12	317.7	0.0514
13	372.1	0.0497
14	429	0.0482
15	485.6	0.0469

Total Drawdown = 0.8713

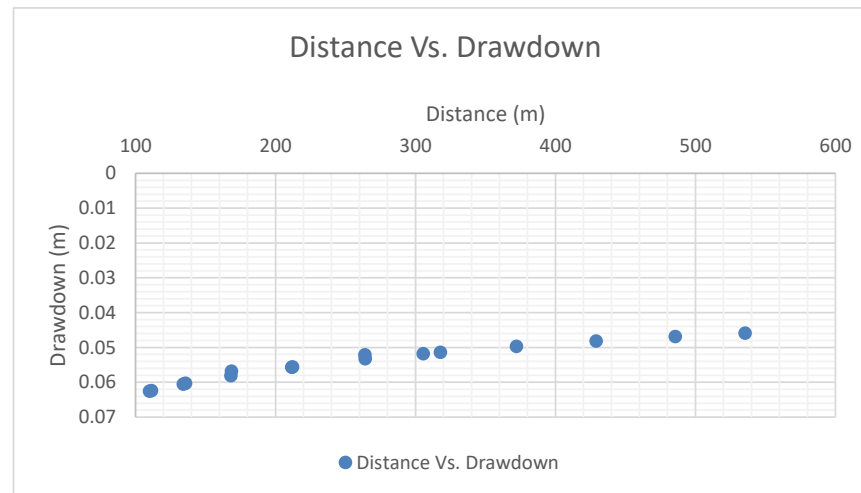


Table 7b: Estimated Interference Drawdown on an Existing Off-Site Well due to Long-Term Well Usage by Proposed Development at Typical Flows

Unit Flow =	1.00	m ³ /lot/day
# of Lots =	16	lots
Design Flow =	16	m ³ /day
Time =	7300	days
T (geomean) =	33.955	m ² /day
S (geomean) =	3.24E-04	unitless

$$u = \frac{r^2 S}{4Tt} \quad s = \frac{Q}{4\pi T} w(u)$$

Lot # Pumping Well	Distance to N.Well	Drawdown (m)
6	110	0.0278
16	535.4	0.0204
2	263.9	0.0237
9	168.4	0.0258
1	305.4	0.023
3	211.5	0.0247
4	168.1	0.0258
5	135.8	0.0268
7	111.3	0.0277
8	134	0.0268
10	212.2	0.0247
11	264.1	0.0237
12	317.7	0.0228
13	372.1	0.0221
14	429	0.0214
15	485.6	0.0208

Total Drawdown = 0.388

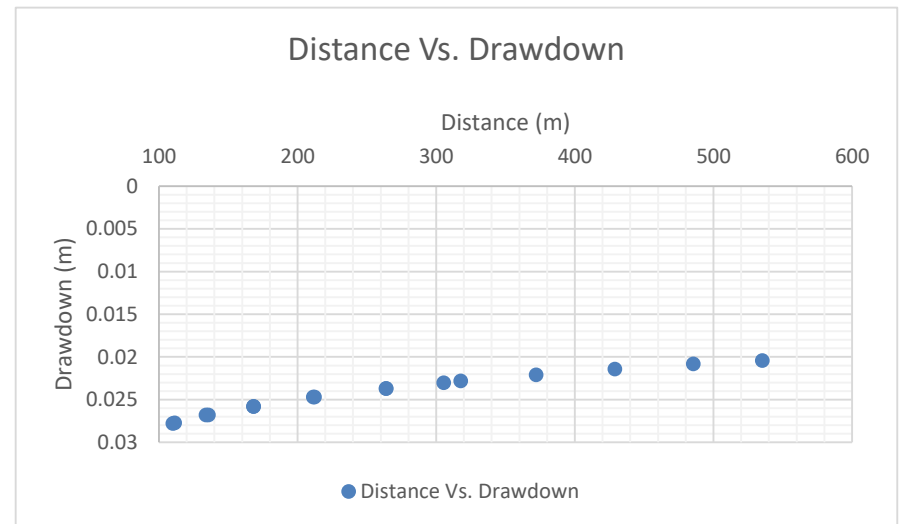


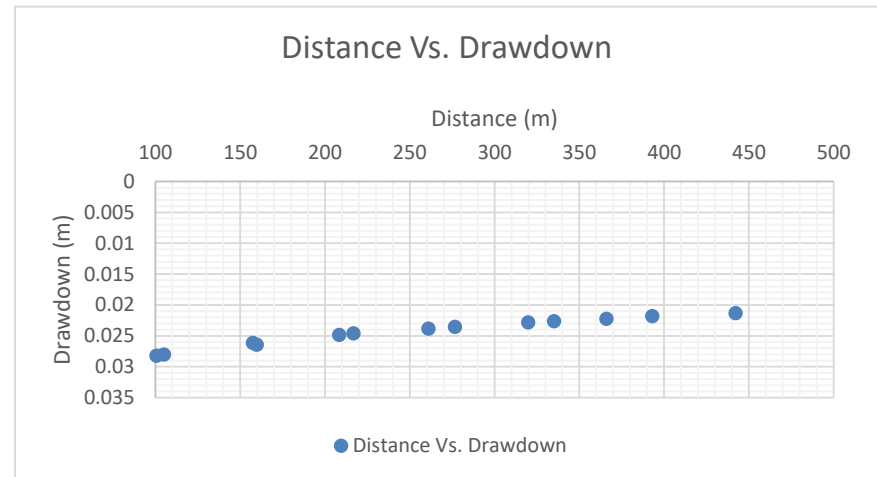
Table 7c: Estimated Interference Drawdown on Proposed Wells due to Long-Term Pumping of Other Wells in the Proposed Development

Unit Flow =	1.00	m ³ /lot/day
# of Lots =	16	lots
Design Flow =	16	m ³ /day
Time =	7300	days
T (geomean) =	33.955	m ² /day
S (geomean) =	3.24E-04	unitless

$$u = \frac{r^2 S}{4Tt} \quad s = \frac{Q}{4\pi T} w(u)$$

Lot # Pumping Well	Distance to Observation Well (m)	Drawdown (m)
7	49.7	0.0315
6	105.1	0.028
5	157.5	0.0261
4	208.5	0.0248
3	261.1	0.0238
2	319.9	0.0228
1	366	0.0222
9	47.6	0.0317
10	100.8	0.0282
11	159.9	0.0264
12	216.9	0.0246
13	276.7	0.0235
14	335.1	0.0226
15	393	0.0218
16	442.2	0.0213

Total Drawdown (m) = 0.38



CHARTS

Chart 1: Hydrograph of BH1

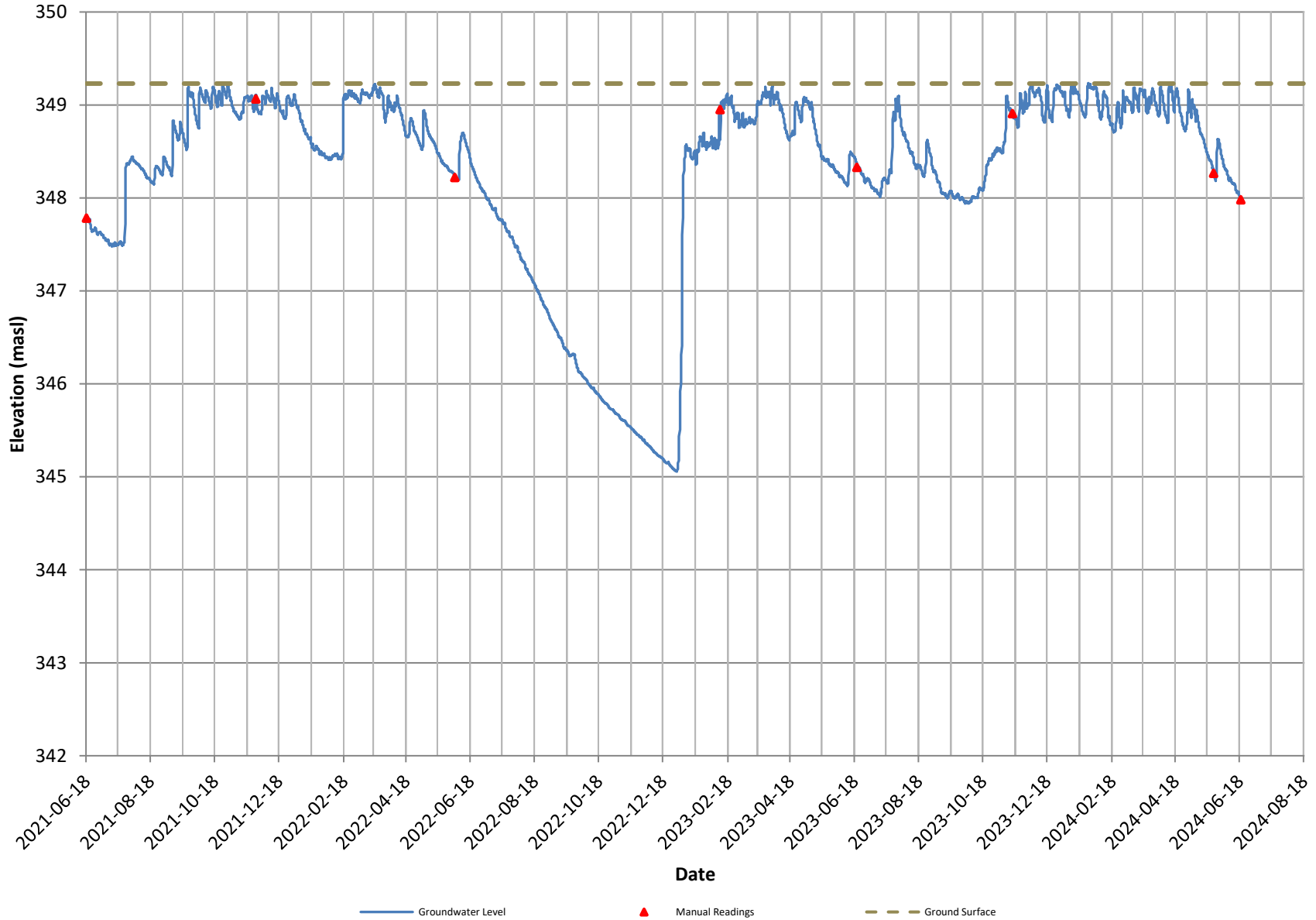


Chart 2: Hydrograph of BH2

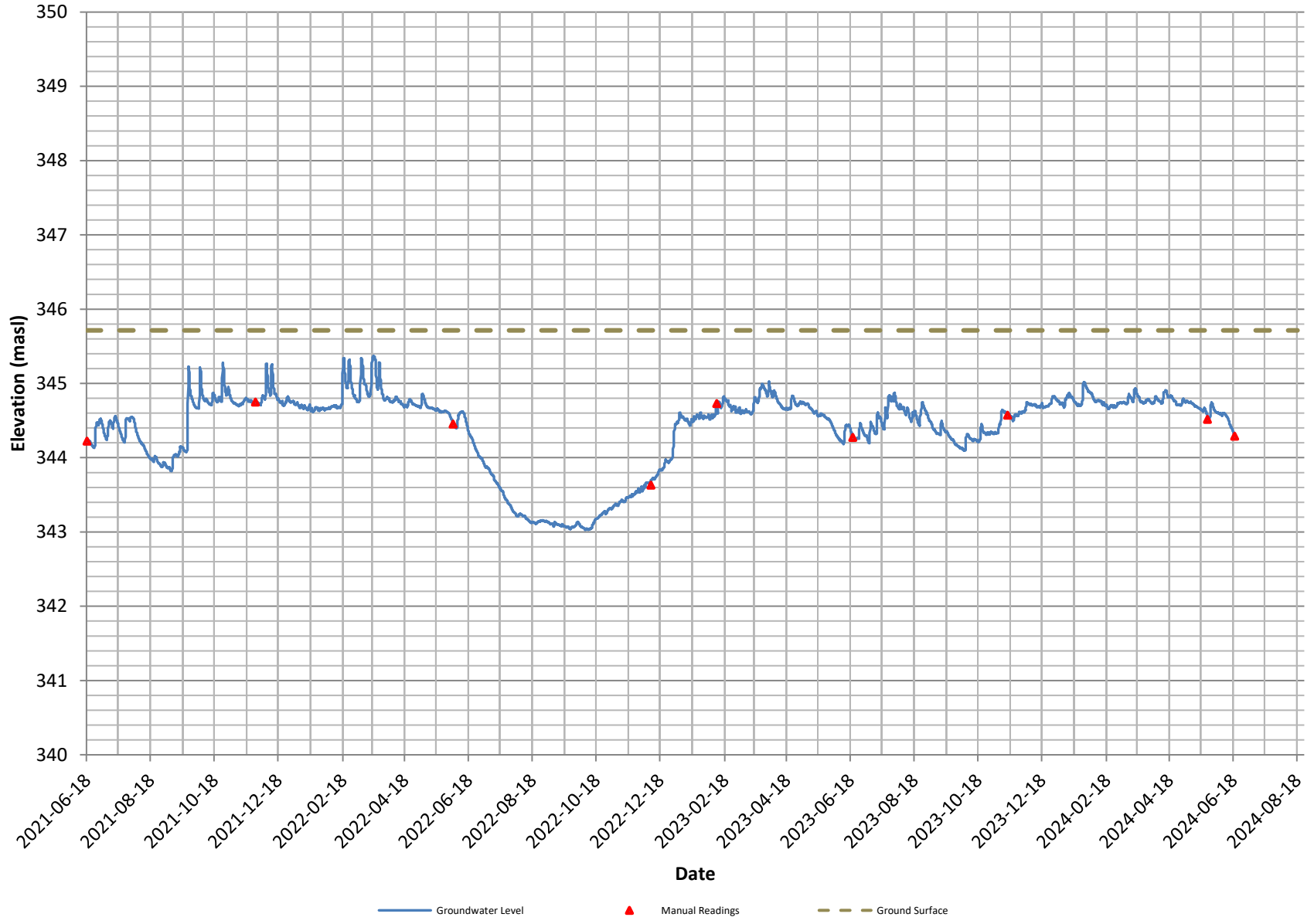


Chart 3: Hydrograph of BH3

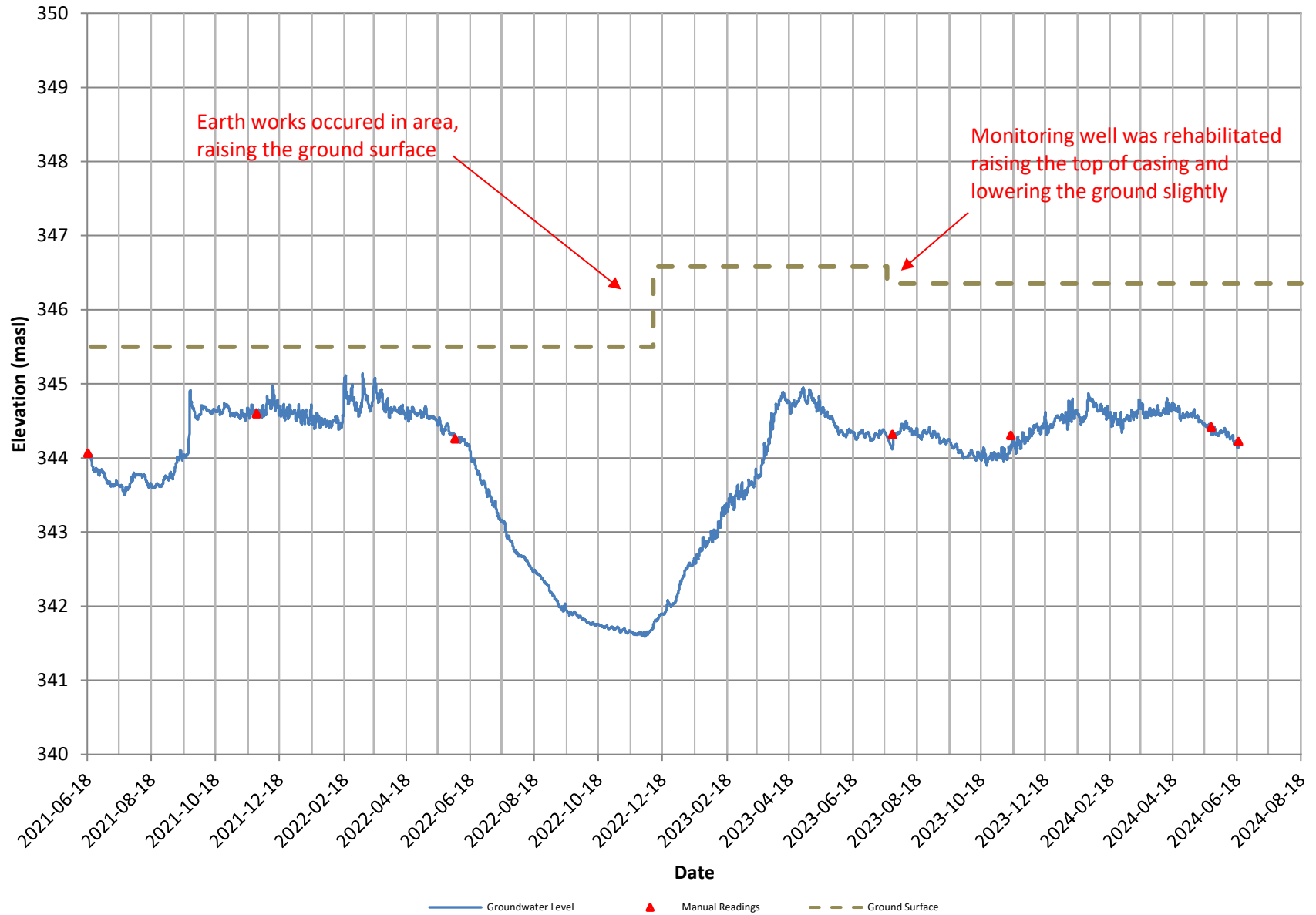


Chart 4: Hydrograph of BH4

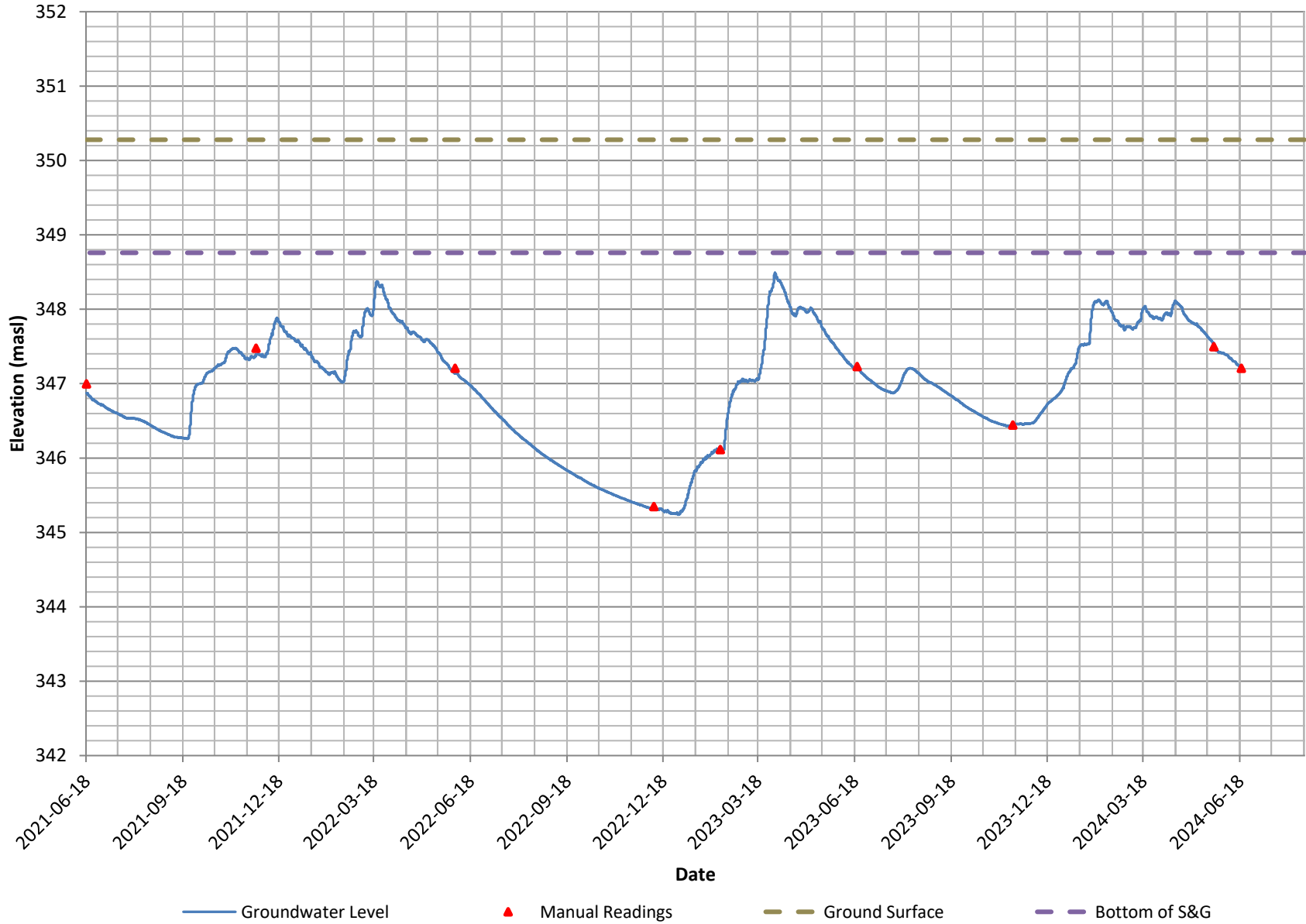


Chart 5: Hydrograph of BH5

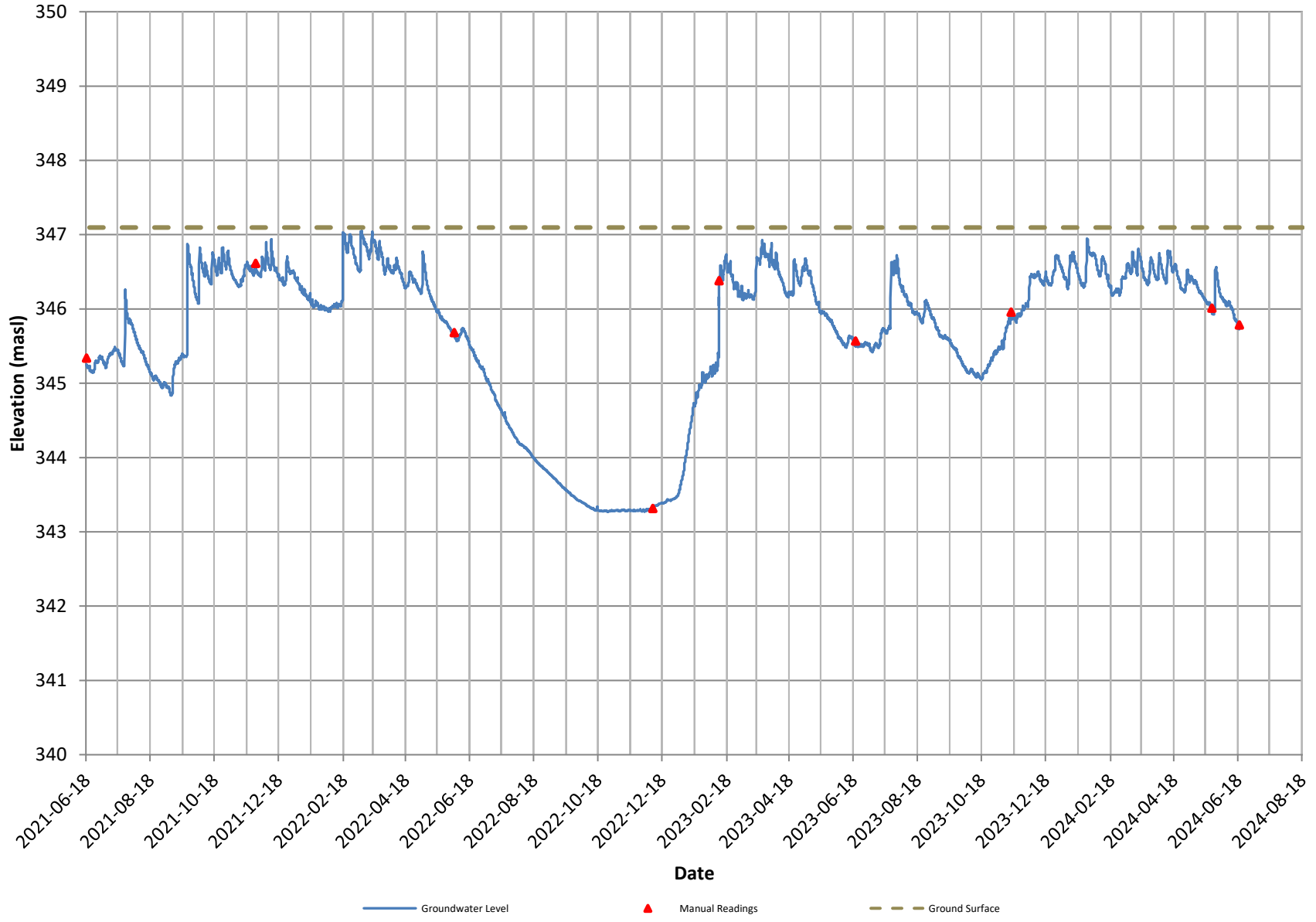
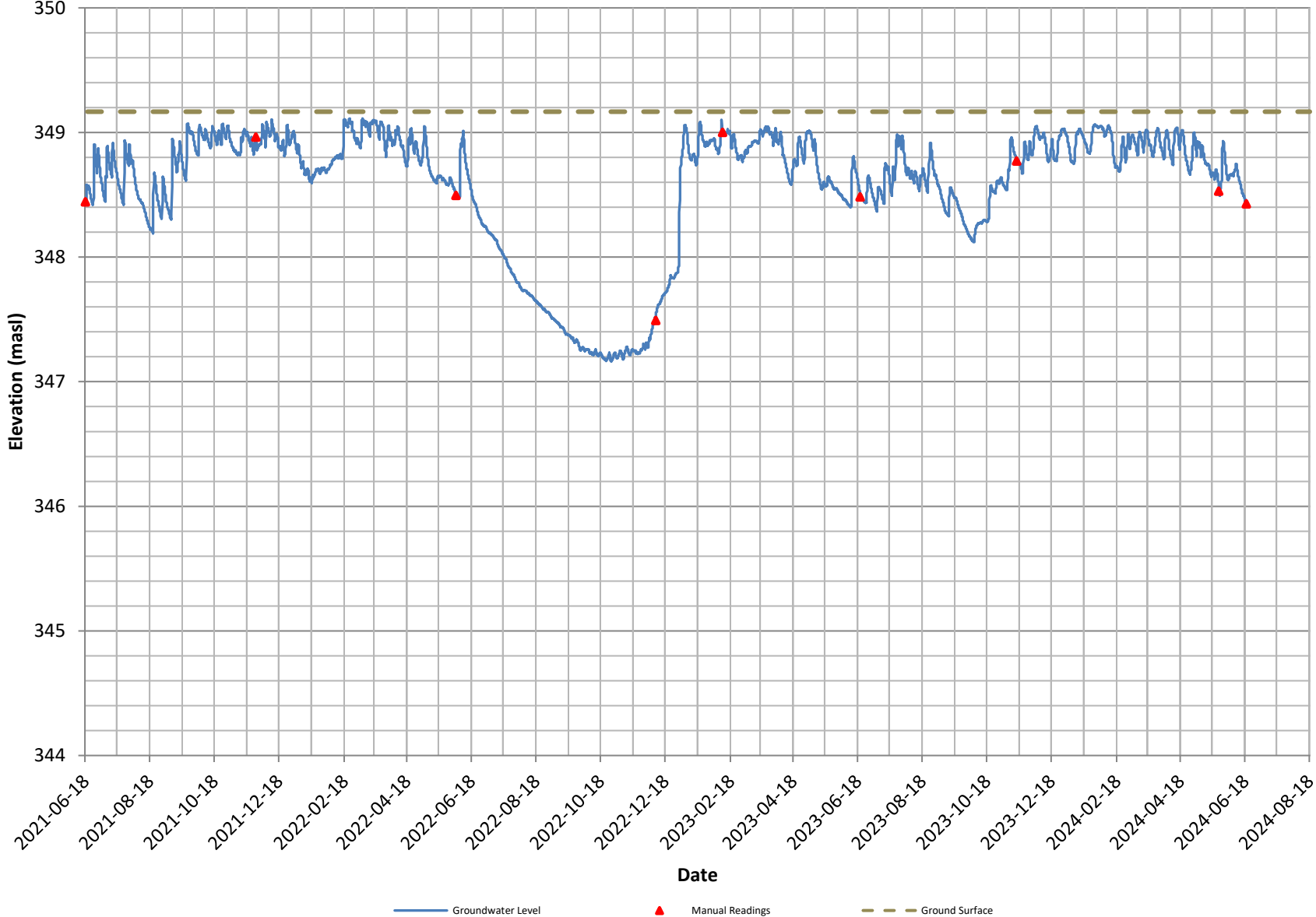
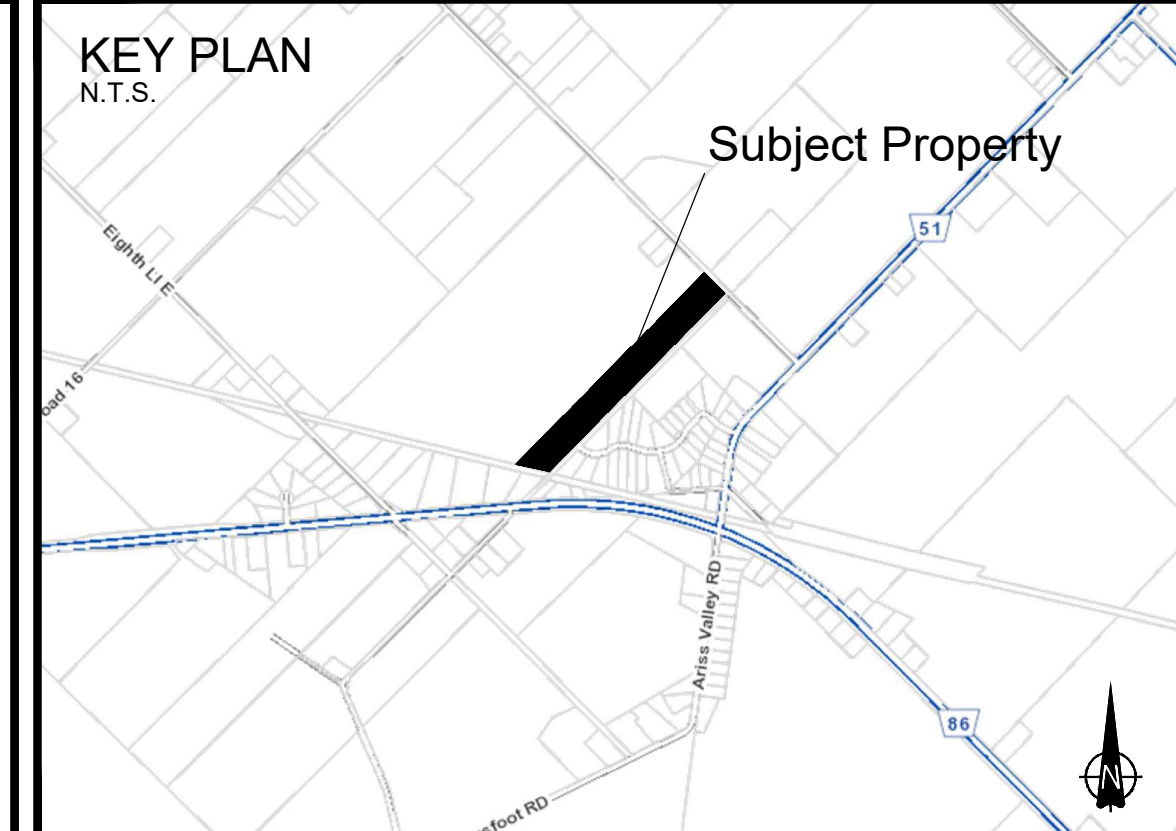


Chart 6: Hydrograph of BH6



**APPENDIX A:
PROPOSED DRAFT PLAN**



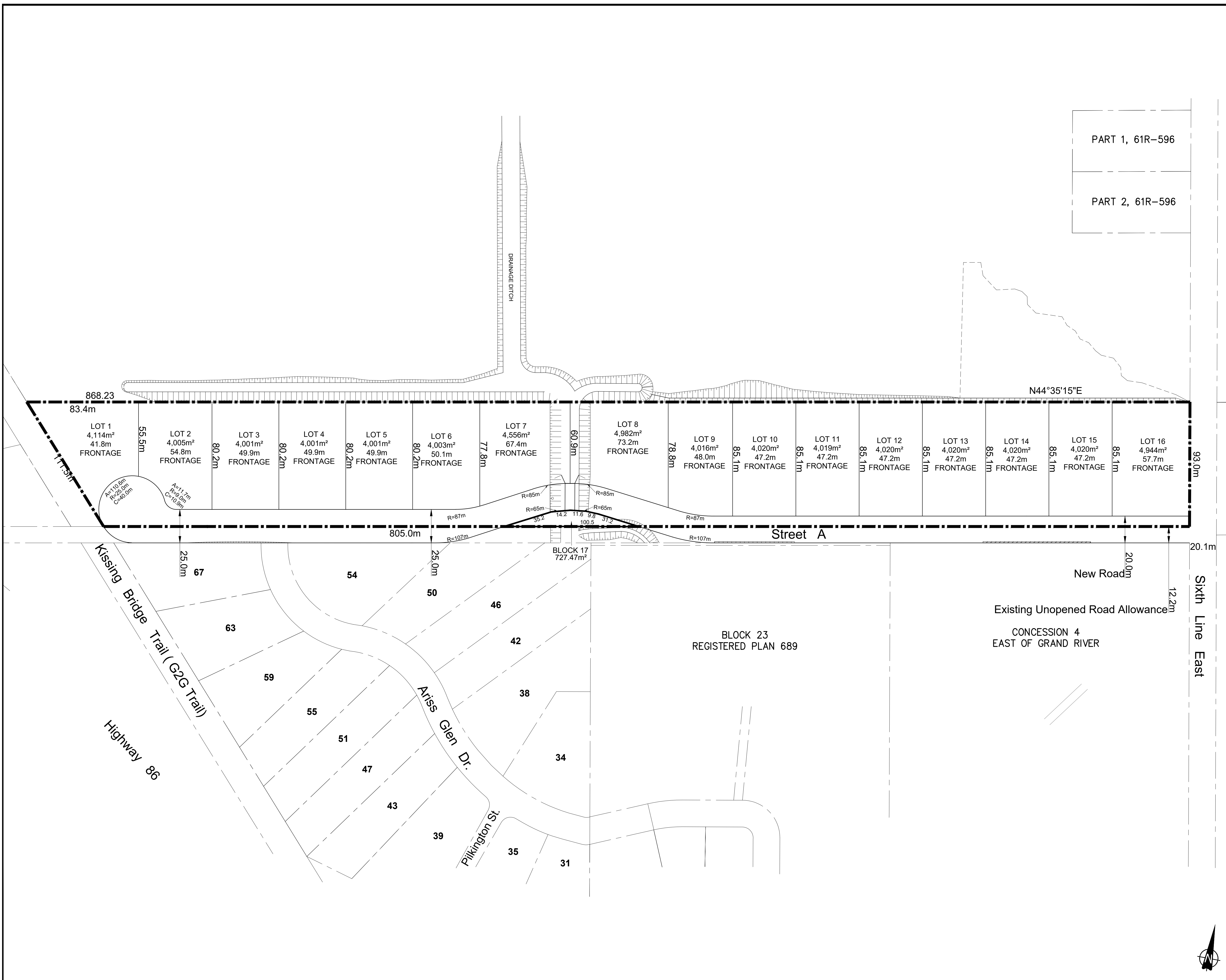
DRAFT PLAN OF SUBDIVISION

Part of Lot 17, Concession 4
East of the Grand River
Geographic Township of Pilkington
Township of Guelph-Eramosa
County of Wellington

Sixth Line East, Ariss

LAND USE SCHEDULE

DESCRIPTION	LOTS/BLKS.	UNITS	AREA (ha.)
Single Detached Residential	1-16	16	6.67
Open Space	17		0.07
Roads			1.05
Total		16	7.79



ADDITIONAL INFORMATION
(UNDER SECTION 51(17) OF THE PLANNING ACT)
INFORMATION REQUIRED BY CLAUSES a,b,c,d,e,f,g,j and l ARE AS SHOWN ON THE DRAFT PLAN.
h) Municipal water supply
i) Sandy silt trace gravel
k) All sanitary and storm sewers as required

OWNER'S CERTIFICATE
I AUTHORIZE THE GSP GROUP INC. TO PREPARE AND SUBMIT THIS DRAFT PLAN OF SUBDIVISION TO THE COUNTY OF OXFORD.

OWNERS SIGNATURE _____ DATE _____

SURVEYOR'S CERTIFICATE
I CERTIFY THAT THE BOUNDARIES OF THE LAND TO BE SUBDIVIDED AND THEIR RELATIONSHIP TO THE ADJACENT LANDS ARE CORRECTLY SHOWN.

SURVEYORS SIGNATURE _____ DATE _____

GSP group
PLANNING | URBAN DESIGN | LANDSCAPE ARCHITECTURE
gspgroup.ca

REVISIONS
November 7, 2023

Date: April 26, 2022 Drawn By: E.F Dwg. File Name: dp19274d.dwg
Scale: 1:1,250 metric Project No.: 19274

**APPENDIX B:
MECP WATER WELL RECORDS**

UTM [] Z [] E
 [5] R [] N
 Elev. [5] R [1153]
 Basin [23] [1] [] [] [] []



GROUND WATER BRANCH
 67 No 1348
 SEP 23 1958
 ONTARIO WATER
 RESOURCES COMMISSION

The Water-well Drillers Act, 1954
 Department of Mines

Water-Well Record

15 29

County or Territorial District WILKINGTON Township, Village, Town or City PILKINGTON
 Village, Town or City ARISS ONT
 Address R.R. No 3 ARISS ONT
 Date completed (day) (month) (year)

Pipe and Casing Record

Pumping Test

Casing diameter(s) 4 1/4 INCH
 Length(s) 71 FT
 Type of screen NONE
 Length of screen NONE
ROCK

Static level 14 FT
 Pumping rate 12 GPM
 Pumping level 26 FT
 Duration of test 3 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)
Dug well	0	45	90 - 100'	86 FT	FRESH
CLAY & STONES	45	65			
GRAVEL	65	70			
SAND	70	71			
BROWN ROCK	71	78			
GREY ROCK	78	95			
BLACK ROCK	95	100			

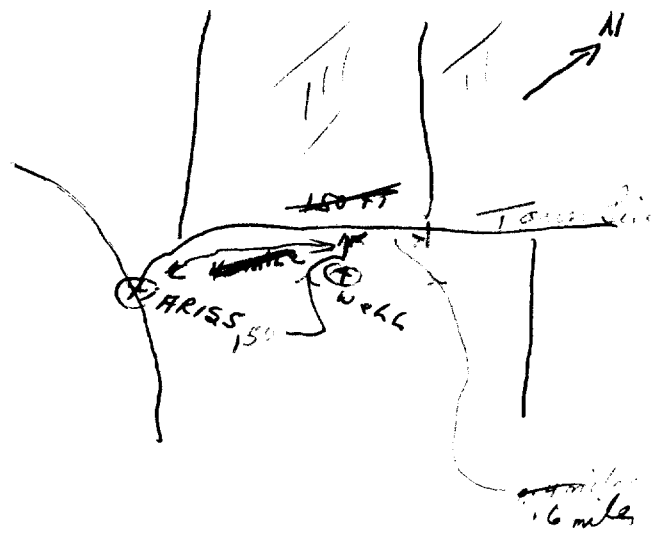
For what purpose(s) is the water to be used?
FARM
 Is water clear or cloudy? CLEAR
 Is well on upland, in valley, or on hillside?
UPLAND
 Drilling firm J. L. GRAHAM
 Address R.R. 3 GUELPH ONT
 Name of Driller J. L. GRAHAM
 Address R.R. 3 GUELPH ONT
 Licence Number 102

I certify that the foregoing statements of fact are true.

Date Aug 19/58
J. L. Graham
 Signature of Licensee
 J. L. GRAHAM DRILLING
 R.R. #3, GUELPH, ONT.

Location of Well

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



850



WATER RESOURCES
DIVISION
67 No. 2203
JUL 22 1965
ONTARIO WATER
RESOURCES COMMISSION

UTM
6. R 5 R
Elev. 11135

The Ontario Water Resources Commission Act

WATER WELL RECORD

Basin 23 WELLINGTON Township, Village, Town or City BRKINGTON
Con. 4 E.G.R. Lot 18 Date completed April 3 1965
(day month year)
Address R.R. #1 ARISS

Casing and Screen Record

Inside diameter of casing 4 1/6"
Total length of casing 72 feet
Type of screen
Length of screen
Depth to top of screen
Diameter of finished hole 4 1/6"

Pumping Test

Static level 13 feet
Test-pumping rate 12 G.P.M.
Pumping level 25 feet
Duration of test pumping 4 hours
Water clear or cloudy at end of test clear
Recommended pumping rate 7 G.P.M.
with pump setting of 30 feet below ground surface

Well Log

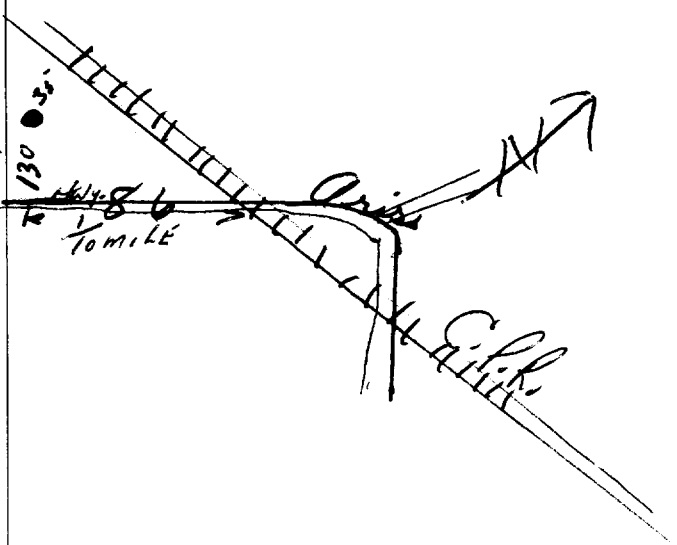
Water Record

Overburden and Bedrock Record	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
Top soil	0	1		
Clay		69	80	
Bedrock limestone	69	100	100	fresh

For what purpose(s) is the water to be used? Drinking
House
Is well on upland, in valley, or on hillside? upland
Drilling or Boring Firm Albert Corley
Address 202 N. ave St Guelph
Licence Number 1498
Name of Driller or Borer Albert Corley
Address 202 N. ave St
Date April 3 1965
Albert Corley
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

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





UTM 18 W G R E E

67 No 2205

Elev. 5 R 11750

The Ontario Water Resources Commission Act

WATER WELL RECORD

Basin 23 County or District Pelkington Wellington Township, Village, Town or City Pelkington Skellington

Con. 4 G.R.E. Lot Part of 17 Date completed 6 Aug 67
(day month year)

ess. R.R. 1 areas

Casing and Screen Record

Inside diameter of casing 30"
Total length of casing 54'
Type of screen
Length of screen
Depth to top of screen
Diameter of finished hole 30"

Pumping Test

Static level 30'
Test-pumping rate 5 G.P.M.
Pumping level 40'
Duration of test pumping 24 hr
Water clear or cloudy at end of test clear
Recommended pumping rate 5 G.P.M.
with pump setting of 52 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)
<u>Brown clay</u>	<u>0</u>	<u>5</u>		
<u>Blue clay</u>	<u>5</u>	<u>50</u>	<u>40'</u>	<u>fresh</u>
<u>Sand</u>	<u>50</u>	<u>54</u>		

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

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

Drilling or Boring Firm LONE STAR WELL DIGGING

Address 176 STRASBURG ROAD
KITCHENER

Licence Number 115

Name of Driller or Borer J. Moore

Address as above

Date 6 Aug 67

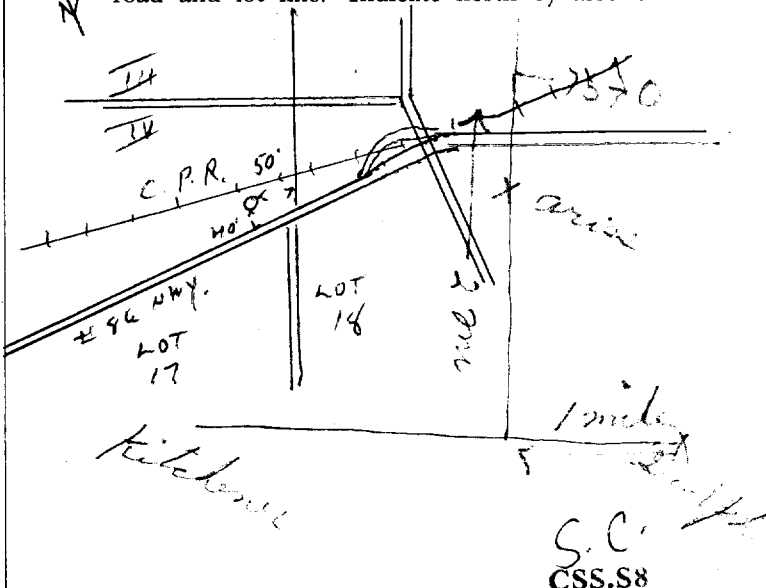
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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





WATER RESOURCES DIVISION
 OCT 24 1967
 67 No. 2207
 ONTARIO WATER RESOURCES COMMISSION

UTM 33 15 R 19 13 2
 Elev. 5 R

The Ontario Water Resources Commission Act

WATER WELL RECORD

Basin 23 County or District Wellington Township, Village, Town or City Pelkington
 Con. IV Lot 18 Date completed 30 MAR 1967
 (day month year)
 Address Breslau

Casing and Screen Record

Inside diameter of casing 7" C.D.
 Total length of casing 65'
 Type of screen -
 Length of screen -
 Depth to top of screen -
 Diameter of finished hole 7" C.D.

Pumping Test

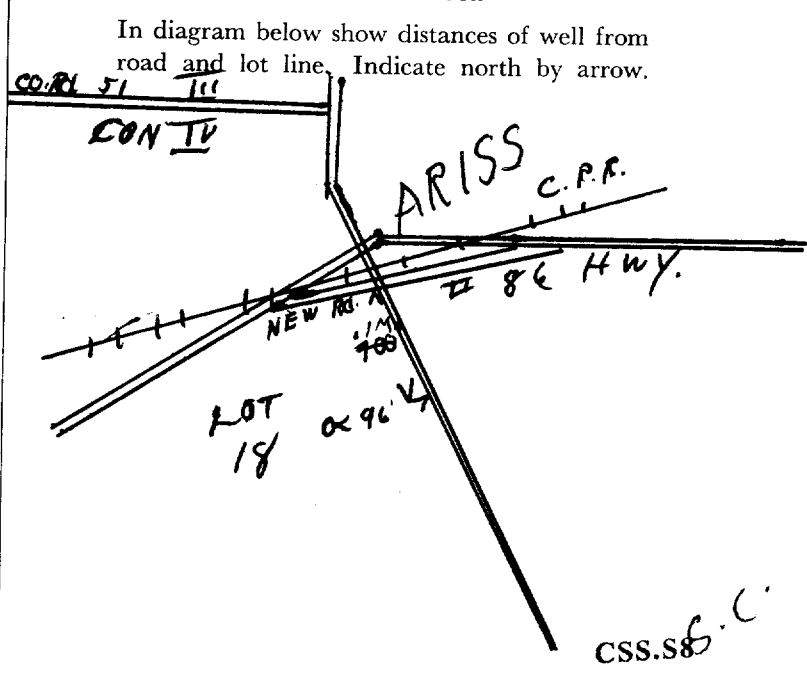
Static level 27'
 Test-pumping rate 43 15 G.P.M.
 Pumping level 43
 Duration of test pumping 2 hrs.
 Water clear or cloudy at end of test clear
 Recommended pumping rate 10 or less G.P.M.
 with pump setting of 45 feet below ground surface

Well Log

Overburden and Bedrock Record	Water Record			
	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
<u>Top soil</u>	<u>0</u>	<u>1</u>		
<u>Sandy soil</u>	<u>1</u>	<u>10</u>		
<u>dry gravel</u>	<u>10</u>	<u>15</u>		
<u>hardpan</u>	<u>15</u>	<u>64</u>		
<u>Limestone</u>	<u>64</u>	<u>87</u>	<u>83-87'</u>	<u>fresh</u>

For what purpose(s) is the water to be used? D.
Household
 Is well on upland, in valley, or on hillside? upland
 Drilling or Boring Firm McLaughlin Water Wells Supply Ltd.
 Address Breslau
 Licence Number 2603
 Name of Driller or Borer Bryan Corey
 Address P.R. #3 Waterloo
 Date Jun 9/67
R. McLaughlin
 (Signature of Licensed Drilling or Boring Contractor)

Location of Well



CSS.S.S.C.

UTM 18 U GR E



67 No 22087

Elev. 5 1135

The Ontario Water Resources Commission Act

WATER WELL RECORD

Basin 23 Wellington

TWP. PILKINGTON
Township, Village, Town or City Ariss

Con. 4 TV G.R.E. Lot 18+19 18

Date completed 7 Dec 1967
(day month year)

Owner [Redacted]
(print in block letters)

Address P.O. ARISS

Casing and Screen Record

Pumping Test

Inside diameter of casing 4 1/2 i.d.
Total length of casing 67 Feet
Type of screen [Redacted]
Length of screen [Redacted]
Depth to top of screen [Redacted]
Diameter of finished hole 4 1/2 i.d.

Static level Over flow 20 P.M.
Test-pumping rate 15 G.P.M.
Pumping level 20 Feet
Duration of test pumping 3 hours
Water clear or cloudy at end of test clear
Recommended pumping rate 10 G.P.M.
with pump setting of 20 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)
<u>clay</u>	<u>0</u>	<u>6</u>		
<u>clay stones</u>	<u>6</u>	<u>22</u>		
<u>sandy clay</u>	<u>22</u>	<u>35</u>		
<u>drag clay</u>	<u>35</u>	<u>50</u>		
<u>sand</u>	<u>50</u>	<u>65</u>		
<u>ferse rock</u>	<u>65</u>	<u>80</u>	<u>80</u>	
<u>blue rock</u>	<u>80</u>	<u>87</u>	<u>87</u>	<u>fresh</u>

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

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

Drilling or Boring Firm Albert Earley

Address 202 Neve St Guelph

Licence Number 2324

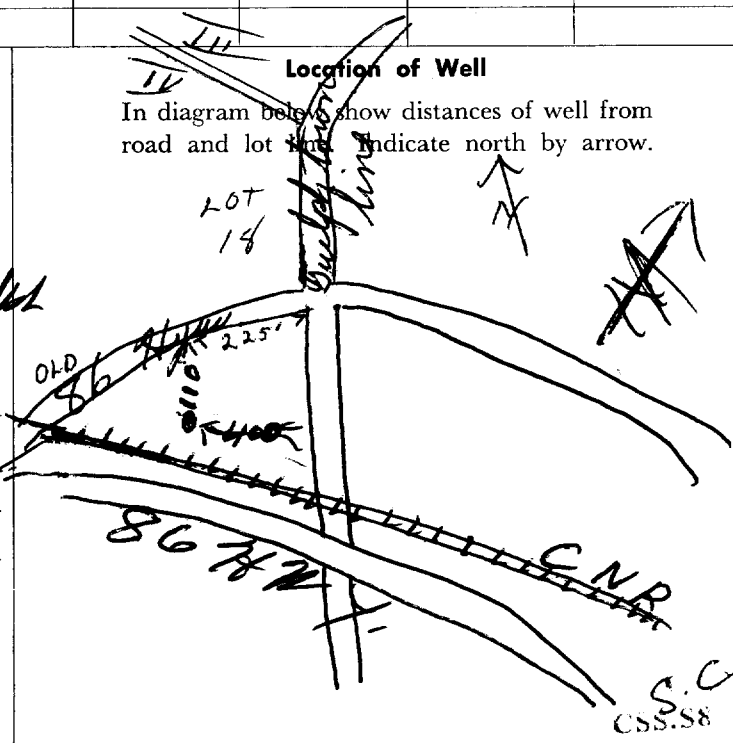
Name of Driller or Borer Albert Earley

Address 202 Neve St

Date Dec 7 1967

Albert Earley
(Signature of Licensed Drilling or Boring Contractor)

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



17 551250 Div. D
 5 4825000 Lot 29
 5 1145
 23



6703143

40' / 90

The Ontario Water Resources Commission Act

WATER WELL RECORD

County or District Wellington Township, Village, Town or City Guelph
 Date completed 3 Oct 1968
 (day) (month) (year)
 Address R.R. 2 Guelph

Casing and Screen Record

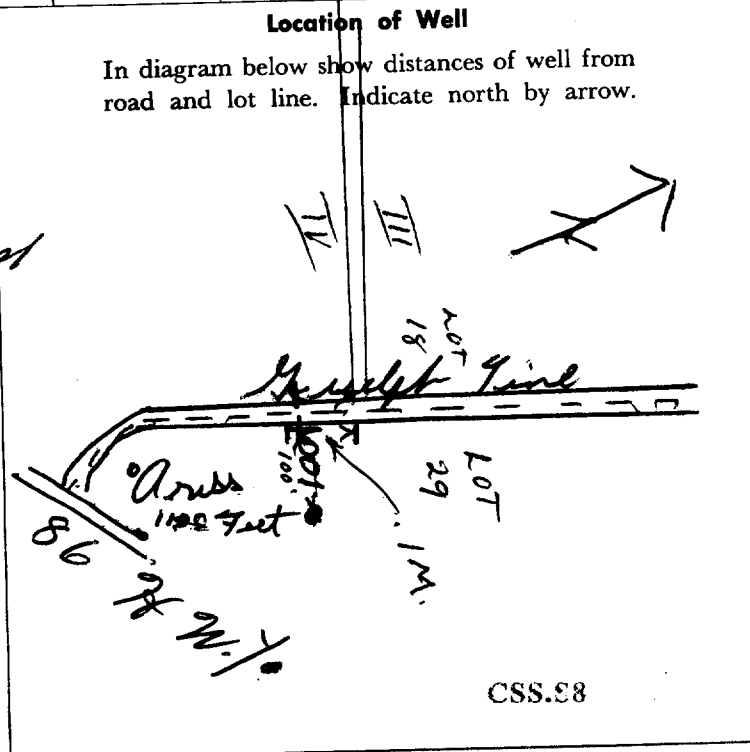
Inside diameter of casing 4 1/2" ID
 Total length of casing 70 feet
 Type of screen
 Length of screen
 Depth to top of screen
 Diameter of finished hole 4 1/2" ID

Pumping Test

Static level 12 feet
 Test-pumping rate 12 G.P.M.
 Pumping level 40
 Duration of test pumping 2 hours
 Water clear or cloudy at end of test clear
 Recommended pumping rate 10 G.P.M.
 with pump setting of 40 feet below ground surface

Well Log	Overburden and Bedrock Record		Water Record	
	From ft.	To ft.	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
sand	0	15		
stones	15	20		
gravel clay	20	30		
Blue clay	30	33		
gravel	33	45		
clay stone	45	55		
Dgd rock	55	65	75	fresh
Lime rock	65	88	88	

For what purpose(s) is the water to be used? house
 Is well on upland, in valley, or on hillside? upland
 Drilling or Boring Firm Albert Earley
 Address 202 Nerve St Guelph
 Licence Number 2861
 Name of Driller or Borer Albert Earley
 Address 202 Nerve St
 Date Oct 3 1968
Albert Earley
 (Signature of Licensed Drilling or Boring Contractor)





WATER WELL RECORD

Water management in Ontario

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

11
1 2

MUNICIP. 6703612-67011
CON. GR E C 04

COUNTY OR DISTRICT Wellington TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE Pilkington CON., BLOCK, TRACT, SURVEY, ETC. Concession 4 CRE LOT 018

DATE COMPLETED 10 48-53 69
DAY 23 MO. Oct. YR. 1969

ADDRESS Highway #86, Ariss, Ontario.
ING 824760 RC. 4 ELEVATION 1150 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	HARD PAN	STONES	HARD	0	29
GRAY	CLAY			29	41
GRAY	CLAY	GRAVEL	FINE	41	72
BROWN	LIMESTONE		HARD	72	108

31 002961412 0041205 007220511 0198615
32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0108	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

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
6.5	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.231	0	73
07	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		73	0108

SCREEN

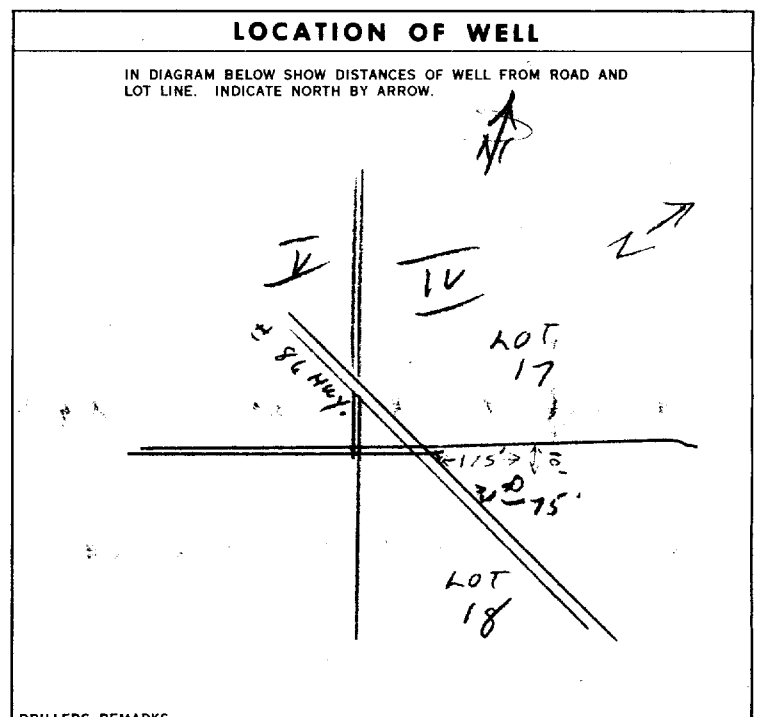
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
NIL.		

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	0005 GPM.	05 HOURS 00 MINS.
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
017 FEET	065 FEET	15 MINUTES 061 FEET 30 MINUTES 065 FEET 45 MINUTES 065 FEET 60 MINUTES 065 FEET
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
1 <input checked="" type="checkbox"/> SHALLOW 2 <input checked="" type="checkbox"/> DEEP	070 FEET	0005 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
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: McLAUGHLIN WATER WELLS & SUPPLY LICENCE NUMBER: 3428
ADDRESS: BRESLAU ONT.
NAME OF DRILLER OR BORER: K WEBBER LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: R. McLaughlin SUBMISSION DATE: 27 MO. NOV. YR. 69

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 3518 DATE RECEIVED: 090370
DATE OF INSPECTION: 7/7/70 INSPECTOR: 7/10
REMARKS: CSS.58 7



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

401/901

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

6704663 | 162.005 | DIV. B. 001

COUNTY OR DISTRICT: W22 TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Guelph CON., BLOCK, TRACT, SURVEY, ETC.: 1 Div. B LOT 25-27: 2024

DATE COMPLETED: DAY 28 MO 05 YR 73

RC. ELEVATION: 1130 RC. BASIN CODE: 4 24 II: MAR 20, 1975 III: 50 IV: 2

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	Fill			0	3
grey	CLAY	Course Sand	Soft	3	57
grey	Limestone	Black Rock	HARD	57	80
grey	Limestone		m. Hard	80	95
Brown	Brown Rock		m. Hard	95	135

31: 0003 01 | 0051203 | 0080215 | 0095215 | 0035626

41 WATER RECORD

WATER FOUND AT - FEET: 0085

KIND OF WATER: FRESH SALTY SULPHUR MINERAL

17-18: FRESH SALTY SULPHUR MINERAL

23: FRESH SALTY SULPHUR MINERAL

25-28: FRESH SALTY SULPHUR MINERAL

30-33: FRESH SALTY SULPHUR MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
<u>4"</u>	<input checked="" type="checkbox"/> STEEL	<u>.188</u>	0	<u>80</u>
<u>4"</u>	<input checked="" type="checkbox"/> OPEN HOLE		80	<u>135</u>
	<input type="checkbox"/> GALVANIZED			
	<input type="checkbox"/> CONCRETE			
	<input type="checkbox"/> STEEL			
	<input type="checkbox"/> GALVANIZED			
	<input type="checkbox"/> CONCRETE			
	<input checked="" type="checkbox"/> OPEN HOLE		80	<u>0135</u>
	<input type="checkbox"/> STEEL			
	<input type="checkbox"/> GALVANIZED			
	<input type="checkbox"/> CONCRETE			
	<input type="checkbox"/> OPEN HOLE			

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD: PUMP OTHER

PUMPING RATE: 008 GPM

DURATION OF PUMPING: 15-16 HOURS: 00 17-18 MINS: 00

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
<u>005</u>	<u>040</u>	19-21 FEET: <u>020</u>	22-24 FEET: <u>020</u>	25-28 FEET: <u>020</u>	29-31 FEET: <u>020</u>

IF FLOWING GIVE RATE: 55 GPM

PUMP INTAKE SET AT: 110 FEET

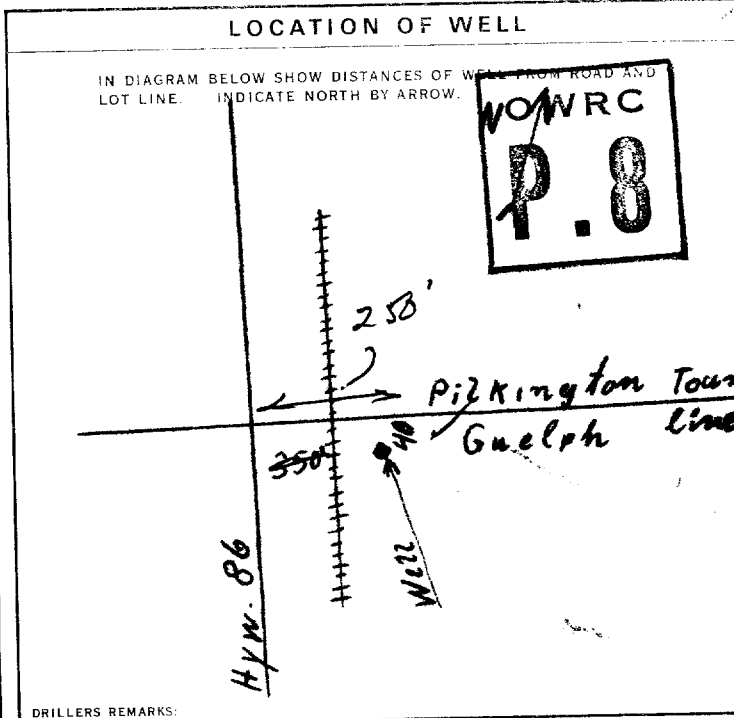
WATER AT END OF TEST: CLEAR CLOUDY

RECOMMENDED PUMP TYPE: SHALLOW DEEP

RECOMMENDED PUMP SETTING: 110 FEET

RECOMMENDED PUMPING RATE: 006 GPM

50-53: 000.2 GPM./FT. SPECIFIC CAPACITY



FINAL STATUS OF WELL

WATER SUPPLY ABANDONED, INSUFFICIENT SUPPLY

OBSERVATION WELL ABANDONED, POOR QUALITY

TEST HOLE UNFINISHED

RECHARGE WELL

WATER USE

DOMESTIC COMMERCIAL

STOCK MUNICIPAL

IRRIGATION PUBLIC SUPPLY

INDUSTRIAL COOLING OR AIR CONDITIONING

OTHER NOT USED

METHOD OF DRILLING

CABLE TOOL BORING

ROTARY (CONVENTIONAL) DIAMOND

ROTARY (REVERSE) JETTING

ROTARY (AIR) DRIVING

AIR PERCUSSION

CONTRACTOR

NAME OF WELL CONTRACTOR: Rudy's Drilling LICENCE NUMBER: 2332

ADDRESS: RR. I Hillsburg, Ont.

NAME OF DRILLER OR BORER: Rudy Garbotz LICENCE NUMBER: 2332

SIGNATURE OF CONTRACTOR: Rudy Garbotz SUBMISSION DATE: _____

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 2332 DATE RECEIVED: 130773

DATE OF INSPECTION: _____ INSPECTOR: _____

REMARKS: _____

CSS.S8

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Ontario

WATER WELL RECORD

40P/9W

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

11

6704860

MUNICIP

67.0/11

CON.

GR S. C. 104

COUNTY OR DISTRICT WELLINGTON	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE PILKINGTON	CON., BLOCK, TRACT, SUBDIV., ETC. 4 GR8	LOT 018
DATE COMPLETED DAY 15 MO. Oct YR. 73			DATE COMPLETED DAY 15 MO. Oct YR. 73
WELL IDENTIFICATION NO. 24580		ELEVATION 1130	BASIN CODE 23

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
		Top soil		0	1
Brown		clay gravel		1	25
Brown		clay		25	69
Light brown		rock		69	75
		Limp stones		75	125

31	32	33	34	35	36	37	38	39	40
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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 checked="" 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	34-80

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
05-10-11	1 <input checked="" type="checkbox"/> STEEL	2.44	0	43-16
17-18	1 <input type="checkbox"/> STEEL			20-23
24-25	1 <input type="checkbox"/> STEEL			27-30

SCREEN

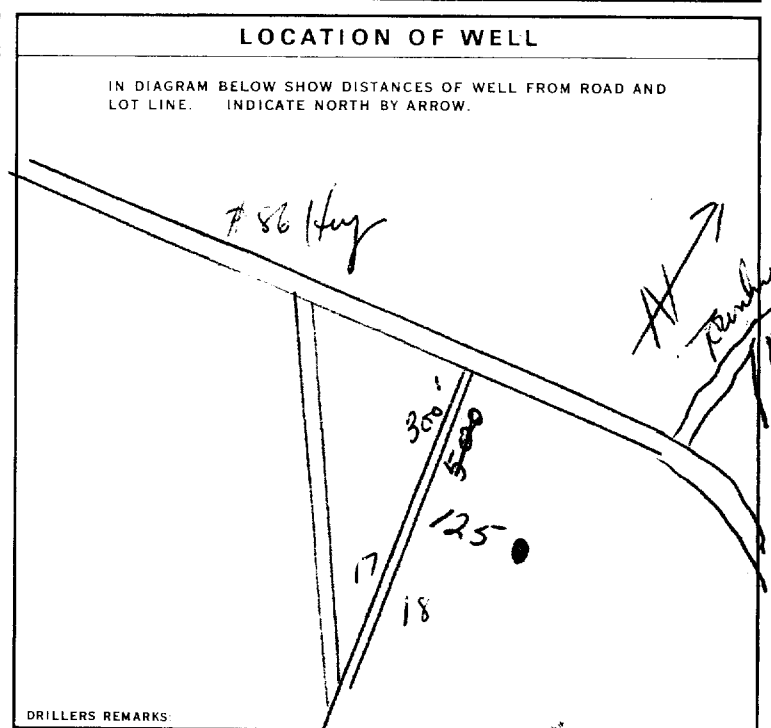
SIZE(S) OF OPENING (SLOT NO.)	31-33	DIAMETER	34-38	LENGTH	39-40
MATERIAL AND TYPE		INCHES		FEET	
		DEPTH TO TOP OF SCREEN		41-44	
				80	

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 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE 0015 GPM	DURATION OF PUMPING 01 HOURS 00 MINS
STATIC LEVEL 020 FEET	WATER LEVEL END OF PUMPING 047 FEET	WATER LEVELS DURING PUMPING 15 MINUTES: 047 FEET 45 MINUTES: 047 FEET 60 MINUTES: 047 FEET
IF FLOWING, GIVE RATE 60 GPM	RECOMMENDED PUMP TYPE 1 <input checked="" type="checkbox"/> SHALLOW 2 <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMPING RATE 0015 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
 9 OTHER

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: **Albert Enley** LICENCE NUMBER: **1906**
 ADDRESS: **202 Meave St St Catharines**
 NAME OF DRILLER OR BORER: **Albert Enley** LICENCE NUMBER: **1906**
 SIGNATURE OF CONTRACTOR: **Albert Enley** SUBMISSION DATE: DAY **15** MO. **Oct** YR. **73**

OFFICE USE ONLY

DATE SOURCE: **1** CONTRACTOR: **1906** DATE RECEIVED: **06 12 73**
 DATE OF INSPECTION: _____ INSPECTOR: _____
 REMARKS: _____
 CSS.S8



Ontario

MINISTRY OF THE ENVIRONMENT
The Ontario Water Resources Act

WATER WELL RECORD

40 P/9W

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

11 16705105 67.011 GR E 03

COUNTY OR DISTRICT: *Wellington* TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: *Wellington Twp* CON., BLOCK, TRACT, SURVEY, ETC.: *Con 3 GRS* LOT: *017*

DATE COMPLETED: DAY *23* MO. *05* YR. *74*

RC: *25* ELEVATION: *750* 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
			<i>clay</i>	<i>0</i>	<i>60</i>
			<i>gravel</i>	<i>60</i>	<i>93</i>
			<i>hard grey rock</i>	<i>93</i>	<i>135</i>

31 0060 05 0093 11 013522673

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
<i>0135</i>	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
<i>04</i>	<input checked="" type="checkbox"/> STEEL	<i>138</i>	<i>0</i>	<i>0100</i>
	<input type="checkbox"/> GALVANIZED		<i>100</i>	<i>138</i>
	<input type="checkbox"/> CONCRETE			
	<input checked="" type="checkbox"/> OPEN HOLE			<i>0135</i>
	<input type="checkbox"/> STEEL			
	<input type="checkbox"/> GALVANIZED			
	<input type="checkbox"/> CONCRETE			
	<input type="checkbox"/> OPEN HOLE			

SCREEN

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

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
FROM	TO
<i>10-12</i>	<i>14-17</i>
<i>18-21</i>	<i>22-25</i>
<i>26-29</i>	<i>30-33</i>

71 PUMPING TEST

PUMPING TEST METHOD: PUMP BAILER

PUMPING RATE: *0010* GPM.

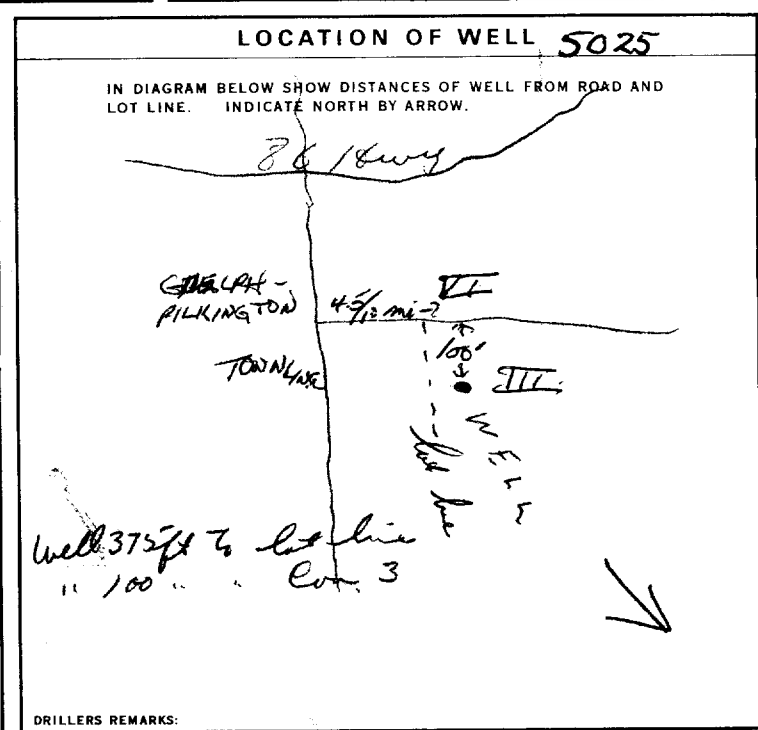
DURATION OF PUMPING: *02* HOURS *00* MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING					
<i>018</i>	<i>070</i>	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES		
		26-28	29-31	32-34	35-37		
		FEET	FEET	FEET	FEET		

RECOMMENDED PUMP TYPE: SHALLOW DEEP

RECOMMENDED PUMP SETTING: *080* FEET

RECOMMENDED PUMPING RATE: *0010* 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
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: *Charles Hill* LICENCE NUMBER: *2521*

ADDRESS: *251 Speedvale Ave E Guelph*

NAME OF DRILLER OR BORER: *Harvey Hill* LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: *Charles Hill* SUBMISSION DATE: DAY _____ MO. _____ YR. _____

OFFICE USE ONLY

DATA SOURCE: *1* CONTRACTOR: *2521* DATE RECEIVED: *030774*

DATE OF INSPECTION: *Jan 22/77* INSPECTOR: *MT*

REMARKS:

P

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WATER WELL RECORD

40P/9W

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

11 | 6705809 | 67011 | GR E | 04

COUNTY OR DISTRICT: WELL | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PILINGTON | CON., BLOCK, TRACT, SURVEY, ETC.: 4 GRS | LOT: 018

OWNER (SURNAME FIRST): [REDACTED] | DATE COMPLETED: 02 10 75

THING: 824550 | RC: 5 | ELEVATION: 1135 | RC: 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
		ground fill		0	3
		clay shales		3	25
		big gravel		35	73
green		rock		13	70
blue		rock		10	110
brown		rock		110	125
		rock		125	150

31 | 0003 11/01 | 0035 05/12 | 0073 05/11 | 0090 06/26 | 0110 02/26 | 0125 3/26

32 | 0180 6/26

41 WATER RECORD

10-13	1 <input checked="" type="checkbox"/> FRESH	3 <input checked="" type="checkbox"/> SULPHUR
	2 <input checked="" type="checkbox"/> SALTY	4 <input checked="" type="checkbox"/> MINERAL
15-18	1 <input checked="" type="checkbox"/> FRESH	3 <input checked="" type="checkbox"/> SULPHUR
	2 <input checked="" type="checkbox"/> SALTY	4 <input checked="" 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

0140
0178

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
10-11	1 <input checked="" type="checkbox"/> STEEL	1/8	0	0076
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input type="checkbox"/> OPEN HOLE			
17-18	1 <input type="checkbox"/> STEEL			20-23
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input checked="" type="checkbox"/> OPEN HOLE			
24-25	1 <input type="checkbox"/> STEEL			27-30
	2 <input type="checkbox"/> GALVANIZED			
	3 <input type="checkbox"/> CONCRETE			
	4 <input type="checkbox"/> OPEN HOLE			

04

SCREEN

31-33	DIAMETER	34-38	LENGTH	39-40
	INCHES	FEET	FEET	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.)	
FROM	TO		
10-13	14-17		
18-21	22-25		
26-29	30-33		

71 PUMPING TEST

1 PUMP 2 BAILER

10 PUMPING RATE: 0008 GPM

11-14 DURATION OF PUMPING: 02 HOURS 00 MINS

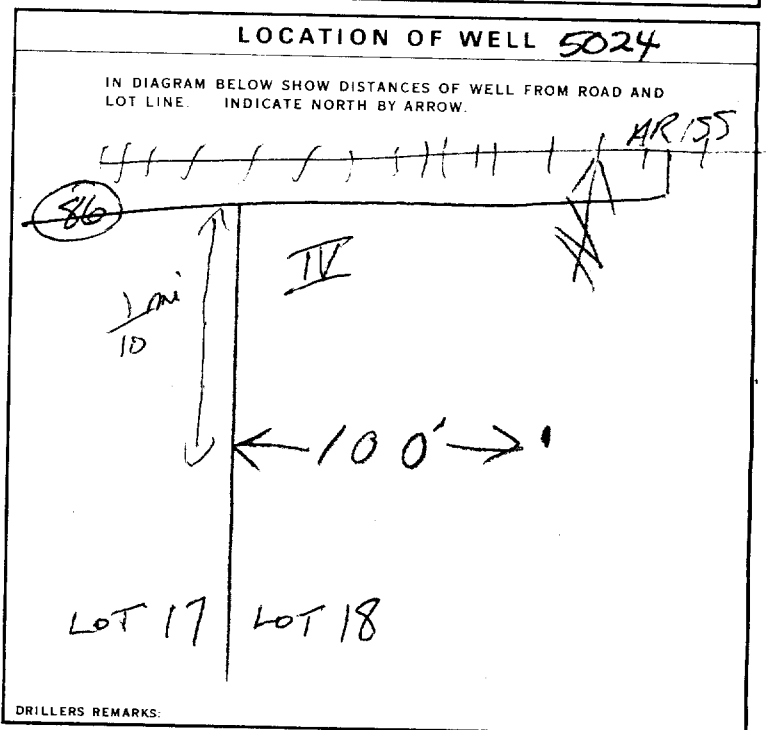
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING					
19-21	22-24	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	32-34	35-37
020	070	070	070	070	070	070	070
FEET	FEET	FEET	FEET	FEET	FEET	FEET	FEET

IF FLOWING, GIVE RATE: 38-41 PUMP INTAKE SET AT: 42 WATER AT END OF TEST: 42

RECOMMENDED PUMP TYPE: SHALLOW DEEP

RECOMMENDED PUMP SETTING: 080 FEET

RECOMMENDED PUMP RATE: 0008 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 COMMERCIAL

6 MUNICIPAL

7 PUBLIC SUPPLY

8 COOLING OR AIR CONDITIONING

9 NOT USED

METHOD OF DRILLING

1 CABLE TOOL

2 ROTARY (CONVENTIONAL)

3 ROTARY (REVERSE)

4 ROTARY (AIR)

5 AIR PERCUSSION

6 BORING

7 DIAMOND

8 JETTING

9 DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Albert Carley | LICENCE NUMBER: 1906

ADDRESS: 1111 St. George St. Toronto

NAME OF DRILLER OR BORER: Albert Carley | LICENCE NUMBER: 1906

SIGNATURE OF CONTRACTOR: Albert Carley | SUBMISSION DATE: DAY 2 NO. Oct YR. 75

OFFICE USE ONLY

DATA SOURCE: 1 | CONTRACTOR: 1906 | DATE RECEIVED: 091275

DATE OF INSPECTION: Jun 22/77 | INSPECTOR: MT

REMARKS:

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WATER WELL RECORD

40 P/W

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

11

6706182

MUNICIPALITY 67011

CON. GRE

04

COUNTY OR DISTRICT: WELL

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: LOT 18 CON 4 PILKINGTON

CON. BLOCK, TRACT, SURVEY, ETC.: CON 4

LOT: 018

OWNER (SURNAME): ARISS

DATE COMPLETED: DAY 29 MC 04 YR 76

HING: 324750 RC: 5 ELEVATION: 11135 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
		Top soil		0	1
Brown		clay stones		1	70
Brown		rock		70	85
Blue		rock		85	95
Grey		rock		95	105

31 00911 02 007060512 0085626 0095326 0105224

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0/0 3	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0/0 5	1 <input checked="" 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
05 10-11	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	1/8	0 0075
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		75
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		005

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: 1 PUMP 2 BAILER

PUMPING RATE: 0015 GPM

DURATION OF PUMPING: 15-16 HOURS 17-18 MINS

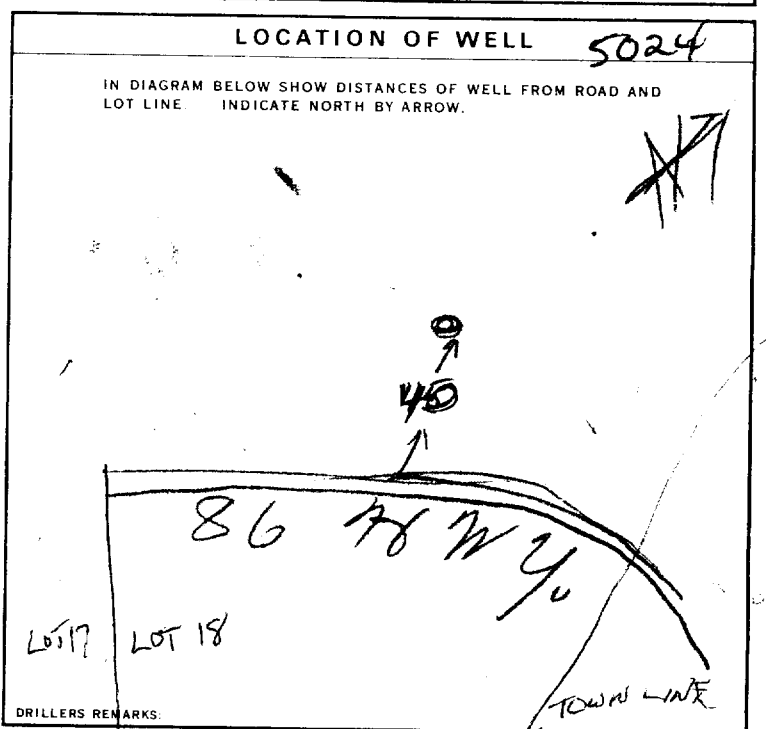
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING PUMPING
015	075	15 MINUTES: 076 30 MINUTES: 075 45 MINUTES: 075 60 MINUTES: 075

IF FLOWING, GIVE RATE: 90 GPM

RECOMMENDED PUMP TYPE: 1 SHALLOW 2 DEEP

RECOMMENDED PUMP SETTING: 080 FEET

RECOMMENDED PUMPING RATE: 0015 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
9 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: Albert Carley LICENCE NUMBER: 1906

ADDRESS: 202 Meave St Guelph

NAME OF DRILLER OR BORER: Albert Carley LICENCE NUMBER: 1906

SIGNATURE OF CONTRACTOR: Albert Carley

SUBMISSION DATE: DAY 10 MO. July YR 76

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 1906 DATE RECEIVED: 60976

DATE OF INSPECTION: Jun 22/77 INSPECTOR: AMT

REMARKS:

P

WI



WATER WELL RECORD

40 P/9W

Ontario 25/79

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

6706743

MUNICIPALITY 67011 COM. CODE GRE 04

COUNTY OR DISTRICT Wellington	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE Pilkington	CON., BLOCK, TRACT, SURVEY, ETC. 4	LOT 017
R# 2 Ariss Ont.			DATE COMPLETED DAY 19 MO 07 YEAR 78
NG 25350	RC 5	ELEVATION 1150	RC 5
BASIN CODE 23		II	III

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	Sand-Stones		1	15
Gray	Clay	Sand Stones		15	83
Gray	Rock			83	125
M. Brown	Rock			125	138
Total Depth 138 ft.					

31 00.01602 00156052812 00832052812 0125212 0130612

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0130	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	0087
05	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		87	0130
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
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN FEET
		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	

71 PUMPING TEST METHOD

1 PUMP 2 BAILER

PUMPING RATE 0010 GPM

DURATION OF PUMPING 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING PUMPING RECOVERY			
030	045	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		26-28	29-31	32-34	35-37
		FEET	FEET	FEET	FEET

IF FLOWING, GIVE RATE

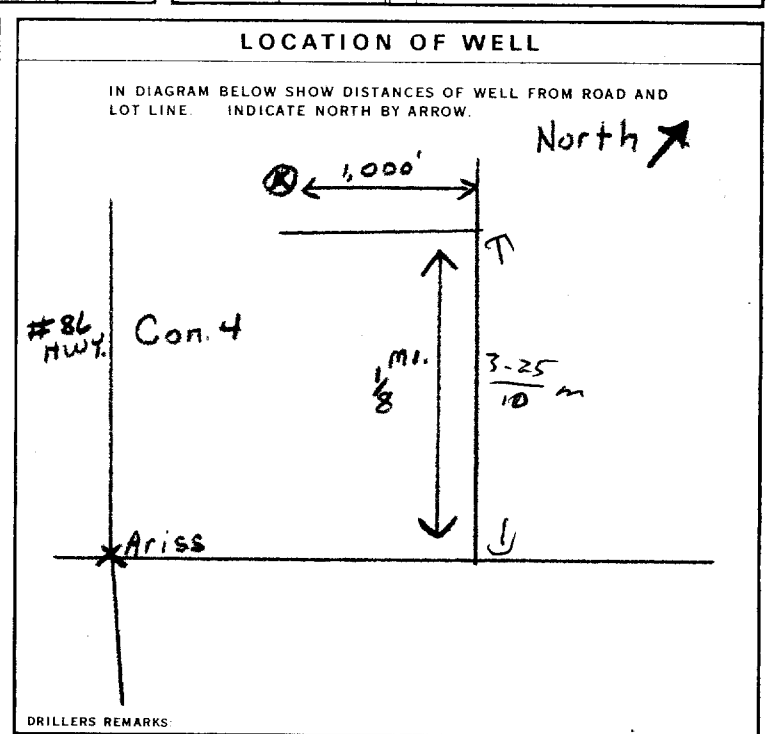
PUMP INTAKE SET AT

WATER AT END OF TEST

RECOMMENDED PUMP TYPE

RECOMMENDED PUMP SETTING 065 FEET

RECOMMENDED PUMPING RATE 0010 GPM



FINAL STATUS OF WELL 1

WATER USE 12

METHOD OF DRILLING 2

CONTRACTOR

NAME OF WELL CONTRACTOR
Graham Well Drilling Ltd.

LICENCE NUMBER
2336

ADDRESS
Guelph, Ont.

NAME OF DRILLER OR BORER
Jim Wilson 10R

LICENCE NUMBER

SIGNATURE OF CONTRACTOR
R.H. Graham

SUBMISSION DATE
DAY **20** NO. **Jul** YEAR **78**

OFFICE USE ONLY

DATA SOURCE 1 CONTRACTOR 2336 DATE RECEIVED 080878

DATE OF INSPECTION July 1979 INSPECTOR

REMARKS

CSS.S8

P

WI



Ontario

27/78

WATER WELL RECORD

400/9W

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

11 6706744

MUNICIPALITY 67011 CON. GR E 04

COUNTY OR DISTRICT Wellington	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE Pilkington	CON., BLOCK, TRACT, SURVEY, ETC. Con. 4	DATE COMPLETED DAY 21 MO Jul. YR 78
262 Liverpool St. Guelph, Ont.		ELEVATION 225100 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
Brown	Clay	Sand - Stones		0	15
Gray	Clay	Sand - Stones		15	60
L. Brown	Rock			60	90
Gray	Rock			90	103
Total Depth 103 ft.					

31 00158052812 00602052812 009061275 0103212

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0100	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	
05 5/8	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0	64
05 5/8	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input checked="" type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		64	103
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

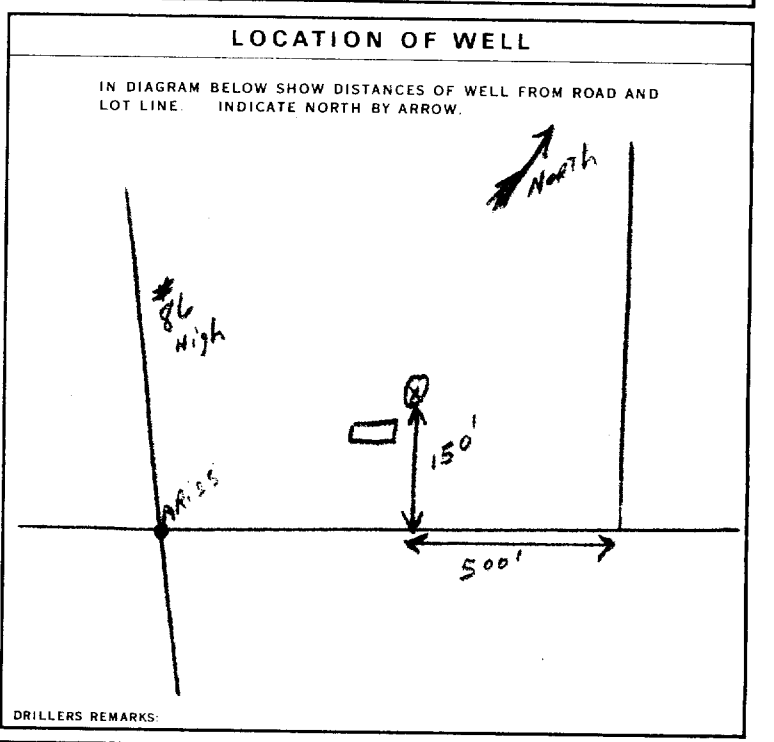
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN	
	41-44	
	FEET	

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 type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	PUMPING RATE 0010 GPM	DURATION OF PUMPING 01 HOURS 00 MINS
STATIC LEVEL 016 FEET	WATER LEVEL END OF PUMPING 040 FEET	WATER LEVELS DURING PUMPING
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
RECOMMENDED PUMP TYPE <input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING 070 FEET	RECOMMENDED PUMPING RATE 0010 GPM



54 FINAL STATUS OF WELL

55-56 WATER USE

57 METHOD OF DRILLING

CONTRACTOR

NAME OF WELL CONTRACTOR: **Graham Welll Drilling Ltd.** LICENCE NUMBER: **2336**

ADDRESS: **Guelph, Ont.**

NAME OF DRILLER OR BORER: **J. m Wilson** LICENCE NUMBER: **10R**

SIGNATURE OF CONTRACTOR: *[Signature]*

SUBMISSION DATE: DAY **21** NO. **Jul.** YR **78**

OFFICE USE ONLY

DATA SOURCE: **1** CONTRACTOR: **2336** DATE RECEIVED: **030878**

DATE OF INSPECTION: **July 1979** INSPECTOR: *[Signature]*

REMARKS:

P
WI



Ministry of the Environment

The Ontario Water Resources Act 40 P9c WATER WELL RECORD

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

11 6707327 MUNICIPAL 67005 CON. DIV. D 06
 COUNTY OR DISTRICT [redacted] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE 6 DND
 DATE COMPLETED DAY 17 MO July YR 80
 RC 4 ELEVATION 1130 RC 4 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		Top soil clay stones Lime rock		0	1
				1	56
				56	94

32 0001 02 005660312 009A 1512
 33 0001 02 005660312 009A 1512

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
05"	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	000060 609940
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	LENGTH
	INCHES	FEET

MATERIAL AND TYPE DEPTH TO TOP OF SCREEN 41-44 30 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 00	

71 PUMPING TEST

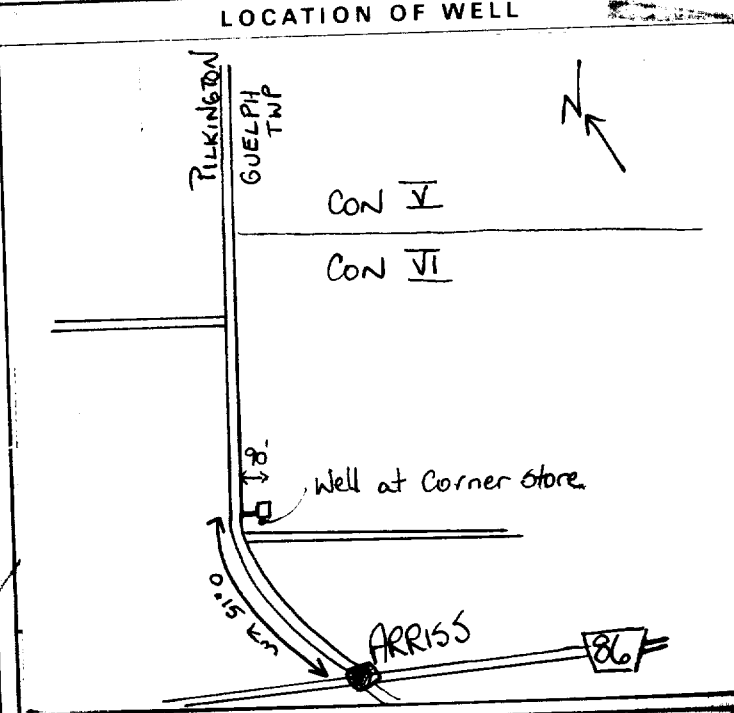
PUMPING TEST METHOD 10 PUMP 2 BAILER

PUMPING RATE 11-14 0013 GPM DURATION OF PUMPING 15-16 01 HOURS 17-18 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
19-21 010 FEET	22-24 011 FEET	15 MINUTES 26-28 011 FEET 30 MINUTES 29-31 011 FEET 45 MINUTES 32-34 011 FEET 60 MINUTES 35-37 011 FEET

IF FLOWING, GIVE RATE 38-41 20 GPM PUMP INTAKE SET AT 42 2 FEET WATER AT END OF TEST 1 CLEAR 2 CLOUDY

RECOMMENDED PUMP TYPE 43-45 SHALLOW DEEP RECOMMENDED PUMP SETTING 020 FEET RECOMMENDED PUMPING RATE 46-49 0015 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 Albert Carley LICENCE NUMBER 1906
 ADDRESS 202 N. Guelph St Guelph
 NAME OF DRILLER OR ROOPER Albert Carley LICENCE NUMBER 1906
 SIGNATURE OF CONTRACTOR Albert Carley SUBMISSION DATE DAY 17 MO July YR 80

OFFICE USE ONLY

DATA SOURCE 58 1986 59-62 DATE RECEIVED 281080 63-68 80
 DATE OF INSPECTION Aug 9/85 INSPECTOR [signature]
 REMARKS CSS.88

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

6707435
 MUNICIPAL 670.11 CON GR E
 COUNTY OR DISTRICT Wellington TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE PILKINGTON CON. BLOCK, TRACT, SURVEY, ETC. 4
 DRILLER RR LARISS DATE COMPLETED 07 July 80

THING 8248.20 RC 4 ELEVATION 1130 RC 4 BASIS CODE 23

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		1	55
Brown		Lime rock		55	95
Blue		rock		95	97

AUG 21 1986
 JUN 23 1986

31 0001 02 005568517 009561512 0097312

41 WATER RECORD

WATER FOUND AT - 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
05-10	<input checked="" type="checkbox"/> STEEL	188	0	10
17-18	<input type="checkbox"/> STEEL			20-23
24-25	<input checked="" type="checkbox"/> STEEL			27-30

SCREEN

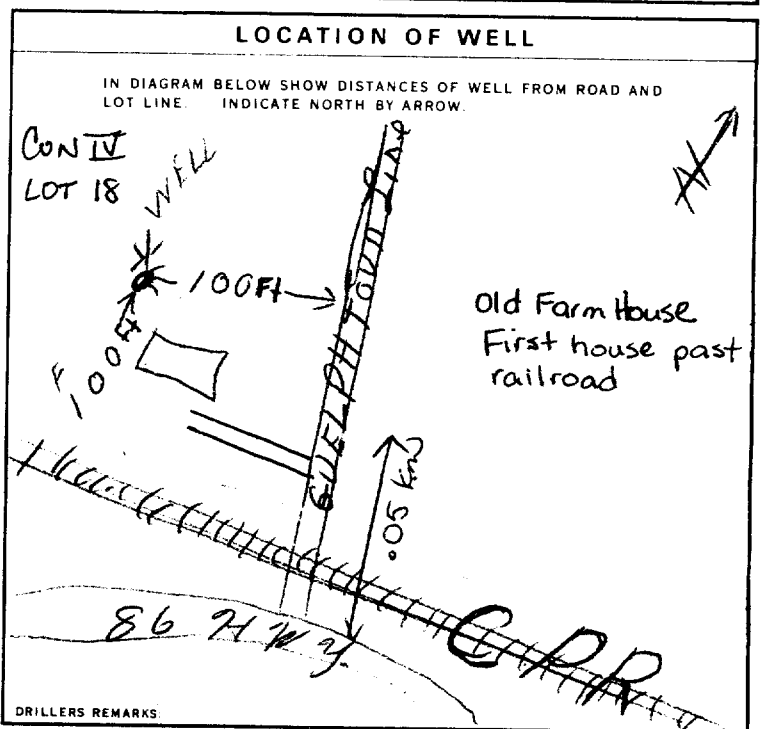
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		DEPTH TO TOP OF SCREEN

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	
<input checked="" type="checkbox"/> PUMP	0012 GPM	15-15 HOURS	00 MINS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	
19-21	22-24	15 MINUTES	30 MINUTES
010 FEET	010 FEET	010 FEET	010 FEET
IF FLOWING GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST	
	20 GPM	010 FEET	
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE	
<input type="checkbox"/> SHALLOW	020 FEET	0015 GPM	



FINAL STATUS OF WELL

WATER USE

METHOD OF DRILLING

CONTRACTOR

NAME OF WELL CONTRACTOR	LICENCE NUMBER
<u>Albert Carley</u>	<u>1906</u>
ADDRESS	
<u>202 Meave St Guelph Ont</u>	
NAME OF DRILLER OR BORER	LICENCE NUMBER
<u>Albert Carley</u>	<u>1906</u>
SIGNATURE OF CONTRACTOR	SUBMISSION DATE
<u>Albert Carley</u>	<u>DAY 4 MO July YR 80</u>

OFFICE USE ONLY

DATA SOURCE	CONTRACTOR	DATE RECEIVED
<u>1</u>	<u>1906</u>	<u>010481</u>
DATE OF INSPECTION	INSPECTOR	
<u>Aug 14/85</u>	<u>KW</u>	
REMARKS		
		<u>CS5.58</u>

6707451

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

11

MUNICIPALITY: 670, 11
CON: GR. E. 04
4 018 18

COUNTY OR DISTRICT: WELLINGTON
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: KINGSTON
CON. BLOCK, TRACT, SURVEY, ETC: 4
DATE COMPLETED: DAY 17 MO June YR 81

TRING: 8,25,08,0
RC: 4
ELEVATION: 1140
RC: 1
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	60
Blue		Lime rock		60	90
		rock		90	100

JUN 23 1981

31 0060 05/24 009,0615/2 0109362

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 checked="" 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 19-41	STEEL	1/88	0	6400
17-18	STEEL		64	1000
24-25	STEEL			27-30

SCREEN

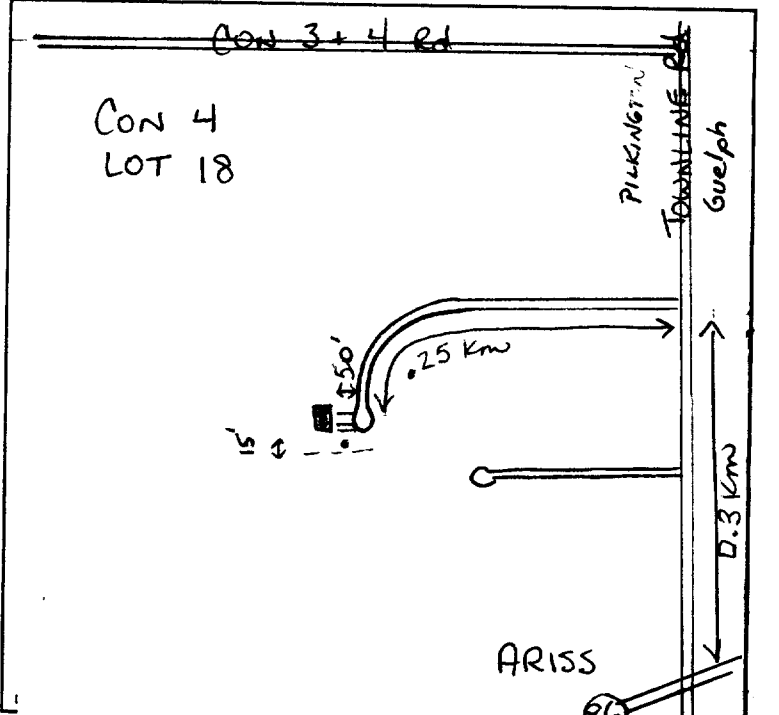
SIZE (S) OF OPENING (SLOT NO)	DIAMETER	LENGTH
	INCHES	FEET
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN
		FEET

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: 1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE: 0/50 GPM	DURATION OF PUMPING: 15-16 HOURS 00 MINS
STATIC LEVEL: 100 FEET	WATER LEVEL END OF PUMPING: 200 FEET	WATER LEVELS DURING PUMPING:
		15 MINUTES: 200 FEET
		30 MINUTES: 200 FEET
		45 MINUTES: 200 FEET
		60 MINUTES: 200 FEET
IF FLOWING GIVE RATE:	PUMP INTAKE SET AT: 90 GPM	WATER AT END OF TEST: 1 CLEAR 2 CLOUDY
RECOMMENDED PUMP TYPE: 1 SHALLOW 2 DEEP	RECOMMENDED PUMP SETTING: 400 FEET	RECOMMENDED PUMPING RATE: 1500 GPM



54 FINAL STATUS OF WELL: 1 WATER SUPPLY

55-56 WATER USE: 1 DOMESTIC

57 METHOD OF DRILLING: 2 ROTARY (CONVENTIONAL)

CONTRACTOR: Albert Corley, 1906, 202 Meave St Guelph

NAME OF DRILLER OR BORER: Albert Corley, 1906

SIGNATURE OF CONTRACTOR: Albert Corley

SUBMISSION DATE: DAY 17 MO June YR 81

OFFICE USE ONLY

DATA SOURCE: 1

CONTRACTOR: 1906

DATE OF INSPECTION: Aug 14/85

INSPECTOR: [Signature]

REMARKS: [Signature]

CSS.S8

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

6707452

MUNICIPALITY: 67011 COUNTY: GR E DISTRICT: 04

COUNTY OR DISTRICT: WELL TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PILKINGTON CON. BLOCK TRACT. SURVEY, ETC.: 4

DATE COMPLETED: DAY 19 MO June YR 81

DRILLING: 825.160 RC: 4 ELEVATION: 1140 RC: 4 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	59
Blue		Lime rock		59	90
		rock	Broken rock	90	100

JUN 23 1981

31: 005710512 009761512 010031271

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	
15-18	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL	
20-23	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL	
25-28	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL	
30-33	1 <input type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERAL	

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
05 1/2	STEEL	1/8	0 - 62
	STEEL		62 - 100

SCREEN

SIZES 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

PUMPING TEST METHOD: 1 PUMP 2 BAILER

PUMPING RATE: 0300 GPM

DURATION OF PUMPING: 02 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING PUMPING			
19-21	22-24	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
010 FEET	015 FEET	025 FEET	025 FEET	015 FEET	015 FEET

PUMP INTAKE SET AT: 90 FEET

RECOMMENDED PUMP TYPE: SHALLOW DEEP

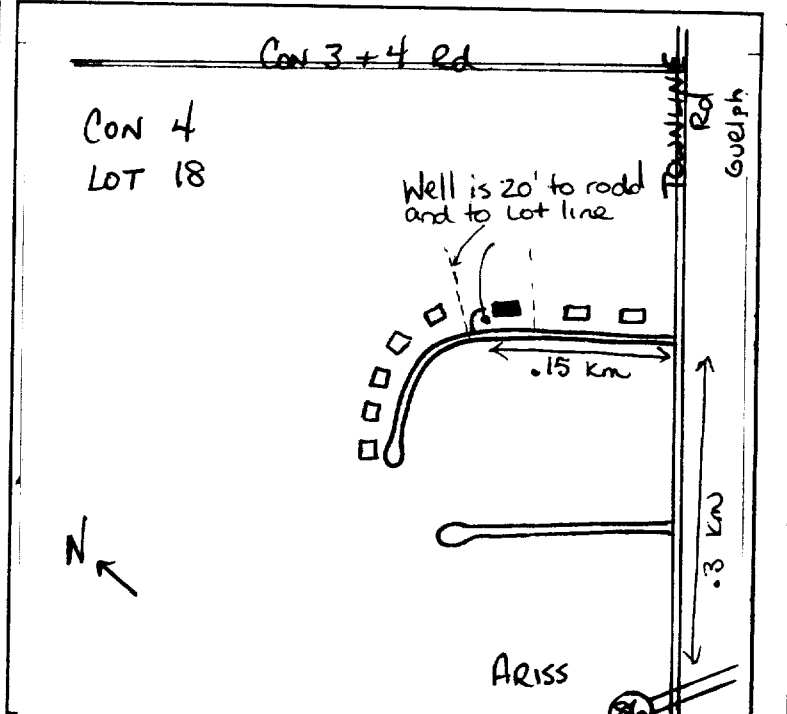
RECOMMENDED PUMP SETTING: 040 FEET

RECOMMENDED PUMPING RATE: 0150 GPM

FINAL STATUS OF WELL 1 WATER SUPPLY

WATER USE 01 DOMESTIC

METHOD OF DRILLING 2 ROTARY (CONVENTIONAL)



CONTRACTOR

NAME OF WELL CONTRACTOR: Albert Carley LICENCE NUMBER: 1906

ADDRESS: 202 Beave St Guelph

NAME OF DRILLER OR BORER: Albert Carley LICENCE NUMBER: 1906

SIGNATURE OF CONTRACTOR: Albert Carley SUBMISSION DATE: DAY 19 MO June YR 81

OFFICE USE ONLY

DATE OF INSPECTION: Aug 14/85 INSPECTOR: [Signature]

REMARKS: _____

CSS.S8



Ministry
of the
Environment
Ontario

The Ontario Water Resources Act 40 P 4c
WATER WELL RECORD

6707453

MUNICIPALITY: 67011 COUNTY: GR E DISTRICT: 08

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

COUNTY OR DISTRICT: WELLINGTON TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PILKINGTON CON., BLOCK, TRACT, SURVEY, ETC.: LOT 10 PLAN 689 LOT: 018
DATE COMPLETED: DAY 10 MONTH 06 YEAR 81
NAME: R. L. ARISS
ELEVATION: 25100 BASIN CODE: 4 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
		clay stones		0	56
Brown		rock		56	65
Gray		"		65	70
		Lime rock		70	95
Blue		rock		95	100

JUN 23 1981

AUG 21 1985

0056 0512 0065612 0070212 00951512 0100312

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-15	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 checked="" 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
05"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	1/8"	0/0060 60 0100 0100
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" 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
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.)
10-13	14-17
18-21	22-25
26-29	30-33

71 PUMPING TEST

PUMPING TEST METHOD: 1 PUMP 2 BAILER

PUMPING RATE: 0020 GPM DURATION OF PUMPING: 02 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING PUMPING					
010 FEET	040 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES		
		040 FEET	040 FEET	040 FEET	040 FEET	040 FEET	040 FEET

PUMP INTAKE SET AT: 80 FEET WATER AT END OF TEST: CLEAR

RECOMMENDED PUMP TYPE: SHALLOW DEEP

RECOMMENDED PUMP SETTING: 040 FEET RECOMMENDED PUMPING RATE: 0015 GPM

FINAL STATUS OF WELL

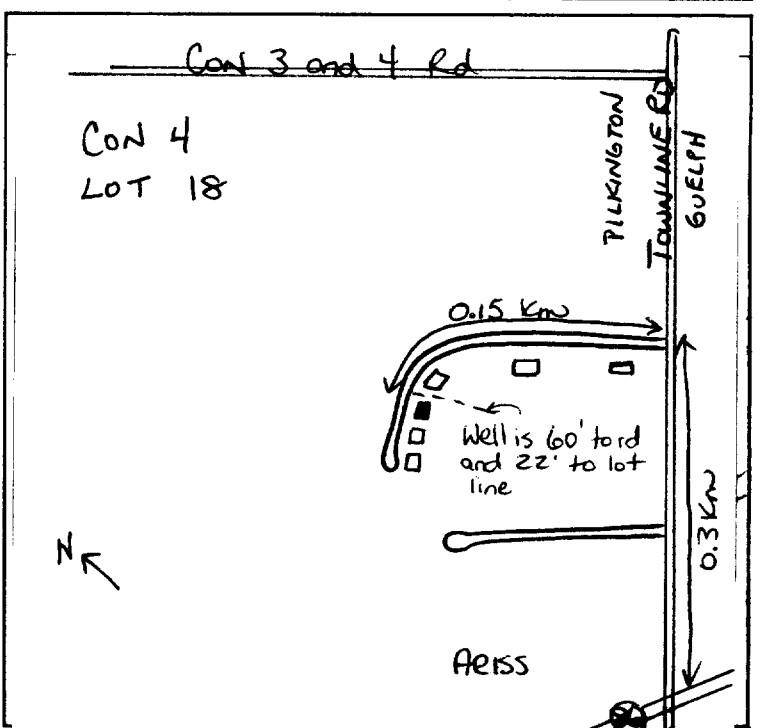
1 WATER SUPPLY 5 ABANDONED INSUFFICIENT SUPPLY
2 OBSERVATION WELL 6 ABANDONED POOR QUALITY
3 TEST HOLE 7 UNFINISHED
4 RECHARGE WELL

WATER USE

1 DOMESTIC 5 COMMERCIAL
2 STOCK 6 MUNICIPAL
3 IRRIGATION 7 PUBLIC SUPPLY
4 INDUSTRIAL 8 COOLING OR AIR CONDITIONING
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: Albert Earley LICENCE NUMBER: 1906
ADDRESS: 202 Neeve St Guelph
NAME OF DRILLER OR BORER: Albert Earley LICENCE NUMBER: 1906
SIGNATURE OF CONTRACTOR: Albert Earley SUBMISSION DATE: DAY 10 MONTH June YEAR 81

OFFICE USE ONLY

DATE RECEIVED: 260681
DATE OF INSPECTION: Aug 14/85 INSPECTOR: [Signature]
REMARKS: [Blank]



Ministry of the Environment
Ontario

The Ontario Water Resources Act
WATER WELL RECORD

4099c

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

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6707506

MUNICIP 670.11

COM GR E

04

COUNTY OR DISTRICT: Wellington TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Wellington CON. BLOCK, TRACT, SURVEY, ETC: 4

DATE COMPLETED: DAY 01 MO 08 YR 81

ING: 24960 RC: 4 ELEVATION: 1130 RC: 4 BASIN CODE: 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
		clay stones		0	57
		fine rock		57	85
		Blue shale		85	90

JUN 23 1981
AUG 21 1985

31: 0085 05/12 0085 15/12 0095 3/7

<p>41 WATER RECORD</p> <p>WATER FOUND AT - FEET: 10-13, 15-18, 20-23, 25-28, 30-33</p> <p>KIND OF WATER: 1 FRESH, 2 SALTY, 3 SULPHUR, 4 MINERAL</p>		<p>51 CASING & OPEN HOLE RECORD</p> <p>INSIDE DIAM INCHES: 05.75</p> <p>MATERIAL: 1 STEEL, 2 GALVANIZED, 3 CONCRETE, 4 OPEN HOLE</p> <p>WALL THICKNESS INCHES: 188</p> <p>DEPTH - FEET: FROM TO</p> <p>0-57: STEEL</p> <p>57-85: GALVANIZED</p> <p>85-90: OPEN HOLE</p>		<p>SCREEN</p> <p>SIZE(S) OF OPENING (SLOT NO): 31-33</p> <p>DIAMETER INCHES: 34-38</p> <p>LENGTH FEET: 39-40</p> <p>MATERIAL AND TYPE: 41-44</p> <p>DEPTH TO TOP OF SCREEN FEET: 50</p>	
---	--	---	--	---	--

71 PUMPING TEST METHOD: 1 PUMP, 2 BAILER

PUMPING RATE: 0030 GPM

DURATION OF PUMPING: 01:30

WATER LEVELS DURING PUMPING:

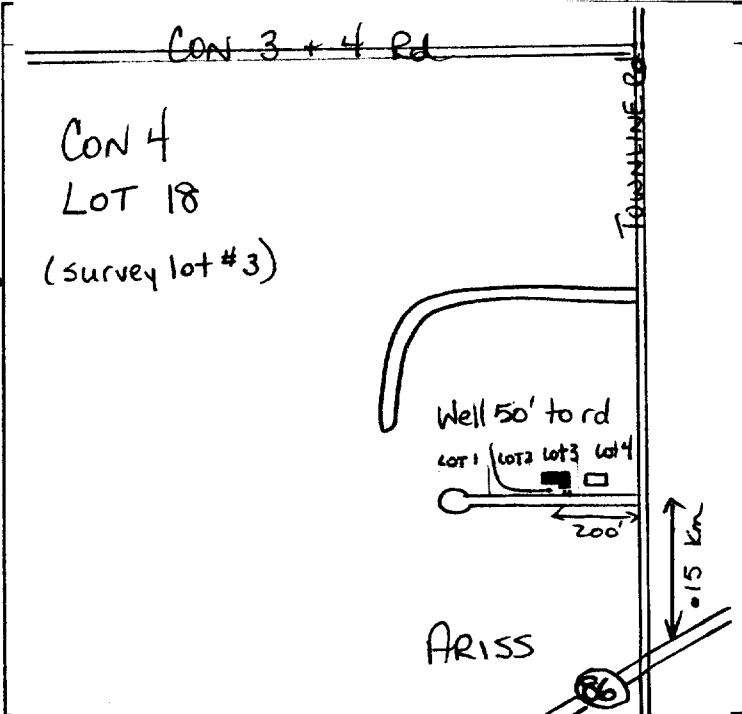
19-21	22-24	25-28	29-31	32-34	35-37
013	015	015	015	015	015

PUMP INTAKE SET AT: 6 FEET

RECOMMENDED PUMP TYPE: 1 SHALLOW

RECOMMENDED PUMP SETTING: 020 FEET

RECOMMENDED PUMP RATE: 0030 GPM



FINAL STATUS OF WELL: 1 WATER SUPPLY

WATER USE: 1 DOMESTIC

METHOD OF DRILLING: 2 ROTARY (CONVENTIONAL)

CONTRACTOR: NAME OF WELL CONTRACTOR: Albert Carley LICENCE NUMBER: 1906

ADDRESS: 202 N. Ave St. Joseph

NAME OF DRILLER OR BORER: Albert Carley LICENCE NUMBER: 1906

SIGNATURE OF CONTRACTOR: _____ SUBMISSION DATE: _____

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 1906 DATE RECEIVED: 01 10 81

DATE OF INSPECTION: Aug 14/85 INSPECTOR: KTD

REMARKS: _____

1. PRINT ONLY IN SPACES PROVIDED
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11 6707507 MUNICIPAL 670.11 COR GRE 04

COUNTY OR DISTRICT: WELLINGTON
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: WELLINGTON
CON., BLOCK, TRACT, SURVEY, ETC: Plan 689 con 4
DATE COMPLETED: DAY 01 MO 08 YR 81
ELEVATION: 11.30
BASIN CODE: 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
		clay stones		0	56
		lime rock		56	85
		blue shale		85	90

JUN 23 1981
AUG 21 1985

31 0056 0512 0085 1512 0090 317
32

41 WATER RECORD

WATER FOUND AT - 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 checked="" 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	1/8	0	60
17-18	STEEL			20-23
24-25	STEEL			27-30

SCREEN

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

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: PUMP BAILER

PUMPING RATE: 0030 GPM

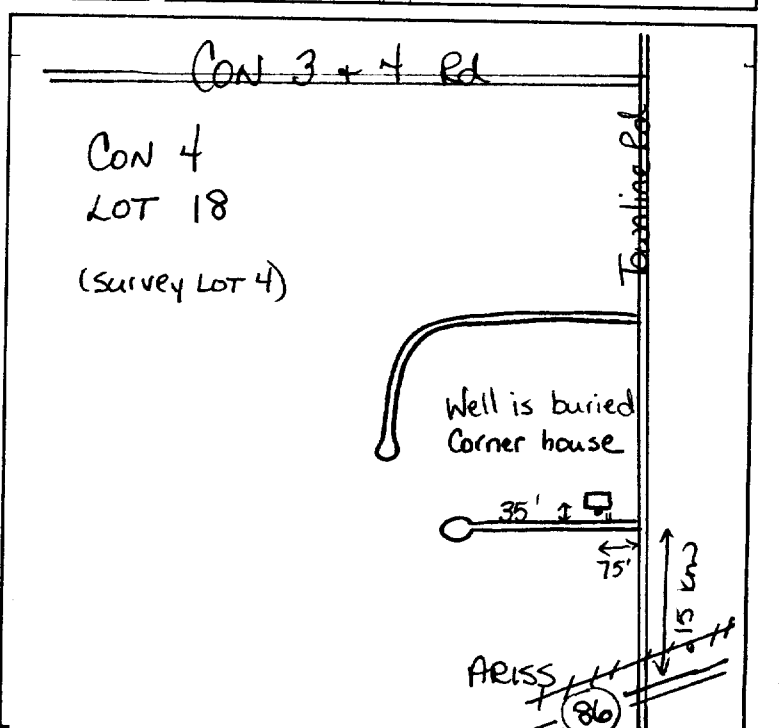
DURATION OF PUMPING: 01 15-16 HOURS 00 17-18 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING					
012	014	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES	75 MINUTES	90 MINUTES
012	014	014	014	014	014	014	014

RECOMMENDED PUMP TYPE: SHALLOW DEEP

RECOMMENDED PUMP SETTING: 020 FEET

RECOMMENDED PUMPING RATE: 0030 GPM



FINAL STATUS OF WELL

WATER SUPPLY

WATER USE 01

DOMESTIC

METHOD OF DRILLING 2

ROTARY (CONVENTIONAL)

CONTRACTOR

NAME OF WELL CONTRACTOR: Albert Carley
ADDRESS: 202 N. ave St. Guelph
NAME OF DRILLER OR BORER: Albert Carley
SIGNATURE OF CONTRACTOR: [Signature]
LICENCE NUMBER: 1906
SUBMISSION DATE: DAY 9 MO 9 YR 81

OFFICE USE ONLY

ISSUE SOURCE: 1
CONTRACTOR: 1906
DATE RECEIVED: 01 10 81
DATE OF INSPECTION: Aug 14 1985
INSPECTOR: [Signature]
REMARKS: [Blank]
CSS.S8



Ministry
of the
Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD ^{40 P2C}

42/81

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11

6707508

MUNICIPALITY 67011

CON. GR E

04

COUNTY OR DISTRICT: Wellington
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Pilkington
CON. BLOCK TRACT SURVEY ETC: 4
DATE COMPLETED: 03 Sept 81
DAY 03 MO Sept YR 81

RC 25 120
RC 4
ELEVATION 1140
RC 4
BASIN CODE 23

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH FEET	
				FROM	TO
Brown	Clay	Gravel		0	12
Gray	Clay	Gravel		12	65
L. Gray	Rock			65	80
M. Gray	Rock			80	95
D. Gray	Rock			95	100

JUN 23 1981

Total Depth 100

31 00120511 006520511 0080212 0095214 0100212

41 WATER RECORD

WATER FOUND AT FEET	KIND OF WATER
0095	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0100	1 <input checked="" 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
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 0067
05"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		67 0100

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		
26-29		

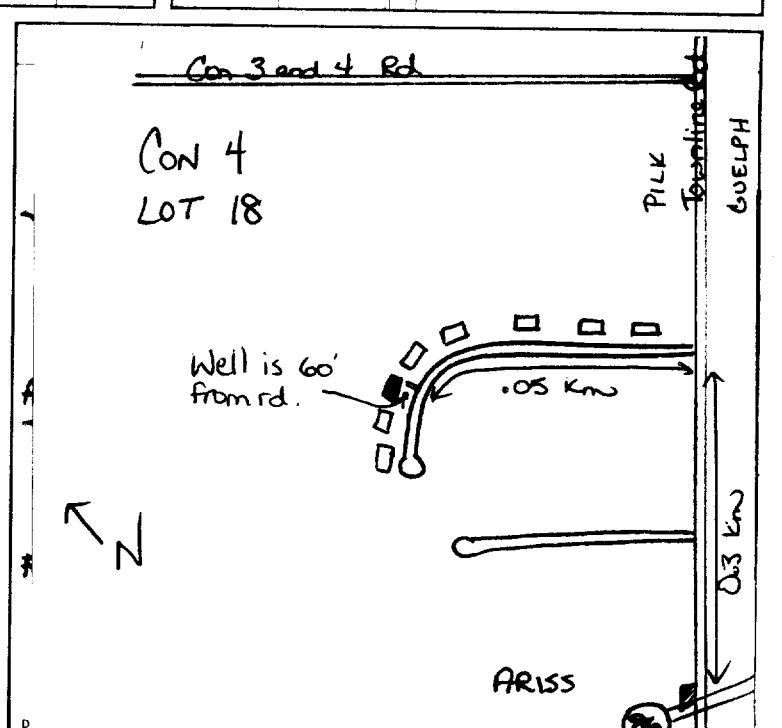
71 PUMPING TEST

PUMPING TEST METHOD: 1 PUMP 2 BAILER
PUMPING RATE: 0015 GPM
DURATION OF PUMPING: 01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
014 FEET	050 FEET	15 MINUTES: 014 FEET 30 MINUTES: FEET 45 MINUTES: FEET 60 MINUTES: FEET

RECOMMENDED PUMP TYPE: SHALLOW DEEP
RECOMMENDED PUMP SETTING: 070 FEET
RECOMMENDED PUMPING RATE: 0012 GPM

FINAL STATUS OF WELL: 1 WATER SUPPLY
WATER USE: 01
METHOD OF DRILLING: 2



CONTRACTOR: Graham Well Drilling Ltd., Licence Number 2336
Address: Guelph, Ontario
Name of Driller or Borer: Robert Graham
Signature: [Signature]
Submission Date: 30 Sept 81

OFFICE USE ONLY: DATA SOURCE 1, CONTRACTOR 2336, DATE 06 10 81
DATE OF INSPECTION: Aug 14/85
INSPECTOR: [Signature]

1. PRINT ONLY IN SPACES PROVIDED
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(11) 6707909 MUNICIPAL 67011 CON GRE 04

COUNTY OR DISTRICT: Wellington TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PILKINGTON CON. BLOCK, TRACT, SURVEY, ETC: 4 Area 018 25-27 18
DATE COMPLETED: DAY 04 MO 06 YR 84
295 SOUTHGATE DR. GUELPH
RC 25020 RC 4 ELEVATION 1130 RC 4 BASIN CODE 23

100 OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown		clay and stones		0	39
		lime rock		39	84
		gray rock		84	102

JUN 25 1980
AUG 21 1980

(31) 00596012 0084 1512 0102212
32

(41) WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0095	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
0102	1 <input checked="" 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
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 (0063)
05	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		63 (0102)

(60) SCREEN

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

(61) PLUGGING & SEALING RECORD

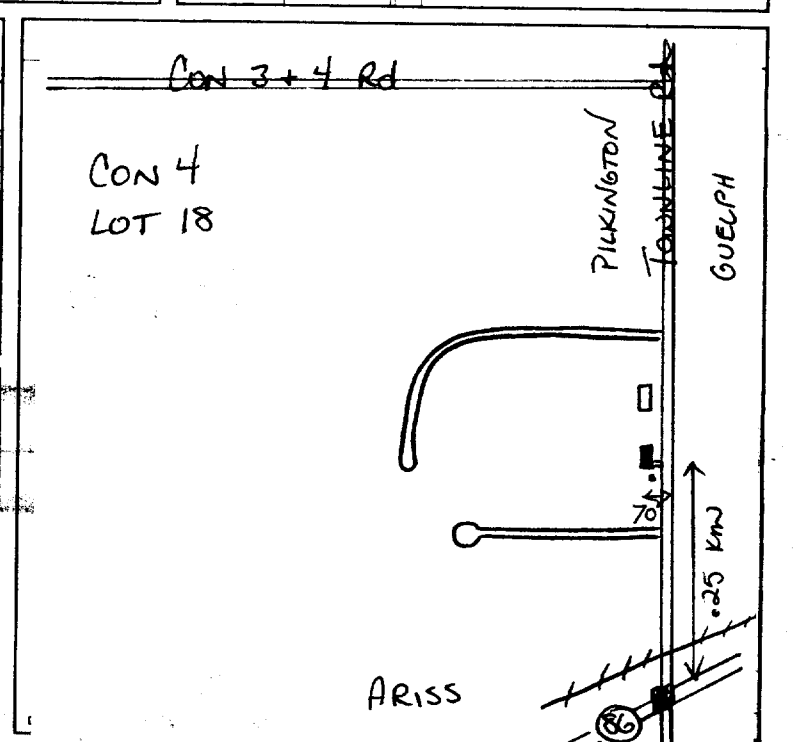
DEPTH SET AT - FEET	MATERIAL AND TYPE
10-13	
18-21	
26-29	

(71) PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	0020 GPM	02 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
015 FEET	040 FEET	15 MINUTES: 040 FEET 30-MINUTES: 040 FEET 45 MINUTES: 040 FEET 60 MINUTES: 040 FEET

IF FLOWING, GIVE RATE: 60 GPM
PUMP INTAKE SET AT: 60 FEET
WATER AT END OF TEST: 1 CLEAR 2 CLOUDY
RECOMMENDED PUMP TYPE: SHALLOW DEEP
RECOMMENDED PUMP SETTING: 040 FEET
RECOMMENDED PUMPING RATE: 0015 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
9 OTHER 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: Albert Carley LICENCE NUMBER: 1906
ADDRESS: 202 New St Guelph
NAME OF DRILLER OR BORER: Albert Carley LICENCE NUMBER: 1906
SIGNATURE OF CONTRACTOR: [Signature] SUBMISSION DATE: DAY 4 NO 16 YR 84

OFFICE USE ONLY: DATA SOURCE: 1 CONTRACTOR: 1906 DATE RECEIVED: 230884
DATE OF INSPECTION: Aug 14/85 INSPECTOR: [Signature]
REMARKS: [Signature]

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

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6707993

MUNICIPALITY

67011

CON.

GRE

04

COUNTY OR DISTRICT: WEE WEL TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PILKINGTON CON. BLOCK, TRACT, SURVEY, ETC.: 4 8 DATE COMPLETED: NOV 20 07 48-53

GENERAL DEL. ARISS NOB: 130 DAY 20 MO 07 YR 84

RC: 25260 4 ELEVATION: 1130 4 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 and stones		0	60
Brown		Lime rock		60	75
Gray		rock		75	100

JUN 25 1986

31 006060512 007361512 0100212

32

41 WATER RECORD

WATER FOUND AT - 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
05	STEEL	198	0	6067
17-18	STEEL		67	100
24-25	STEEL		67	100

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
28-29	30-33

71 PUMPING TEST METHOD

1 PUMP 2 BAILER

PUMPING RATE: 0008 GPM

DURATION OF PUMPING: 02 HOURS 00 MINS

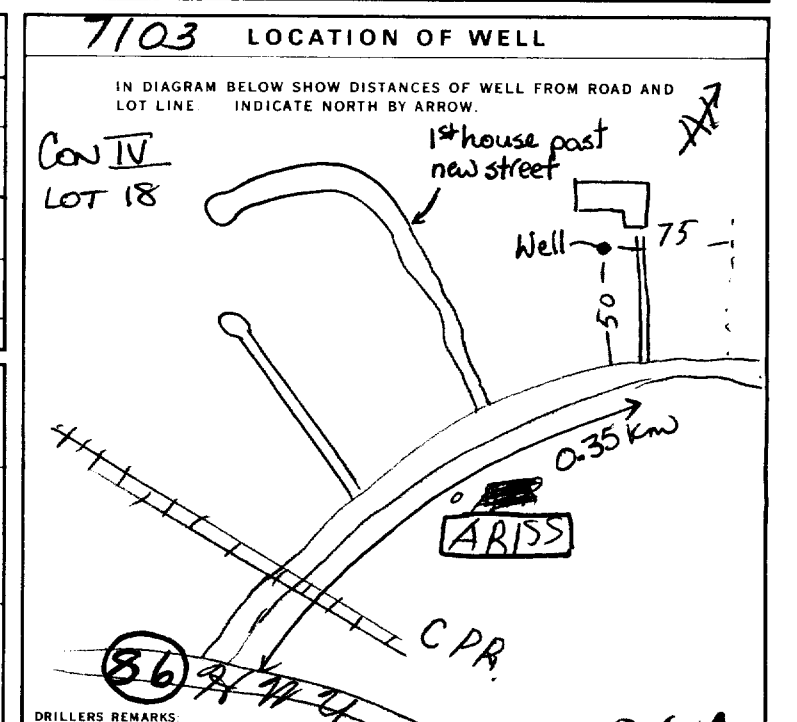
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
018 FEET	060 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
		060 FEET	060 FEET	060 FEET	060 FEET

PUMP INTAKE SET AT: 70 FEET

RECOMMENDED PUMP TYPE: SHALLOW DEEP

RECOMMENDED PUMP SETTING: 070 FEET

RECOMMENDED PUMPING RATE: 0008 GPM



FINAL STATUS OF WELL: 1

WATER USE: 01

METHOD OF DRILLING: 2

CONTRACTOR

NAME OF WELL CONTRACTOR: Albert Corley LICENCE NUMBER: 1906

ADDRESS: 202 Beave St Gueph

NAME OF DRILLER OR BORER: Albert Corley LICENCE NUMBER: 1906

SIGNATURE OF CONTRACTOR: Albert Corley SUBMISSION DATE: DAY 20 MO 7 YR 84

OFFICE USE ONLY

DATA SOURCE: 1 CONTRACTOR: 1906 DATE RECEIVED: 31 12 84

DATE OF INSPECTION: Aug 14 85 INSPECTOR: AW

REMARKS:

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

11

6708014

MUNICIPALITY 670111

COM. GR E

04

COUNTY OR DISTRICT Wellington TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE Pickering CON. BLOCK, TRACT, SURVEY ETC. 4

DATE COMPLETED DAY 18 MO May YR 83

15 Southgate Drive Lot 7 Plan 689

NG 25060 RC 4 ELEVATION 1130

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)				
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	DEPTH - FEET	
			FROM	TO
Brown		clay and stones	0	4
Black		Top soil	4	6
Gray		clay and stones	6	64
Line		rock	64	99

JUN 23 1983

31 0001601201 0004802 0042012 0011 1512

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 checked="" type="checkbox"/> #5 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 19-11	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE	188	0	80068
17-18	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		68	0099
24-25	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE			

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 METHOD

1 PUMP 2 BAILER

19-21 STATIC LEVEL 015 FEET

22-24 WATER LEVEL END OF PUMPING 060 FEET

25 WATER LEVELS DURING PUMPING

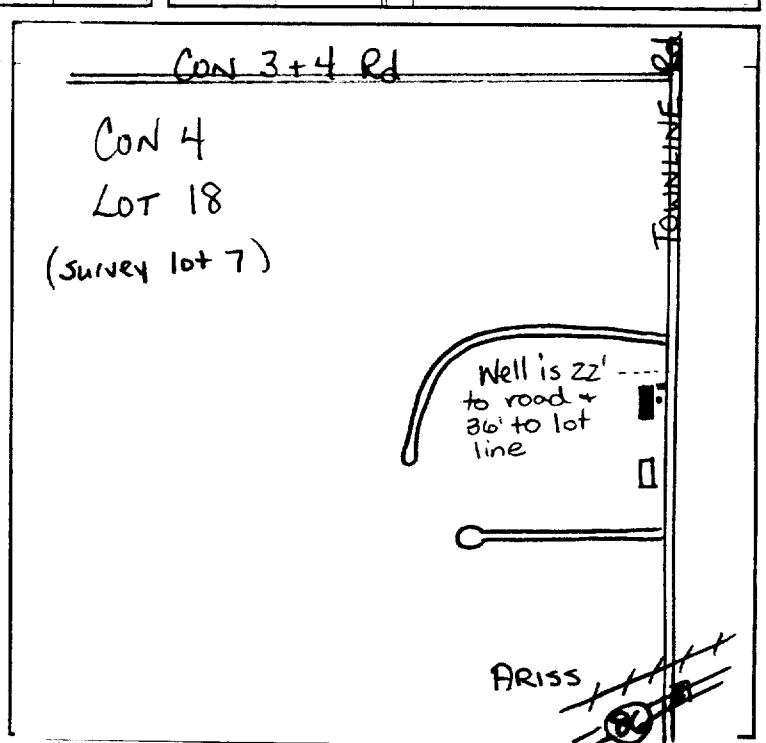
15 MINUTES 060 FEET	30 MINUTES 060 FEET	45 MINUTES 060 FEET	60 MINUTES 060 FEET
---------------------	---------------------	---------------------	---------------------

38-41 IF FLOWING, GIVE RATE GPM 70

42 PUMP INTAKE SET AT FEET 70

43-45 RECOMMENDED PUMP SETTING 060 FEET

46-49 RECOMMENDED PUMPING RATE 0008 GPM



84 FINAL STATUS OF WELL 1

85-86 WATER USE 01

87 METHOD OF DRILLING 2

CONTRACTOR

NAME OF WELL CONTRACTOR Albert Carley LICENCE NUMBER 1906

ADDRESS 202 Reeve St South

NAME OF DRILLER OR BORER Albert Carley LICENCE NUMBER 1906

SIGNATURE OF CONTRACTOR Albert Carley

SUBMISSION DATE DAY 19 NO May YR 83

OFFICE USE ONLY

DATA SOURCE 1 CONTRACTOR 1906 DATE RECEIVED 06 07 83

DATE OF INSPECTION Aug #1/85 INSPECTOR

REMARKS: changed from 6707714

CSS.S8

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

11

6708108

MUNICIPALITY 67011

CON. GR E

04

COUNTY OR DISTRICT: WELLSINGTON TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: RULKINGTON CON., BLOCK, TRACT, SURVEY, ETC.: 4

DATE COMPLETED: DAY 11 MO 09 YR 85

RC 4 ELEVATION 1130 RC 4 BASIN CODE 23

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)				
GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	DEPTH - FEET	
			FROM	TO
Brown		clay and stones	0	35
		clay and gravel	35	60
Brown		rock	60	75
Gray		rock	75	90
Blue		rock	90	97

JUN 25 1985

31 002560514 0060 0511 0025612 0090022 0097312

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-13	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 14
	2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 19
	2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 24
	2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 29
	2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 34
	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 12	1/8	0-65
	2 <input type="checkbox"/> GALVANIZED		
	3 <input type="checkbox"/> CONCRETE		
	4 <input type="checkbox"/> OPEN HOLE		
17-18	1 <input type="checkbox"/> STEEL 19		20-23
	2 <input type="checkbox"/> GALVANIZED		
	3 <input type="checkbox"/> CONCRETE		
	4 <input type="checkbox"/> OPEN HOLE		
24-25	1 <input type="checkbox"/> STEEL 26		27-30
	2 <input type="checkbox"/> GALVANIZED		
	3 <input type="checkbox"/> CONCRETE		
	4 <input type="checkbox"/> OPEN HOLE		

SCREEN

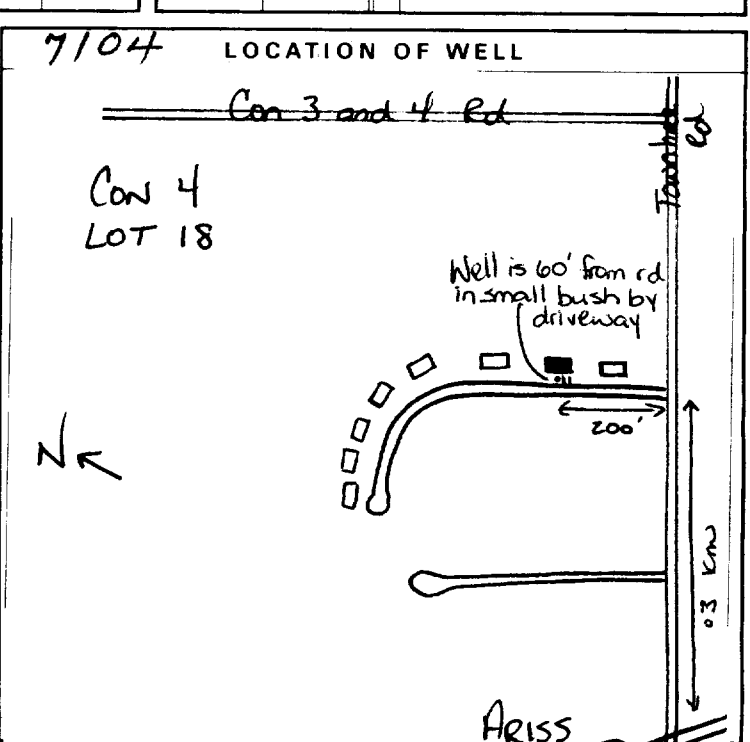
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		DEPTH TO TOP OF SCREEN

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	1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE	81201 GPM	DURATION OF PUMPING	02 HOURS 00 MINS
STATIC LEVEL	012 FEET	WATER LEVEL END OF PUMPING	040 FEET	WATER LEVELS DURING	
		15 MINUTES	040 FEET	30 MINUTES	040 FEET
		45 MINUTES	040 FEET	60 MINUTES	040 FEET
IF FLOWING, GIVE RATE		PUMP INTAKE SET AT	60 FEET	WATER AT END OF TEST	
		RECOMMENDED PUMP TYPE	<input type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING	040 FEET
		RECOMMENDED PUMPING RATE	0015 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 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	Albert Carley	LICENCE NUMBER	1906
ADDRESS	202 N. Ave St. Guelph		
NAME OF DRILLER OR BORER	Albert Carley	LICENCE NUMBER	1906
SIGNATURE OF CONTRACTOR	Albert Carley	SUBMISSION DATE	DAY 11 MO. SEPT YR 84

OFFICE USE ONLY

DATE OF INSPECTION	Aug 14/85	INSPECTOR	TS 01 85
REMARKS	Kw		

CSS.S8

WATER WELL RECORD

40P9c

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

11 6708201 670.11 GR E 04

COUNTY OR DISTRICT: WELLINGTON TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PILKINGTON CON. BLOCK, TRACT, SURVEY, ETC: ~~CON. 4~~ CON. 4

GENERAL DEL. ARISS DATE COMPLETED DAY 24 MO. 04 YR 85

NG 25.160 RC 4 ELEVATION 11.40 RC 4 BASIN CODE 23

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown		clay stores		0	30
Gray		clay stores		30	60
Brown		Lime rock		60	70
Gray		rock		70	75
		Lime rock		75	106

JUN 25 1985 OCT 09 1985
AUG 21 1985

31 003060512 006020512 007061512 0075212 01061512

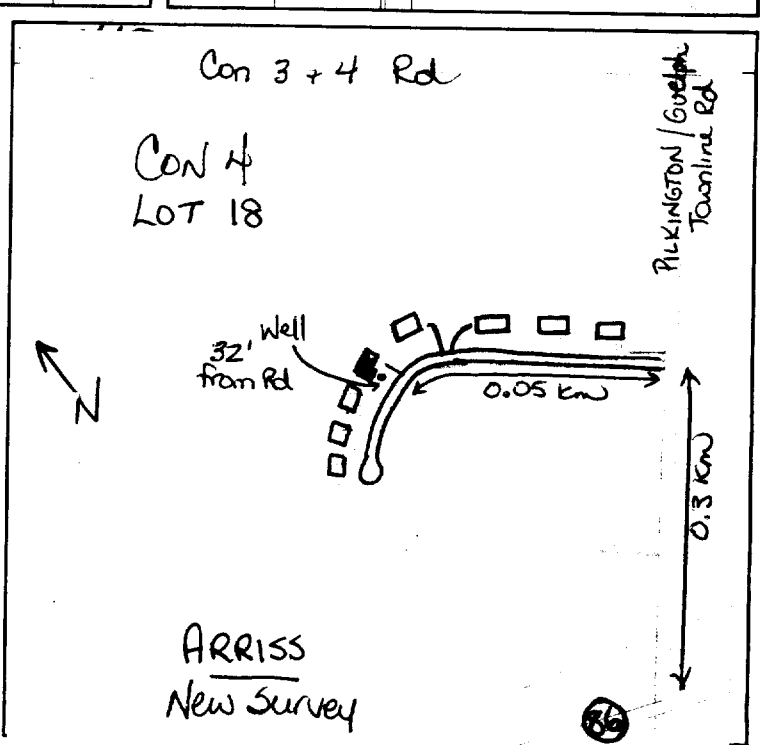
WATER FOUND AT - FEET	KIND OF WATER
10-13	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 2 <input type="checkbox"/> SALTY 4 <input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

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
198	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	188	050065	198
05"	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		656	0106

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

PLUGGING & SEALING RECORD		
DEPTH SET AT - FEET	MATERIAL AND TYPE	(CEMENT GROUT LEAD PACKER, ETC.)
10-13		
18-21		
26-29		

PUMPING TEST METHOD	PUMPING RATE GPM	DURATION OF PUMPING HOURS	WATER LEVELS DURING PUMPING					
			15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES		
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	00/2	03	016	045	045	045	045	
IF FLOWING, GIVE RATE	80							



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

CONTRACTOR	LICENCE NUMBER
Albert Earley	1906
202 McEve St Guelph	
Albert Earley	1906
Albert Earley	
	DAY 24 MO. April YR 84

OFFICE USE ONLY	CONTRACTOR	DATE RECEIVED
DATA SOURCE: 1	1906	18 06 85
DATE OF INSPECTION: Aug 14 1985	INSPECTOR: km	
REMARKS: CSS.S8		

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

11 6708202 67010 GRE 04

COUNTY OR DISTRICT: WELLINGTON TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PILKINGTON TWP. ARISS 4
 CON., BLOCK, TRACT, SURVEY, ETC.: 018 25-27 18
 GENERAL DELIVERY ARISS DATE COMPLETED DAY 25 MO 04 YR 85
 SOUTH EAST DR
 25 120 4 1140 4 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	20
Grey		clay + stones		20	59
Brown		rock		59	75
Grey		rock		75	90
Brown		rock		90	110

JUN 29 1985

31 002060112 005120112 00756112 00900112 01106112

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

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	59
05	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE		59	0/100
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

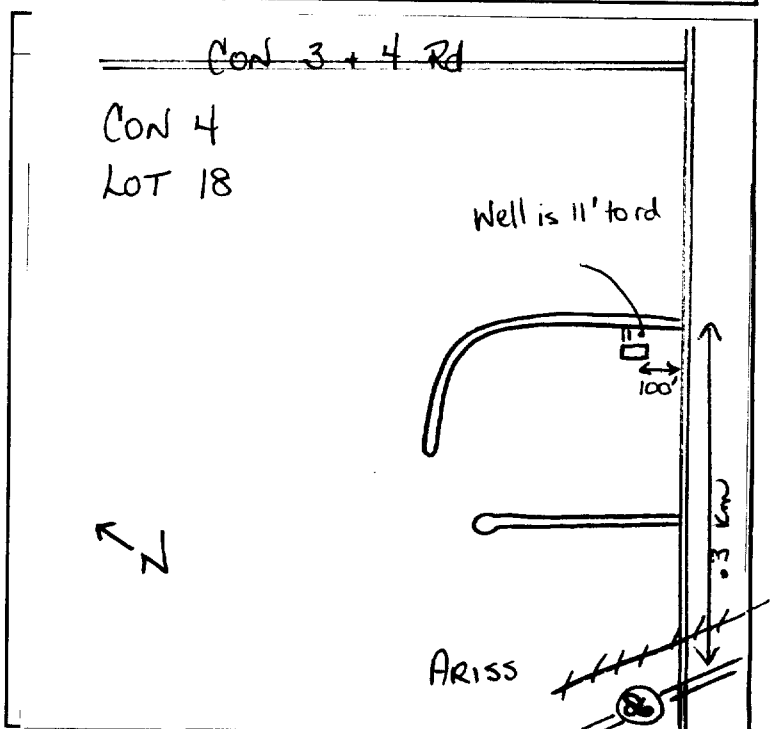
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
	31-33	34-38
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN FEET
		41-44
		45-48
		49-52
		53-56
		57-60

PLUGGING & SEALING RECORD

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

PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE GPM	DURATION OF PUMPING HOURS
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	008	02
STATIC LEVEL FEET	WATER LEVEL END OF PUMPING FEET	WATER LEVELS DURING PUMPING
011	060	15 MINUTES: 060, 30 MINUTES: 060, 45 MINUTES: 060, 60 MINUTES: 060
IF FLOWING, GIVE RATE GPM	PUMP INTAKE SET AT FEET	WATER AT END OF TEST FEET
	90	060
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING FEET	RECOMMENDED PUMPING RATE GPM
<input type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	066	0007



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 checked="" type="checkbox"/> CABLE TOOL	5 <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: Albert Carley	LICENCE NUMBER: 1906
ADDRESS: 202 Newe St. Shelph	
NAME OF DRILLER OR BORER: Albert Carley	LICENCE NUMBER: 1906
SIGNATURE OF CONTRACTOR	SUBMISSION DATE: DAY 25 MO 04 YR 85

OFFICE USE ONLY

DATA SOURCE: 1	CONTRACTOR: 1906	DATE RECEIVED: 18 06 85
DATE OF INSPECTION: August 14/85	INSPECTOR: KRW	
REMARKS:		CSS.S8

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

11 6708203 670.11 G R E 04

COUNTY OR DISTRICT: WELLINGTON
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: PILKINGTON TWP ARISS 4
CON. BLOCK, TRACT, SURVEY, ETC.: 4
DATE COMPLETED: DAY 18 MO 05 YR 85
GENERAL DELIVERY: ARISS
ELEVATION: 25.120 1140 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	55
Grey		rock		55	80
Blade		rock		80	90
		rock		90	100

JUN 25 1985

31 0.5 0.5/2 00806/2 00902/2 01003/2

WATER RECORD

WATER FOUND AT - FEET: 0100

KIND OF WATER:

1 FRESH 3 SULPHUR
2 SALTY 4 MINERAL

CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES: 05

MATERIAL: 1 STEEL 2 GALVANIZED 3 CONCRETE 4 OPEN HOLE

WALL THICKNESS INCHES: 188

DEPTH - FEET: FROM 0 TO 60

SCREEN

SIZE(S) OF OPENING (SLOT NO.):

DIAMETER: 31-33 INCHES

LENGTH: 34-38 FEET

PLUGGING & SEALING RECORD

DEPTH SET AT - FEET:

FROM TO MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

PUMPING TEST

PUMPING TEST METHOD: 1 PUMP 2 BAILER

PUMPING RATE: 0030 GPM

DURATION OF PUMPING: 02 HOURS 00 MINS

STATIC LEVEL: 025 FEET

WATER LEVELS DURING PUMPING:

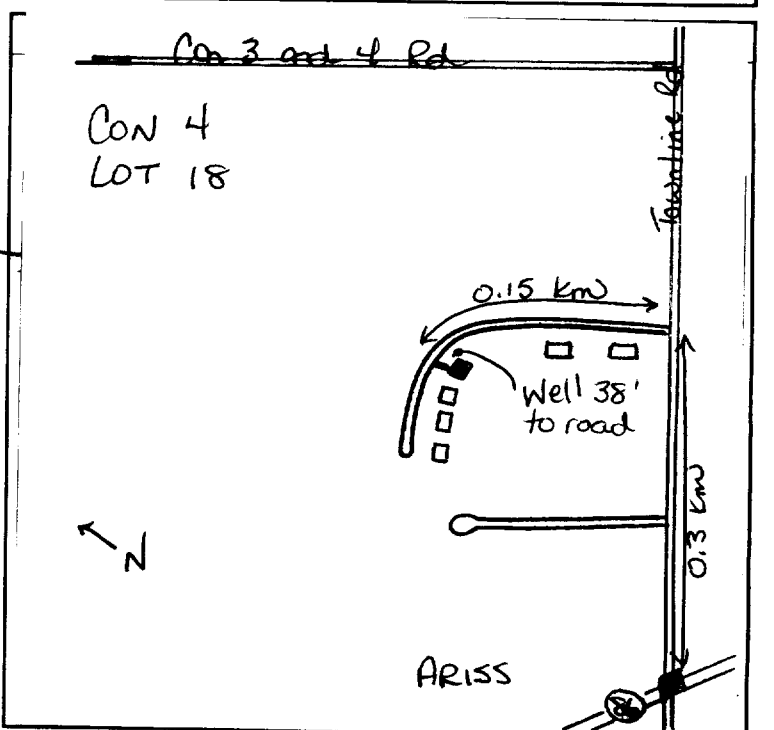
15 MINUTES: 025 FEET
30 MINUTES: 025 FEET
45 MINUTES: 025 FEET
60 MINUTES: 025 FEET

PUMP INTAKE SET AT: 80 FEET

RECOMMENDED PUMP TYPE: SHALLOW DEEP

RECOMMENDED PUMP SETTING: 040 FEET

RECOMMENDED PUMPING RATE: 015 GPM



FINAL STATUS OF WELL 1

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

WATER USE 01

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

METHOD OF DRILLING 7

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

CONTRACTOR

NAME OF WELL CONTRACTOR: Albert Carley
LICENCE NUMBER: 1906
ADDRESS: 202 Newe St. Shelph
NAME OF DRILLER OR BORE: Albert Carley
LICENCE NUMBER: 1906
SIGNATURE OF CONTRACTOR: Albert Carley
SUBMISSION DATE: DAY 18 MO 05 YR 85

OFFICE USE ONLY

DATA SOURCE: 1
CONTRACTOR: 1906
DATE RECEIVED: 18 06 85
DATE OF INSPECTION: Aug 14/85
INSPECTOR: km
REMARKS: CSS.S8



Ministry
of the
Environment
Ontario

The Ontario Water Resources Act

WATER WELL RECORD

20
40 Pgc

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

11

6708204

MUNICIPALITY 67011

CON. GR E

04

COUNTY OR DISTRICT WELLINGTON TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE DUKINGTON CON. BLOCK, TRACT, SURVEY, ETC 4

GENERAL DELIVERY ARISS NOB 180 DATE COMPLETED DAY 05 MO 06 YR 85

25.120 RC 4 ELEVATION 1140 RC 4 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 and stones		0	59
Brown		rock		59	92
		Broken rock		90	92

JUN 25 1985

31 40596 4/2 90926/2

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

CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET	
			FROM	TO
05-10	1 <input checked="" type="checkbox"/> STEEL	188	0	0064
17-18	1 <input type="checkbox"/> STEEL			20-23
24-25	1 <input type="checkbox"/> STEEL			27-30

SCREEN

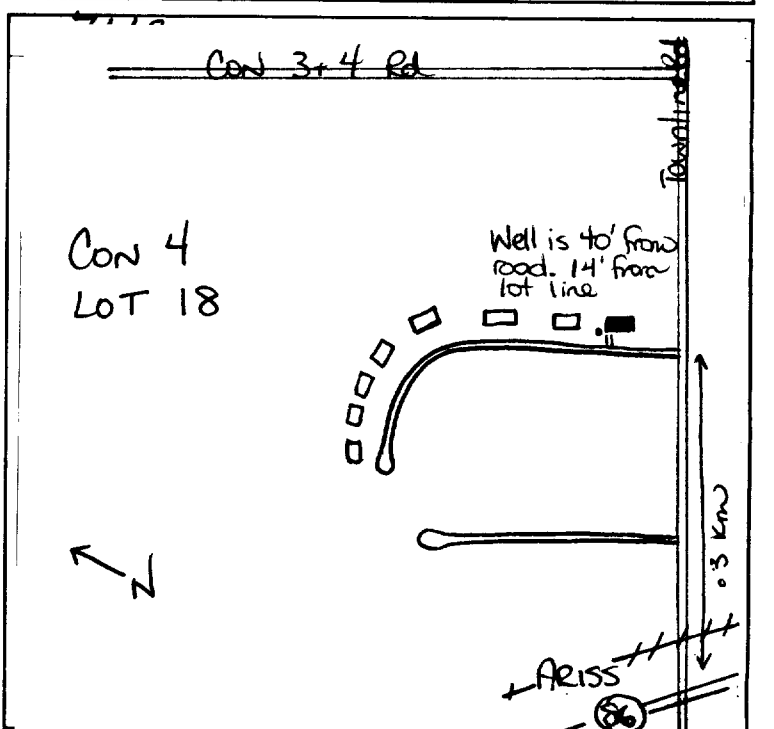
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET

PLUGGING & SEALING RECORD

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

PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	6080 GPM	15-18 HOURS 17-18 MINS
STATIC LEVEL	WATER LEVELS DURING	
19-21 015 FEET	15 MINUTES 22-24 020 FEET	30 MINUTES 26-28 020 FEET
	45 MINUTES 29-31 020 FEET	60 MINUTES 32-34 020 FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	60 GPM	1 <input checked="" type="checkbox"/> CLEAR 2 <input type="checkbox"/> CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMP RATE
1 <input checked="" type="checkbox"/> SHALLOW 2 <input type="checkbox"/> DEEP	040 FEET	0015 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"/> 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	LICENCE NUMBER
Albert Carley	1906
ADDRESS	
202 New St. Shelph	
NAME OF DRILLER OR BORER	LICENCE NUMBER
Albert Carley	1906
SIGNATURE OF CONTRACTOR	SUBMISSION DATE
	DAY 05 MO 06 YR 85

OFFICE USE ONLY

DATA SOURCE	CONTRACTOR	DATE
1	1906	18 06 85
DATE OF INSPECTION	INSPECTOR	
Aug 14/85	KM	
REMARKS		

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

11 6708263 MUNICIPAL CON.

COUNTY OR DISTRICT: **WATERLOO** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **DUNKINGTON TOWNSHIP** CON. BLOCK, TRACT, SURVEY, ETC: **CON 4** LOT: **2**
GENERAL DELIVERY: **ARRISS** DATE COMPLETED: **DAY 17 MO 6 YR 85**

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
		clay stones		0	58
Brown		rock		58	70
Gray		rock		70	97

31 32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
97	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
1 1/2	STEEL	1/8	0	62
5"	GALVANIZED CONCRETE OPEN HOLE		62	97
17-18	STEEL GALVANIZED CONCRETE OPEN HOLE			20-23
24-25	STEEL GALVANIZED CONCRETE OPEN HOLE			27-30

SCREEN

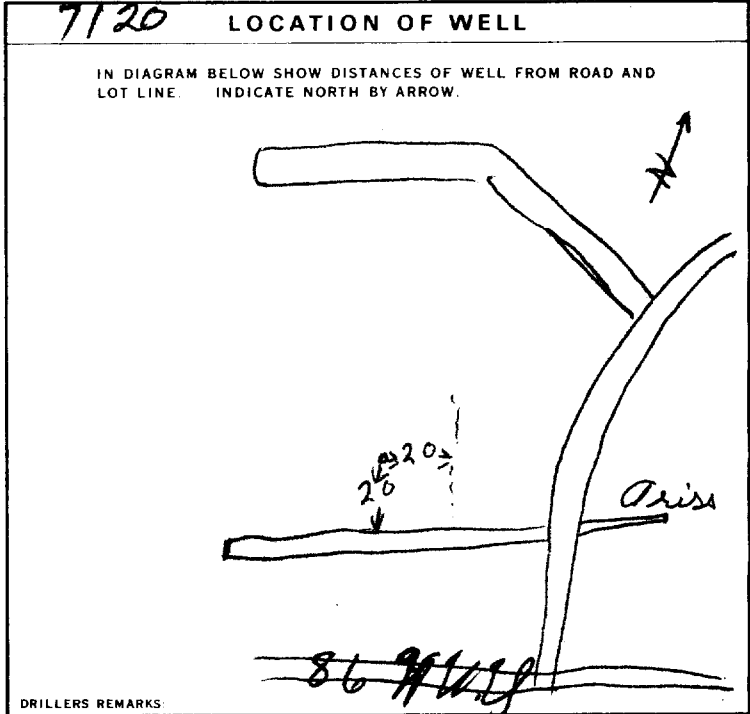
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET
MATERIAL AND TYPE		DEPTH TO TOP OF SCREEN FEET
		41-44

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET		MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
FROM	TO	
10-12	14-17	
18-21	22-25	
26-29	30-33	

71 PUMPING TEST

PUMPING TEST METHOD: 1 <input type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	PUMPING RATE: 15 GPM	DURATION OF PUMPING: 2 HOURS
STATIC LEVEL: 12 FEET	WATER LEVEL END OF PUMPING: 15 FEET	WATER LEVELS DURING:
		15 MINUTES: 15 FEET
		30 MINUTES: 15 FEET
		45 MINUTES: 15 FEET
		60 MINUTES: 15 FEET
IF FLOWING, GIVE RATE: 30 GPM	PUMP INTAKE SET AT: 30 FEET	WATER AT END OF TEST: CLEAR
RECOMMENDED PUMP TYPE: <input checked="" type="checkbox"/> SHALLOW <input type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: 40 FEET	RECOMMENDED PUMPING RATE: 15 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: **Albert Carley** LICENCE NUMBER: **1906**
ADDRESS: **202 Meave St Guelph**
NAME OF DRILLER OR BORER: **Albert Carley** LICENCE NUMBER: **1906**
SIGNATURE OF CONTRACTOR: *Albert Carley* SUBMISSION DATE: **DAY 17 MO 6 YR 85**

OFFICE USE ONLY

DATE RECEIVED: **03 09 85**
DATE OF INSPECTION: _____ INSPECTOR: _____
REMARKS: _____

CSS.ES

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

11 6708379 67011 GR E 04

COUNTY OR DISTRICT: Wellington
TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: RR
CON. BLOCK, TRACT, SURVEY ETC: C4
DATE COMPLETED: 02 17 83
ELEVATION: 25.160
BASIN CODE: 23

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
		clay stone		0	60
		Lime rock		60	93
Blue		Bt rock		93	97

JUN 25 1988

0660 02/12 0093 15 00933/2

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
05	1 <input checked="" type="checkbox"/> STEEL	1/8	0 to 65
05	1 <input type="checkbox"/> STEEL		65 to 97

60 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
FROM TO	(CEMENT GROUT LEAD PACKER ETC.)
10-13 14-17	
18-21 22-25	
26-29 30-33	

71 PUMPING TEST

PUMPING TEST METHOD: 1 PUMP 2 BAILER
PUMPING RATE: 0025 GPM
DURATION OF PUMPING: 02 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING PUMPING			
19-21	22-24	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
40	30	030	030	030	030

PUMP INTAKE SET AT: 60 FEET
WATER AT END OF TEST: 1 CLEAR 2 CLOUDY

RECOMMENDED PUMP TYPE: SHALLOW DEEP
RECOMMENDED PUMP SETTING: 040 FEET
RECOMMENDED PUMPING RATE: 0020 GPM

54 FINAL STATUS OF WELL

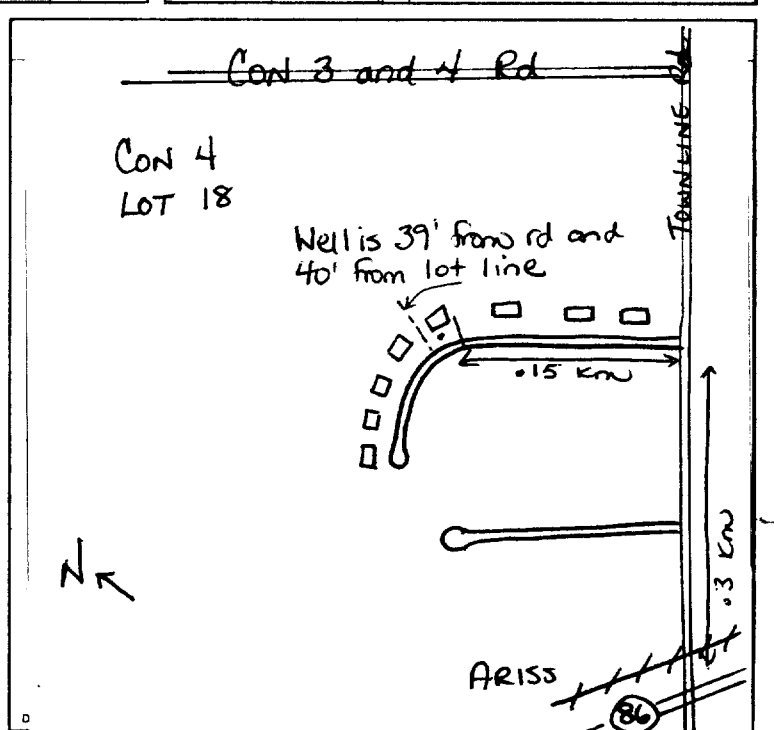
1 WATER SUPPLY
2 OBSERVATION WELL
3 TEST HOLE
4 RECHARGE WELL

55-56 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

57 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: Albert Carley
LICENCE NUMBER: 1906
ADDRESS: 202 Merve St Kitchener
NAME OF DRILLER OR BORE: Albert Carley
LICENCE NUMBER: 1906
SIGNATURE OF CONTRACTOR: Albert Carley
SUBMISSION DATE: DAY 2 MO Sept YR 83

OFFICE USE ONLY

DATA SOURCE: 1
CONTRACTOR: 1706
DATE RECEIVED: 07 10 83
DATE OF INSPECTION: Aug 14/85
INSPECTOR: K.W.
REMARKS: changed from 6603579

6708587

76/86

1. PRINT ONLY IN SPACES PROVIDED
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COUNTY OR DISTRICT: [REDACTED] TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **PILKINGTON** CON. BLOCK, TRACT, SURVEY, ETC.: **GRE CON 4** LOT: **4**
DATE COMPLETED: DAY **018** MO. **011** YR. **86**
Address: **14 Woodbrough Rd. Guelph, ONT**

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	18
Grey	CLAY	GRAVEL		18	73
"	Rock			73	85
L. Brown	"			85	98
m. Brown				98	116
TOTAL DEPTH					116 ft.

31 [] 32 []

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
10-13 116	1 <input checked="" type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
15-18	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
20-23	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
25-28	1 <input type="checkbox"/> FRESH 3 <input type="checkbox"/> SULPHUR 4 <input type="checkbox"/> MINERAL
30-33	1 <input type="checkbox"/> FRESH 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	1 <input checked="" type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input type="checkbox"/> OPEN HOLE	.188	0	75
5	1 <input type="checkbox"/> STEEL 2 <input type="checkbox"/> GALVANIZED 3 <input type="checkbox"/> CONCRETE 4 <input checked="" type="checkbox"/> OPEN HOLE		75	116

SCREEN

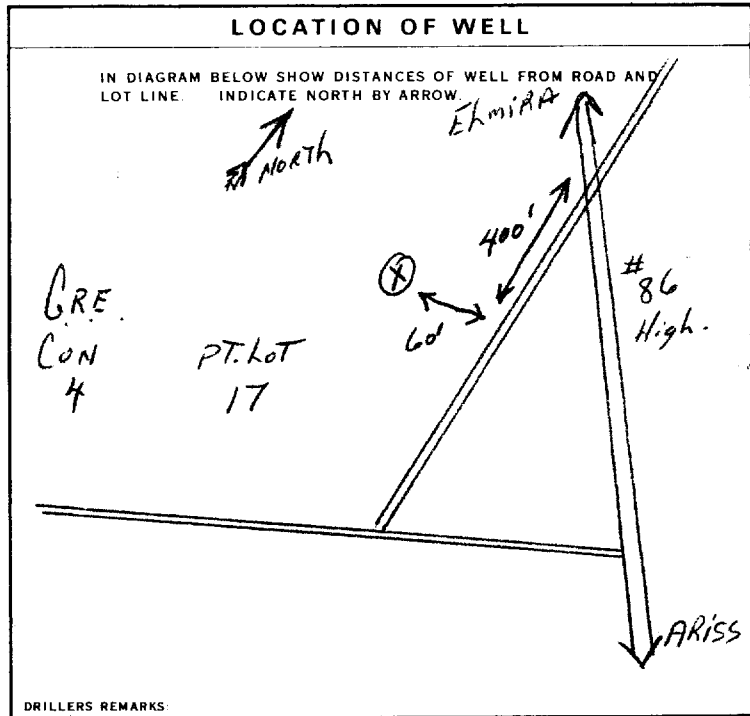
SIZES (S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	INCHES	FEET
		DEPTH TO TOP OF SCREEN
		FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input type="checkbox"/> PUMP 2 <input checked="" type="checkbox"/> BAILER	10 GPM	1 15-16 HOURS 17-18 MINS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
10 FEET	50 FEET	15 MINUTES 10 FEET 30 MINUTES 10 FEET 45 MINUTES 10 FEET 60 MINUTES 10 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: **GRAHAM Well Drilling LTD.** LICENCE NUMBER: **2336**
ADDRESS: **Guelph, ONT**
NAME OF DRILLER OR BORER: **R. GRAHAM** LICENCE NUMBER:
SIGNATURE OF CONTRACTOR: [Signature] SUBMISSION DATE: DAY **030** NO. **011** YR. **86**

OFFICE USE ONLY

DATA SOURCE: 58 CONTRACTOR: 59-62 DATE RECEIVED: **05 12 86** 63-68 80
DATE OF INSPECTION: INSPECTOR:
REMARKS:



WATER WELL RECORD

6709196

MUNICIPALITY: [] CON. BLOCK/TRACT, SURVEY ETC: **CON 4** LOT: **17** BLOCK: **23**

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

11

COUNTY OR DISTRICT: **Wellington Co.** TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: **Pilkington Twp.** CON. BLOCK/TRACT, SURVEY ETC: **CON 4** LOT: **17**

DATE COMPLETED: DAY **16** MO **10** YR **87**

ADDRESS: **RR 2 Orissa Ont.**

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
	CLAY & Limestone	Stones		0	55
				55	96

31 [] 32 []

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
95	<input checked="" type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
	<input type="checkbox"/> FRESH <input type="checkbox"/> SALTY <input type="checkbox"/> SULPHUR <input type="checkbox"/> MINERAL
	<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
4"	<input checked="" type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input type="checkbox"/> OPEN HOLE	188	0	59
4"	<input type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input checked="" type="checkbox"/> OPEN HOLE		59	96
	<input type="checkbox"/> STEEL <input type="checkbox"/> GALVANIZED <input type="checkbox"/> CONCRETE <input type="checkbox"/> OPEN HOLE			

SCREEN

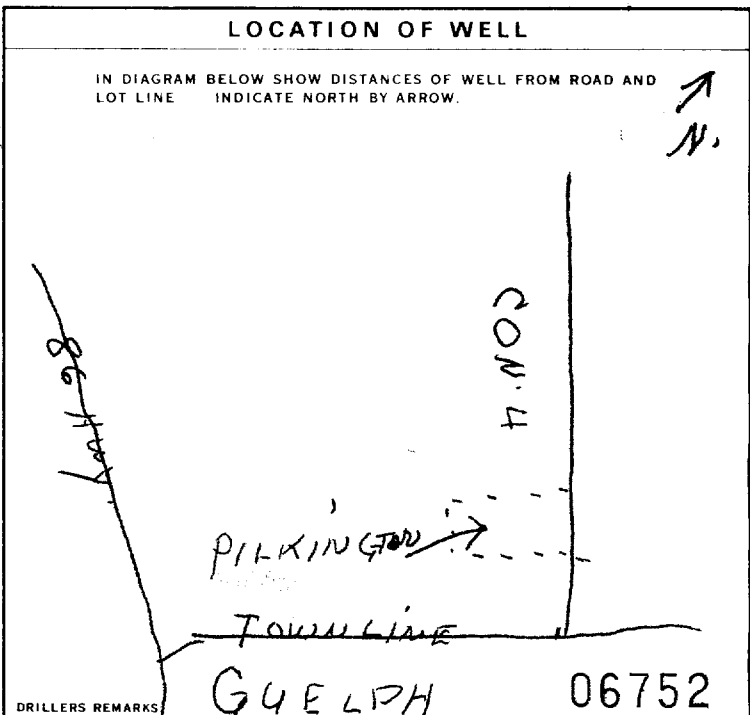
SIZE(S) OF OPENING (SLOT NO.)	DIAMETER INCHES	LENGTH FEET

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
<input checked="" type="checkbox"/> PUMP <input type="checkbox"/> BAILEY	12 GPM	2 HOURS
STATIC LEVEL: 20 FEET	WATER LEVEL END OF PUMPING: 30 FEET	WATER LEVELS DURING:
		15 MINUTES: 30 FEET
		30 MINUTES: 30 FEET
		45 MINUTES: 30 FEET
		60 MINUTES: 30 FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT: 30 FEET	WATER AT END OF TEST: 10 GPM
RECOMMENDED PUMP TYPE: <input checked="" type="checkbox"/> SHALLOW <input checked="" type="checkbox"/> DEEP	RECOMMENDED PUMP SETTING: 30 FEET	RECOMMENDED PUMPING RATE: 10 GPM



FINAL STATUS OF WELL

WATER SUPPLY OBSERVATION WELL TEST HOLE RECHARGE WELL

ABANDONED, INSUFFICIENT SUPPLY ABANDONED, POOR QUALITY UNFINISHED

WATER USE

DOMESTIC STOCK IRRIGATION INDUSTRIAL OTHER

COMMERCIAL MUNICIPAL PUBLIC SUPPLY COOLING OR AIR CONDITIONING NOT USED

METHOD OF DRILLING

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

BORING DIAMOND JETTING DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: **HARVEY HILL** LICENCE NUMBER: **2564**

ADDRESS: **RR1 FLORA ONT.**

NAME OF DRILLER OR BORER: **Donald Hill** LICENCE NUMBER: []

SIGNATURE OF CONTRACTOR: **Harvey Hill** SUBMISSION DATE: DAY **15** MO **4** YR **88**

OFFICE USE ONLY

DATE RECEIVED: **APR 20 1988**

CONTRACTOR LICENCE NUMBER: **2564**

DATE OF INSPECTION: [] INSPECTOR: []

REMARKS: []

CSS.ES

WATER WELL RECORD

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

11

6709905

MUNICIPALITY 67011

CON. G.R.E. 104

COUNTY OR DISTRICT: Wellington TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: Pilkington CON. BLOCK TRACT SURVEY ETC: 4 LOT: 17
RR #1 Ariss Ont. DATE COMPLETED: DAY 18 MO 8 YR 89
 BASIN CODE: I 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	Top Soil			0	1
Gray	clay & Gravel			1	60
	Loose Gravel			60	80
Gray	clay & Granite Bolder			80	95
Light Brown	Rock			95	100
Med. Gray	Rock			100	106
Light Brown	Rock				
6" casing shoe					

31
32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER			
106	1 <input checked="" type="checkbox"/> FRESH	3 <input type="checkbox"/> SULPHUR	4 <input type="checkbox"/> MINERALS	6 <input type="checkbox"/> GAS
	2 <input type="checkbox"/> SALTY	4 <input type="checkbox"/> MINERALS	6 <input type="checkbox"/> GAS	

51 CASING & OPEN HOLE RECORD

INSIDE DIA. 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	0	81
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		81	106

SCREEN

SIZE OF OPENING (SLOT NO.)	DIAMETER	LENGTH

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	

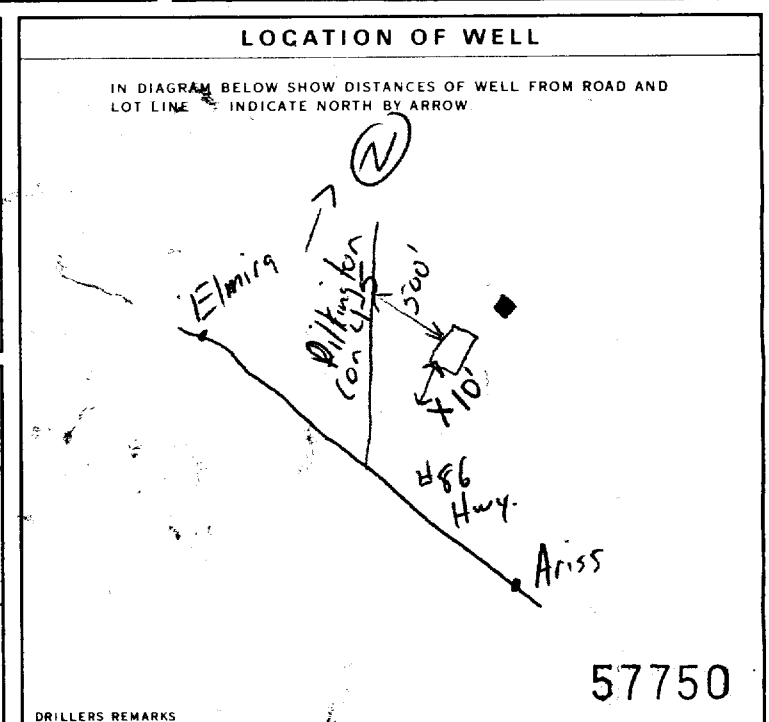
71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 <input checked="" type="checkbox"/> PUMP 2 <input type="checkbox"/> BAILER	9 GPM	1 15-16 HOURS 17-18 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			
47 FEET	47 FEET	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES

IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
	857092	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 checked="" type="checkbox"/> DEEP	857092	9 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	8 <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
9 <input type="checkbox"/> OTHER	9 <input type="checkbox"/> NOT USED

METHOD OF CONSTRUCTION

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	10 <input type="checkbox"/> DIGGING
	11 <input type="checkbox"/> OTHER

CONTRACTOR

NAME OF WELL CONTRACTOR: Henry R. Hanlon Drilling WELL CONTRACTOR'S LICENCE NUMBER: 2063
 ADDRESS: RR #5 Guelph Ont.
 NAME OF WELL TECHNICIAN: Henry R. Hanlon WELL TECHNICIAN'S LICENCE NUMBER: T-0590
 SIGNATURE OF TECHNICIAN/CONTRACTOR: [Signature] SUBMISSION DATE: DAY 21 MO 09 YR 89

OFFICE USE ONLY

DATA SOURCE: 2663 CONTRACTOR: 2663 DATE RECEIVED: AUG 31 1989
 DATE OF INSPECTION: _____ INSPECTOR: _____
 REMARKS: _____

CSS.ES

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

6712028

Municipality 67011 Con. GR E 03

County or District [redacted] Township/Borough/City/Town/Village **PILKINGTON TWP** Con block tract survey, etc. **CON 3 FGR** Lot 25-27 **17**
 Address **RR #2 ARISS ONT NOB 130** Date completed **30 07 96**
 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	SAND, STONES		0	17
GREY	CLAY	ROCKS		17	75
GREY	LIMESTONE			75	96

41 WATER RECORD

Water found at - feet	Kind of water	
80' 90' 96'	<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
6.250	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic	0.188	12'	78'
6.125	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input checked="" type="checkbox"/> Open hole <input type="checkbox"/> Plastic		78'	96'
24-25	<input type="checkbox"/> Steel <input type="checkbox"/> Galvanized <input type="checkbox"/> Concrete <input type="checkbox"/> Open hole <input type="checkbox"/> Plastic			27-50

SCREEN

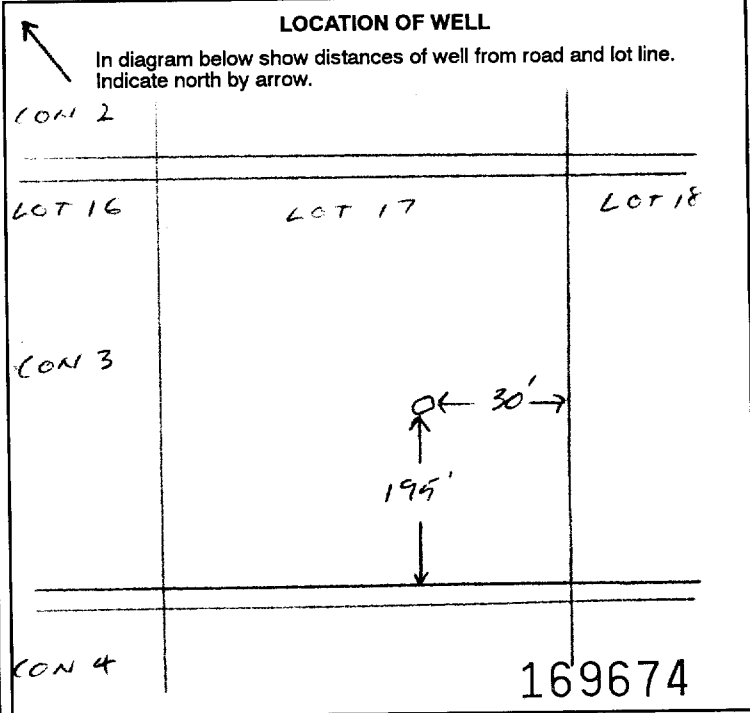
Sizes of opening (Slot No.)	Diameter inches	Length feet
Material and type	Depth at top of screen feet	

61 PLUGGING & SEALING RECORD

Depth set at - feet		Material and type (Cement grout, bentonite, etc.)
From	To	
0	20	HOLEPLUG
18-21	22-25	
26-29	30-33	

71 PUMPING TEST

Pumping test method	Pumping rate	Duration of pumping
<input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailor	10 GPM	0...18 Mins
Static level	Water level end of pumping	Water levels during
7'9"	18'3"	15 minutes: 15'7" 30 minutes: 16'9" 45 minutes: 17'7" 60 minutes: 18'3"
If flowing give rate	Pump intake set at	Water at end of test
GPM	40 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	40 feet	10 GPM



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	

WATER USE

<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	

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: **MEADOWBANK DRILLING SERVICE** Well Contractor's Licence No.: **6865**
 Address: **Box 416 FLORA ONT NOB 150**
 Name of Well Technician: **Jim Broadfoot** Well Technician's Licence No.: **70370**
 Signature of Technician/Contractor: *Jim Broadfoot* Submission date: _____ day _____ mo _____ yr

MINISTRY USE ONLY

Data source: _____ Contractor: **6865** Date received: **AUG 22 1996**
 Date of inspection: _____ Inspector: _____
 Remarks: _____

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

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6712315

Municipality 67005 Con. DIV D 06
10 14 15 22 23 24

County or District WELLINGTON		Township/Borough/City/Town/Village GUELPH TWP		Con block tract survey, etc. DIV D CON V 1		Lot 29	
Owner's surname FRISIA FARMS LTD		First name		Address RR #1 ARISS ONT NOB 1A0		Date completed 31 07 97 day month year	

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
	TOP SOIL			0	2
GREY	CLAY	ROCKS		2	46
GREY	HARDPAN			46	53
GREY	CLAY	GRAVEL		53	73
BROWN	LIMESTONE			73	89
GREY	LIMESTONE			89	108
BROWN	LIMESTONE			108	140

31

32

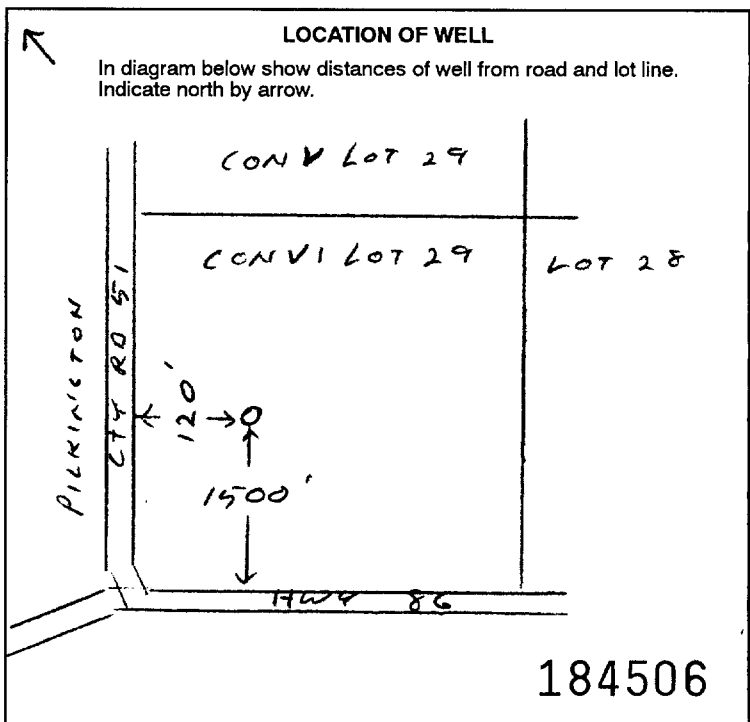
WATER RECORD			
Water found at - feet	Kind of water		
95	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	
110	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	
140	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	
	<input type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	
	<input type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	

CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6 1/4	Steel	0.188	2	78
6 1/8	Galvanized		78	140
	Concrete			
	Open hole			
	Plastic			

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

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		
0	20	BENTONITE	
18-21	22-25		
26-29	30-33		

PUMPING TEST		PUMPING TEST	
71	Pumping test method <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Pumping rate 6 GPM	Duration of pumping 12 Hours 0 Mins
	Static level 21' 5"	Water level end of pumping 76' 6"	Water levels during
			15 minutes: 55' 7"
			30 minutes: 68' 4"
			45 minutes: 74' 0"
			60 minutes: 76' 6"
	If flowing give rate GPM	Pump intake set at 100 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 100 feet	Recommended pump rate 6 GPM



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		

WATER USE			
<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		

METHOD OF CONSTRUCTION			
<input checked="" 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 MEADOWBANK DRILLING SERVICES	Well Contractor's Licence No. 6865
Address Box 416 EORA CRT NOB 1A0	
Name of Well Technician Jim Broadfoot	Well Technician's Licence No. 10370
Signature of Technician/Contractor <i>Jim Broadfoot</i>	Submission date 26 08 97 day mo yr

MINISTRY USE ONLY	Data source 6865	Contractor 6865	Date received AUG 14 1997
	Date of inspection	Inspector	
	Remarks <i>[Signature]</i>		

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Mark correct box with a checkmark, where applicable.

6712486

Municipality 67011 Con. 04

County of District [redacted] Township/Borough/City/Town/Village **PILKINGTON** Con block tract survey, etc. Lot **4 17**
Address **R.R. #1 ARISS ONT.** Date completed **06 03 98**

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
	TOP SOIL			0	2
BROWN	CLAY	STONES		2	20
BROWN	CLAY	SAND, GRAVEL		20	70
LIGHT BROWN	LIMESTONE		SOFT, BROKEN	70	78
MED BROWN	LIMESTONE			78	85
GREY	LIMESTONE			85	95
GREY BROWN	LIMESTONE			95	115
MED. BROWN	LIMESTONE			115	121
TOTAL = 121 FT					
6" CASING DRIVE SHOE					

31 32

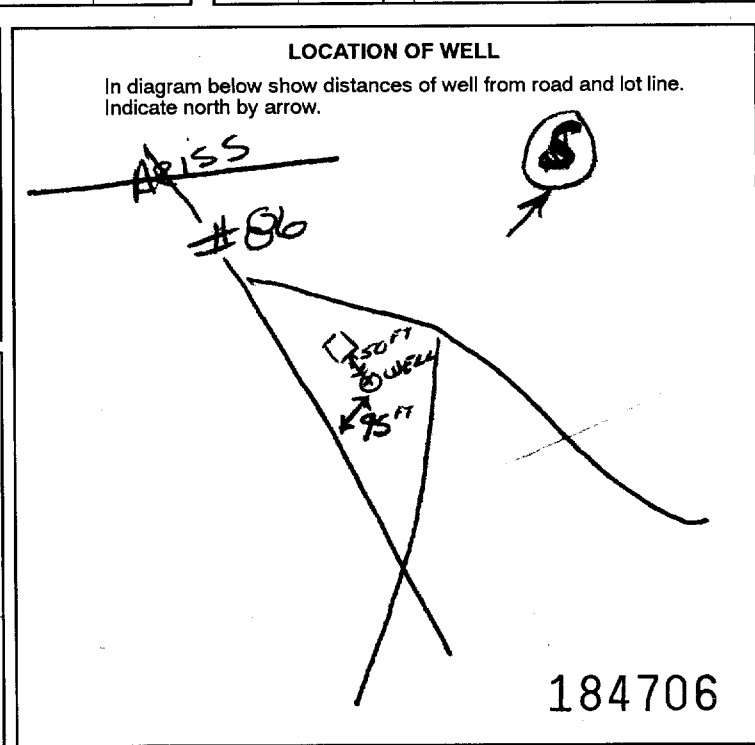
WATER RECORD				CASING & OPEN HOLE RECORD				SCREEN		
Water found at - feet	Kind of water	inside diam inches	Material	Wall thickness inches	Depth - feet		Material and type	Depth at top of screen	feet	feet
85	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 14 2 <input type="checkbox"/> Salty 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas	6"	1 <input checked="" type="checkbox"/> Steel 12 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic	.108 + 3	78					
115	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 19 2 <input type="checkbox"/> Salty 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas	6"	1 <input type="checkbox"/> Steel 19 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		78	121				
121	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 24 2 <input type="checkbox"/> Salty 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas									

71 Pumping test method Pump 2 Bailer Pumping rate **15** GPM Duration of pumping **15** Mins

Static level Water level end of pumping Water levels during Pumping Recovery

30 feet 80 feet 40 feet 60 feet 80 feet 80 feet

Recommended pump type Shallow Deep Recommended pump setting **100** feet Recommended pump rate **15** GPM



FINAL STATUS OF WELL

1 Water supply 5 Abandoned, insufficient supply 9 Unfinished
2 Observation well 6 Abandoned, poor quality 10 Replacement well
3 Test hole 7 Abandoned (Other)
4 Recharge well 8 Dewatering

WATER USE

1 Domestic 5 Commercial 9 Not used
2 Stock 6 Municipal 10 Other
3 Irrigation 7 Public supply
4 Industrial 8 Cooling & air conditioning

METHOD OF CONSTRUCTION

1 Cable tool 5 Air percussion 9 Driving
2 Rotary (conventional) 6 Boring 10 Digging
3 Rotary (reverse) 7 Diamond
4 Rotary (air) 8 Jetting

Name of Well Contractor **HANLON Well Drilling LTD** Well Contractor's Licence No. **2663** Data source **2663** Contractor **2663** Date received **MAR 25 1998**

Address **R.R. #5 GUELPH ONT** Date of inspection Inspector

Name of Well Technician **HENRY R HANLON** Well Technician's Licence No. **T-0090** Submission date **03 04 98**

Signature of Technician/Contractor **[Signature]** day mo yr

MINISTRY USE ONLY

Remarks **[Signature]**

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

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6712529

Municipality 67011 Con. GR E 04

County or District [Redacted] Township/Borough/City/Town/Village PINKINGTON Cont. block tract survey, etc. 04 Lot 17
Address RR #1 NEISS ONT. Date completed 14/05/98
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
	Top Soil			0	2
Brown	Clay	Sand + Gravel		2	81
Med	Brown	Limestone		81	100
Med Green	Limestone			100	120
Med Brown	Limestone			120	140
TOTAL = 140					
6" CASING DRILL SHOCE					

41 WATER RECORD

Water found at - feet	Kind of water			
100	1 <input checked="" type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	14 <input type="checkbox"/> Minerals	14 <input type="checkbox"/> Gas
120	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Sulphur	19 <input type="checkbox"/> Minerals	19 <input type="checkbox"/> Gas
140	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	24 <input type="checkbox"/> Minerals	24 <input type="checkbox"/> Gas
	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Sulphur	29 <input type="checkbox"/> Minerals	29 <input type="checkbox"/> Gas
	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	34 <input type="checkbox"/> Minerals	34 <input type="checkbox"/> Gas
	2 <input type="checkbox"/> Salty	4 <input type="checkbox"/> Sulphur	39 <input type="checkbox"/> Minerals	39 <input type="checkbox"/> Gas

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6"	1 <input checked="" type="checkbox"/> Steel	.108 + 2	84	13-16
	2 <input type="checkbox"/> Galvanized			
	3 <input type="checkbox"/> Concrete			
	4 <input type="checkbox"/> Open hole			
	5 <input type="checkbox"/> Plastic			
6"	1 <input type="checkbox"/> Steel		84	140
	2 <input type="checkbox"/> Galvanized			
	3 <input type="checkbox"/> Concrete			
	4 <input type="checkbox"/> Open hole			
	5 <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	
0	20	SEAL
18-21	22-25	
26-29	30-33	

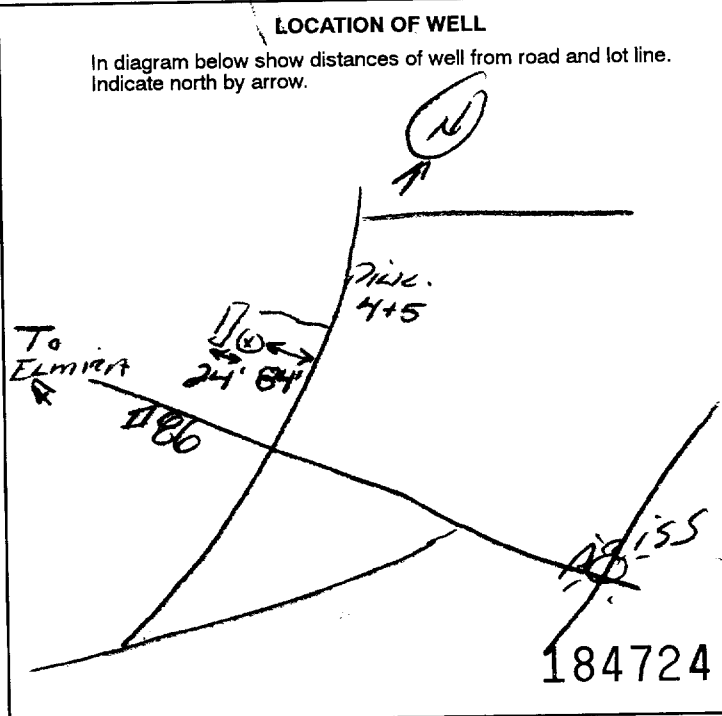
71 PUMPING TEST

Pumping test method Pump Bailor Pumping rate 10 GPM Duration of pumping 17-18 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
80 feet	120 feet	90 feet	100 feet	110 feet	120 feet

If flowing give rate 38-41 GPM Pump intake set at feet Water at end of test Clear Cloudy

Recommended pump type Shallow Deep Recommended pump setting 130 feet Recommended pump rate 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 used
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 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 checked="" type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor L.H. HANCOCK WELL DRILLING 2663 Well Contractor's Licence No. 2663
Address RR #5 QUELON ONT. N1H 6J2
Name of Well Technician DENNY R. HANCOCK Well Technician's Licence No. T-0540
Signature of Technician/Contractor [Signature] Submission date 01 05 98
day mo yr

MINISTRY USE ONLY

Data source 2663 Contractor 2663 Date received MAY 22 1998
Date of inspection _____ Inspector _____
Remarks _____

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

6712873

Municipality 67005 Con DIM D 08
10 14 15 22 23 24

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County or District: WELLINGTON
Township/Borough/City/Town/Village: GUELPH
Con block tract survey, etc.: VI Lot: 29
Address: [REDACTED]
Date completed: 26 10 98
day month year

21
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
BR.	CLAY	STONES		0	22
GR	CLAY	STONES		22	28
	SAND	GRAVEL		28	32
GR.	CLAY	STONES		32	68
	ROCK LEDGES			68	72
BR & GR	LIMESTONE			72	100

31
32
10 14 15 21 32 43 54 65 75 80

41 WATER RECORD

Water found at - feet	Kind of water					
78-82	1 <input checked="" type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	14 <input type="checkbox"/> Minerals	4 <input type="checkbox"/> Gas	5 <input type="checkbox"/>	6 <input type="checkbox"/>
90 to 100	1 <input checked="" type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	19 <input type="checkbox"/> Minerals	4 <input type="checkbox"/> Gas	5 <input type="checkbox"/>	6 <input type="checkbox"/>
20-23	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	24 <input type="checkbox"/> Minerals	4 <input type="checkbox"/> Gas	5 <input type="checkbox"/>	6 <input type="checkbox"/>
25-28	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	29 <input type="checkbox"/> Minerals	4 <input type="checkbox"/> Gas	5 <input type="checkbox"/>	6 <input type="checkbox"/>
30-33	1 <input type="checkbox"/> Fresh	3 <input type="checkbox"/> Sulphur	34 <input type="checkbox"/> Minerals	4 <input type="checkbox"/> Gas	5 <input type="checkbox"/>	6 <input type="checkbox"/>

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6"	1 <input checked="" type="checkbox"/> Steel	188	0	75
6"	1 <input type="checkbox"/> Steel		75	100

SCREEN

Sizes of opening (Slot No.)	Diameter inches	Length feet

Material and type: _____
Depth at top of screen: _____ feet

61 PLUGGING & SEALING RECORD

Annular space Abandonment

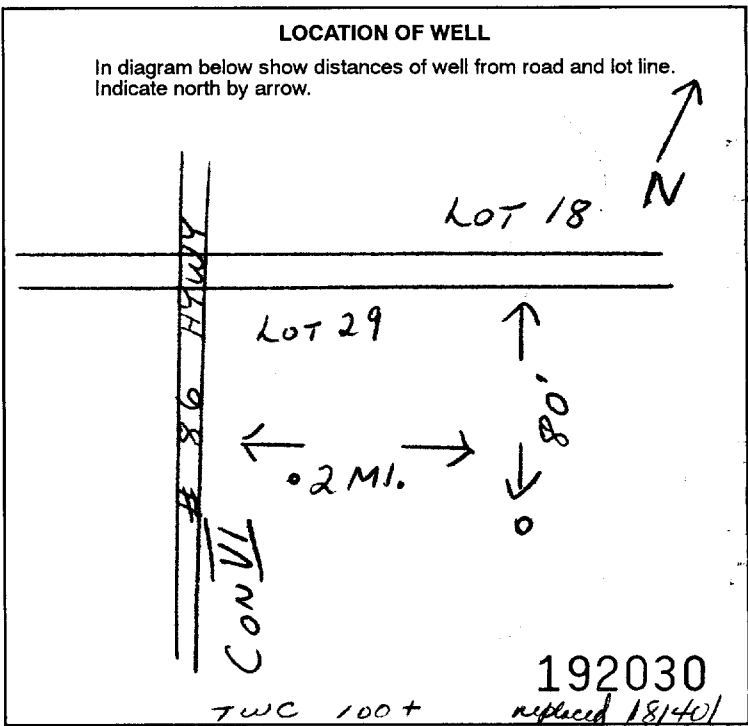
Depth set at - feet	Material and type (Cement grout, bentonite, etc.)
10-13	14-17
18-21	22-25
26-29	30-33

71 PUMPING TEST

Pumping test method	Pumping rate	Duration of pumping
1 <input type="checkbox"/> Pump 2 <input checked="" type="checkbox"/> Bailor	15 GPM	30 Mins

Static level	Water level end of pumping	Water levels during Pumping			
30 feet	40 feet	15 minutes: 40 feet	30 minutes: 40 feet	45 minutes: 40 feet	60 minutes: 40 feet

If flowing give rate: _____ GPM
Pump intake set at: _____ feet
Water at end of test: Clear Cloudy
Recommended pump type: Shallow Deep
Recommended pump setting: 60 feet
Recommended pump rate: 15 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 Abandoned (Other)
8 Dewatering
9 Unfinished
10 Replacement well

WATER USE

1 Domestic
2 Stock
3 Irrigation
4 Industrial
5 Commercial
6 Municipal
7 Public supply
8 Cooling & air conditioning
9 Not used
10 Other

METHOD OF CONSTRUCTION

1 Cable tool
2 Rotary (conventional)
3 Rotary (reverse)
4 Rotary (air)
5 Air percussion
6 Boring
7 Diamond
8 Jetting
9 Driving
10 Digging
11 Other

Name of Well Contractor: LANG WELL DRILLING LTD
Well Contractor's Licence No.: 3317
Address: RRI HILLSBURGH ONT.
Name of Well Technician: ROY LANG
Well Technician's Licence No.: T-0158
Signature of Technician/Contractor: [Signature]
Submission date: 26 12 98
day mo yr

MINISTRY USE ONLY

Data source: 3317
Date received: JAN 07 1999
Date of inspection: _____
Inspector: _____
Remarks: _____
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Mark correct box with a checkmark, where applicable.

6712876

Municipality 67011 Con. _____

County or District <u>WELLINGTON</u>	Township/Borough/City/Town/Village <u>PILKINGTON</u>	Con block tract survey, etc. <u>IV</u>	Lot <u>18</u>
Address <u># 5742 CTY RD. # 39</u> <u>RRTD, HEISS ONT. N0B1B0</u>		Date completed <u>13</u> <u>11</u> <u>98</u> day month year	
Northing		RC	Elevation
RC		Basin Code	ii iii iv

General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
BR.	CLAY, SAND,	GRAVEL LAYERS		0	16
GR.	CLAY	STONES		16	52
LT. BR.	LIMESTONE			52	68
GR.	LIMESTONE			68	95
BR.	LIMESTONE			95	285
GR.	LIMESTONE			285	309

31 _____

32 _____

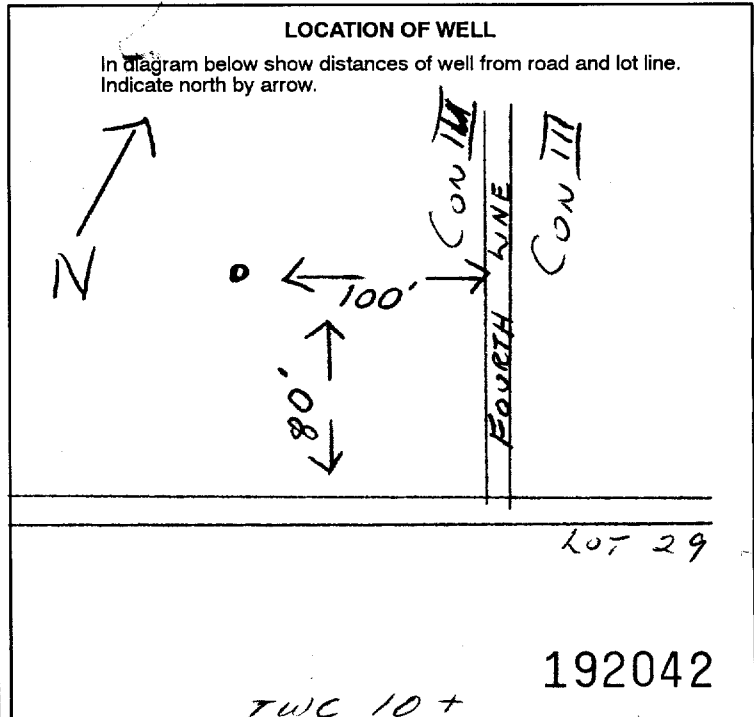
Water found at - feet	Kind of water
300-305	1 <input checked="" type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 14 2 <input type="checkbox"/> Salty 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas
15-18	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 19 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 24 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 29 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 34 2 <input type="checkbox"/> Salty 4 <input type="checkbox"/> Minerals 6 <input type="checkbox"/> Gas

Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6"4	1 <input checked="" type="checkbox"/> Steel 12 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic	188	0	56'2"
6"8	1 <input type="checkbox"/> Steel 19 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input checked="" type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic		56'2"	309
24-25	1 <input type="checkbox"/> Steel 26 2 <input type="checkbox"/> Galvanized 3 <input type="checkbox"/> Concrete 4 <input type="checkbox"/> Open hole 5 <input type="checkbox"/> Plastic			27-30

Sizes of opening (Slot No.)	Diameter 31-33 inches	Length 34-38 feet
Material and type	Depth at top of screen 39-40 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 80

Pumping test method <u>AIR</u>	Pumping rate <u>7</u> GPM	Duration of pumping <u>30</u> Mins
Static level <u>20</u> feet	Water level end of pumping <u>147</u> feet	Water levels during <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Recovery
15 minutes <u>147</u> feet	30 minutes <u>147</u> feet	45 minutes <u>147</u> feet
60 minutes <u>147</u> feet		
If flowing give rate _____ GPM	Pump intake set at _____ feet	Water at end of test <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy
Recommended pump type <input checked="" type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Recommended pump setting <u>175</u> feet	Recommended pump rate <u>7</u> 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"/> Abandoned (Other)
4 <input type="checkbox"/> Recharge well	8 <input type="checkbox"/> Dewatering
9 <input type="checkbox"/> Unfinished	10 <input type="checkbox"/> Replacement 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 & air conditioning
9 <input type="checkbox"/> Not used	10 <input type="checkbox"/> Other
METHOD OF CONSTRUCTION	
1 <input type="checkbox"/> Cable tool	5 <input type="checkbox"/> Air percussion
2 <input checked="" type="checkbox"/> Rotary (conventional)	6 <input type="checkbox"/> Boring
3 <input type="checkbox"/> Rotary (reverse)	7 <input type="checkbox"/> Diamond
4 <input type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting
9 <input type="checkbox"/> Driving	10 <input type="checkbox"/> Digging
11 <input type="checkbox"/> Other	

Name of Well Contractor <u>LANG WELL DRILLING LTD.</u>	Well Contractor's Licence No. <u>3317</u>
Address <u>RRI HULLSBURGH ONT.</u>	
Name of Well Technician <u>ROY LANG</u>	Well Technician's Licence No. <u>T-0158</u>
Signature of Technician/Contractor <u>[Signature]</u>	Submission date <u>26</u> <u>12</u> <u>98</u> day mo yr

MINISTRY USE ONLY	Data source	Contractor <u>3317</u>	Date received <u>JAN 07 1999</u>
	Date of inspection	Inspector	
	Remarks		
	CSS.ES9		

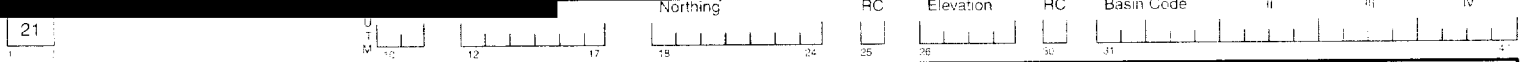
Print only in spaces provided.
Mark correct box with a checkmark, where applicable.

11

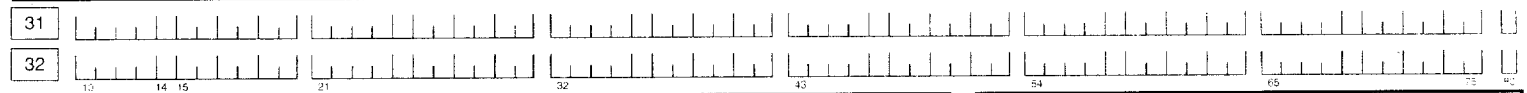
6713334

Municipality **67011** Con. **GR E 05**

County or District Highland	Township/Borough/City/Town/Village PILKINGTON TWP	Con block tract survey, etc. LOW 5 SGR	Lot 17
Address R. #1, AARIS		Date completed 26 day 04 month 00 year	



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
Grey	CLAY	GRAVEL		17	80
Grey	LIMESTONE			80	101
White	LIMESTONE			101	123
Brown	LIMESTONE	Grey LIMESTONE LAYERS		123	298



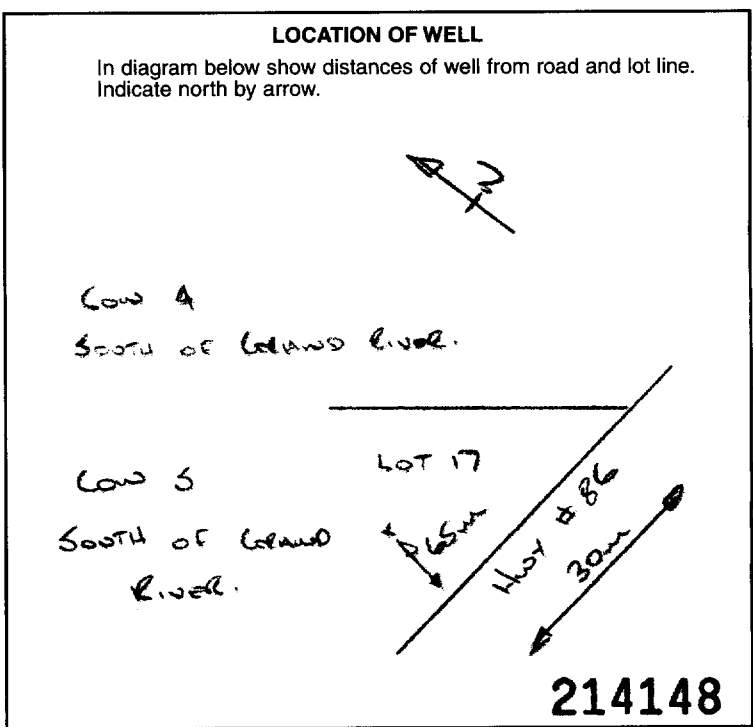
41 WATER RECORD	
Water found at - feet	Kind of water
13-13	1 <input checked="" type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 14
170	2 <input type="checkbox"/> Salty 4 <input type="checkbox"/> Minerals
15-18	1 <input checked="" type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 19
288	2 <input type="checkbox"/> Salty 4 <input type="checkbox"/> Minerals
20-23	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 24
	2 <input type="checkbox"/> Salty 4 <input type="checkbox"/> Minerals
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	1 <input type="checkbox"/> Fresh 3 <input type="checkbox"/> Sulphur 34
	2 <input type="checkbox"/> Salty 4 <input type="checkbox"/> Minerals

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
10-11	1 <input checked="" type="checkbox"/> Steel 12	188	+1	83
17-16	2 <input type="checkbox"/> Galvanized			
	3 <input type="checkbox"/> Concrete			
	4 <input type="checkbox"/> Open hole			
	5 <input type="checkbox"/> Plastic			
24-25	1 <input type="checkbox"/> Steel 19	83	298	
	2 <input type="checkbox"/> Galvanized			
	3 <input type="checkbox"/> Concrete			
	4 <input type="checkbox"/> Open hole			
	5 <input type="checkbox"/> Plastic			

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

61 PLUGGING & SEALING RECORD			
Annular space		Abandonment	
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
0	39	BENSAL	
18-21	22-25		
26-29	30-33		

71 PUMPING TEST	
Pumping test method <input type="checkbox"/> Pump <input type="checkbox"/> Bailer	Pumping rate 12 GPM
Duration of pumping 30 Hours 30 Mins	
Static level 12 feet	Water level end of pumping 26 feet
Water levels during 15 minutes 21 feet	30 minutes 21 feet
45 minutes 26 feet	60 minutes 21 feet
If flowing give rate 85 GPM	Pump intake set at 85 feet
Recommended pump type <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	Recommended pump setting 85 feet
Water at end of test <input checked="" type="checkbox"/> Clear <input type="checkbox"/> Cloudy	Recommended pump rate 12 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 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 checked="" type="checkbox"/> Rotary (air)	8 <input type="checkbox"/> Jetting	

Name of Well Contractor HIGHLAND WATER WELLS	Well Contractor's Licence No. 2576
Address Box 141, Durham, Ont. N0G 1R0	
Name of Well Technician NIGEL PARPLETON	Well Technician's Licence No. T230
Signature of Technician/Contractor <i>Nigel Parpleton</i>	Submission date day 5 mo 5 yr 00

MINISTRY USE ONLY	Data source 2576	Contractor 2576	Date received MAY 15 2000
	Date of inspection	Inspector	
	Remarks		
CSS.ES0			

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

11

6713945

Municipality 67011 Con. GR E

County or District WELLINGTON Township/Borough/City/Town/Village QUELPA / EUMOSA Plan. 689 Lot 7
Address 2 PINKINGTON Date completed 07 12 01
day month 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	TOP SOIL			0	2
Brown	CLAY	STONES/COBBL		2	58
White	LIMESTONE			58	102
TOTAL = 102'					
6 1/4" CASING DRIVE SHOE					

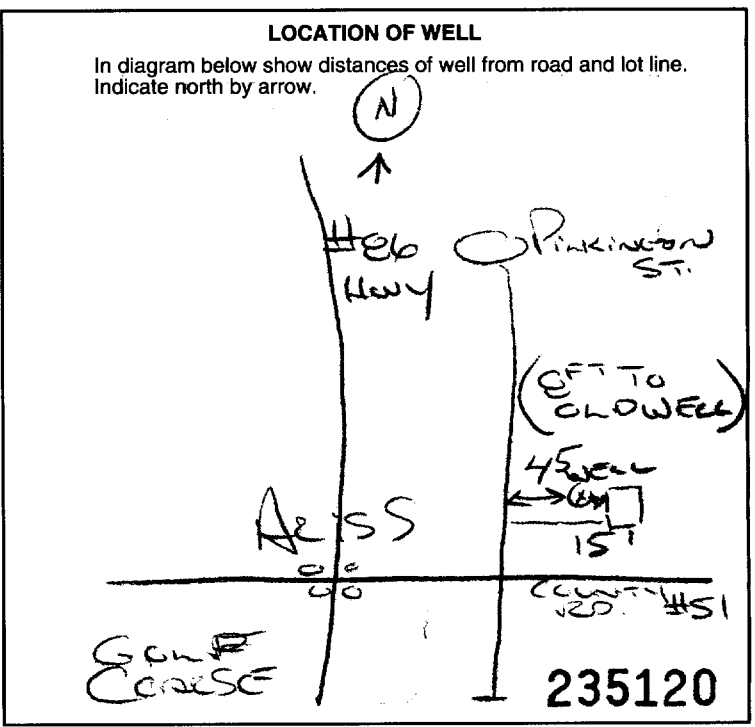
31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60

41 WATER RECORD			
Water found at - feet	Kind of water		
90	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	
102	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	
UNSATURATED	<input type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	
	<input type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	
	<input type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6 1/4	<input checked="" type="checkbox"/> Steel	1.00	1	58
	<input type="checkbox"/> Galvanized			
	<input type="checkbox"/> Concrete			
	<input type="checkbox"/> Open hole			
	<input type="checkbox"/> Plastic			
5 1/2	<input checked="" type="checkbox"/> Steel	1.00	55	75
	<input type="checkbox"/> Galvanized			
	<input type="checkbox"/> Concrete			
	<input type="checkbox"/> Open hole			
	<input type="checkbox"/> Plastic			
5 1/2	<input type="checkbox"/> Steel		75	102
	<input type="checkbox"/> Galvanized			
	<input type="checkbox"/> Concrete			
	<input type="checkbox"/> Open hole			
	<input type="checkbox"/> Plastic			

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

71 PUMPING TEST			
Pumping test method <input checked="" type="checkbox"/> Pump <input type="checkbox"/> Bailer	Pumping rate 20 GPM	Duration of pumping 1 Hours 17-18 Mins	
Static level 17 feet	Water level end of pumping 18 feet	Water levels during <input checked="" type="checkbox"/> Pumping <input type="checkbox"/> Recovery	
15 minutes 18 feet	30 minutes 18 feet	45 minutes 18 feet	60 minutes 18 feet
If flowing give rate GPM	Pump intake set at 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 50 feet	Recommended pump rate 20 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 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 <u>Harvey Wren Drilling LTD</u>	Well Contractor's Licence No. <u>2063</u>
Address <u>22 #5 QUELPA NW 632</u>	
Name of Well Technician <u>JOHN WHITNEY</u>	Well Technician's Licence No. <u>7-2790</u>
Signature of Technician/Contractor <u>[Signature]</u>	Submission date <u>07/12/01</u> day mo yr

MINISTRY USE ONLY	
Data source <u>2663</u>	Date received <u>DEC 27 2001</u>
Date of inspection	Inspector
Remarks	

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

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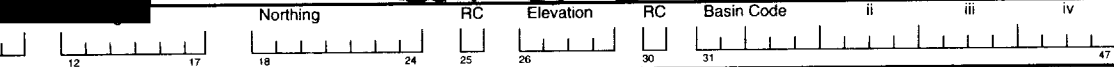
6714027

Municipality 67005

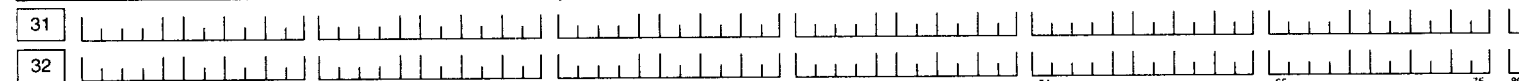
Con. DIV. D

10 14 15 22 23 24 25-27

County or District: [redacted] Township/Borough/City/Town/Village: GUELPH / ERAMOSA
 Con block tract survey, etc.: 6 Div - D Lot: 29
 Address: 54 Monarch Guelph Date completed: 16 02 02
 day month year



General colour	Most common material	Other materials	General description	Depth - feet	
				From	To
BROWN	CLAY	STONES		0	20
GREY	CLAY	SAND + STONES		20	64
BEIGE	LIMESTONE		SOFT + BROKEN	64	67
BROWN + GREY	LIMESTONE			67	102
TOTAL = 102 FT					
6 1/4" CASING DRIVE SHOE					



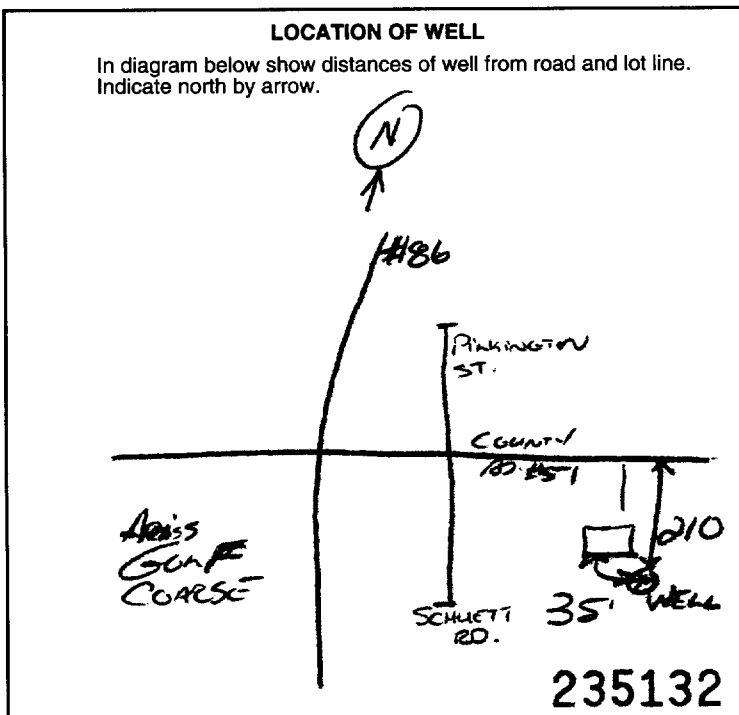
41 WATER RECORD			
Water found at - feet	Kind of water		
80	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	
102	<input checked="" type="checkbox"/> Fresh	<input type="checkbox"/> Sulphur	<input type="checkbox"/> Minerals
	<input type="checkbox"/> Salty	<input type="checkbox"/> Gas	

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
6 1/4	Steel	.188	2	67
6 1/4	Open hole		67	102

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

61 PLUGGING & SEALING RECORD		
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)
From	To	
0	20	BENSEAL

71 PUMPING TEST	Pumping test method		Pumping rate	Duration of pumping		
	<input checked="" type="checkbox"/> Pump	<input type="checkbox"/> Bailer	25 GPM	1	Hours	Mins
	Static level	Water level end of pumping	Water levels during			
	07 feet	07 feet	15 minutes	30 minutes	45 minutes	60 minutes



FINAL STATUS OF WELL: Water supply

WATER USE: Domestic

METHOD OF CONSTRUCTION: Rotary (air)

Name of Well Contractor: HANCOCK WELL DRILLING LTD
 Well Contractor's Licence No.: 2663
 Address: 2215 GUELPH N1H 6J2
 Name of Well Technician: JOHN WHITNEY
 Well Technician's Licence No.: T-2790
 Signature of Technician/Contractor: [Signature]
 Submission date: 01 02 02

MINISTRY USE ONLY

Data source: 2663
 Date received: APR 19 2002
 Date of inspection: _____
 Inspector: _____
 Remarks: _____



Well T.	A 005645	(number below)
	A 005645	

Instructions for Completing Form

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

Well Owner's Information and Location of Well Information

Ministry Use Only										
MUN	63	005	CON	DIV	D			06	LOT	79

RR#/Street Number/Name: **WELLINGTON 7225 WELLINGTON RO 51**

City/Town/Village: **GUELPH TWP**

Site/Compartment/Block/Tract etc.: **29 6 Div D**

GPS Reading: NAD **8.3** Zone **17** Easting **551330** Northing **4825201**

Unit Make/Model: **GARMIN ETREX** 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	GRAVEL			0	1.8
	CLAY	SAND		1.8	5.5
	GRAVEL			5.5	8.8
GREY	CLAY	GRAVEL		8.8	20.1
BROWN	LIMESTONE			20.1	22.6
	GRAVEL			22.6	23.2
GREY	LIMESTONE			23.2	42.6

FINAL DEPTH 76'

Hole Diameter		
Depth From	Metres To	Diameter Centimetres
0	23.6	23
23.6	42.6	15.6

Construction Record				
Inside diam centimetres	Material	Wall thickness centimetres	Depth Metres	
			From	To
Casing				
	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass	.48	+ .7	22.1
	<input type="checkbox"/> Plastic <input type="checkbox"/> Concrete			
	<input type="checkbox"/> Galvanized			
Screen				
Outside diam	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass	Slot No.	22.2	23.1
14	<input type="checkbox"/> Plastic <input type="checkbox"/> Concrete	MAASS		
	<input type="checkbox"/> Galvanized	SANDBLOCKER		
No Casing or Screen				
<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
PUMP				
Pump intake set at - (metres)	21	Static Level 7.25		
Pumping rate - (litres/min)	36	1 7.75	1	8.10
Duration of pumping	1 hrs + 0 min	2 7.82	2	7.86
Final water level end of pumping	8.9 metres	3 7.87	3	7.80
Recommended pump type	<input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	4 7.92	4	7.77
Recommended pump depth	21 metres	5 7.96	5	7.74
Recommended pump rate	36 (litres/min)	10 8.07	10	7.67
If flowing give rate - (litres/min)		15 8.15	15	7.64
		20 8.21	20	7.62
		25 8.26	25	7.60
		30 8.31	30	7.59
		40 8.40	40	7.59
		50 8.51	50	7.59
		60 8.90	60	7.58

Plugging and Sealing Record			<input checked="" type="checkbox"/> Annular space	<input type="checkbox"/> Abandonment
Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)	
0	7	BENTONITE SLURRY	.2	

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 05764** Date Well Completed **2004 07**

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

Well Contractor/Technician Information

Name of Well Contractor: **MEADOWBANK DRILLING SERVS.** Well Contractor's Licence No.: **6865**

Business Address (street name, number, city etc.): **RR 1 FLORA ON N0B 1S0**

Name of Well Technician (last name, first name): **HUGH BROADFOOT** Well Technician's Licence No.: **T1897**

Signature of Technician/Contractor: *[Signature]* Date Submitted

Ministry Use Only

Data Source: Contractor **6865**

Date Received: **SEP 15 2004** Date of Inspection

Remarks: Well Record Number **6715079**

75-04
Instructions for Completing Form

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

Well Owner's Information and Location of Well Information

Ministry Use Only
 MUN **67011** CON **GR E** **04** LOT **1**

RR#/Street Number/Name **WELLINGTON 5276 6TH LINE RR#1 ARISS** City/Town/Village **WELLINGTON ARISS** Site/Compartment/Block/Tract etc. **77 021**
 GPS Reading NAD Zone Easting Northing Unit Make/Model Mode of Operation: Undifferentiated Averaged
8.3 17 551017 4825809 GARMIN Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Depth To
BROWN	CLAY	STONES		0	18
GREY	CLAY	STONES		18	65
GREY	CLAY	GRAVEL		65	82
GREY	ROCK			82	100
TOTAL DEPTH 100'					

Hole Diameter

Depth From	Depth To	Diameter
0	20	8 3/4"
20	100	6"

Construction Record

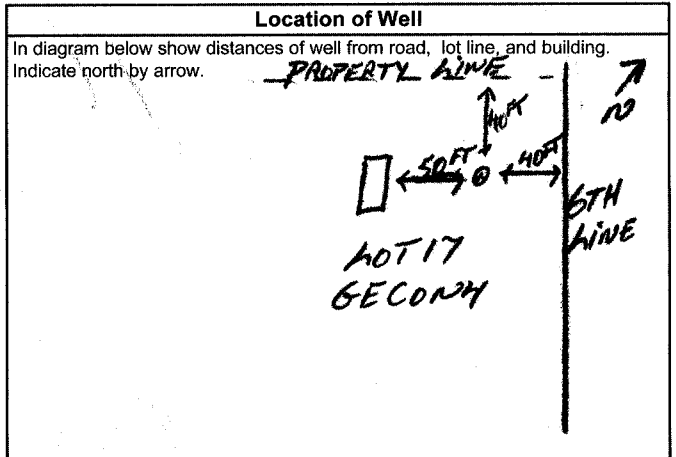
Inside diam	Material	Wall thickness	Depth From	Depth To
6"	<input checked="" type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	.188	+2	83
Screen				
Outside diam	<input type="checkbox"/> Steel <input type="checkbox"/> Fibreglass <input type="checkbox"/> Plastic <input type="checkbox"/> Concrete <input type="checkbox"/> Galvanized	Slot No.		
No Casing or Screen				
<input checked="" type="checkbox"/> Open hole 83 FT 100 FT				

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) 20 FT	Static Level	25 FT		49 FT
Pumping rate - (litres/min) 106 GPM	1	30	1	45
Duration of pumping 3 hrs + 0 min	2	34	2	43
Final water level end of pumping 49 metres	3	36	3	41
Recommended pump type. <input type="checkbox"/> Shallow <input checked="" type="checkbox"/> Deep	4	38	4	39
Recommended pump depth. 70 metres	5	39	5	38
Recommended pump rate. 106 GPM (litres/min)	10	43	10	33
If flowing give rate - (litres/min)	15	47	15	29
	20	49	20	26
	25	49	25	25
If pumping discontinued, give reason.	30	49	30	25
	40	49	40	25
	50	49	50	25
	60	49	60	25

Plugging and Sealing Record Annular space Abandonment

Depth set at - Metres From	Depth set at - Metres To	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)
0	20 FT	BENTONITE SLURRY	



Method of Construction

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

Water Use

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

Final Status of Well

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

Well Contractor/Technician Information

Name of Well Contractor **GRAHAM WELL DRILLING LTD** Well Contractor's Licence No. **2336**
 Business Address (street name, number, city etc.) **RR#5 ROCKWOOD, ONT N0B-2K0**
 Name of Well Technician (last name, first name) **WILSON Jim** Well Technician's Licence No. **T-1924**
 Signature of Technician/Contractor **Clim Wilson** Date Submitted **04 11 30**

Audit No. **Z 10359** Date Well Completed **04 11 01**
 Was the well owner's information package delivered? Yes No Date Delivered **09 11 01**

Ministry Use Only

Data Source Contractor **2336**
 Date Received **DEC 07 2004** Date of Inspection **04 11 01**
 Remarks Well Record Number **6715174**

Instructions for Completing Form

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- **All metre measurements shall be reported to 1/10th of a metre.**
- Please print clearly in blue or black ink only.

Well Owner's Information and Location of Well										Ministry Use Only									
Address of Well Location (County/District/Municipality) Wellington										MUN / DISTRICT / CON / LOT / CONCESSION									
RR#/Street Number/Name RR#1 E Line 4x Con RR#1										City/Town/Village Georgetown / Erma									
GPS Reading NAD Zone Easting Northing 8 3 17 550270 4824241										Site/Compartment/Block/Tract etc. 17 8									
Unit Make/Model DRFS										Mode of Operation: <input type="checkbox"/> Undifferentiated <input checked="" 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	From	To
Brown	Clay	STONES		0	25	0	7.62
Brown	Clay	SAND/GRAVEL		25	75	7.62	22.86
Light Brown	Limestone		BROKEN	75	77	22.86	23.47
Med. Brown	Limestone			77	85	23.47	25.91
Med Grey	Limestone			85	162	25.91	49.38
				TOTAL = 162 / 49.38			

6 1/4 / 40.32 CASING DRIVE SHAFT

Hole Diameter			Construction Record				Test of Well Yield			
Depth From	Metres To	Diameter Centimetres	Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Metres To	Pumping test method	Draw Down	Recovery
0	6.09	25.4						Submersible Pump	Time min	Water Level Metres
6.09	49.38	15.87	15.87	Steel	0.48	0.61	23.47	Pump intake set at - (metres) 120	1	28
			Casing							
			Galvanized							
			0.188							
			+2							
			77							
			Screen							
			No casing or screen							
			Open hole							
			23.47							
			77							
			49.38							
			162							

Plugging and Sealing Record			Location of Well		
Depth set at - Metres From	To	Material and type (bentonite slurry, neat cement slurry) etc.	In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.		
0	6.09	Quick Cure			
Method of Construction			Audit No. Z 17932		
<input type="checkbox"/> Cable Tool	<input checked="" type="checkbox"/> Rotary (air)	<input type="checkbox"/> Diamond	Date Well Completed 2004/09/15		
<input type="checkbox"/> Rotary (conventional)	<input type="checkbox"/> Air percussion	<input type="checkbox"/> Jetting	Was the well owner's information package delivered? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		
<input type="checkbox"/> Rotary (reverse)	<input type="checkbox"/> Boring	<input type="checkbox"/> Driving	Date Delivered 2007/09/15		
Water Use			Ministry Use Only		
<input checked="" type="checkbox"/> Domestic	<input type="checkbox"/> Industrial	<input type="checkbox"/> Public Supply	Data Source		
<input type="checkbox"/> Stock	<input type="checkbox"/> Commercial	<input type="checkbox"/> Not used	Contractor 2663		
<input type="checkbox"/> Irrigation	<input type="checkbox"/> Municipal	<input type="checkbox"/> Cooling & air conditioning	Date Received DEC 03 2004		
Final Status of Well			Date of Inspection 2004/10/01		
<input checked="" type="checkbox"/> Water Supply	<input type="checkbox"/> Recharge well	<input type="checkbox"/> Unfinished	Remarks		
<input type="checkbox"/> Observation well	<input type="checkbox"/> Abandoned, insufficient supply	<input type="checkbox"/> Dewatering	Well Record Number 6715185		
<input type="checkbox"/> Test Hole	<input type="checkbox"/> Abandoned, poor quality	<input type="checkbox"/> Replacement well			
Well Contractor/Technician Information					
Name of Well Contractor Hanson Well Drilling		Well Contractor's Licence No. 2663			
Business Address (street name, number, city etc.) RR#5 GEORGETOWN CANT. N1H 6J2					
Name of Well Technician (last name, first name) James		Well Technician's Licence No. 7427			
Signature of Technician/Contractor [Signature]		Date Submitted 2004/10/01			

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: Emerald Homes Last Name / Organization: Emerald Homes E-mail Address: strappe.emeraldhomes.com Well Constructed by Well Owner

Mailing Address (Street Number/Name): 43 Pintail Drive Elmira Ont Municipality: Wellington Province: Ont. Postal Code: N3B3G8 Telephone No. (inc. area code): 519 669 4157

Well Location

Address of Well Location (Street Number/Name): 7159 Schaeffer Township: Guelph / Eramosa Lot: 18 Concession: 4

County/District/Municipality: Wellington City/Town/Village: Ariss Province: Ontario Postal Code: N0B1B0

UTM Coordinates Zone: 18 Easting: 175504324 Northing: 924792 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	Gravel	Fill		0	6'
Brown	Clay	Sand / stones		6	18'
Grey	Clay	Sand / stones		18	75'
White	Limestone	grey	Broken	75	100
Brown	Limestone			100	185'
Total 185'					

6 1/4" casing drive shoe

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)
0 to 20'	Quick Grout	90gal

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)		<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	
	steel	.188	+2	75'	

Water Details		Hole Diameter	
Water found at Depth: <u>100 (m/ft)</u> <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft) From: <u>0</u> To: <u>20</u>	Diameter (cm/in): <u>10</u>
Water found at Depth: <u>(m/ft)</u> <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft) From: <u>20</u> To: <u>185</u>	Diameter (cm/in): <u>6 1/8</u>
Water found at Depth: <u>(m/ft)</u> <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: Hanon Well Drilling Ltd Well Contractor's Licence No.: 2663

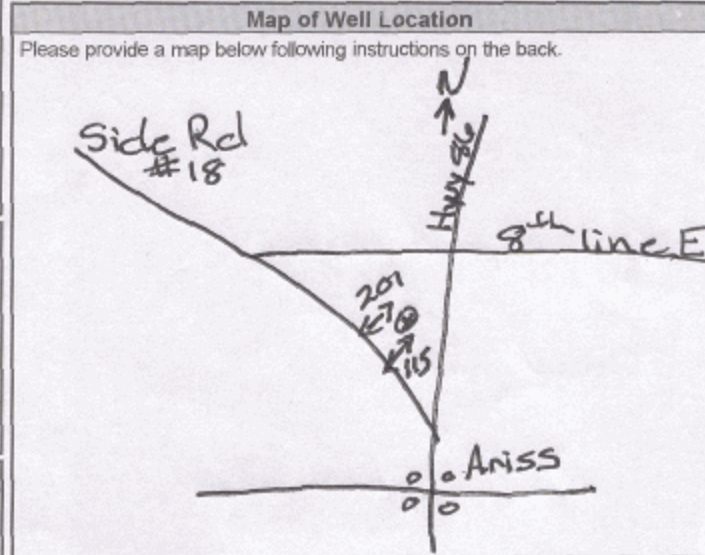
Business Address (Street Number/Name): 5896 County Rd. #7 RR#5 Municipality: Guelph

Province: Ont. Postal Code: N1H6J2 Business E-mail Address: hanonwelldrilling@bellnet.ca

Bus. Telephone No. (inc. area code): 519 763 8239 Name of Well Technician (Last Name, First Name): William deBries

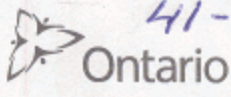
Well Technician's Licence No.: 3309 Signature of Technician and/or Contractor: W deBries Date Submitted: 20110721

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): <u>80</u> Pumping rate (l/min / GPM): <u>15</u> Duration of pumping: <u>1</u> hrs + <u>0</u> min Final water level end of pumping (m/ft): <u>76.8</u> If flowing give rate (l/min / GPM): <u>15</u> Recommended pump depth (m/ft): <u>130</u> Recommended pump rate (l/min / GPM): <u>15</u> Well production (l/min / GPM): <u>15</u> Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Static Level	<u>27.8</u>		
	1	<u>35.9</u>	1	<u>65</u>
	2	<u>41.5</u>	2	<u>57.2</u>
	3	<u>46.9</u>	3	<u>53.3</u>
	4	<u>50.5</u>	4	<u>50.1</u>
	5	<u>53.9</u>	5	<u>45.2</u>
10	<u>62.6</u>	10	<u>34.5</u>	
15	<u>69.1</u>	15	<u>30.8</u>	
20	<u>71.1</u>	20	<u>30.5</u>	
25	<u>72.7</u>	25		
30	<u>74.2</u>	30		
40	<u>75.5</u>	40		
50	<u>76.2</u>	50		
60	<u>76.8</u>	60		



Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
<input type="checkbox"/> Yes <input type="checkbox"/> No	Y Y Y Y M M D D Date Work Completed	Audit No.: <u>z124739</u>
	Y Y Y Y M M D D	Received: <u>JUL 26 2011</u>



Well Tag No **A102288**
A102288

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name	Last Name / Organization <i>KURTZ AUCTIONS INC.</i>	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name) <i>5757 WELLINGTON RD. #86 RR#1</i>	Municipality <i>ARISS</i>	Province <i>ON</i>	Postal Code <i>N0B1B0</i>
		Telephone No. (inc. area code) <i>5198360342</i>	

Well Location

Address of Well Location (Street Number/Name) <i>5757 WELLINGTON RD #86</i>	Township <i>PILKINGTON</i>	Lot <i>18</i>	Concession <i>4 GRE</i>
County/District/Municipality <i>WELLINGTON</i>	City/Town/Village <i>ARISS</i>	Province Ontario	Postal Code <i>N0B1B0</i>
UTM Coordinates Zone Easting <i>NAD 83 17550687</i>	Northing <i>4824970</i>	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
<i>BROWN</i>	<i>CLAY</i>	<i>STONES</i>		<i>0</i>	<i>22</i>
<i>GREY</i>	<i>CLAY</i>	<i>STONES</i>		<i>22</i>	<i>70</i>
<i>BROWN</i>	<i>LIMESTONE</i>			<i>70</i>	<i>100</i>
<i>TOTAL DEPTH 100FT</i>					

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/m²)
From	To	
<i>0</i>	<i>20 BENTONITE</i>	

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	<i>26 FT</i>		
Pump intake set at (m/ft) <i>70 FT</i>		1	<i>29</i>	1	<i>40</i>
Pumping rate (l/min / GPM) <i>100 GPM</i>		2	<i>31</i>	2	<i>35</i>
Duration of pumping <i>1 hrs + 0 min</i>		3	<i>33</i>	3	<i>33</i>
Final water level end of pumping (m/ft) <i>45 FT</i>		4	<i>35</i>	4	<i>30</i>
If flowing give rate (l/min / GPM)		5	<i>37</i>	5	<i>28</i>
Recommended pump depth (m/ft) <i>70 FT</i>		10	<i>42</i>	10	<i>26</i>
Recommended pump rate (l/min / GPM) <i>100 GPM</i>		15	<i>45</i>	15	<i>26</i>
Well production (l/min / GPM) <i>126 GPM</i>		20	<i>45</i>	20	<i>26</i>
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		25	<i>45</i>	25	<i>26</i>
		30	<i>45</i>	30	<i>26</i>
		40	<i>45</i>	40	<i>26</i>
		50	<i>45</i>	50	<i>26</i>
		60	<i>45</i>	60	<i>26</i>

Method of Construction		Well Use	
<input type="checkbox"/> Cable Tool	<input type="checkbox"/> Diamond	<input type="checkbox"/> Public	<input checked="" type="checkbox"/> Commercial
<input type="checkbox"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input 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 checked="" type="checkbox"/> Other, specify <i>AIR ROTARY</i>		<input type="checkbox"/> Other, specify	

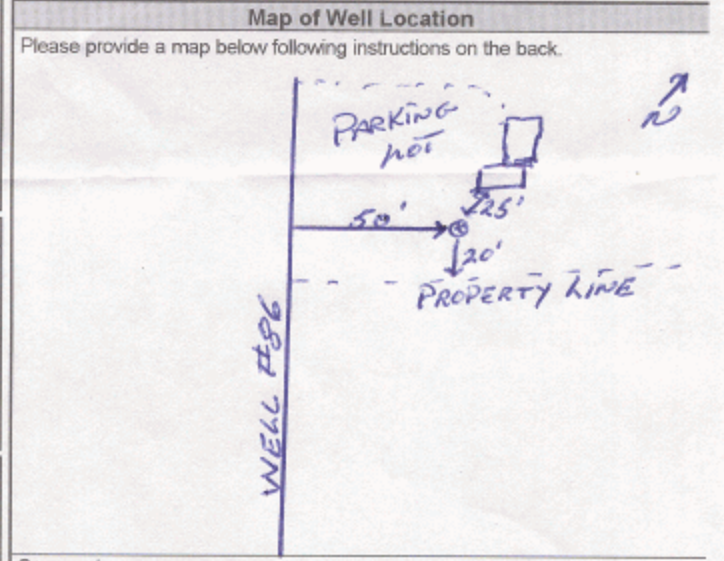
Construction Record - Casing			Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	
			From	To
<i>6 1/8</i>	<i>STEEL</i>	<i>.188</i>	<i>+3</i>	<i>75</i>
<i>6 1/8</i>	<i>OPEN HOLE</i>		<i>75</i>	<i>100</i>

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	Depth (m/ft)	Diameter (cm/in)
		From	To
<i>98 FT</i>	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	<i>0</i>	<i>8 3/4</i>
		<i>20</i>	<i>100</i>

Well Contractor and Well Technician Information			
Business Name of Well Contractor <i>JIM WILSON WELL DRILLING LTD</i>	Well Contractor's Licence No. <i>7 3 8 5</i>		
Business Address (Street Number/Name) <i>551 EBYCREST RD</i>	Municipality <i>WATERLOO</i>		
Province <i>ON.</i>	Postal Code <i>N2J4G8</i>	Business E-mail Address	

Bus. Telephone No. (inc. area code) <i>5196482412</i>	Name of Well Technician (Last Name, First Name) <i>WILSON Jim</i>
Well Technician's Licence No. <i>T1924</i>	Signature of Technician and/or Contractor <i>Jim Wilson</i>
	Date Submitted <i>20110729</i>



Comments:	Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered <i>20110712</i>	Date Work Completed <i>20110712</i>
		Ministry Use Only Audit No. <i>z129845</i> AUG 18 2011	

Measurements recorded in: Metric Imperial

Address of Well Location (Street Number/Name) 5772 Hwy 86		Township Guelph/Eramosa	Lot Pt 17	Concession 4E
County/District/Municipality Wellington		City/Town/Village Ariss	Province Ontario	Postal Code N0B1B0
UTM Coordinates NAD 83	Zone 17	Easting 550278	Northing 4824981	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
			Decommission stone well	
			according to Reg 903	0 24
6	0	Sand	75.30 ft³	

Annular Space		
Depth Set at (m/ft) From To	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
24 23	Sand	12.56 ft³
23 22	Bentonite chips	12.56 ft³
22 12	Sand and stones	125.60 ft³
12 6	Bentonite / sand	75.30 ft³

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	8		
Pump intake set at (m/ft)		1		1	
Pumping rate (l/min / GPM)		2		2	
Duration of pumping hrs + min		3		3	
Final water level end of pumping (m/ft)		4		4	
If flowing give rate (l/min / GPM)		5		5	
Recommended pump depth (m/ft)		10		10	
Recommended pump rate (l/min / GPM)		15		15	
Well production (l/min / GPM)		20		20	
Disinfected?		25		25	
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No		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"/> Rotary (Conventional)	<input type="checkbox"/> Jetting	<input 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 checked="" type="checkbox"/> Industrial	<input type="checkbox"/> Monitoring
<input type="checkbox"/> Other, specify		<input type="checkbox"/> Other, specify	

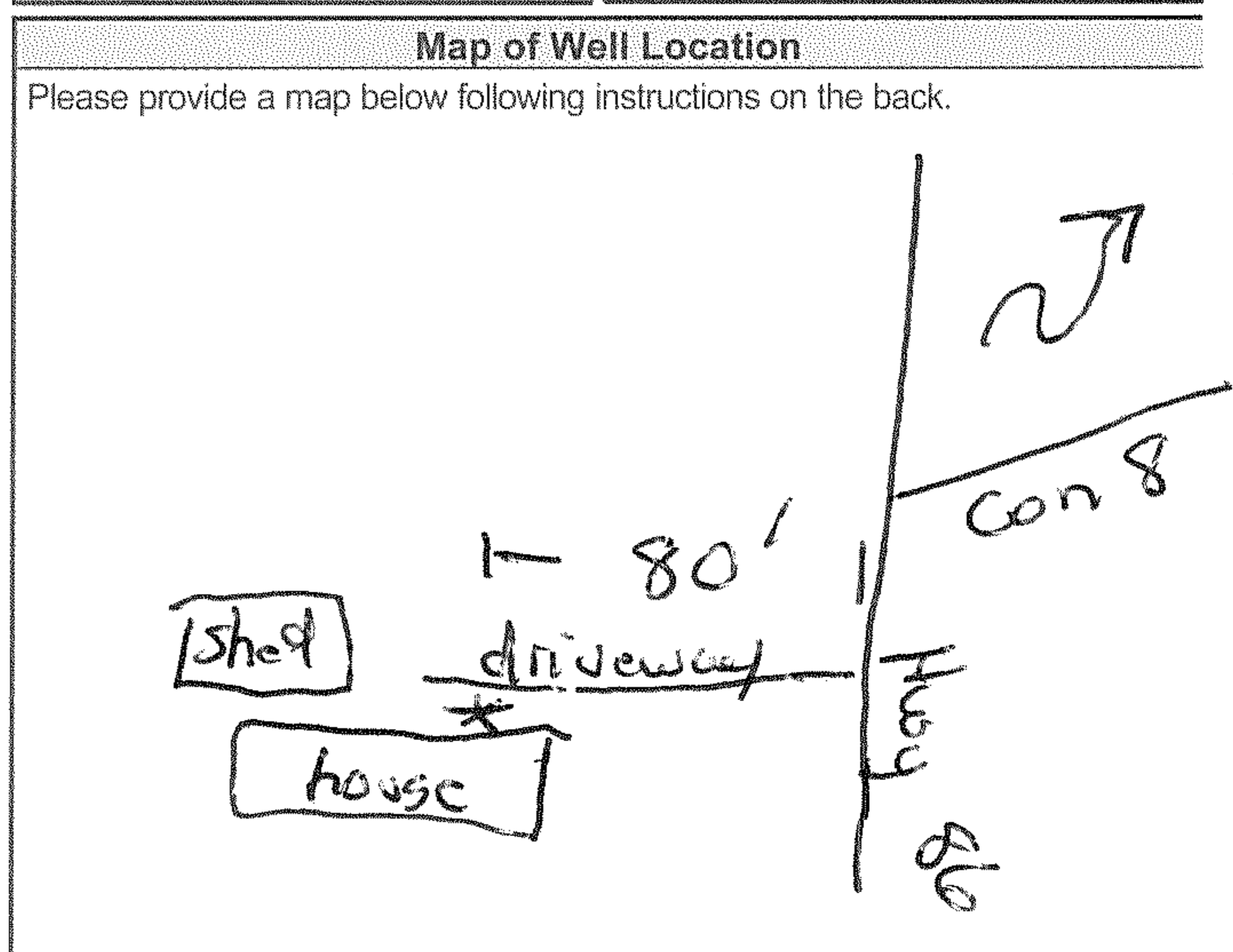
Construction Record - Casing			Status of Well		
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From To		
				<input type="checkbox"/> Water Supply	
				<input type="checkbox"/> Replacement Well	
				<input type="checkbox"/>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

Water Details		Hole Diameter	
Water found at Depth (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)

Well Contractor and Well Technician Information			
Business Name of Well Contractor Martin Well Drilling Inc.		Well Contractor's Licence No. 7557	
Business Address (Street Number/Name) Box 60 Alma		Municipality Wellington	
Province Ontario	Postal Code N0B1B0	Business E-mail Address	

Business Telephone No. (inc. area code) 5198469162		Name of Well Technician (Last Name, First Name) Martin Mike	
Well Technician's Licence No. 3430		Signature of Technician and/or Contractor Mike Martin	
		Date Submitted 20150918	



Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only	
<input type="checkbox"/> Yes <input type="checkbox"/> No	Y Y Y M M D D 20150918	Audit No.	2218798
	Date Work Completed	Received	
	20150918		

Measurements recorded in: Metric Imperial

Page _____ of _____

Well Owner's Information

First Name GRANITE HOMES EAST INC	Last Name / Organization	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name) 7 EDINBURGH ROAD SOUTH	Municipality GUELPH	Province ONT	Postal Code N1H5N8
Telephone No. (inc. area code)			

Well Location

Address of Well Location (Street Number/Name)	Township PILKINGTON	Lot 18	Concession 4
County/District/Municipality WELLINGTON	City/Town/Village	Province Ontario	Postal Code
UTM Coordinates Zone Easting NAD 83 17 550946	Northing 4825030	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 FILL			0	5ft
BROWN	CLAY & STONES			5ft	21ft
GRAY	CLAY & STONE			21ft	58ft
GRAY	LIMESTONE			58ft	140ft

Annular Space

Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
From To 0 61ft	BENTONITE SLURRY	60gal

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	22ft		
Pump intake set at (m/ft) 60ft	1		1	
Pumping rate (l/min / GPM) 8gpm	2		2	
Duration of pumping 2 hrs + 0 min	3		3	
Final water level end of pumping (m/ft) 41ft	4		4	
If flowing give rate (l/min / GPM)	5	31ft	5	25ft
Recommended pump depth (m/ft) 60ft	10	35ft	10	22ft
Recommended pump rate (l/min / GPM) 8gpm	15	38ft	15	
Well production (l/min / GPM)	20	40ft	20	
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	25	41ft	25	
	30		30	
	40		40	
	50		50	
	60	41ft	60	22ft

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 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
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 1/4	steel	.188	0	61ft	
6in	open hole		61ft	140ft	

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 28ft (m/ft)	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft)	Diameter (cm/in)
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	From To	
Water found at Depth 37ft (m/ft)	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested	0 61ft	8.75 in
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	61ft 140ft	6in
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 _____		

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	
Business Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name) KEITH LANG
Well Technician's Licence No. T446	Signature of Technician and/or Contractor <i>K. Lang</i>
Date Submitted	

Map of Well Location

Please provide a map below following instructions on the back.

Comments:

Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered Y Y Y Y M M D D 2016 6 27	Ministry Use Only Audit No. 2234431 Received AUG 15 2016
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Well Tag No. (F Number and/or Print Below) 205281 Tag#: A205281

Measurements recorded in: Metric Imperial

Well Owner's Information: First Name, Last Name / Organization, E-mail Address, Mailing Address, Municipality, Province, Postal Code, Telephone No.

Overburden and Bedrock Materials/Abandonment Sealing Record table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To.

Annular Space table with columns: Depth Set at (m/ft) From, To, Type of Sealant Used, Volume Placed (m³/ft³).

Method of Construction and Well Use checkboxes: Cable Tool, Rotary, Boring, etc.

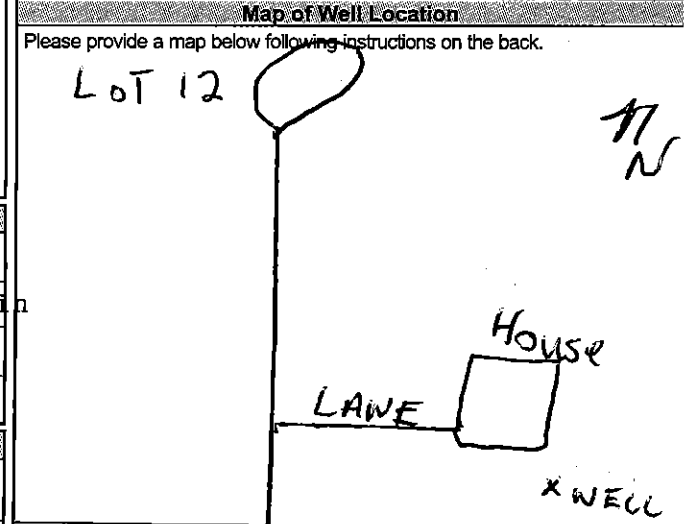
Construction Record - Casing table with columns: Inside Diameter, Open Hole OR Material, Wall Thickness, Depth, Status of Well.

Construction Record - Screen table with columns: Outside Diameter, Material, Slot No., Depth.

Water Details and Hole Diameter table with columns: Water found at Depth, Kind of Water, Depth, Diameter.

Well Contractor and Well Technician Information: Business Name, Address, Licence No., Name, Signature.

Results of Well Yield Testing table with columns: Draw Down, Recovery, Time, Water Level.



Comments:

Ministry Use Only: Well owner's information package delivered, Date Package Delivered, Date Work Completed, Audit No., Received.



Well Tag No. (Number and/or Print Below) 205282 Tag#: A205282

Measurements recorded in: Metric Imperial

Page of

Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: GRANITE HOMES, E-mail Address: [blank], Well Constructed by Well Owner: [checked], Mailing Address: 7 EDINBURGH RD SOUTH UNITE 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Telephone No.: [blank]

Well Location

Address of Well Location: [blank], Township: PILKINGTON, Lot: 18, Concession: 4 S of GR, County/District/Municipality: WELLINGTON, City/Town/Village: [blank], Province: Ontario, Postal Code: [blank], UTM Coordinates: NAD 83 17 550805 4825169, Municipal Plan and Sublot Number: [blank], Other: [blank]

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 BROWN SILTY CLAY & STONES, GRAY CLAY & STONES, BROWN LIMESTONE.

Annular Space

Table with 3 columns: Depth Set at (m/ft) From, To; Type of Sealant Used (Material and Type); Volume Placed (m³/ft³). Row: 0 81ft BENTONITE SLURRY 45gal

Results of Well Yield Testing

After test of well yield, water was: [checked] Clear and sand free. Draw Down table with Time (min), Water Level (m/ft), Recovery Time (min), Water Level (m/ft). Pumping rate: 15 gpm. Final water level end of pumping: 26 ft.

Method of Construction

Well Use

Method of Construction: [checked] Rotary (Conventional). Well Use: [checked] Domestic.

Construction Record - Casing

Status of Well

Construction Record - Casing table with Inside Diameter, Open Hole OR Material, Wall Thickness, Depth. Status of Well: [checked] Water Supply.

Construction Record - Screen

Construction Record - Screen table with Outside Diameter, Material, Slot No., Depth.

Water Details

Hole Diameter

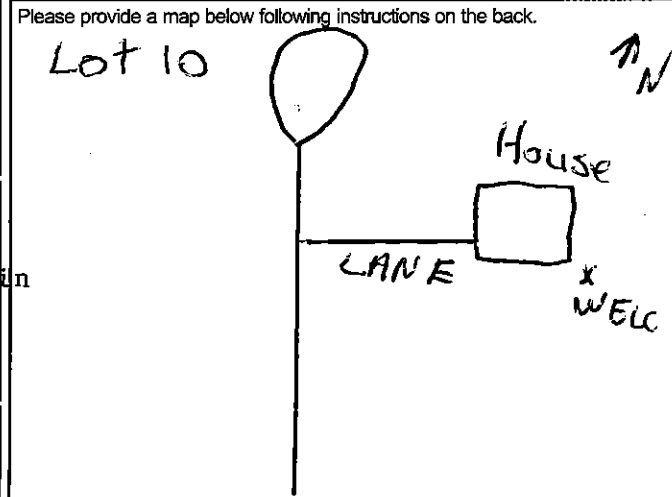
Water Details table with Water found at Depth, Kind of Water. Hole Diameter table with Depth, Diameter.

Well Contractor and Well Technician Information

Business Name of Well Contractor: KEITH LANG WELL DRILLING INC, Well Contractor's Licence No.: 7154, Business Address: 251 ELDON ST GODERICH, Province: ONT, Postal Code: N7A3R9.

Name of Well Technician: KEITH LANG, Well Technician's Licence No.: T446, Date Submitted: [blank].

Map of Well Location



Comments: [blank]

Well owner's information package delivered: [checked] Yes, Date Package Delivered: 2017 7 28, Ministry Use Only: Audit No. Z250174, Received: AUG 17 2017.



Measurements recorded in: Metric Imperial

Page ___ of ___

Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: GRANITE HOMES, E-mail Address: [blank], Mailing Address: 7 EDINBURGH RD SOUTH UNITE 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Telephone No. [blank]

Well Location

Address of Well Location: [blank], Township: PILKINGTON, Lot: 18, Concession: 4 S of GR, County/District/Municipality: WELLINGTON, City/Town/Village: [blank], Province: Ontario, Postal Code: [blank], UTM Coordinates: Zone 17, Easting 550836, Northing 4825052, Municipal Plan and Sublot Number: [blank]

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: BROWN SILTY CLAY & STONES (0-20ft), GRAY CLAY & STONES (20ft-58ft), BROWN LIMESTONE (58ft-142ft)

Annular Space table with 3 columns: Depth Set at (m/ft) From/To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Row: 0 to 63ft, BENTONITE SLURRY 40gal

Method of Construction and Well Use. Method of Construction: [X] Rotary (Conventional), [X] Domestic. Well Use: [X] Domestic, [] Commercial, [] Not used, [] Municipal, [] Dewatering, [] Test Hole, [] Monitoring, [] Cooling & Air Conditioning.

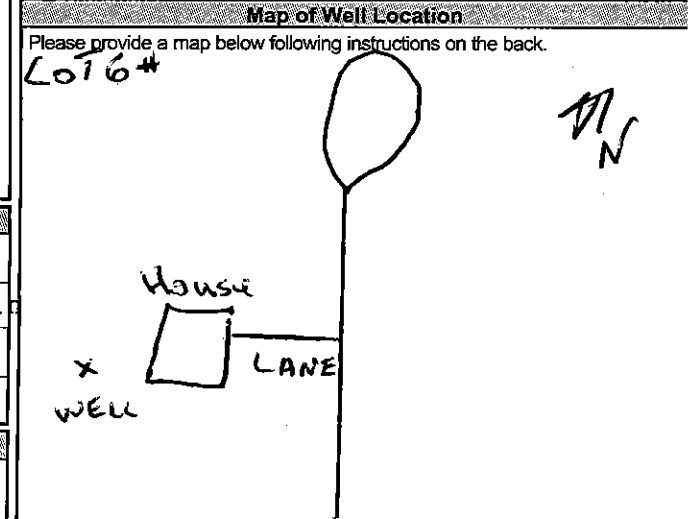
Construction Record - Casing table with 4 columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From/To. Rows: 6 1/4 inch steel (0-63ft), 6 inch open hole (63ft-142ft)

Construction Record - Screen table with 4 columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From/To. Row: [blank]

Water Details and Hole Diameter table. Water found at Depth: 134 ft (Fresh), 136 ft (Fresh). Hole Diameter: 8.75 in (0-63ft), 6 in (63ft-142ft)

Well Contractor and Well Technician Information. Business Name: KEITH LANG WELL DRILLING INC, Well Contractor's Licence No.: 7154, Business Address: 251 ELDON ST GODERICH, Well Technician: KEITH LANG, Licence No.: T446

Results of Well Yield Testing table. After test of well yield, water was: [X] Clear and sand free. Draw Down table: Time (min) vs Water Level (m/ft) from 1 to 60 minutes. Recovery table: Time (min) vs Water Level (m/ft) from 1 to 60 minutes.



Comments: [blank]. Well owner's information package delivered: [X] Yes. Date Package Delivered: 2017 7 31. Date Work Completed: 2017 7 31. Ministry Use Only: Audit No. 2250173, AUG 17 2017.



Measurements recorded in: Metric Imperial

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Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: GRANITE HOMES, E-mail Address: [blank], Mailing Address: 7 EDINBURGH RD SOUTH UNITE 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Telephone No. [blank]

Well Location

Address of Well Location: [blank], Township: PILKINGTON, Lot: 18, Concession: 4S of G R, County/District/Municipality: WELLINGTON, City/Town/Village: [blank], Province: Ontario, Postal Code: [blank], UTM Coordinates: NAD 83, Zone: 17, Easting: 550877, Northing: 4825194, Municipal Plan and Sublot Number: [blank], Other: [blank]

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 BROWN FILL, BROWN CLAY & STONES, GRAY CLAY & STONES, GRAY LIMESTONE.

Annular Space table with 3 columns: Depth Set at (m/ft) From, To; Type of Sealant Used (Material and Type); Volume Placed (m³/ft³). Row: 0 to 43ft, BENTONITE SLURRY, 50 gal.

Method of Construction and Well Use sections. Method of Construction includes Cable Tool, Rotary (Conventional/Reverse), Boring, Air percussion, Other. Well Use includes Public, Commercial, Domestic, Municipal, Test Hole, Livestock, Irrigation, Industrial, Cooling & Air Conditioning, Not used, Dewatering, Monitoring, Other.

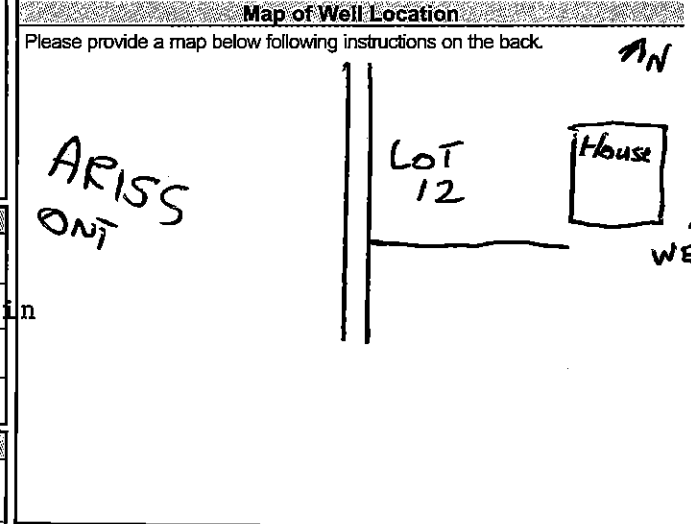
Construction Record - Casing table with 4 columns: Inside Diameter (cm/in), Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel), Wall Thickness (cm/in), Depth (m/ft) From, To. Rows: 6 1/2 inch steel, 6 inch open hole.

Construction Record - Screen table with 4 columns: Outside Diameter (cm/in), Material (Plastic, Galvanized, Steel), Slot No., Depth (m/ft) From, To. Row: [blank].

Water Details and Hole Diameter table. Water found at Depth: 118 ft, Kind of Water: Fresh, Gas, Other. Hole Diameter: Depth (m/ft) From, To; Diameter (cm/in). Rows: 0-43ft (8.75 in), 43ft-124ft (6 in).

Well Contractor and Well Technician Information. Business Name: KEITHJLANG WELL DRILLING INC, Licence No: 7154, Business Address: 251 ELDON ST GODERICH, Province: ONT, Postal Code: N7A3R9, Business E-mail Address: [blank], Name of Well Technician: KEITH LANG, Well Technician's Licence No: T446.

Results of Well Yield Testing table. Columns: After test of well yield, water was; Draw Down (Time, Water Level); Recovery (Time, Water Level). Includes pumping rate (12 gpm), duration (1 hr), final water level (24 ft), and flow rate (PPM 95).



Comments: [blank]

Well owner's information package delivered (Yes/No), Date Package Delivered (Y Y Y Y M M D D), Date Work Completed (Y 2017 M 21 D D), Ministry Use Only (Audit No: 2250159, Received: AUG 17 2017).

Well Owner's Information

First Name GRANITE HOMES	Last Name / Organization	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name) 7 EDINBURGH RD SOUTH UNITE 1	Municipality GUELPH	Province ONT	Postal Code N1H5N8
		Telephone No. (inc. area code)	

Well Location

Address of Well Location (Street Number/Name)	Township PILKINGTON	Lot 18	Concession 5 S OF GR
County/District/Municipality WELLINGTON	City/Town/Village	Province Ontario	Postal Code
UTM Coordinates Zone Easting Northing NAD 83 17 551014 4825060	Municipal Plan and Sublot Number	Other	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BROWN	SILTY STONES CLAY			0	26ft
GRAY	CLAY & STONES			26ft	62ft
GRAY	LIMESTONE			62ft	124ft

Annular Space		
Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)
0	65ft	BENTONITE SLURRY
		Volume Placed (m³/ft³) 60gal

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

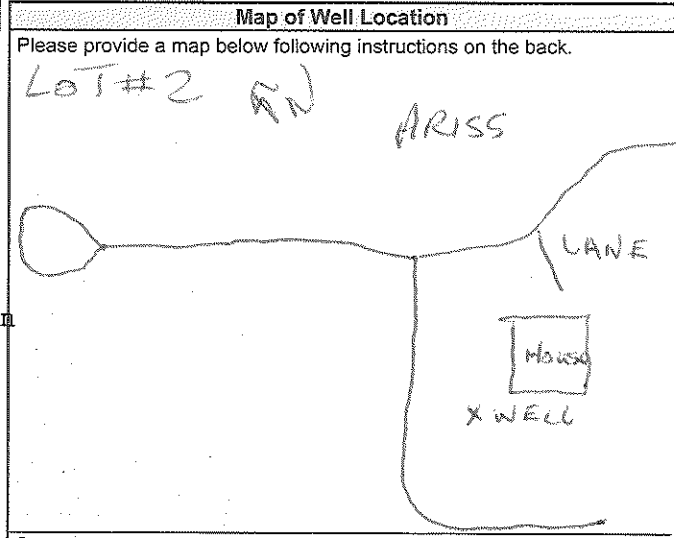
Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		<input checked="" type="checkbox"/> Water Supply <input type="checkbox"/> Replacement Well <input type="checkbox"/> Test 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 1/4	steel	.188	0	65ft	
6in	open hole		65ft	124ft	

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 115ft (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
Water found at Depth 122ft (m/ft)	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Gas <input type="checkbox"/> Other, specify	0	65ft
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	65ft	124ft
			Diameter (cm/in) 8.75in 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)	Name of Well Technician (Last Name, First Name) KEITH LANG
Well Technician's Licence No. T446	Signature of Technician and/or Contractor <i>K. Lang</i>
	Date Submitted YYYYMMDD

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	14ft		
	1		1	
	2		2	
	3		3	
	4		4	
	5	27ft	5	29ft
Pump intake set at (m/ft) 60ft				
Pumping rate (l/min / GPM) 10gpm				
Duration of pumping 1 hrs + 0 min				
Final water level end of pumping (m/ft) 54ft				
If flowing give rate (l/min / GPM)	10	31ft	10	23ft
	15	35ft	15	19ft
	20	38ft	20	15ft
	25	41ft	25	14ft
	30	44ft	30	
	40	47ft	40	
Recommended pump depth (m/ft) 60ft				
Recommended pump rate (l/min / GPM) 10gpm				
Well production (l/min / GPM)				
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				
50	49ft	50		
60	51ft	60	14ft	



Comments:

Well owner's information package delivered <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered YYYYMMDD 2018 3 6	Ministry Use Only Audit No. 2270778 Received MAR 19 2018
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Measurements recorded in: Metric Imperial

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Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: GRANITE HOMES, E-mail Address: [blank], Mailing Address: 7 EDINBURGH RD SOUTH UNIT 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Telephone No. [blank]

Well Location

Address of Well Location: [blank], Township: PILKINGTON, Lot: 18, Concession: 5 S OF GR, County/District/Municipality: WELLINGTON, City/Town/Village: [blank], Province: Ontario, Postal Code: [blank], UTM Coordinates: NAD 83, Zone: 17, Easting: 550868, Northing: 4825071

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: BROWN SILTY STONES CLAY (0-26ft), GRAY CLAY & STONES (26ft-60ft), GRAY LIMESTONE (60ft-144ft)

Annular Space: Depth Set at (m/ft) From/To: 0/64ft, Type of Sealant Used: BENTONITE SLURRY 70gal, Volume Placed (m³/ft³): [blank]

Method of Construction: [X] Rotary (Conventional), Well Use: [X] Domestic, [] Commercial, [] Not used, [] Municipal, [] Dewatering, [] Monitoring, [] Irrigation, [] Cooling & Air Conditioning

Construction Record - Casing: Table with 4 columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From/To. Rows: 6 1/2 steel .188 0 64ft, 6 in open hole 64ft 144ft

Construction Record - Screen: Table with 4 columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From/To. Rows: [blank]

Water Details: Table with 2 columns: Water found at Depth (m/ft), Kind of Water. Rows: 102ft Fresh, 135ft Fresh, [blank]

Well Contractor and Well Technician Information: Business Name: KEITH LANG WELL DRILLING INC, Licence No: 7154, Business Address: 251 ELDON ST GODERICH, Province: ONT, Postal Code: N7A3R9, Well Technician: KEITH LANG

Results of Well Yield Testing: Table with 4 columns: Time (min), Water Level (m/ft), Time (min), Water Level (m/ft). Includes draw down and recovery data for various depths and pumping rates.

Map of Well Location: Please provide a map below following instructions on the back. Includes handwritten notes: LOTS AN, ARISS, LANE, House, X WELL.

Well Contractor and Well Technician Information (continued): Date Submitted: [blank], Signature of Technician and/or Contractor: [Signature], Date Submitted: [blank]

Ministry Use Only: Audit No. Z270776, Date Work Completed: 2018 2 28, Received: MAR 19 2018



Measurements recorded in: Metric Imperial

Page _____ of _____

Well Owner's Information

First Name GRANITE HOMES	Last Name / Organization	E-mail Address	<input type="checkbox"/> Well Constructed by Well Owner
Mailing Address (Street Number/Name) 7 EDINBURGH RD SOUTH UNITE 1	Municipality GUELPH	Province ONT	Postal Code N1H5N8
Telephone No. (inc. area code)			

Well Location

Address of Well Location (Street Number/Name)	Township PILKINGTON	Lot 18	Concession 5 S OF GR
County/District/Municipality WELLINGTON	City/Town/Village	Province Ontario	Postal Code
UTM Coordinates Zone Easting Northing NAD 83 17 550883 4825061	Municipal Plan and Sublot Number	Other	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BROWN	SILTY STONES CLAY			0	22ft
GRAY	CLAY & STONES			22ft	58ft
GRAY	LIMESTONE			58ft	142ft

Annular Space		
Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)
0	62ft	BENTONITE SLURRY 60gal

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

Construction Record - Casing				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 1/4	steel	.188	0	62ft	<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		62ft	142ft	

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 136ft	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested	Depth (m/ft) From	Diameter (cm/in)
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____	0	8.75in
Water found at Depth	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested	62ft	142ft
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____		6in
Water found at Depth	Kind of Water: <input type="checkbox"/> Fresh <input type="checkbox"/> Untested		
	<input type="checkbox"/> Gas <input type="checkbox"/> Other, specify _____		

Well Contractor and Well Technician Information	
Business Name of Well Contractor 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)	Name of Well Technician (Last Name, First Name) KEITH LANG
Well Technician's Licence No. T446	Signature of Technician and/or Contractor <i>K. Lang</i>
Date Submitted Y Y Y Y M M D D	

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	18ft		
	1		1	
	Pump intake set at (m/ft) 50ft	2	2	
	Pumping rate (l/min / GPM) 12 gpm	3	3	
	Duration of pumping 1 hrs + 0 min	4	4	
	Final water level end of pumping (m/ft) 38ft	5	23ft	5
If flowing give rate (l/min / GPM)	10	24ft	10	20ft
	15	27ft	15	19ft
	20	29ft	20	18ft
	25	31ft	25	
	30	33ft	30	
	40	35ft	40	
Recommended pump depth (m/ft) 50ft	50	37ft	50	
Recommended pump rate (l/min / GPM) 12 gpm	60	38ft	60	18ft
Well production (l/min / GPM)				
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No				

Map of Well Location

Please provide a map below following instructions on the back.

Lot #4

ARISS

LANE

House

**WELL*

Comments:

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	Ministry Use Only Audit No. 2270777 MAR 19 2018 Received
	Date Work Completed 2018 3 5 Y Y Y Y M M D D	



Measurements recorded in: Metric Imperial

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Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: [blank], E-mail Address: [blank], Well Constructed by Well Owner:
Mailing Address (Street Number/Name): 7 EDINBURGH RD SOUTH UNITE 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Telephone No. (inc. area code): [blank]

Well Location

Address of Well Location (Street Number/Name): [blank], Township: PILKINGTON, Lot: 18, Concession: 4, County/District/Municipality: WELLINGTON, City/Town/Village: [blank], Province: Ontario, Postal Code: [blank]
UTM Coordinates Zone: NAD, Easting: 8317, Northing: 550692, 4825053, Municipal Plan and Sublot Number: [blank], Other: [blank]

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 BROWN CLAY & STONES (0-29ft), GRAY CLAY & STONES (29ft-68ft), BROWN LIMESTONE (68ft-175ft), GRAY LIMESTONE (175ft-282ft).

Annular Space table with 3 columns: Depth Set at (m/ft) From/To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Row: 0-72ft BENTONITE SLURRY 60gal.

Method of Construction and Well Use table. Method of Construction: Rotary (Conventional). Well Use: Domestic.

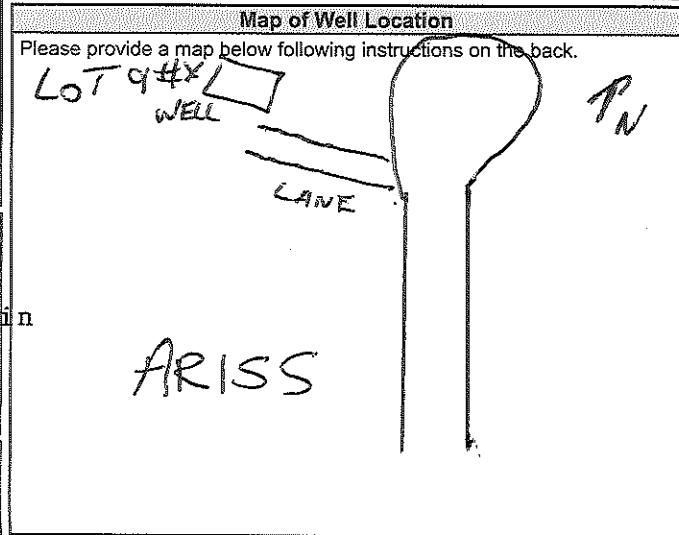
Construction Record - Casing table with 5 columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From/To, Status of Well. Rows: 6 1/4 steel .188 0-72ft, 6in open hole 72ft-282ft.

Construction Record - Screen table with 5 columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From/To, Status of Well.

Water Details and Hole Diameter table. Water found at Depth: 132ft, 279ft. Hole Diameter: 8.75 in, 6 in.

Well Contractor and Well Technician Information. Business Name: EITH ANG WELL DRILLING INC, Licence No: 7154, Business Address: 251 ELDON ST GODERICH, Province: ONT, Postal Code: N7A3R9, Business E-mail Address: [blank], Name of Well Technician: KEITH LANG, Signature: [Signature], Date Submitted: [blank]

Results of Well Yield Testing table. Columns: Draw Down (Time, Water Level), Recovery (Time, Water Level). Includes pumping rate (12 gpm), duration (1 hr + 0 min), final water level (87ft), and recommended pump depth (120ft).



Comments: [blank], Well owner's information package delivered: Yes, Date Package Delivered: 2018 6 14, Ministry Use Only: Audit No. 2287011, AUG 13 2018



Well Tag No. (Place Sticker and/or Print Below) 219478 Tag#: A 219478

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: GRANITE HOMES, E-mail Address: [blank], Well Constructed by Well Owner:

Well Location

Address of Well Location: 7 EDINBURGH RD SOUTH UNITE 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Township: PILKINGTON, Lot: 18, Concession: 4

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 BROWN CLAY & STONES, GRAY CLAY & STONES, BROWN LIMESTONE.

Annular Space: Depth Set at (m/ft) From/To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Entry: 0 to 61ft, BENTONITE SLURRY, 50gal.

Method of Construction and Well Use. Method: Rotary (Conventional). Well Use: Domestic.

Construction Record - Casing and Status of Well. Casing: 6 1/4 inch steel, 6 inch open hole. Status: Water Supply.

Construction Record - Screen. Outside Diameter: 6 inch, Material: open hole, Slot No., Depth (m/ft) From/To.

Water Details and Hole Diameter. Water found at Depth: 115ft, Kind of Water: Fresh. Hole Diameter: 8.75 inch, 6 inch.

Well Contractor and Well Technician Information. Business Name: EITH LANG WELL DRILLING INC, Well Contractor's Licence No.: 7154, Well Technician: KEITH LANG.

Results of Well Yield Testing. Draw Down and Recovery table with columns: Time (min), Water Level (m/ft). Includes pumping rate of 15 gpm and final water level of 26ft.

Map of Well Location. Hand-drawn map showing Lot 11, ARISS, and a well location relative to a house. Includes handwritten notes and a north arrow.

Well Technician's Licence No. T446, Signature of Technician: Keith Lang, Date Submitted: [blank].

Ministry Use Only. Audit No.: Z287014, Received: AUG 13 2018, Date Work Completed: 2018 6 18.

Well Owner's Information

First Name GRANITE HOMES		Last Name / Organization		E-mail Address		<input type="checkbox"/> Well Constructed by Well Owner	
Mailing Address (Street Number/Name) 7 EDINBURGH RD SOUTH UNITE 1				Municipality GUELPH	Province ONT	Postal Code N1H5N8	Telephone No. (inc. area code)

Well Location

Address of Well Location (Street Number/Name)		Township PILKINGTON		Lot 18	Concession 4	
County/District/Municipality WELLINGTON			City/Town/Village		Province Ontario	Postal Code
UTM Coordinates Zone Easting NAD 83 17 550991		Northing 4825173		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	26ft
GRAY	CLAY & STONES			26ft	58ft
BROWN	LIMESTONE			58ft	120ft

Annular Space		
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
From	To	
0	62ft BENTONITE SLURRY	50gal

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	22ft		
Pump intake set at (m/ft) 60ft		1		1	
Pumping rate (l/min / GPM) 15gpm		2		2	
Duration of pumping 1 hrs + 0 min		3		3	
Final water level end of pumping (m/ft) 34ft		4		4	
If flowing give rate (l/min / GPM)		5	28ft	5	25ft
Recommended pump depth (m/ft) 60ft		10	32ft	10	22ft
Recommended pump rate (l/min / GPM) 15gpm		15	38ft	15	
Well production (l/min / GPM)		20	34ft	20	
Disinfected? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No		25		25	
		30		30	
		40		40	
		50		50	
		60	34ft	60	22ft

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	62ft
6in	open hole		62ft	120ft

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 116ft (m/ft) <input type="checkbox"/> Gas	Kind of Water: <input checked="" type="checkbox"/> Fresh <input type="checkbox"/> Untested <input type="checkbox"/> Other, specify _____	Depth (m/ft)	Diameter (cm/in)	
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 _____	From	To	
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 _____	0	62ft	8.75in
		62ft	120ft	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
Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name) KEITH LANG
Well Technician's Licence No. T446	Signature of Technician and/or Contractor <i>K. Lang</i>
	Date Submitted Y Y Y Y M M D D

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	Y Y Y Y M M D D 2018 6 15	Audit No. Z287013 AUG 13 2018 Received



Tag #: A 235572

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: GRANITE HOMES, E-mail Address: [blank], Well Constructed by Well Owner

Mailing Address (Street Number/Name): 7 EDINBURGH RD SOUTH UNIT 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Telephone No. (inc. area code): [blank]

Well Location

Address of Well Location (Street Number/Name): [blank], Township: PILKINGTON, Lot: 18, Concession: 4

County/District/Municipality: wellington, City/Town/Village: [blank], Province: Ontario, Postal Code: [blank]

UTM Coordinates Zone: NAD 83, Easting: 17, Northing: 4852594, Municipal Plan and Sublot Number: [blank], Other: [blank]

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 BROWN CLAY & STONES, GRAY CLAY & STONES, BROWN LIMESTONE.

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 BENTONITE SLURRY and BENSEAL BENTONITE.

Method of Construction and Well Use sections. Includes checkboxes for Cable Tool, Rotary, Boring, etc., and Public/Commercial/Industrial well use.

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. Rows include steel casing and open hole.

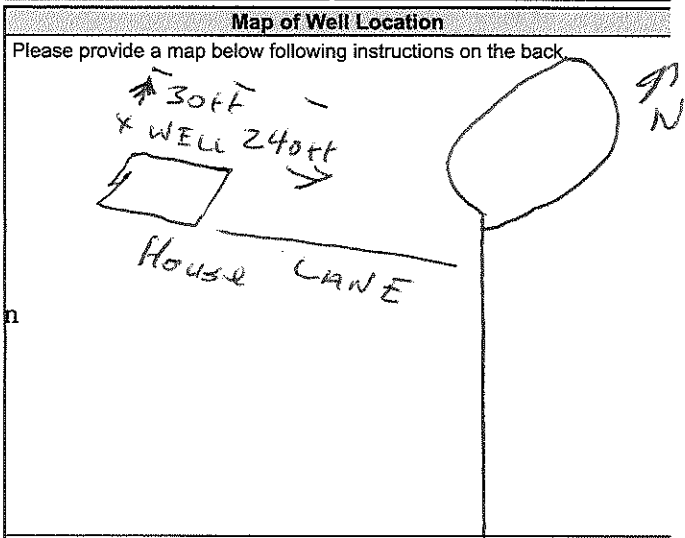
Construction Record - Screen table with 5 columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From/To, Status of Well. Rows include screen details.

Water Details and Hole Diameter tables. Water Details includes depth and kind of water. Hole Diameter includes depth and diameter.

Well Contractor and Well Technician Information section. Includes Business Name (KEITH LANG WELL DRILLING INC), Licence No. (7154), and Business Address (251 ELDON ST GODERICH).

Well Technician's Licence No. (t446), Signature of Technician and/or Contractor (KEITH LANG), Date Submitted (2018/11/22).

Results of Well Yield Testing table. Includes After test of well yield, water was; Draw Down and Recovery data; Pumping rate (12 gpm); Duration of pumping (1 hrs + 0 min); Final water level end of pumping (70 ft); Recommended pump depth (80 ft); Recommended pump rate (12 gpm); Well production (70 ppm).



Comments: [blank]

Ministry Use Only section. Includes Well owner's information package delivered (2018/11/22), Date Work Completed (2018/11/22), Audit No. (Z287084), and Received date (NOV 28 2018).



Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: GRANITE HOMES, E-mail Address: [blank], Mailing Address: 7 EDINBURGH RD SOUTH UNIT 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Telephone No. [blank]

Well Location

Address of Well Location: [blank], Township: PILKINGTON, Lot: 18, Concession: 4, County/District/Municipality: WELLINGTON, City/Town/Village: [blank], Province: Ontario, Postal Code: [blank], UTM Coordinates: NAD 83 17 550733 4825051, Municipal Plan and Sublot Number: [blank]

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

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To. Rows include BROWN CLAY & STONES, GRAY CLAY & STONES, GRAY LIMESTONE, and USE CENTRALIZERS.

Annular Space table with columns: Depth Set at (m/ft) From, To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Row: 0 to 69ft, BENTONITE SLURRY, 90 gal.

Method of Construction and Well Use section with checkboxes for Cable Tool, Rotary, Boring, etc., and Public, Commercial, Domestic, etc.

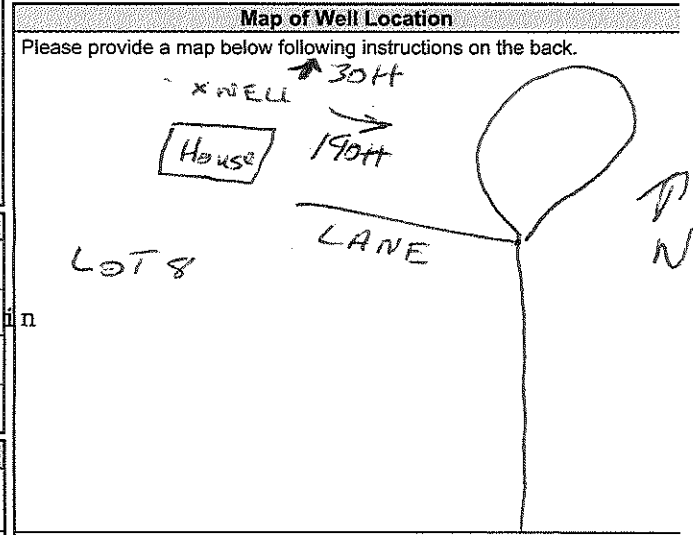
Construction Record - Casing table with columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From, To, Status of Well. Rows: 6 1/4 inch steel, 6 inch open hole.

Construction Record - Screen table with columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From, To, Status of Well.

Water Details and Hole Diameter table with columns: Water found at Depth, Kind of Water, Depth (m/ft) From, To, Diameter (cm/in). Rows: 109 ft, 117 ft.

Well Contractor and Well Technician Information section with fields for Business Name (KEITH LANG WELL DRILLING INC), Licence No. (7154), Business Address (251 ELDON ST GODERICH), and Technician Name (KEITH LANG).

Results of Well Yield Testing table with columns: Draw Down (Time, Water Level), Recovery (Time, Water Level). Includes pumping rate (10 gpm), duration (1 hr), and final water level (57 ft).



Comments: [blank]

Well owner's information package delivered (checked), Date Package Delivered (2018 11 22), Date Work Completed (2018 11 14), Ministry Use Only (Audit No. Z287085, Received NOV 28 2018).



Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: GRANITE HOMES, E-mail Address: [blank], Mailing Address: 7 EDINBURGH RD SOUTH UNIT 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Telephone No.: [blank]

Well Location

Address of Well Location: [blank], Township: PILKINGTON, Lot: 18, Concession: 4, County/District/Municipality: WELLINGTON, City/Town/Village: [blank], Province: Ontario, Postal Code: [blank], UTM Coordinates: Zone 17, Easting 551044, Northing 4825076, Municipal Plan and Sublot Number: [blank]

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

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, Depth (m/ft) To. Rows include BROWN CLAY & STONES, GRAY CLAY & STONES, GRAY LIMESTONE, and USE CENTRALIZERS.

Annular Space table with columns: Depth Set at (m/ft) From, Depth Set at (m/ft) To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Row: 0 to 70ft, BENTONITE SLURRY, 90a1.

Results of Well Yield Testing table with columns: Draw Down (Time, Water Level), Recovery (Time, Water Level). Includes pumping rate (15 gpm), static level (20 FT), and final water level (25 ft).

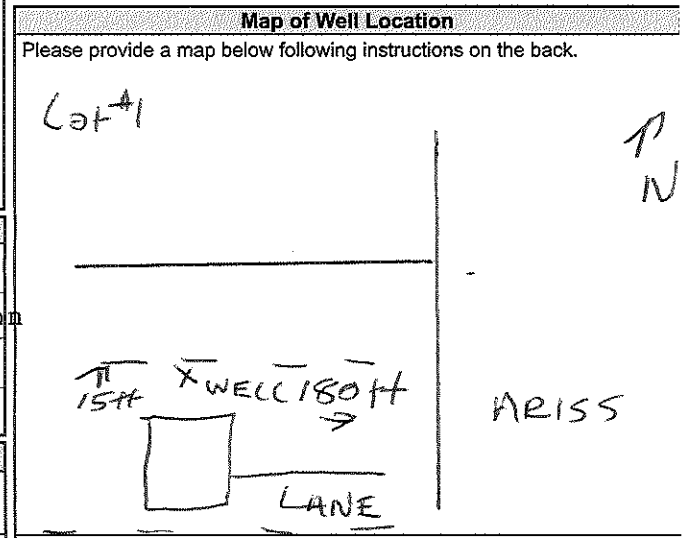
Method of Construction and Well Use section with checkboxes for Cable Tool, Rotary, Boring, etc., and Public, Commercial, Domestic, etc.

Construction Record - Casing table with columns: Inside Diameter, Open Hole OR Material, Wall Thickness, Depth (m/ft) From, Depth (m/ft) To. Rows: 6 1/4 inch steel, 6 inch open hole.

Construction Record - Screen table with columns: Outside Diameter, Material, Slot No., Depth (m/ft) From, Depth (m/ft) To.

Water Details and Hole Diameter table with columns: Water found at Depth, Kind of Water, Depth (m/ft) From, Depth (m/ft) To, Diameter (cm/in).

Well Contractor and Well Technician Information section with fields for Business Name (KEITH LANG WELL DRILLING INC), Business Address (251 ELDON ST GODERICH), and Well Technician Name (KEITH LANG).



Signature and Date Submitted section with fields for Well Technician's Licence No. (t446), Signature (Keith Lang), and Date Submitted (2018/11/22).

Ministry Use Only section with fields for Audit No. (2287086), Date Work Completed (2018 11 13), and Received date (NOV 28 2018).



Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: GRANITE HOMES, Last Name / Organization: [blank], E-mail Address: [blank], Mailing Address: 7 EDINBURGH RD SOUTH UNIT 1, Municipality: GUELPH, Province: ONT, Postal Code: N1H5N8, Telephone No.: [blank]

Well Location

Address of Well Location: [blank], Township: PILKINGTON, Lot: 18, Concession: 4, County/District/Municipality: WELLINGTON, City/Town/Village: [blank], Province: Ontario, Postal Code: [blank], UTM Coordinates: Zone: NAD 83, Easting: 17, Northing: 550920, 4825195, Municipal Plan and Sublot Number: [blank]

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 BROWN CLAY & STONES, GRAY CLAY & STONES, GRAY LIMESTONE, and USE CENTRALIZERS.

Annular Space table with 4 columns: Depth Set at (m/ft) From To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Row: 0 to 60ft, BENTONITE SLURRY, 90gal.

Method of Construction and Well Use checkboxes. Method of Construction includes Cable Tool, Rotary (Conventional), Rotary (Reverse), Boring, Air percussion, Other. Well Use includes Public, Commercial, Domestic, Municipal, Livestock, Test Hole, Cooling & Air Conditioning, Industrial, Other.

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. Rows: 6 1/4 inch steel casing, 6 inch open hole casing.

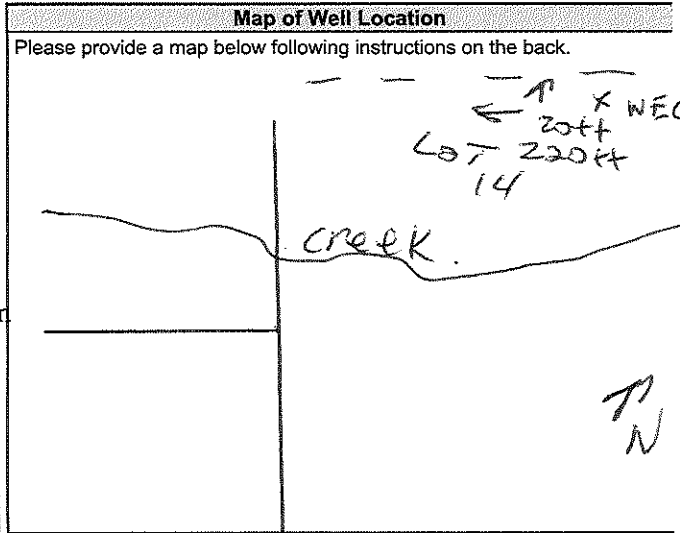
Construction Record - Screen table with 5 columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From To, Status of Well. Row: 6 inch open hole casing.

Water Details and Hole Diameter table. Water found at Depth 94ft, Kind of Water: Fresh. Hole Diameter: 8.75 inch at 0-60ft, 6 inch at 60-102ft.

Well Contractor and Well Technician Information. Business Name: KEITH LANG WELL DRILLING INC, Well Contractor's Licence No.: 7154, Business Address: 251 ELDON ST GODERICH, Province: ONT, Postal Code: N7A3R9.

Well Technician Information. Name of Well Technician: KEITH LANG, Signature: K. Lang, Date Submitted: 2018 11 12, Well Technician's Licence No.: T446.

Results of Well Yield Testing table. Columns: Draw Down (Time, Water Level), Recovery (Time, Water Level). Includes pumping rate (15gpm), final water level (24ft), and recommended pump depth (40ft).



Ministry Use Only section. Audit No.: 2287087, Received: NOV 28 2018, Date Package Delivered: 2018 11 22, Date Work Completed: 2018 11 12.

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A333645

Type *

Construction Abandonment

Measurement recorded in: *

Metric Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name	First Name
[REDACTED]	[REDACTED]
Organization	Email Address
WILL-O-HOMES	[REDACTED]

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Country	Province	Postal Code	Telephone Number
CAN	ON	[REDACTED]	[REDACTED]

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	5782	6TH LINE E	
Lot	Concession	County/District/Municipality	
City/Town	Province	Postal Code	
ARISS	Ontario		
UTM Coordinates	Zone *	Easting *	Northing *
NAD 83	17	550559	4825097
			Municipal Plan and Sublot Number
			Test UTM in Map

Other

3. Overburden and Bedrock Material *

Well Depth *	20	(ft)			
General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Silt	Clay		0	10
Grey	Silt		Dense	10	20

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 HOLEPLUG	0.27
8	20	#2 SAND	0.41

5. Method of Construction *

- Cable Tool Rotary (Conventional) Rotary (Reverse) Boring Air percussion Diamond
 Jetting Driving Digging Rotary (Air) Augering Direct Push
 Other (specify) _____

6. Well Use *

- Public Industrial Cooling & Air Conditioning
 Domestic Commercial Not Used
 Livestock Municipal Monitoring
 Irrigation Test Hole Dewatering
 Other (specify) _____

7. 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) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
1.5	Plastic	0.25	-3	10

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
1.75	Plastic	10	10	20

10. Water Details

Water found at Depth (ft) Gas Kind of water Fresh Untested Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	20	4

12. Results of Well Yield Testing

Pumping Discontinued

Explain _____

If flowing give rate

Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

Clear and sand free Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
-------------------------	--------------------	-------------------------------	---------------------------------------	---

Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)
-----------------------------	-----------------------------	-----------------------

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. Make map area bigger



14. Information

Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) * 2021/05/13
Comments		

15. Well Contractor and Well Technician Information

Business Name of Well Contractor * CMT DRILLING INC		Well Contractor's License Number * 7366	
Business Address			
Unit Number 1	Street Number 1011	Street Name * INDUSTRIAL CRES	
City/Town/Village * ST CLEMENTS		Province ON	Postal Code * NOB 2M0
Business Telephone Number 519-699-5775		Business Email Address info@cmtinc.net	
Last Name of Well Technician * BLACK		First Name of Well Technician * CHRIS	Well Technician's License Number * 3711

16. Declaration *

I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name BLACK	First Name CHRIS	Email Address cblack@cmtinc.net
Signature Chris Black		Date Submitted (yyyy/mm/dd) 2021/06/25
Digitally signed by Chris Black Date: 2021.06.25 06:40:21 -04'00'		

17. Ministry Use Only

Audit Number
JMD6 C298

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A333646

Type *

Construction Abandonment

Measurement recorded in: *

Metric Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name	First Name
[Redacted]	[Redacted]
Organization	Email Address
WILL-O-HOMES	[Redacted]

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
[Redacted]	[Redacted]	[Redacted]	[Redacted]
Country	Province	Postal Code	Telephone Number
[Redacted]	[Redacted]	[Redacted]	[Redacted]

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	5782	6TH LINE E	
Lot	Concession	County/District/Municipality	
City/Town	Province	Postal Code	
ARISS	Ontario		
UTM Coordinates	Zone *	Easting *	Northing *
NAD 83	17	550739	4825173
			Municipal Plan and Sublot Number
			Test UTM in Map

Other

3. Overburden and Bedrock Material *

Well Depth *	20	(ft)			
General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Silt	Clay		0	10
Grey	Silt		Dense	10	20

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 HOLEPLUG	0.27
8	20	#2 SAND	0.41

5. Method of Construction *

- Cable Tool Rotary (Conventional) Rotary (Reverse) Boring Air percussion Diamond
 Jetting Driving Digging Rotary (Air) Augering Direct Push
 Other (specify) _____

6. Well Use *

- Public Industrial Cooling & Air Conditioning
 Domestic Commercial Not Used
 Livestock Municipal Monitoring
 Irrigation Test Hole Dewatering
 Other (specify) _____

7. 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) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
1.5	Plastic	0.25	-3	10

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
1.75	Plastic	10	10	20

10. Water Details

Water found at Depth (ft) Gas Kind of water Fresh Untested Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	20	4

12. Results of Well Yield Testing

Pumping Discontinued

Explain _____

If flowing give rate

Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

Clear and sand free Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
-------------------------	--------------------	-------------------------------	---------------------------------------	---

Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)
-----------------------------	-----------------------------	-----------------------

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. Make map area bigger



14. Information

Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) * 2021/05/13
Comments		

15. Well Contractor and Well Technician Information

Business Name of Well Contractor * CMT DRILLING INC		Well Contractor's License Number * 7366	
Business Address			
Unit Number 1	Street Number 1011	Street Name * INDUSTRIAL CRES	
City/Town/Village * ST CLEMENTS		Province ON	Postal Code * N0B 2M0
Business Telephone Number 519-699-5775		Business Email Address info@cmtinc.net	
Last Name of Well Technician * BLACK		First Name of Well Technician * CHRIS	Well Technician's License Number * 3711

16. Declaration *

I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name BLACK	First Name CHRIS	Email Address cblack@cmtinc.net
Signature Chris Black		Date Submitted (yyyy/mm/dd) 2021/06/25
Digitally signed by Chris Black Date: 2021.06.25 06:48:12 -04'00'		

17. Ministry Use Only

Audit Number
MWEF QOYU

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A333647

Type *

Construction Abandonment

Measurement recorded in: *

Metric Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name	First Name
[Redacted]	[Redacted]
Organization	Email Address
WILL-O-HOMES	[Redacted]

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
[Redacted]	[Redacted]	[Redacted]	[Redacted]
Country	Province	Postal Code	Telephone Number
CAN	ON	[Redacted]	[Redacted]

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	5782	6TH LINE E	
Lot	Concession	County/District/Municipality	
City/Town	Province	Postal Code	
ARISS	Ontario		
UTM Coordinates	Zone *	Easting *	Northing *
NAD 83	17	550896	4825441
			Municipal Plan and Sublot Number
			Test UTM in Map

Other

3. Overburden and Bedrock Material *

Well Depth *	20	(ft)			
General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Silt	Clay		0	10
Grey	Silt		Dense	10	20

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 HOLEPLUG	0.27
8	20	#2 SAND	0.41

5. Method of Construction *

- Cable Tool Rotary (Conventional) Rotary (Reverse) Boring Air percussion Diamond
 Jetting Driving Digging Rotary (Air) Augering Direct Push
 Other (specify) _____

6. Well Use *

- Public Industrial Cooling & Air Conditioning
 Domestic Commercial Not Used
 Livestock Municipal Monitoring
 Irrigation Test Hole Dewatering
 Other (specify) _____

7. 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) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
1.5	Plastic	0.25	-3	10

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
1.75	Plastic	10	10	20

10. Water Details

Water found at Depth (ft) Gas Kind of water Fresh Untested Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	20	4

12. Results of Well Yield Testing

Pumping Discontinued

Explain _____

If flowing give rate

Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

Clear and sand free Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
-------------------------	--------------------	-------------------------------	---------------------------------------	---

Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)
-----------------------------	-----------------------------	-----------------------

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. Make map area bigger



14. Information

Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) * 2021/05/13
Comments		

15. Well Contractor and Well Technician Information

Business Name of Well Contractor * CMT DRILLING INC		Well Contractor's License Number * 7366	
Business Address			
Unit Number 1	Street Number 1011	Street Name * INDUSTRIAL CRES	
City/Town/Village * ST CLEMENTS		Province ON	Postal Code * N0B 2M0
Business Telephone Number 519-699-5775		Business Email Address info@cmtinc.net	
Last Name of Well Technician * BLACK		First Name of Well Technician * CHRIS	Well Technician's License Number * 3711

16. Declaration *

I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name BLACK	First Name CHRIS	Email Address cblack@cmtinc.net
Signature Chris Black		Date Submitted (yyyy/mm/dd) 2021/06/25
Digitally signed by Chris Black Date: 2021.06.25 06:55:16 -04'00'		

17. Ministry Use Only

Audit Number
4F9A KTTTC

Notice of Collection of Personal Information

Personal information contained on this form is collected pursuant to sections 35-50 and 75(2) of the *Ontario Water Resources Act* and section 16.3 of the Wells Regulation. This information will be used for the purpose of maintaining a public record of wells in Ontario. This form and the information contained on the form will be stored in the Ministry's well record database and made publicly available. Questions about this collection should be directed to the Water Well Customer Service Representative at the Wells Help Desk, 125 Resources Road, Toronto Ontario M9P 3V6, at 1-888-396-9355 or wellshelpdesk@ontario.ca.

Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A333648

Type *

Construction Abandonment

Measurement recorded in: *

Metric Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name	First Name
[REDACTED]	[REDACTED]
Organization	Email Address
WILL-O-HOMES	[REDACTED]

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Country	Province	Postal Code	Telephone Number
CAN	ON	[REDACTED]	[REDACTED]

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	5782	6TH LINE E	
Lot	Concession	County/District/Municipality	
City/Town	Province	Postal Code	
ARISS	Ontario		
UTM Coordinates	Zone *	Easting *	Northing *
NAD 83	17	550791	4825334
			Municipal Plan and Sublot Number
			Test UTM in Map

Other

3. Overburden and Bedrock Material *

Well Depth *	20	(ft)			
General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Silt	Clay		0	10
Grey	Silt		Dense	10	20

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 HOLEPLUG	0.27
8	20	#2 SAND	0.41

5. Method of Construction *

- Cable Tool Rotary (Conventional) Rotary (Reverse) Boring Air percussion Diamond
 Jetting Driving Digging Rotary (Air) Augering Direct Push
 Other (specify) _____

6. Well Use *

- Public Industrial Cooling & Air Conditioning
 Domestic Commercial Not Used
 Livestock Municipal Monitoring
 Irrigation Test Hole Dewatering
 Other (specify) _____

7. 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) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
1.5	Plastic	0.25	-3	10

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
1.75	Plastic	10	10	20

10. Water Details

Water found at Depth (ft) Gas Kind of water Fresh Untested Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	20	4

12. Results of Well Yield Testing

Pumping Discontinued

Explain _____

If flowing give rate

Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

Clear and sand free Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)
-----------------------------	-----------------------------	-----------------------

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. Make map area bigger



14. Information

Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) * 2021/05/13
Comments		

15. Well Contractor and Well Technician Information

Business Name of Well Contractor * CMT DRILLING INC		Well Contractor's License Number * 7366	
Business Address			
Unit Number 1	Street Number 1011	Street Name * INDUSTRIAL CRES	
City/Town/Village * ST CLEMENTS		Province ON	Postal Code * NOB 2M0
Business Telephone Number 519-699-5775		Business Email Address info@cmtinc.net	
Last Name of Well Technician * BLACK		First Name of Well Technician * CHRIS	Well Technician's License Number * 3711

16. Declaration *

I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name BLACK	First Name CHRIS	Email Address cblack@cmtinc.net
Signature Chris Black		Date Submitted (yyyy/mm/dd) 2021/06/25
Digitally signed by Chris Black Date: 2021.06.25 07:01:33 -04'00'		

17. Ministry Use Only

Audit Number
475U 2AFR

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Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A333649

Type *

Construction Abandonment

Measurement recorded in: *

Metric Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name	First Name
[Redacted]	[Redacted]
Organization	Email Address
WILL-O-HOMES	[Redacted]

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
[Redacted]	[Redacted]	[Redacted]	[Redacted]
Country	Province	Postal Code	Telephone Number
CAN	ON	[Redacted]	[Redacted]

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	5782	6TH LINE E	
Lot	Concession	County/District/Municipality	
City/Town	Province	Postal Code	
ARISS	Ontario		
UTM Coordinates	Zone *	Easting *	Northing *
NAD 83	17	551042	4825477
			Municipal Plan and Sublot Number
			Test UTM in Map

Other

3. Overburden and Bedrock Material *

Well Depth *	20	(ft)			
General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Silt	Clay		0	10
Grey	Silt		Dense	10	20

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 HOLEPLUG	0.27
8	12	#2 SAND	0.41

5. Method of Construction *

- Cable Tool Rotary (Conventional) Rotary (Reverse) Boring Air percussion Diamond
 Jetting Driving Digging Rotary (Air) Augering Direct Push
 Other (specify) _____

6. Well Use *

- Public Industrial Cooling & Air Conditioning
 Domestic Commercial Not Used
 Livestock Municipal Monitoring
 Irrigation Test Hole Dewatering
 Other (specify) _____

7. 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) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
1.5	Plastic	10	-3	10

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
1.75	Plastic	10	10	20

10. Water Details

Water found at Depth (ft) Gas Kind of water Fresh Untested Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	20	4

12. Results of Well Yield Testing

Pumping Discontinued

Explain _____

If flowing give rate

Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

Clear and sand free Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
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Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)
-----------------------------	-----------------------------	-----------------------

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. Make map area bigger



14. Information

Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) * 2021/05/26
Comments		

15. Well Contractor and Well Technician Information

Business Name of Well Contractor * CMT DRILLING INC		Well Contractor's License Number * 7366	
Business Address			
Unit Number 1	Street Number 1011	Street Name * INDUSTRIAL CRES	
City/Town/Village * ST CLEMENTS		Province ON	Postal Code * NOB 2M0
Business Telephone Number 519-699-5775		Business Email Address info@cmtinc.net	
Last Name of Well Technician * BLACK		First Name of Well Technician * CHRIS	Well Technician's License Number * 3711

16. Declaration *

I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name BLACK	First Name CHRIS	Email Address cblack@cmtinc.net
Signature Chris Black		Date Submitted (yyyy/mm/dd) 2021/06/25
Digitally signed by Chris Black Date: 2021.06.25 07:11:00 -04'00'		

17. Ministry Use Only

Audit Number
6DHC T8ZI

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Fields marked with an asterisk (*) are mandatory.

Well Tag Number *
A333650

Type *

Construction Abandonment

Measurement recorded in: *

Metric Imperial

1. Well Owner's Information

Last Name and First Name, or Organization is mandatory. *

Last Name	First Name
[REDACTED]	[REDACTED]
Organization	Email Address
WILL-O-HOMES	[REDACTED]

Current Address

Unit Number	Street Number *	Street Name *	City/Town/Village
[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
Country	Province	Postal Code	Telephone Number
CAN	ON	[REDACTED]	[REDACTED]

2. Well Location

Address of Well Location

Unit Number	Street Number *	Street Name *	Township
	5782	6TH LINE E	
Lot	Concession	County/District/Municipality	
City/Town	Province	Postal Code	
ARISS	Ontario		
UTM Coordinates	Zone *	Easting *	Northing *
NAD 83	17	551091	4825650
			Municipal Plan and Sublot Number
			Test UTM in Map

Other

3. Overburden and Bedrock Material *

Well Depth *	20	(ft)			
General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To

				(ft)	(ft)
Brown	Silt	Clay		0	10
Grey	Silt		Dense	10	20

4. Annular Space *

Depth From (ft)	Depth To (ft)	Type of Sealant Used (Material and Type)	Volume Placed (cubic feet)
0	8	3/8 HOLEPLUG	0.27
8	20	#2 SAND	0.41

5. Method of Construction *

- Cable Tool Rotary (Conventional) Rotary (Reverse) Boring Air percussion Diamond
 Jetting Driving Digging Rotary (Air) Augering Direct Push
 Other (specify) _____

6. Well Use *

- Public Industrial Cooling & Air Conditioning
 Domestic Commercial Not Used
 Livestock Municipal Monitoring
 Irrigation Test Hole Dewatering
 Other (specify) _____

7. 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) _____

8. Construction Record - Casing * (use negative number(s) to indicate depth above ground surface)

Inside Diameter (in)	Open Hole or Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness	Depth From (ft)	Depth To (ft)
1.5	Plastic	0.75	-3	10

9. Construction Record - Screen

Outside Diameter (in)	Material (Plastic, Galvanized, Steel)	Slot Number	Depth From (ft)	Depth To (ft)
1.75	Plastic	10	10	20

10. Water Details

Water found at Depth (ft) Gas Kind of water Fresh Untested Other

11. Hole Diameter

Depth From (ft)	Depth To (ft)	Diameter (in)
0	20	4

12. Results of Well Yield Testing

Pumping Discontinued

Explain _____

If flowing give rate

Flowing _____ (GPM)

Draw down

Time (min)	Static Level	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)														

Recovery

Time (min)	1	2	3	4	5	10	15	20	25	30	40	50	60
Water Level (ft)													

After test of well yield, water was

Clear and sand free Other (specify)

Pump intake set at (ft)	Pumping rate (GPM)	Duration of pumping hrs + min	Final water level end of pumping (ft)	Disinfected? * <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
-------------------------	--------------------	-------------------------------	---------------------------------------	---

Recommended pump depth (ft)	Recommended pump rate (GPM)	Well production (GPM)
-----------------------------	-----------------------------	-----------------------

13. Map of Well Location *

Map 1. Please Click the map area below to import an image file to use as the map. Make map area bigger



14. Information

Well owner's information package delivered <input type="checkbox"/> Yes <input type="checkbox"/> No	Date Package Delivered (yyyy/mm/dd)	Date Work Completed (yyyy/mm/dd) * 2021/05/26
Comments		

15. Well Contractor and Well Technician Information

Business Name of Well Contractor * CMT DRILLING INC		Well Contractor's License Number * 7366	
Business Address			
Unit Number 1	Street Number 1011	Street Name * INDUSTRIAL CRES	
City/Town/Village * ST CLEMENTS		Province ON	Postal Code * N0B 2M0
Business Telephone Number 519-699-5775		Business Email Address info@cmtinc.net	
Last Name of Well Technician * BLACK		First Name of Well Technician * CHRIS	Well Technician's License Number * 3711

16. Declaration *

I hereby confirm that I am the person who constructed the well and I hereby confirm that the information on the form is correct and accurate.

Last Name BLACK	First Name CHRIS	Email Address cblack@cmtinc.net
Signature Chris Black		Date Submitted (yyyy/mm/dd) 2021/06/25
Digitally signed by Chris Black Date: 2021.06.25 07:17:39 -04'00'		

17. Ministry Use Only

Audit Number
FRA8 752J

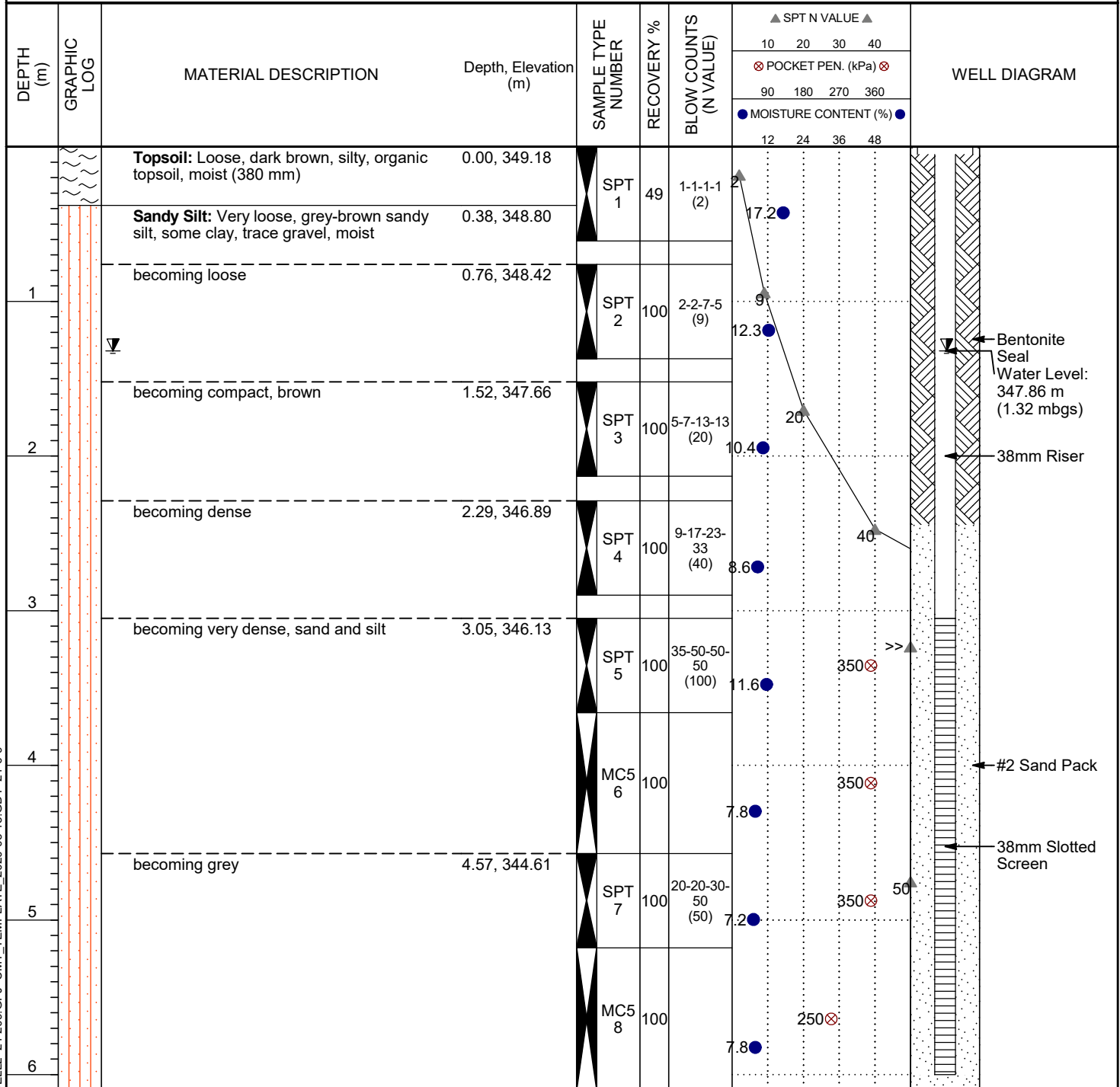
**APPENDIX C:
GEOTECHNICAL BOREHOLE LOGS (CMT 2021)**



CMT Engineering Inc.
 1011 Industrial Crescent
 St. Clements, Ontario, N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER 1

PROJECT: Proposed Development
PROJECT ADDRESS: 5782 6th Line East
PROJECT NUMBER: 21-209
PROJECT LOCATION: Ariss, Ontario
DRILLING DATE: 21-5-13
GROUND ELEVATION: 349.18 m
DRILLING CONTRACTOR: CMT Drilling Inc.
LOGGED BY: J. Feeney
DRILLING EQUIPMENT: Geoprobe 7822DT
SAMPLING METHOD: SPT



Bottom of borehole at 6.10 m, Elevation 343.08 m.

BOREHOLE LOG WITH WELL2 21-209.GPJ CMT_TEMPLATE_2020-05-15.GDT 21-6-9

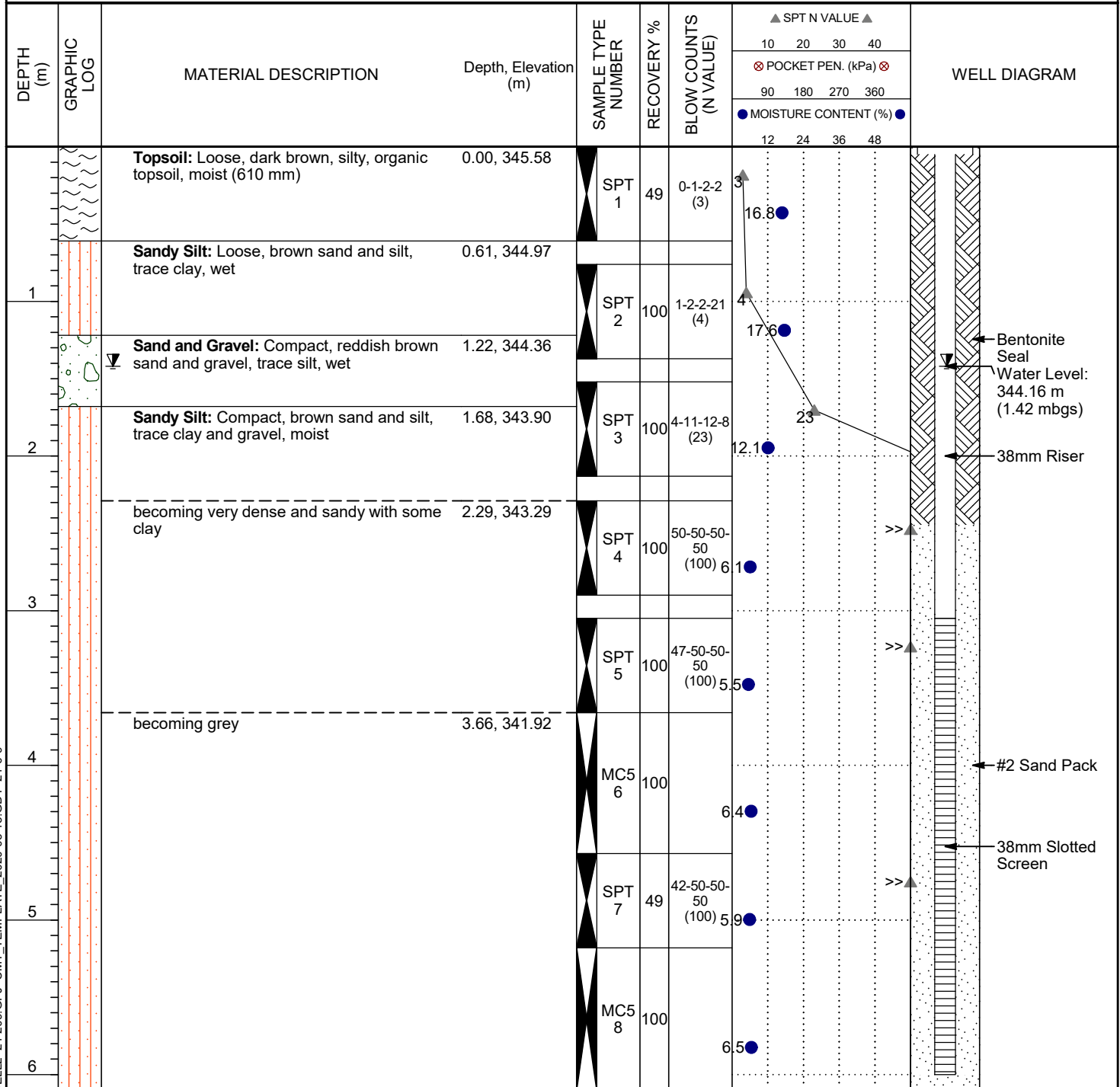


CMT Engineering Inc.
 1011 Industrial Crescent
 St. Clements, Ontario, N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER 2

PROJECT: Proposed Development
PROJECT ADDRESS: 5782 6th Line East
PROJECT LOCATION: Ariss, Ontario
GROUND ELEVATION: 345.58 m
LOGGED BY: J. Feeney
SAMPLING METHOD: SPT

PROJECT NUMBER: 21-209
DRILLING DATE: 21-5-13
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT



Bottom of borehole at 6.10 m, Elevation 339.48 m.

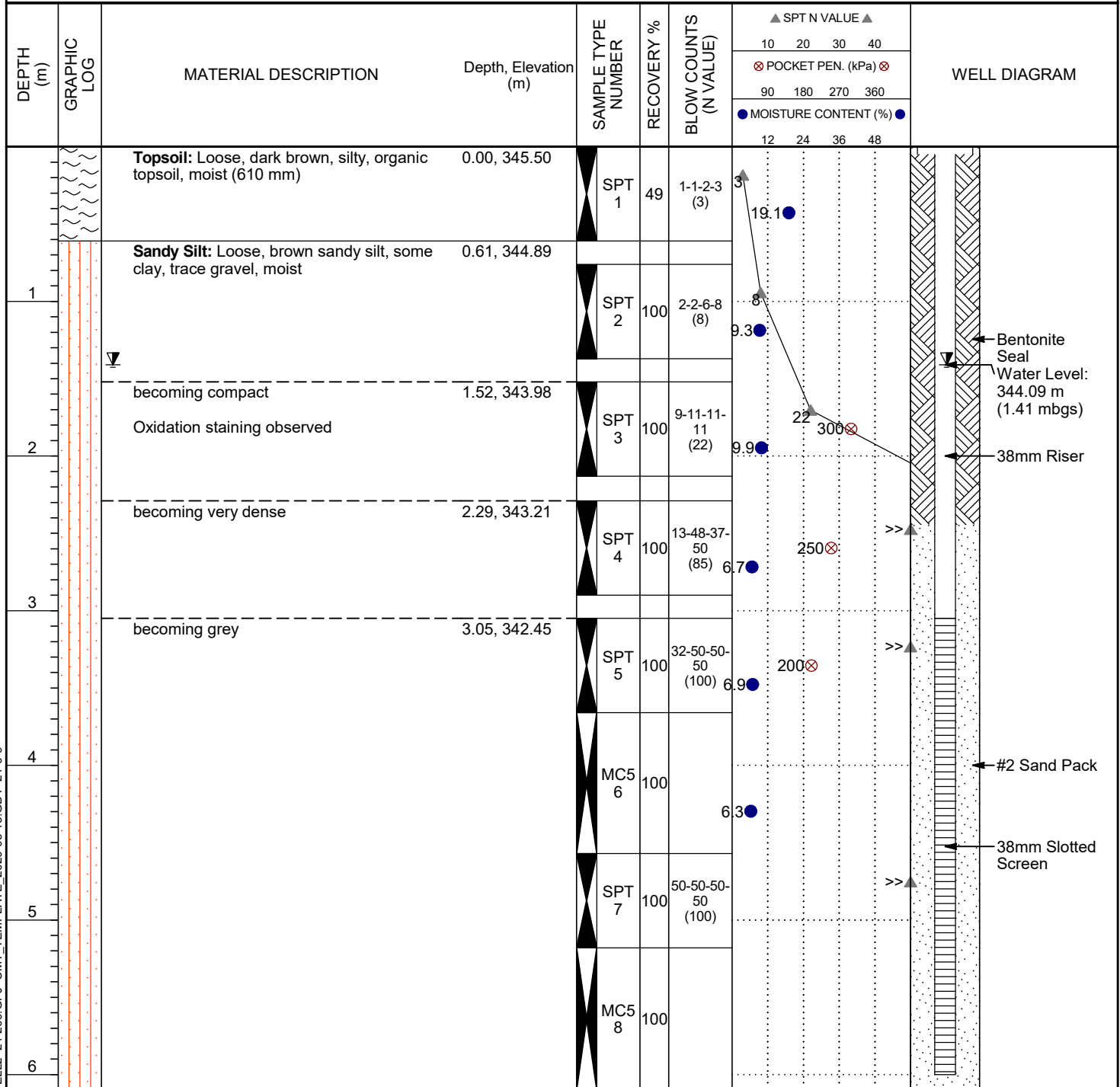
BOREHOLE LOG WITH WELL2 21-209.GPJ CMT_TEMPLATE_2020-05-15.GDT 21-6-9



CMT Engineering Inc.
 1011 Industrial Crescent
 St. Clements, Ontario, N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER 3

PROJECT: Proposed Development
PROJECT ADDRESS: 5782 6th Line East
PROJECT LOCATION: Ariss, Ontario
PROJECT NUMBER: 21-209
DRILLING DATE: 21-5-13
DRILLING CONTRACTOR: CMT Drilling Inc.
DRILLING EQUIPMENT: Geoprobe 7822DT
GROUND ELEVATION: 345.50 m
LOGGED BY: J. Feeney
SAMPLING METHOD: SPT



Bottom of borehole at 6.10 m, Elevation 339.40 m.

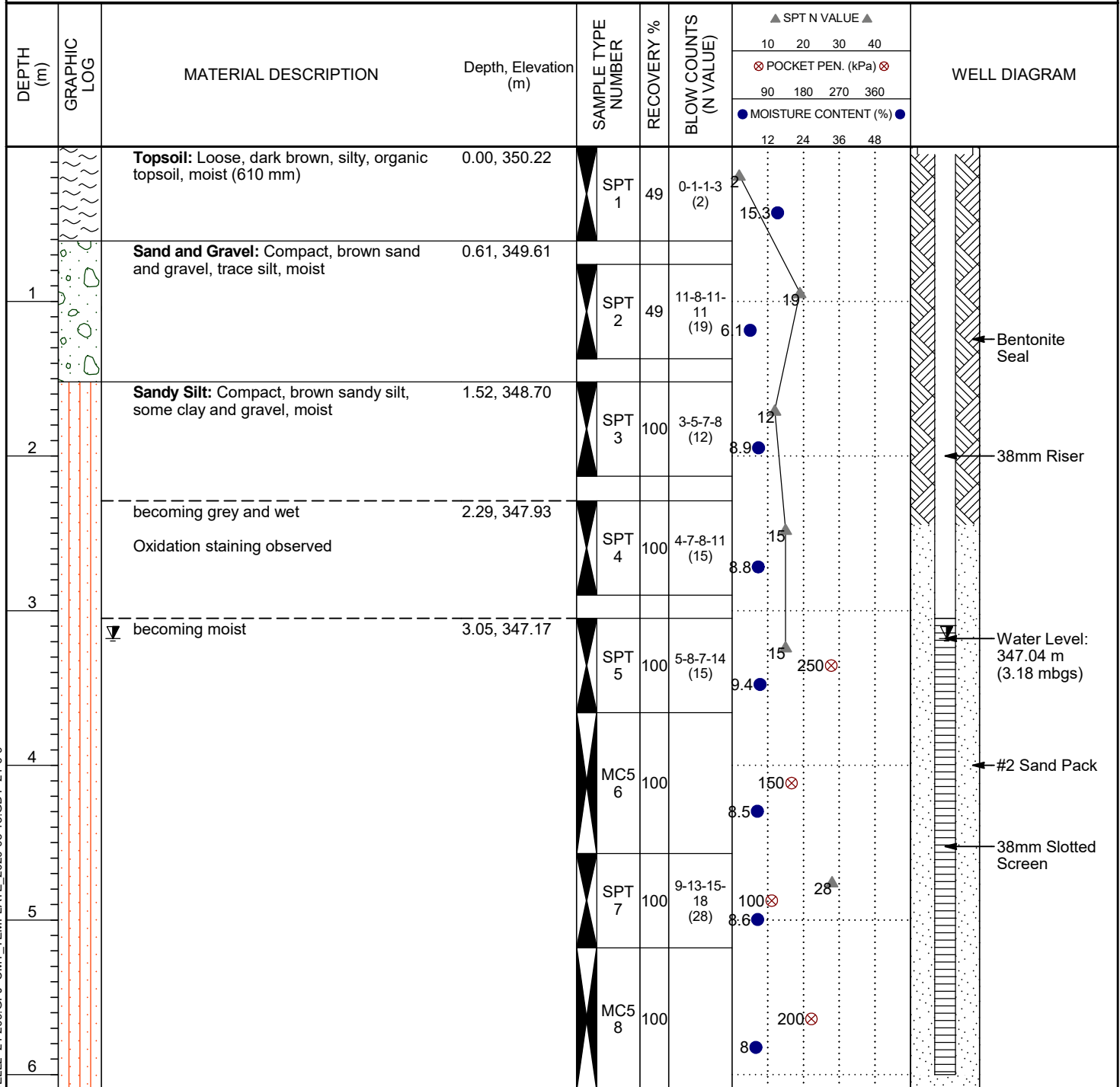
BOREHOLE LOG WITH WELL2 21-209.GPJ CMT_TEMPLATE_2020-05-15.GDT 21-6-9



CMT Engineering Inc.
 1011 Industrial Crescent
 St. Clements, Ontario, N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER 4

PROJECT: Proposed Development
PROJECT ADDRESS: 5782 6th Line East
PROJECT NUMBER: 21-209
PROJECT LOCATION: Ariss, Ontario
DRILLING DATE: 21-5-13
GROUND ELEVATION: 350.22 m
DRILLING CONTRACTOR: CMT Drilling Inc.
LOGGED BY: J. Feeney
DRILLING EQUIPMENT: Geoprobe 7822DT
SAMPLING METHOD: SPT



Bottom of borehole at 6.10 m, Elevation 344.12 m.

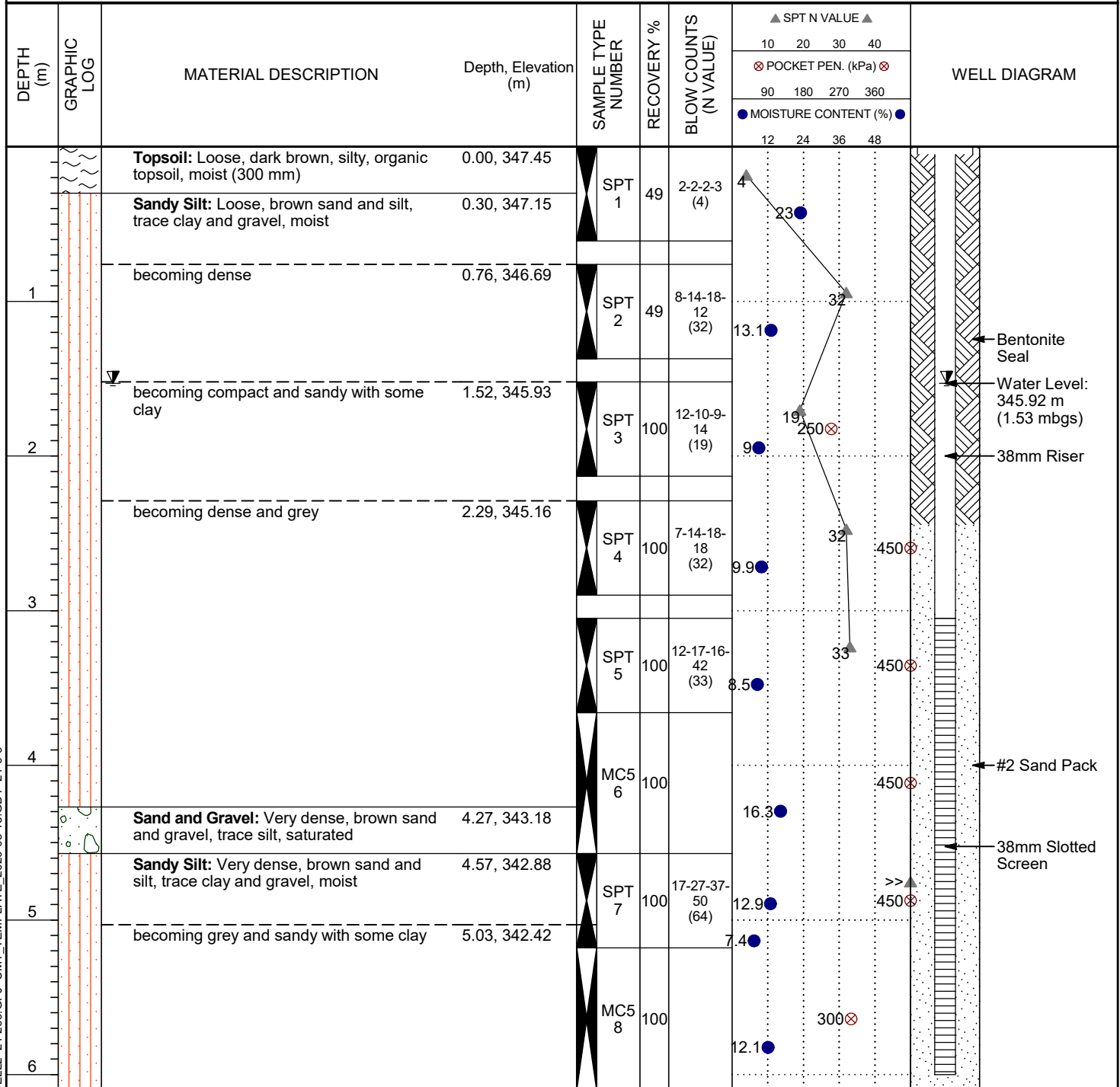
BOREHOLE LOG WITH WELL2 21-209.GPJ CMT_TEMPLATE_2020-05-15.GDT 21-6-9



CMT Engineering Inc.
 1011 Industrial Crescent
 St. Clements, Ontario, N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER 5

PROJECT: Proposed Development
PROJECT ADDRESS: 5782 6th Line East
PROJECT NUMBER: 21-209
PROJECT LOCATION: Ariss, Ontario
DRILLING DATE: 21-5-26
GROUND ELEVATION: 347.45 m
DRILLING CONTRACTOR: CMT Drilling Inc.
LOGGED BY: J. Feeney
DRILLING EQUIPMENT: Geoprobe 7822DT
SAMPLING METHOD: SPT



Bottom of borehole at 6.10 m, Elevation 341.35 m.

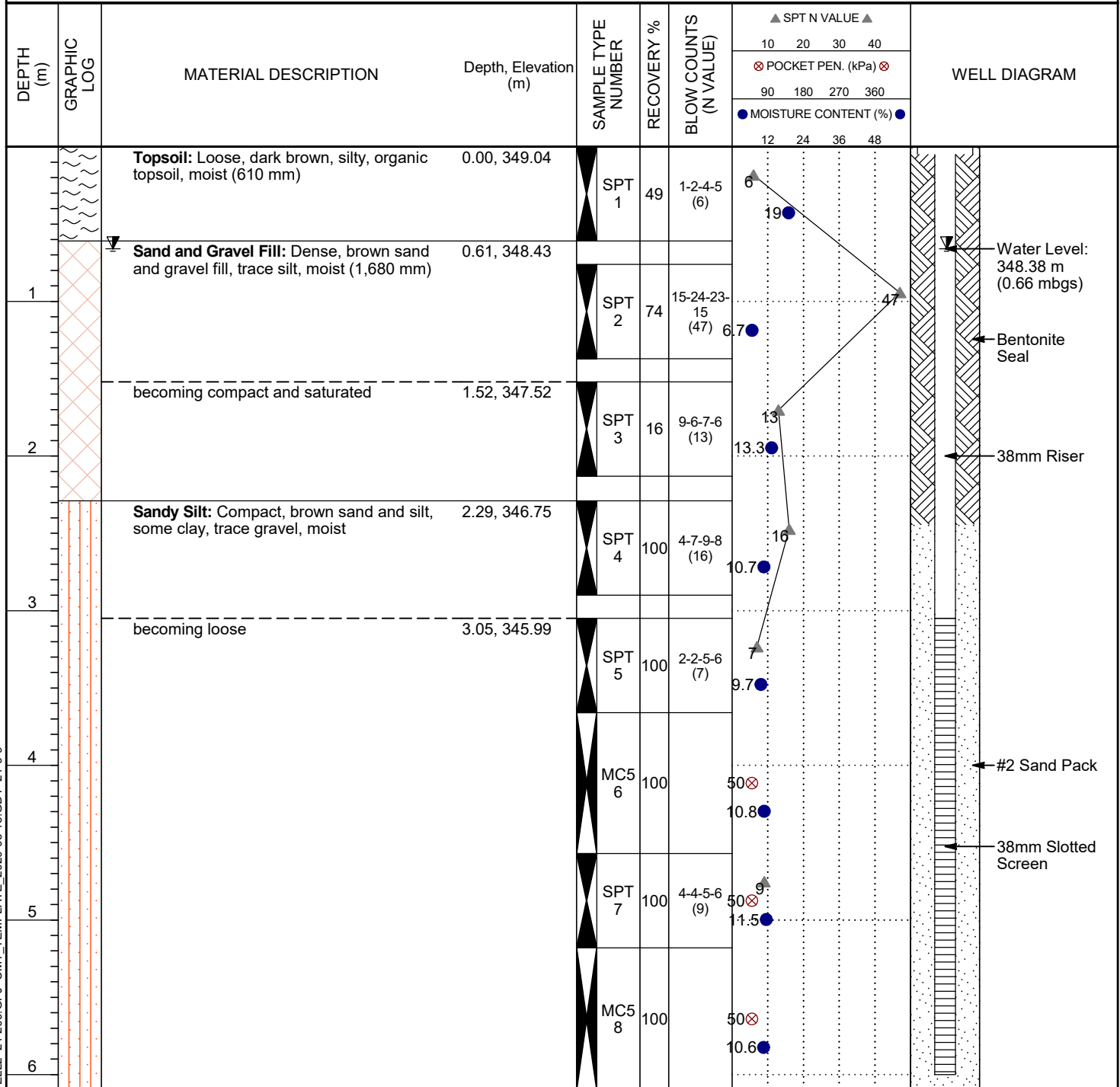
BOREHOLE LOG WITH WELL2 21-209.GPJ CMT_TEMPLATE_2020-05-15.GDT 21-6-9



CMT Engineering Inc.
 1011 Industrial Crescent
 St. Clements, Ontario, N0B 2M0
 Telephone: 519-699-5775
 Fax: 519-699-4664

BOREHOLE NUMBER 6

PROJECT: Proposed Development
PROJECT ADDRESS: 5782 6th Line East
PROJECT NUMBER: 21-209
PROJECT LOCATION: Ariss, Ontario
DRILLING DATE: 21-5-26
GROUND ELEVATION: 349.04 m
DRILLING CONTRACTOR: CMT Drilling Inc.
LOGGED BY: J. Feeney
DRILLING EQUIPMENT: Geoprobe 7822DT
SAMPLING METHOD: SPT

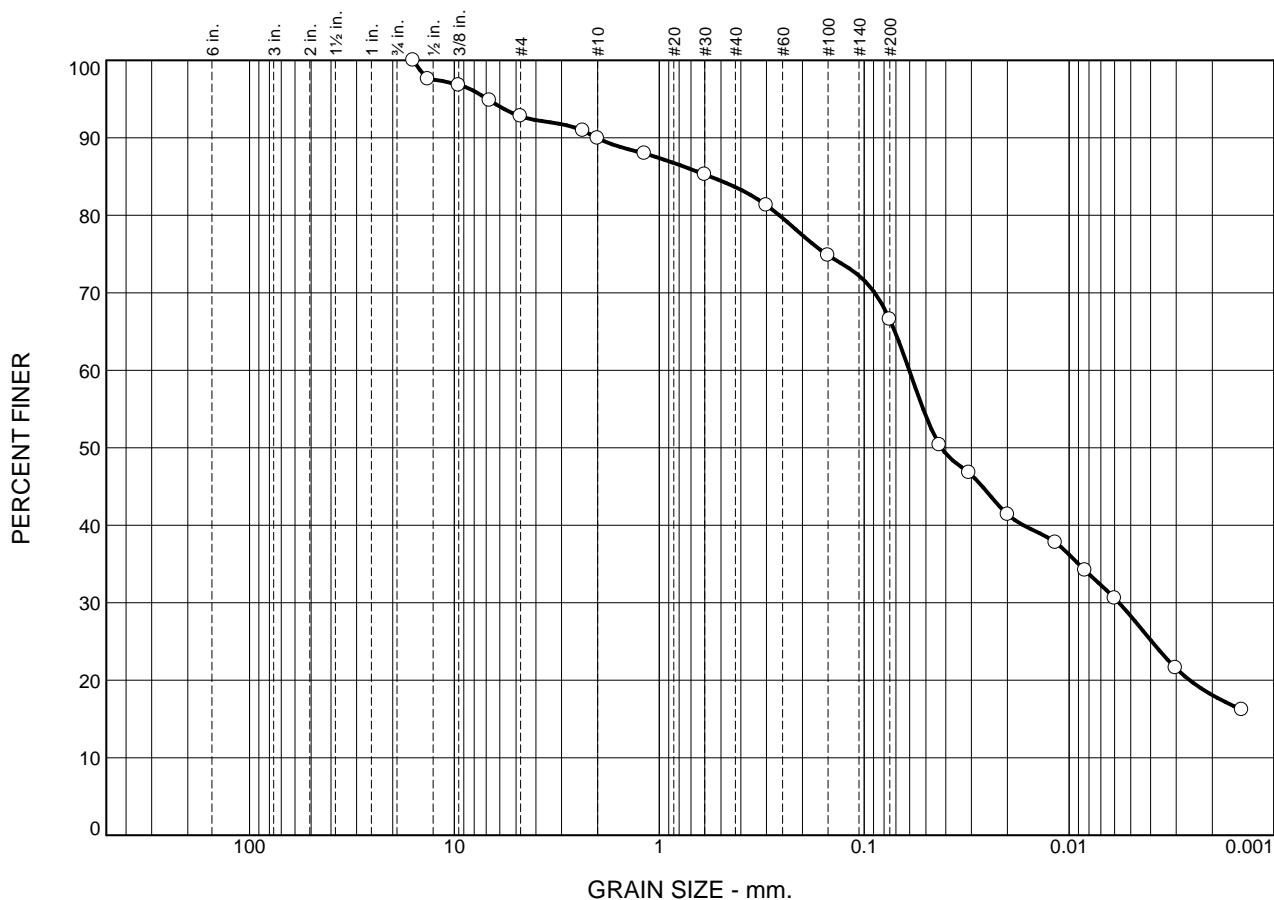


Bottom of borehole at 6.10 m, Elevation 342.94 m.

BOREHOLE LOG WITH WELL2 21-209.GPJ CMT_TEMPLATE_2020-05-15.GDT 21-6-9

**APPENDIX D:
GRAIN SIZE ANALYSES (CMT 2021)**

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	7.2	2.9	6.3	17.0	48.5	18.1

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH1	4	2.29-2.90m	sandy silt, some clay, trace gravel	ML
				Estimated Coefficient of Permeability; $k = 1.22 \times 10^{-6}$ cm/sec	
				Sampled by JF of CMT Engineering Inc., May 13, 2021	
				Tested by JM of CMT Engineering Inc., May 28, 2021	

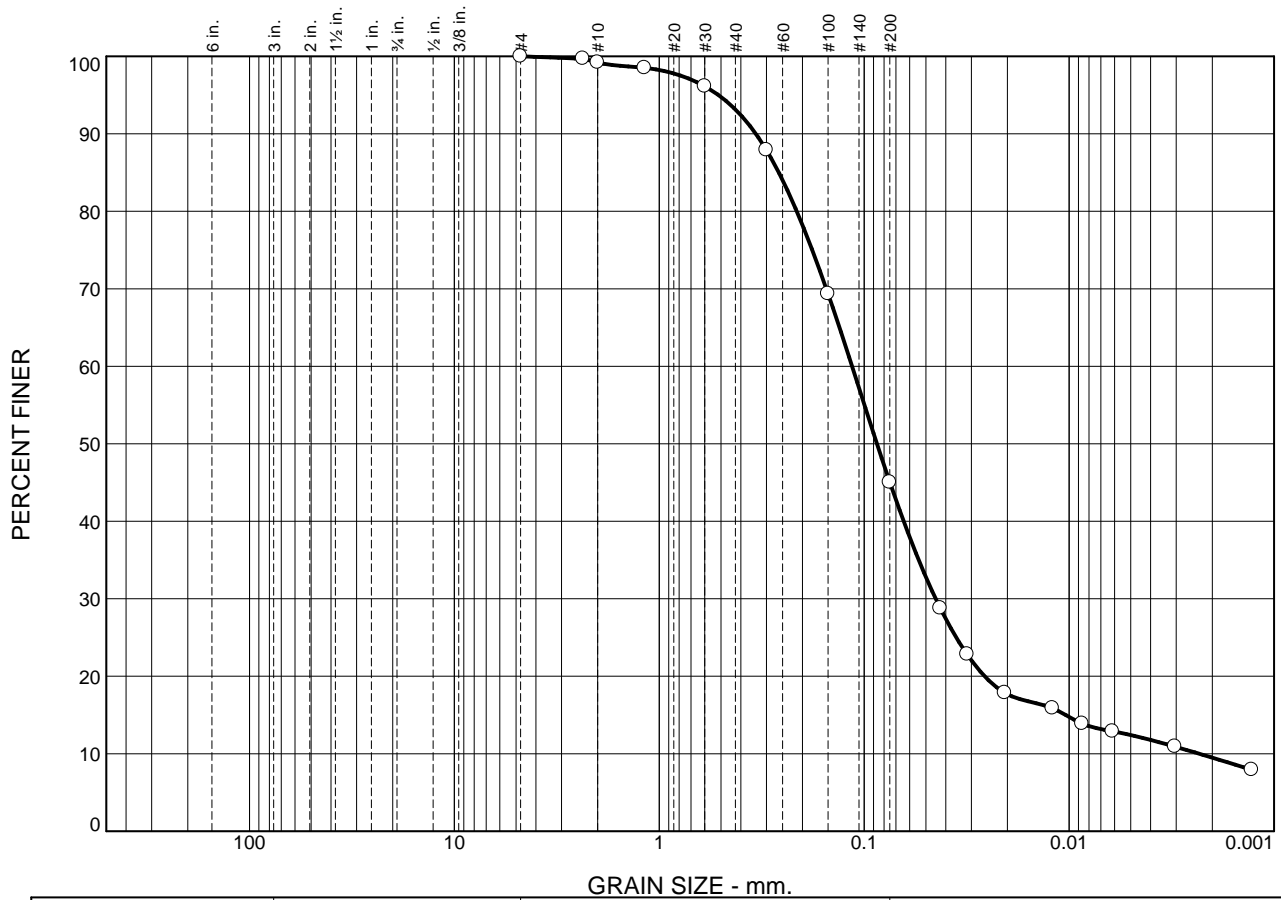
CMT Engineering Inc.

St. Clements, ON

Client: Will-O Homes
Project: 5782 6th Line East
 Ariss, Ontario
Project No.: 21-209

Figure 1

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	0.0	0.8	6.1	48.1	35.5	9.5

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH2	2	0.76-1.37m	sand and silt, trace clay	SM
				Estimated Percolation Rate; T = 20 min/cm	
				Sampled by JF of CMT Engineering Inc., May 13, 2021	
				Tested by JM of CMT Engineering Inc., May 28, 2021	

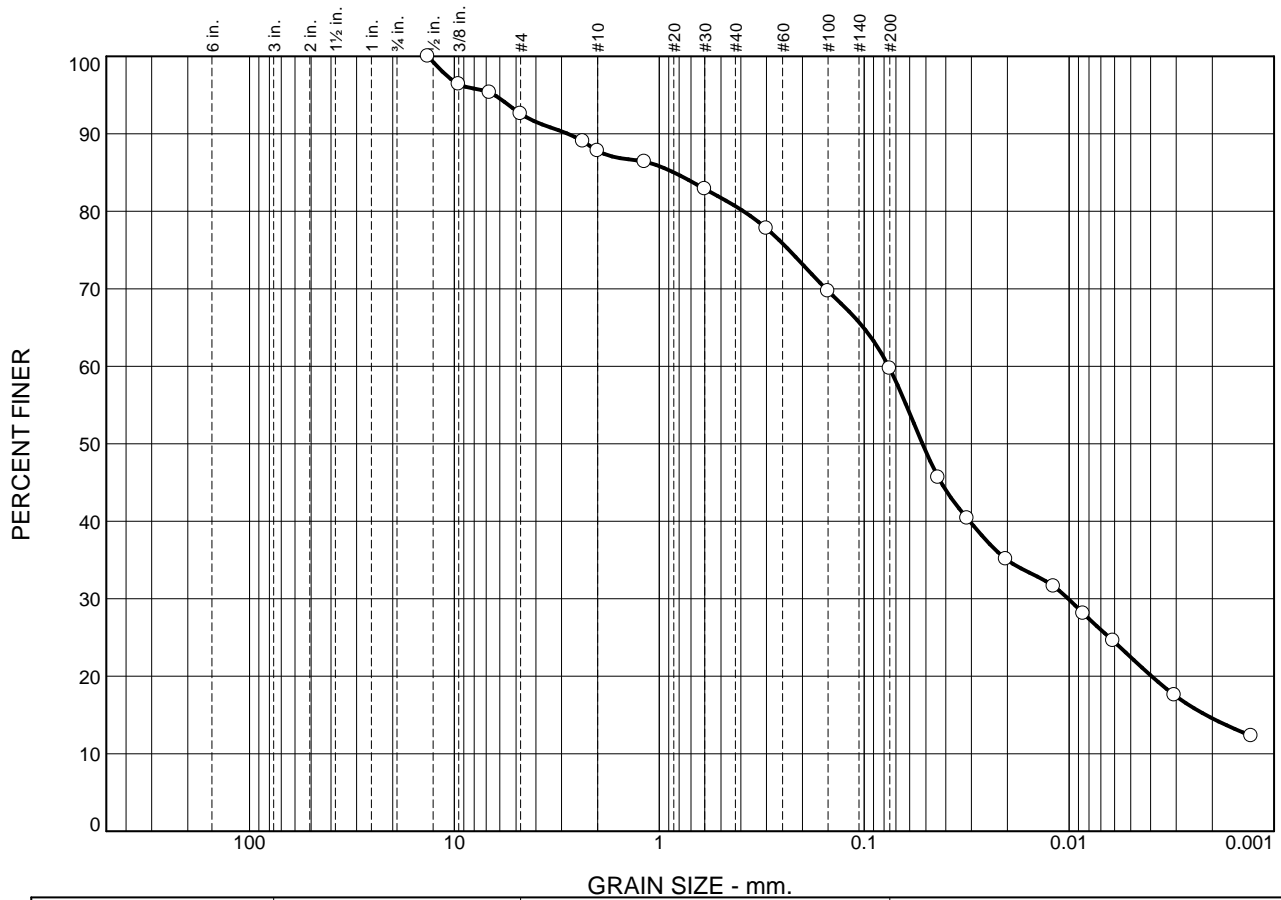
CMT Engineering Inc.

St. Clements, ON

Client: Will-O Homes
Project: 5782 6th Line East
 Ariss, Ontario
Project No.: 21-209

Figure 2

Particle Size Distribution Report



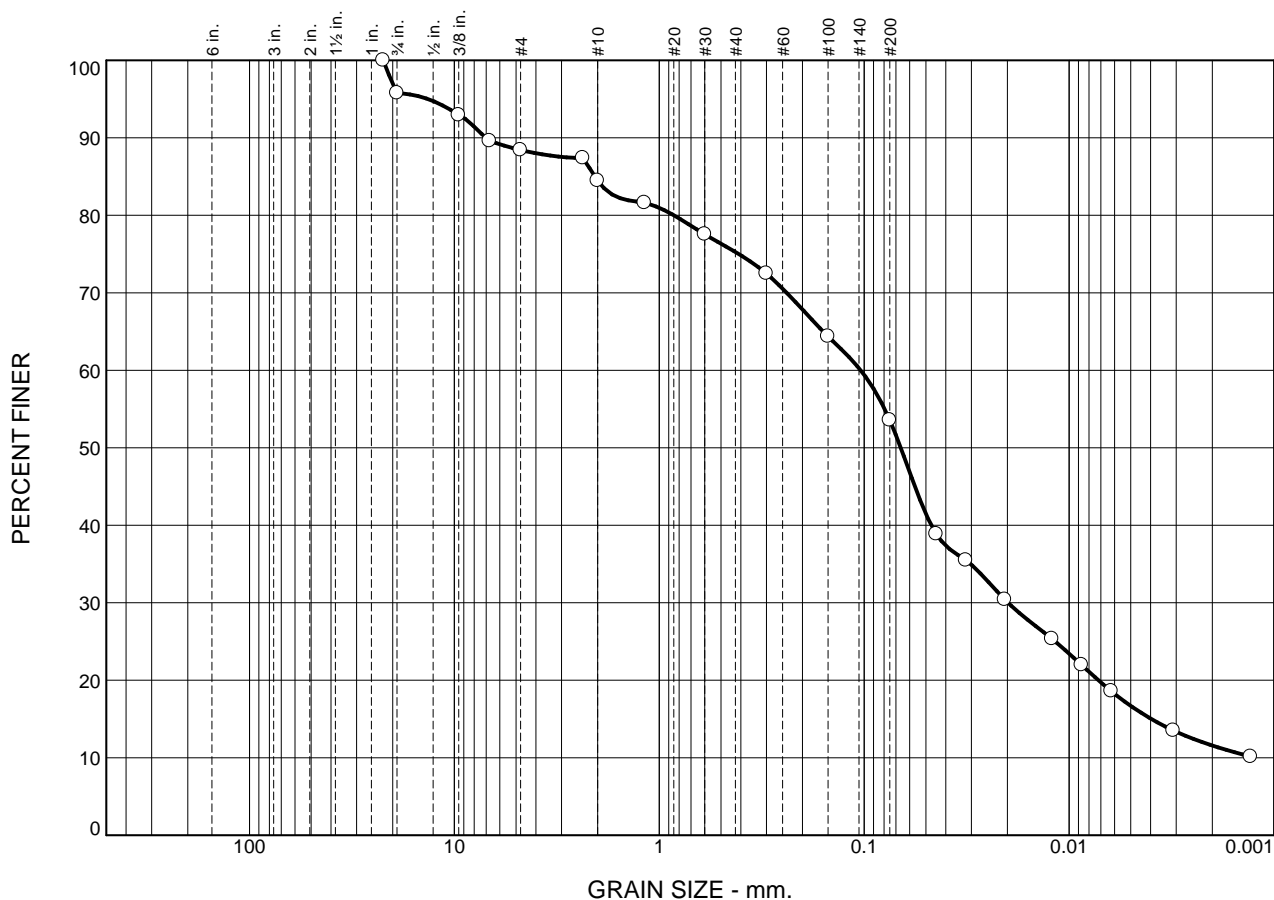
	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	7.4	4.8	7.1	21.0	45.1	14.6

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH3	5	3.05-3.66m	sandy silt, some clay, trace gravel	ML
				Estimated Coefficient of Permeability; $k = 2.44 \times 10^{-6}$ cm/sec	
				Sampled by JF of CMT Engineering Inc., May 13, 2021	
				Tested by JM of CMT Engineering Inc., May 28, 2021	

CMT Engineering Inc.
St. Clements, ON

Client: Will-O Homes
Project: 5782 6th Line East
Ariss, Ontario
Project No.: 21-209

Particle Size Distribution Report



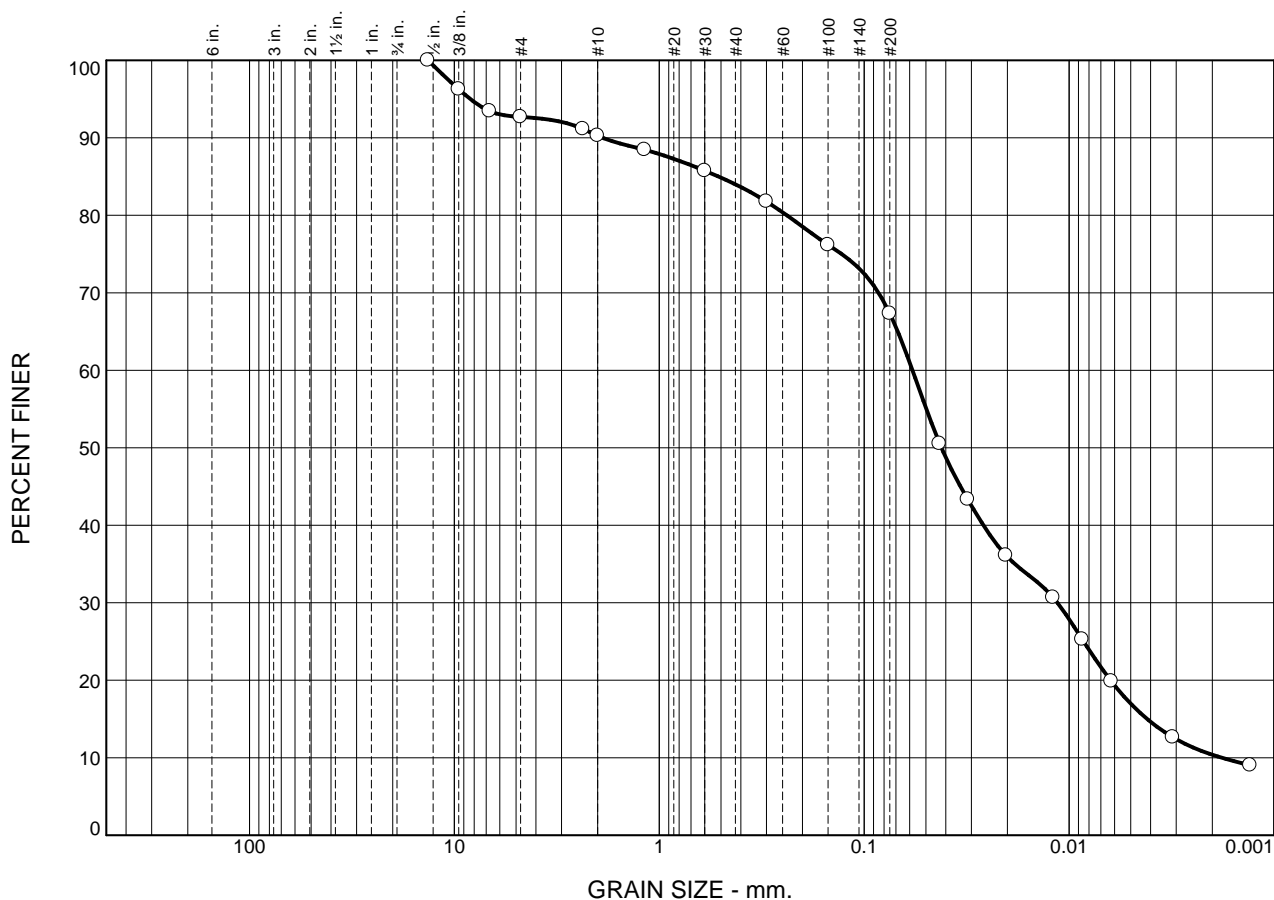
	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	4.2	7.4	3.9	9.2	21.7	42.0	11.6

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH4	3	1.52-2.13m	sandy silt, some clay, and gravel	ML
				Estimated Percolation Rate; T = 25min/cm	
				Sampled by JF of CMT Engineering Inc., May 13, 2021	
				Tested by JM of CMT Engineering Inc., May 28, 2021	

CMT Engineering Inc.
St. Clements, ON

Client: Will-O Homes
Project: 5782 6th Line East
Ariss, Ontario
Project No.: 21-209

Particle Size Distribution Report



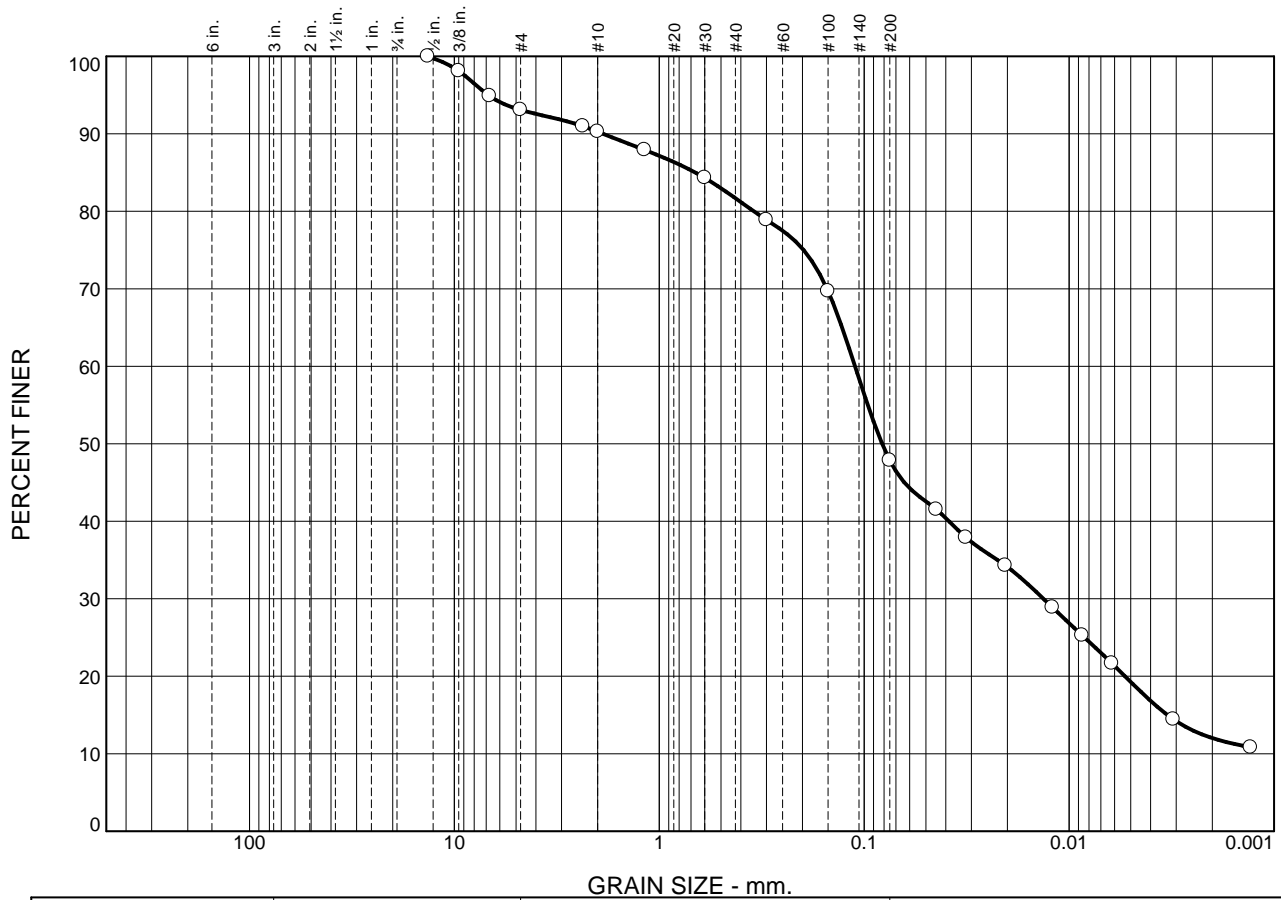
	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	7.3	2.4	6.3	16.7	56.9	10.4

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH5	3	1.52-2.13m	sandy silt, some clay, trace gravel	ML
				Estimated Percolation Rate; T = 30 min/cm	
				Sampled by JF of CMT Engineering Inc., May 13, 2021	
				Tested by JM of CMT Engineering Inc., May 28, 2021	

CMT Engineering Inc.
St. Clements, ON

Client: Will-O Homes
Project: 5782 6th Line East
Ariss, Ontario
Project No.: 21-209

Particle Size Distribution Report



	% Cobbles	% Gravel		% Sand			% Fines	
		Coarse	Fine	Coarse	Medium	Fine	Silt	Clay
○	0.0	0.0	6.9	2.8	8.6	33.9	35.8	12.0

SOIL DATA					
SYMBOL	SOURCE	SAMPLE NO.	DEPTH (ft.)	Material Description	USCS
○	BH6	5	3.05-3.66m	sand and silt, some clay, trace gravel	SM
				Estimated Coefficient of Permeability; $k = 4.08 \times 10^{-6}$ cm/sec	
				Sampled by JF of CMT Engineering Inc., May 13, 2021	
				Tested by JM of CMT Engineering Inc., May 28, 2021	

CMT Engineering Inc.

St. Clements, ON

Client: Will-O Homes
Project: 5782 6th Line East
 Ariss, Ontario
Project No.: 21-209

**APPENDIX E:
LABORATORY CERTIFICATE OF ANALYSIS OF SHALLOW
GROUNDWATER QUALITY**



Your Project #: 420099-2
 Site Location: ARISS
 Your C.O.C. #: 822162-10-01

Attention: Abdi Faarah

GM BluePlan Engineering Limited
 650 Woodlawn Rd W
 Block C, Unit 2
 Guelph, ON
 CANADA N1K 1B8

Report Date: 2023/02/17
 Report #: R7513552
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C343999

Received: 2023/02/14, 08:54

Sample Matrix: Ground Water
 # Samples Received: 5

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	5	N/A	2023/02/15	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	5	N/A	2023/02/15	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	5	N/A	2023/02/16	CAM SOP-00463	SM 23 4500-Cl E m
Conductivity	5	N/A	2023/02/15	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	5	N/A	2023/02/15	CAM SOP-00446	SM 23 5310 B m
Hardness (calculated as CaCO3)	5	N/A	2023/02/16	CAM SOP 00102/00408/00447	SM 2340 B
Dissolved Metals by ICPMS	5	N/A	2023/02/16	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	5	N/A	2023/02/16		
Anion and Cation Sum	5	N/A	2023/02/16		
Total Ammonia-N	5	N/A	2023/02/16	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (2)	5	N/A	2023/02/16	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	5	2023/02/15	2023/02/15	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	5	N/A	2023/02/16	CAM SOP-00461	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C)	5	N/A	2023/02/16		Auto Calc
Sat. pH and Langelier Index (@ 4C)	5	N/A	2023/02/16		Auto Calc
Sulphate by Automated Turbidimetry	5	N/A	2023/02/16	CAM SOP-00464	SM 23 4500-SO42- E m
Total Dissolved Solids (TDS calc)	5	N/A	2023/02/16		Auto Calc

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas 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 Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas 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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report.



Your Project #: 420099-2
Site Location: ARISS
Your C.O.C. #: 822162-10-01

Attention: Abdi Faarah

GM BluePlan Engineering Limited
650 Woodlawn Rd W
Block C, Unit 2
Guelph, ON
CANADA N1K 1B8

Report Date: 2023/02/17
Report #: R7513552
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C343999

Received: 2023/02/14, 08:54

Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, 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:

Ashton Gibson, Project Manager
Email: Ashton.Gibson@bureauveritas.com
Phone# (905)817-5765

=====
This report has been generated and distributed using a secure automated process.

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C343999
Report Date: 2023/02/17

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: ARISS
Sampler Initials: AF

RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		VBG897			VBG897			VBG898		
Sampling Date		2023/02/10 12:30			2023/02/10 12:30			2023/02/10 13:00		
	UNITS	BH-1	RDL	QC Batch	BH-1 Lab-Dup	RDL	QC Batch	BH-2	RDL	QC Batch
Calculated Parameters										
Anion Sum	me/L	7.04	N/A	8505208				6.32	N/A	8505208
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	270	1.0	8505205				280	1.0	8505205
Calculated TDS	mg/L	370	1.0	8505211				320	1.0	8505211
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.8	1.0	8505205				3.1	1.0	8505205
Cation Sum	me/L	7.09	N/A	8505208				6.20	N/A	8505208
Hardness (CaCO3)	mg/L	330	1.0	8505206				220	1.0	8505206
Ion Balance (% Difference)	%	0.380	N/A	8505207				0.910	N/A	8505207
Langelier Index (@ 20C)	N/A	0.858		8505209				0.711		8505209
Langelier Index (@ 4C)	N/A	0.609		8505210				0.462		8505210
Saturation pH (@ 20C)	N/A	7.20		8505209				7.37		8505209
Saturation pH (@ 4C)	N/A	7.45		8505210				7.61		8505210
Inorganics										
Total Ammonia-N	mg/L	<0.050	0.050	8507702				<0.050	0.050	8507702
Conductivity	umho/cm	640	1.0	8505428				550	1.0	8505428
Dissolved Organic Carbon	mg/L	0.69	0.40	8506504				2.1	0.40	8506504
Orthophosphate (P)	mg/L	<0.010	0.010	8505684	<0.010	0.010	8505684	<0.010	0.010	8505684
pH	pH	8.06		8505410				8.08		8505410
Dissolved Sulphate (SO4)	mg/L	58	1.0	8505679	60	1.0	8505679	7.6	1.0	8505679
Alkalinity (Total as CaCO3)	mg/L	270	1.0	8505418				280	1.0	8505418
Dissolved Chloride (Cl-)	mg/L	11	1.0	8506667				17	1.0	8506667
Nitrite (N)	mg/L	<0.010	0.010	8504649				<0.010	0.010	8504649
Nitrate (N)	mg/L	2.16	0.10	8504649				0.27	0.10	8504649
Nitrate + Nitrite (N)	mg/L	2.16	0.10	8504649				0.27	0.10	8504649
Metals										
Dissolved Aluminum (Al)	ug/L	5.2	4.9	8507959	<4.9	4.9	8507959	5.7	4.9	8507959
Dissolved Antimony (Sb)	ug/L	<0.50	0.50	8507959	<0.50	0.50	8507959	<0.50	0.50	8507959
Dissolved Arsenic (As)	ug/L	<1.0	1.0	8507959	<1.0	1.0	8507959	1.9	1.0	8507959
Dissolved Barium (Ba)	ug/L	67	2.0	8507959	68	2.0	8507959	43	2.0	8507959
Dissolved Beryllium (Be)	ug/L	<0.40	0.40	8507959	<0.40	0.40	8507959	<0.40	0.40	8507959
Dissolved Boron (B)	ug/L	26	10	8507959	26	10	8507959	71	10	8507959
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate N/A = Not Applicable										



BUREAU
VERITAS

Bureau Veritas Job #: C343999
Report Date: 2023/02/17

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: ARISS
Sampler Initials: AF

RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		VBG897			VBG897			VBG898		
Sampling Date		2023/02/10 12:30			2023/02/10 12:30			2023/02/10 13:00		
	UNITS	BH-1	RDL	QC Batch	BH-1 Lab-Dup	RDL	QC Batch	BH-2	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L	<0.090	0.090	8507959	<0.090	0.090	8507959	<0.090	0.090	8507959
Dissolved Calcium (Ca)	ug/L	65000	200	8507959	65000	200	8507959	41000	200	8507959
Dissolved Chromium (Cr)	ug/L	<5.0	5.0	8507959	<5.0	5.0	8507959	<5.0	5.0	8507959
Dissolved Cobalt (Co)	ug/L	<0.50	0.50	8507959	<0.50	0.50	8507959	<0.50	0.50	8507959
Dissolved Copper (Cu)	ug/L	1.2	0.90	8507959	1.2	0.90	8507959	1.0	0.90	8507959
Dissolved Iron (Fe)	ug/L	<100	100	8507959	<100	100	8507959	<100	100	8507959
Dissolved Lead (Pb)	ug/L	<0.50	0.50	8507959	<0.50	0.50	8507959	<0.50	0.50	8507959
Dissolved Magnesium (Mg)	ug/L	40000	50	8507959	40000	50	8507959	29000	50	8507959
Dissolved Manganese (Mn)	ug/L	<2.0	2.0	8507959	<2.0	2.0	8507959	9.0	2.0	8507959
Dissolved Molybdenum (Mo)	ug/L	6.7	0.50	8507959	6.7	0.50	8507959	15	0.50	8507959
Dissolved Nickel (Ni)	ug/L	<1.0	1.0	8507959	<1.0	1.0	8507959	1.5	1.0	8507959
Dissolved Phosphorus (P)	ug/L	<100	100	8507959	<100	100	8507959	<100	100	8507959
Dissolved Potassium (K)	ug/L	2600	200	8507959	2600	200	8507959	2800	200	8507959
Dissolved Selenium (Se)	ug/L	<2.0	2.0	8507959	<2.0	2.0	8507959	<2.0	2.0	8507959
Dissolved Silicon (Si)	ug/L	6200	50	8507959	6200	50	8507959	6600	50	8507959
Dissolved Silver (Ag)	ug/L	<0.090	0.090	8507959	<0.090	0.090	8507959	<0.090	0.090	8507959
Dissolved Sodium (Na)	ug/L	12000	100	8507959	12000	100	8507959	40000	100	8507959
Dissolved Strontium (Sr)	ug/L	300	1.0	8507959	300	1.0	8507959	300	1.0	8507959
Dissolved Thallium (Tl)	ug/L	<0.050	0.050	8507959	<0.050	0.050	8507959	<0.050	0.050	8507959
Dissolved Titanium (Ti)	ug/L	<5.0	5.0	8507959	<5.0	5.0	8507959	<5.0	5.0	8507959
Dissolved Uranium (U)	ug/L	2.4	0.10	8507959	2.4	0.10	8507959	0.92	0.10	8507959
Dissolved Vanadium (V)	ug/L	1.0	0.50	8507959	1.0	0.50	8507959	0.55	0.50	8507959
Dissolved Zinc (Zn)	ug/L	<5.0	5.0	8507959	<5.0	5.0	8507959	<5.0	5.0	8507959
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										



BUREAU
VERITAS

Bureau Veritas Job #: C343999
Report Date: 2023/02/17

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: ARISS
Sampler Initials: AF

RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		VBG898			VBG899	VBG900		VBG901		
Sampling Date		2023/02/10 13:00			2023/02/10 13:30	2023/02/10 14:30		2023/02/10 16:00		
	UNITS	BH-2 Lab-Dup	RDL	QC Batch	BH-4	BH-5	RDL	BH-6	RDL	QC Batch

Calculated Parameters										
Anion Sum	me/L				6.97	7.12	N/A	9.44	N/A	8505208
Bicarb. Alkalinity (calc. as CaCO3)	mg/L				270	260	1.0	240	1.0	8505205
Calculated TDS	mg/L				370	370	1.0	510	1.0	8505211
Carb. Alkalinity (calc. as CaCO3)	mg/L				2.6	2.7	1.0	2.3	1.0	8505205
Cation Sum	me/L				6.90	7.05	N/A	10.0	N/A	8505208
Hardness (CaCO3)	mg/L				330	310	1.0	360	1.0	8505206
Ion Balance (% Difference)	%				0.490	0.460	N/A	3.01	N/A	8505207
Langelier Index (@ 20C)	N/A				0.898	0.825		0.796		8505209
Langelier Index (@ 4C)	N/A				0.650	0.576		0.549		8505210
Saturation pH (@ 20C)	N/A				7.12	7.22		7.21		8505209
Saturation pH (@ 4C)	N/A				7.37	7.47		7.45		8505210

Inorganics										
Total Ammonia-N	mg/L				<0.050	<0.050	0.050	<0.050	0.050	8507702
Conductivity	umho/cm	560	1.0	8505428	610	640	1.0	990	1.0	8505428
Dissolved Organic Carbon	mg/L				0.95	0.87	0.40	1.2	0.40	8506504
Orthophosphate (P)	mg/L				<0.010	0.028	0.010	<0.010	0.010	8505684
pH	pH	8.08		8505410	8.02	8.04		8.00		8505410
Dissolved Sulphate (SO4)	mg/L				71	68	1.0	32	1.0	8505679
Alkalinity (Total as CaCO3)	mg/L	280	1.0	8505418	270	270	1.0	250	1.0	8505418
Dissolved Chloride (Cl-)	mg/L				2.8	13	1.0	140	2.0	8506667
Nitrite (N)	mg/L				<0.010	<0.010	0.010	<0.010	0.010	8504649
Nitrate (N)	mg/L				<0.10	0.25	0.10	<0.10	0.10	8504649
Nitrate + Nitrite (N)	mg/L				<0.10	0.25	0.10	<0.10	0.10	8504649

Metals										
Dissolved Aluminum (Al)	ug/L				<4.9	6.4	4.9	<4.9	4.9	8507959
Dissolved Antimony (Sb)	ug/L				<0.50	<0.50	0.50	<0.50	0.50	8507959
Dissolved Arsenic (As)	ug/L				<1.0	<1.0	1.0	<1.0	1.0	8507959
Dissolved Barium (Ba)	ug/L				84	110	2.0	110	2.0	8507959
Dissolved Beryllium (Be)	ug/L				<0.40	<0.40	0.40	<0.40	0.40	8507959
Dissolved Boron (B)	ug/L				17	67	10	48	10	8507959

RDL = Reportable Detection Limit
 QC Batch = Quality Control Batch
 Lab-Dup = Laboratory Initiated Duplicate
 N/A = Not Applicable



BUREAU
VERITAS

Bureau Veritas Job #: C343999
Report Date: 2023/02/17

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: ARISS
Sampler Initials: AF

RCAP - COMPREHENSIVE (GROUND WATER)

Bureau Veritas ID		VBG898			VBG899	VBG900		VBG901		
Sampling Date		2023/02/10 13:00			2023/02/10 13:30	2023/02/10 14:30		2023/02/10 16:00		
	UNITS	BH-2 Lab-Dup	RDL	QC Batch	BH-4	BH-5	RDL	BH-6	RDL	QC Batch
Dissolved Cadmium (Cd)	ug/L				<0.090	<0.090	0.090	<0.090	0.090	8507959
Dissolved Calcium (Ca)	ug/L				77000	62000	200	75000	200	8507959
Dissolved Chromium (Cr)	ug/L				<5.0	<5.0	5.0	<5.0	5.0	8507959
Dissolved Cobalt (Co)	ug/L				<0.50	<0.50	0.50	<0.50	0.50	8507959
Dissolved Copper (Cu)	ug/L				1.6	0.99	0.90	1.7	0.90	8507959
Dissolved Iron (Fe)	ug/L				<100	<100	100	<100	100	8507959
Dissolved Lead (Pb)	ug/L				<0.50	1.1	0.50	<0.50	0.50	8507959
Dissolved Magnesium (Mg)	ug/L				34000	37000	50	42000	50	8507959
Dissolved Manganese (Mn)	ug/L				<2.0	7.8	2.0	3.3	2.0	8507959
Dissolved Molybdenum (Mo)	ug/L				21	5.6	0.50	14	0.50	8507959
Dissolved Nickel (Ni)	ug/L				1.0	<1.0	1.0	<1.0	1.0	8507959
Dissolved Phosphorus (P)	ug/L				<100	<100	100	<100	100	8507959
Dissolved Potassium (K)	ug/L				1800	2400	200	1800	200	8507959
Dissolved Selenium (Se)	ug/L				<2.0	<2.0	2.0	<2.0	2.0	8507959
Dissolved Silicon (Si)	ug/L				5000	4900	50	6700	50	8507959
Dissolved Silver (Ag)	ug/L				<0.090	<0.090	0.090	<0.090	0.090	8507959
Dissolved Sodium (Na)	ug/L				4100	19000	100	64000	100	8507959
Dissolved Strontium (Sr)	ug/L				130	550	1.0	550	1.0	8507959
Dissolved Thallium (Tl)	ug/L				<0.050	<0.050	0.050	<0.050	0.050	8507959
Dissolved Titanium (Ti)	ug/L				<5.0	<5.0	5.0	<5.0	5.0	8507959
Dissolved Uranium (U)	ug/L				1.5	2.5	0.10	0.64	0.10	8507959
Dissolved Vanadium (V)	ug/L				0.55	0.77	0.50	0.50	0.50	8507959
Dissolved Zinc (Zn)	ug/L				<5.0	<5.0	5.0	<5.0	5.0	8507959
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate										



BUREAU
VERITAS

Bureau Veritas Job #: C343999
Report Date: 2023/02/17

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: ARISS
Sampler Initials: AF

TEST SUMMARY

Bureau Veritas ID: VBG897
Sample ID: BH-1
Matrix: Ground Water

Collected: 2023/02/10
Shipped:
Received: 2023/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8505418	N/A	2023/02/15	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8505205	N/A	2023/02/15	Automated Statchk
Chloride by Automated Colourimetry	KONE	8506667	N/A	2023/02/16	Samuel Law
Conductivity	AT	8505428	N/A	2023/02/15	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8506504	N/A	2023/02/15	Gyulshen Idriz
Hardness (calculated as CaCO3)		8505206	N/A	2023/02/16	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8507959	N/A	2023/02/16	Nan Raykha
Ion Balance (% Difference)	CALC	8505207	N/A	2023/02/16	Automated Statchk
Anion and Cation Sum	CALC	8505208	N/A	2023/02/16	Automated Statchk
Total Ammonia-N	LACH/NH4	8507702	N/A	2023/02/16	Shivani Shivani
Nitrate & Nitrite as Nitrogen in Water	LACH	8504649	N/A	2023/02/16	Chandra Nandlal
pH	AT	8505410	2023/02/15	2023/02/15	Surinder Rai
Orthophosphate	KONE	8505684	N/A	2023/02/16	Massarat Jan
Sat. pH and Langelier Index (@ 20C)	CALC	8505209	N/A	2023/02/16	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8505210	N/A	2023/02/16	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8505679	N/A	2023/02/16	Massarat Jan
Total Dissolved Solids (TDS calc)	CALC	8505211	N/A	2023/02/16	Automated Statchk

Bureau Veritas ID: VBG897 Dup
Sample ID: BH-1
Matrix: Ground Water

Collected: 2023/02/10
Shipped:
Received: 2023/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Dissolved Metals by ICPMS	ICP/MS	8507959	N/A	2023/02/16	Nan Raykha
Orthophosphate	KONE	8505684	N/A	2023/02/16	Massarat Jan
Sulphate by Automated Turbidimetry	KONE	8505679	N/A	2023/02/16	Massarat Jan

Bureau Veritas ID: VBG898
Sample ID: BH-2
Matrix: Ground Water

Collected: 2023/02/10
Shipped:
Received: 2023/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8505418	N/A	2023/02/15	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8505205	N/A	2023/02/15	Automated Statchk
Chloride by Automated Colourimetry	KONE	8506667	N/A	2023/02/16	Samuel Law
Conductivity	AT	8505428	N/A	2023/02/15	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8506504	N/A	2023/02/15	Gyulshen Idriz
Hardness (calculated as CaCO3)		8505206	N/A	2023/02/16	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8507959	N/A	2023/02/16	Nan Raykha
Ion Balance (% Difference)	CALC	8505207	N/A	2023/02/16	Automated Statchk
Anion and Cation Sum	CALC	8505208	N/A	2023/02/16	Automated Statchk
Total Ammonia-N	LACH/NH4	8507702	N/A	2023/02/16	Shivani Shivani
Nitrate & Nitrite as Nitrogen in Water	LACH	8504649	N/A	2023/02/16	Chandra Nandlal
pH	AT	8505410	2023/02/15	2023/02/15	Surinder Rai



BUREAU
VERITAS

Bureau Veritas Job #: C343999
Report Date: 2023/02/17

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: ARISS
Sampler Initials: AF

TEST SUMMARY

Bureau Veritas ID: VBG898
Sample ID: BH-2
Matrix: Ground Water

Collected: 2023/02/10
Shipped:
Received: 2023/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Orthophosphate	KONE	8505684	N/A	2023/02/16	Massarat Jan
Sat. pH and Langelier Index (@ 20C)	CALC	8505209	N/A	2023/02/16	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8505210	N/A	2023/02/16	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8505679	N/A	2023/02/16	Massarat Jan
Total Dissolved Solids (TDS calc)	CALC	8505211	N/A	2023/02/16	Automated Statchk

Bureau Veritas ID: VBG898 Dup
Sample ID: BH-2
Matrix: Ground Water

Collected: 2023/02/10
Shipped:
Received: 2023/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8505418	N/A	2023/02/15	Surinder Rai
Conductivity	AT	8505428	N/A	2023/02/15	Surinder Rai
pH	AT	8505410	2023/02/15	2023/02/15	Surinder Rai

Bureau Veritas ID: VBG899
Sample ID: BH-4
Matrix: Ground Water

Collected: 2023/02/10
Shipped:
Received: 2023/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8505418	N/A	2023/02/15	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8505205	N/A	2023/02/15	Automated Statchk
Chloride by Automated Colourimetry	KONE	8506667	N/A	2023/02/16	Samuel Law
Conductivity	AT	8505428	N/A	2023/02/15	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8506504	N/A	2023/02/15	Gyulshen Idriz
Hardness (calculated as CaCO3)		8505206	N/A	2023/02/16	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8507959	N/A	2023/02/16	Nan Raykha
Ion Balance (% Difference)	CALC	8505207	N/A	2023/02/16	Automated Statchk
Anion and Cation Sum	CALC	8505208	N/A	2023/02/16	Automated Statchk
Total Ammonia-N	LACH/NH4	8507702	N/A	2023/02/16	Shivani Shivani
Nitrate & Nitrite as Nitrogen in Water	LACH	8504649	N/A	2023/02/16	Chandra Nandlal
pH	AT	8505410	2023/02/15	2023/02/15	Surinder Rai
Orthophosphate	KONE	8505684	N/A	2023/02/16	Massarat Jan
Sat. pH and Langelier Index (@ 20C)	CALC	8505209	N/A	2023/02/16	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8505210	N/A	2023/02/16	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8505679	N/A	2023/02/16	Massarat Jan
Total Dissolved Solids (TDS calc)	CALC	8505211	N/A	2023/02/16	Automated Statchk

Bureau Veritas ID: VBG900
Sample ID: BH-5
Matrix: Ground Water

Collected: 2023/02/10
Shipped:
Received: 2023/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8505418	N/A	2023/02/15	Surinder Rai



BUREAU
VERITAS

Bureau Veritas Job #: C343999
Report Date: 2023/02/17

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: ARISS
Sampler Initials: AF

TEST SUMMARY

Bureau Veritas ID: VBG900
Sample ID: BH-5
Matrix: Ground Water

Collected: 2023/02/10
Shipped:
Received: 2023/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Carbonate, Bicarbonate and Hydroxide	CALC	8505205	N/A	2023/02/15	Automated Statchk
Chloride by Automated Colourimetry	KONE	8506667	N/A	2023/02/16	Samuel Law
Conductivity	AT	8505428	N/A	2023/02/15	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8506504	N/A	2023/02/15	Gyulshen Idriz
Hardness (calculated as CaCO3)		8505206	N/A	2023/02/16	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8507959	N/A	2023/02/16	Nan Raykha
Ion Balance (% Difference)	CALC	8505207	N/A	2023/02/16	Automated Statchk
Anion and Cation Sum	CALC	8505208	N/A	2023/02/16	Automated Statchk
Total Ammonia-N	LACH/NH4	8507702	N/A	2023/02/16	Shivani Shivani
Nitrate & Nitrite as Nitrogen in Water	LACH	8504649	N/A	2023/02/16	Chandra Nandlal
pH	AT	8505410	2023/02/15	2023/02/15	Surinder Rai
Orthophosphate	KONE	8505684	N/A	2023/02/16	Massarat Jan
Sat. pH and Langelier Index (@ 20C)	CALC	8505209	N/A	2023/02/16	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8505210	N/A	2023/02/16	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8505679	N/A	2023/02/16	Massarat Jan
Total Dissolved Solids (TDS calc)	CALC	8505211	N/A	2023/02/16	Automated Statchk

Bureau Veritas ID: VBG901
Sample ID: BH-6
Matrix: Ground Water

Collected: 2023/02/10
Shipped:
Received: 2023/02/14

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8505418	N/A	2023/02/15	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	8505205	N/A	2023/02/15	Automated Statchk
Chloride by Automated Colourimetry	KONE	8506667	N/A	2023/02/16	Samuel Law
Conductivity	AT	8505428	N/A	2023/02/15	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8506504	N/A	2023/02/15	Gyulshen Idriz
Hardness (calculated as CaCO3)		8505206	N/A	2023/02/16	Automated Statchk
Dissolved Metals by ICPMS	ICP/MS	8507959	N/A	2023/02/16	Nan Raykha
Ion Balance (% Difference)	CALC	8505207	N/A	2023/02/16	Automated Statchk
Anion and Cation Sum	CALC	8505208	N/A	2023/02/16	Automated Statchk
Total Ammonia-N	LACH/NH4	8507702	N/A	2023/02/16	Shivani Shivani
Nitrate & Nitrite as Nitrogen in Water	LACH	8504649	N/A	2023/02/16	Chandra Nandlal
pH	AT	8505410	2023/02/15	2023/02/15	Surinder Rai
Orthophosphate	KONE	8505684	N/A	2023/02/16	Massarat Jan
Sat. pH and Langelier Index (@ 20C)	CALC	8505209	N/A	2023/02/16	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8505210	N/A	2023/02/16	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8505679	N/A	2023/02/16	Massarat Jan
Total Dissolved Solids (TDS calc)	CALC	8505211	N/A	2023/02/16	Automated Statchk



**BUREAU
VERITAS**

Bureau Veritas Job #: C343999
Report Date: 2023/02/17

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: ARISS
Sampler Initials: AF

GENERAL COMMENTS

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C343999

Report Date: 2023/02/17

QUALITY ASSURANCE REPORT

GM BluePlan Engineering Limited

Client Project #: 420099-2

Site Location: ARISS

Sampler Initials: AF

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8504649	Nitrate (N)	2023/02/16	103	80 - 120	100	80 - 120	<0.10	mg/L	1.3	20
8504649	Nitrite (N)	2023/02/16	NC	80 - 120	109	80 - 120	<0.010	mg/L	2.5	20
8505410	pH	2023/02/15			102	98 - 103			0.078	N/A
8505418	Alkalinity (Total as CaCO3)	2023/02/15			100	85 - 115	<1.0	mg/L	0.15	20
8505428	Conductivity	2023/02/15			105	85 - 115	<1.0	umho/cm	0.54	25
8505679	Dissolved Sulphate (SO4)	2023/02/16	NC	75 - 125	111	80 - 120	<1.0	mg/L	2.8	20
8505684	Orthophosphate (P)	2023/02/16	93	75 - 125	95	80 - 120	<0.010	mg/L	NC	20
8506504	Dissolved Organic Carbon	2023/02/15	96	80 - 120	101	80 - 120	<0.40	mg/L	16	20
8506667	Dissolved Chloride (Cl-)	2023/02/16	NC	80 - 120	103	80 - 120	<1.0	mg/L	3.7	20
8507702	Total Ammonia-N	2023/02/16	99	75 - 125	98	80 - 120	<0.050	mg/L	4.3	20
8507959	Dissolved Aluminum (Al)	2023/02/16	105	80 - 120	101	80 - 120	<4.9	ug/L	6.8	20
8507959	Dissolved Antimony (Sb)	2023/02/16	109	80 - 120	103	80 - 120	<0.50	ug/L	NC	20
8507959	Dissolved Arsenic (As)	2023/02/16	105	80 - 120	99	80 - 120	<1.0	ug/L	NC	20
8507959	Dissolved Barium (Ba)	2023/02/16	104	80 - 120	100	80 - 120	<2.0	ug/L	0.67	20
8507959	Dissolved Beryllium (Be)	2023/02/16	107	80 - 120	100	80 - 120	<0.40	ug/L	NC	20
8507959	Dissolved Boron (B)	2023/02/16	107	80 - 120	96	80 - 120	<10	ug/L	1.6	20
8507959	Dissolved Cadmium (Cd)	2023/02/16	107	80 - 120	100	80 - 120	<0.090	ug/L	NC	20
8507959	Dissolved Calcium (Ca)	2023/02/16	NC	80 - 120	100	80 - 120	<200	ug/L	0.024	20
8507959	Dissolved Chromium (Cr)	2023/02/16	105	80 - 120	98	80 - 120	<5.0	ug/L	NC	20
8507959	Dissolved Cobalt (Co)	2023/02/16	102	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
8507959	Dissolved Copper (Cu)	2023/02/16	107	80 - 120	101	80 - 120	<0.90	ug/L	4.3	20
8507959	Dissolved Iron (Fe)	2023/02/16	104	80 - 120	98	80 - 120	<100	ug/L	NC	20
8507959	Dissolved Lead (Pb)	2023/02/16	106	80 - 120	97	80 - 120	<0.50	ug/L	NC	20
8507959	Dissolved Magnesium (Mg)	2023/02/16	NC	80 - 120	97	80 - 120	<50	ug/L	0.48	20
8507959	Dissolved Manganese (Mn)	2023/02/16	104	80 - 120	99	80 - 120	<2.0	ug/L	NC	20
8507959	Dissolved Molybdenum (Mo)	2023/02/16	113	80 - 120	106	80 - 120	<0.50	ug/L	0.090	20
8507959	Dissolved Nickel (Ni)	2023/02/16	101	80 - 120	96	80 - 120	<1.0	ug/L	NC	20
8507959	Dissolved Phosphorus (P)	2023/02/16	115	80 - 120	114	80 - 120	<100	ug/L	NC	20
8507959	Dissolved Potassium (K)	2023/02/16	107	80 - 120	102	80 - 120	<200	ug/L	0.76	20
8507959	Dissolved Selenium (Se)	2023/02/16	105	80 - 120	96	80 - 120	<2.0	ug/L	NC	20
8507959	Dissolved Silicon (Si)	2023/02/16	102	80 - 120	99	80 - 120	<50	ug/L	0.66	20



BUREAU
VERITAS

Bureau Veritas Job #: C343999

Report Date: 2023/02/17

QUALITY ASSURANCE REPORT(CONT'D)

GM BluePlan Engineering Limited

Client Project #: 420099-2

Site Location: ARISS

Sampler Initials: AF

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8507959	Dissolved Silver (Ag)	2023/02/16	108	80 - 120	102	80 - 120	<0.090	ug/L	NC	20
8507959	Dissolved Sodium (Na)	2023/02/16	102	80 - 120	98	80 - 120	<100	ug/L	0.85	20
8507959	Dissolved Strontium (Sr)	2023/02/16	104	80 - 120	100	80 - 120	<1.0	ug/L	0.18	20
8507959	Dissolved Thallium (Tl)	2023/02/16	109	80 - 120	98	80 - 120	<0.050	ug/L	NC	20
8507959	Dissolved Titanium (Ti)	2023/02/16	103	80 - 120	99	80 - 120	<5.0	ug/L	NC	20
8507959	Dissolved Uranium (U)	2023/02/16	105	80 - 120	98	80 - 120	<0.10	ug/L	1.9	20
8507959	Dissolved Vanadium (V)	2023/02/16	104	80 - 120	98	80 - 120	<0.50	ug/L	0.29	20
8507959	Dissolved Zinc (Zn)	2023/02/16	104	80 - 120	98	80 - 120	<5.0	ug/L	NC	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).



BUREAU
VERITAS

Bureau Veritas Job #: C343999
Report Date: 2023/02/17

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: ARISS
Sampler Initials: AF

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.



Bureau Veritas Laboratories
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel: (905) 817-5700 Toll-free 800-563-6266 Fax: (905) 817-5777 www.bvlab.com

CHAI

14-Feb-23 08:54

Ashton Gibson

C343999

INVOICE TO:

Company Name: #1067 GM BluePlan Engineering Limited
 Attention: Joe Rotondi
 Address: 650 Woodlawn Rd W Block C, Unit 2
 Guelph ON N1K 1B8
 Tel: (519) 824-8150 Fax: (519) 824-8089
 Email: jrotondi@gmsby.com info@gmblueplan.ca

REPORT TO:

Company Name:
 Attention: Abdi Faarah; Matt Long
 Address:
 Tel:
 Fax:
 Email: abdi.farah@smblueplan.ca

PROJECT INFORMATION:

Quotation #: B47865
 P.O. #:
 Project: 420099-2
 Project Name: Ariss
 Site #:
 Sampled By: Abdi Faarah

Order #: 822162
 AN4 ENV-1117
 COC #:
 Project Manager: Ashton Gibson
 C#822162-10-01

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BV LABS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
<input type="checkbox"/> Table 1 <input type="checkbox"/> Res/Park <input type="checkbox"/> Medium/Fine <input type="checkbox"/> Table 2 <input type="checkbox"/> Ind/Comm <input type="checkbox"/> Coarse <input type="checkbox"/> Table 3 <input type="checkbox"/> Agri/Other <input type="checkbox"/> For RSC <input type="checkbox"/> Table	<input type="checkbox"/> CCME <input type="checkbox"/> Sanitary Sewer Bylaw <input type="checkbox"/> Reg 558 <input type="checkbox"/> Storm Sewer Bylaw <input type="checkbox"/> MISA Municipality _____ <input type="checkbox"/> PWQO <input type="checkbox"/> Reg 406 Table _____ <input type="checkbox"/> Other _____	

Include Criteria on Certificate of Analysis (Y/N)?

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Field Filtered (please circle): Metals / Hg / Cr / V	Alkalinity	Chloride by Automated Colourometry	Conductivity	Total Ammonia-N	Nitrate (NO3) and Nitrite (NO2) in Water	Total Phosphorus (Colourimetric)	total dissolved metals	RCAP - Comprehensive	Nitrate + Nitrite
								✓	✓
								✓	✓
								✓	✓
								✓	✓
								✓	✓

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT:
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests.
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: _____ Time Required: _____
Rush Confirmation Number: _____ (call lab for #)

Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix
1	BH-1	2023/02/10	12:30	GW
2	BH-2		13:00	GW
3	BH-4		13:50	GW
4	BH-5		14:30	GW
5	BH-6		16:00	GW
6				
7				
8				
9				
10				

# of Bottles	Comments
4	
4	
4	
4	
4	

REC'D IN WATERLOO

* RELINQUISHED BY: (Signature/Print) A.A. / Abdi Faarah	Date: (YY/MM/DD) 23/02/13	Time 16:30	RECEIVED BY: (Signature/Print) K. N. AL-KHAYAT	Date: (YY/MM/DD) 2023/02/14	Time 08:54	# jars used and not submitted	Laboratory Use Only			
						Time Sensitive	Temperature (°C) on Recept 1/2/1°C	Custody Seal Present Intact	Yes /	No

White: BV Labs Yellow: Client

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BV LABS' STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVLABS.COM/TERMS-AND-CONDITIONS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVLABS.COM/RESOURCES/CHAIN-OF-CUSTODY-FORMS.

Bureau Veritas Canada (2019) Inc.

3/4/C 627130

**APPENDIX F:
WELL RECORDS FOR TEST (BEDROCK) WELLS**

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name, Last Name/Organization, E-mail Address, Mailing Address, Municipality, Province, Postal Code, Telephone No.

Well Location

Address of Well Location, Township (PILKINGTON), Lot (17), Concession (5), County/District/Municipality (WELLINGTON), City/Town/Village, Province (Ontario), Postal Code, UTM Coordinates, Municipal Plan and Sublot Number.

Overburden and Bedrock Materials/Abandonment Sealing Record

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To. Includes entries for BROWN CLAY STONES GRAVEL, GRAY CLAY & STONES, GRAY LIMESTONE, BROWN LIMESTONE.

Annular Space

Table with columns: Depth Set at (m/ft) From, To, Type of Sealant Used, Volume Placed. Entry: 0 to 70ft BENTONITE SLURRY, 150gal.

Method of Construction

Well Use

Checkboxes for Method of Construction (Cable Tool, Rotary, Boring, etc.) and Well Use (Public, Commercial, etc.).

Construction Record - Casing

Status of Well

Table with columns: Inside Diameter, Open Hole OR Material, Wall Thickness, Depth, Status of Well. Includes entries for 6 1/2 inch steel casing and 6 inch open hole casing.

Construction Record - Screen

Table with columns: Outside Diameter, Material, Slot No., Depth. Includes entry for 6 inch material screen.

Water Details

Hole Diameter

Table with columns: Water found at Depth, Kind of Water, Hole Diameter (Depth, Diameter). Includes entries for 112ft, 143ft, 153ft depths.

Well Contractor and Well Technician Information

Business Name of Well Contractor (KEITH LANG WELL DRILLING INC), Well Contractor's Licence No. (7154), Business Address (251 ELDON ST GODERICH), Name of Well Technician (KEITH LANG), Date Submitted (2023 M 7 D 5).

Results of Well Yield Testing

Table with columns: After test of well yield, water was, Draw Down (Time, Water Level), Recovery (Time, Water Level). Includes entries for 20gpm pumping rate and 24ft static level.

Map of Well Location

Map area with handwritten notes: OW-1, FIELD, PW-3, X WELL, CANE, and a north arrow.

Well owner's information package delivered (Yes), Date Package Delivered (2023 M 7 D 3), Date Work Completed (2023 M 7 D 17), Ministry Use Only Audit No. (Z399641).

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: WILL O HOMES, Last Name/Organization: P.O BOX 187, Municipality: PETERSBURG, Province: ONT, Postal Code: N0B2H0, Telephone No. (inc. area code):

Well Location

Address of Well Location (Street Number/Name): 55 REINHART PLACE, Township: PILKINGTON, Lot: 17, Concession: 5, City/Town/Village: WELLINGTON, Province: Ontario, Postal Code:

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 BROWN CLAY & STONES SILTY, GRAY CLAY & STONES, BROWN LIMESTONE.

Annular Space

Table with 4 columns: Depth Set at (m/ft) From/To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Row: 0 to 68ft, BENTONITE SLURRY, 120gal.

Results of Well Yield Testing

Table with 4 columns: Time (min), Water Level (m/ft), Time (min), Water Level (m/ft). Includes sections for After test of well yield, water was; Duration of pumping; Final water level end of pumping; Recommended pump depth; Recommended pump rate; Well production; Disinfected?

Method of Construction

- Cable Tool, Rotary (Conventional), Rotary (Reverse), Boring, 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

Table with 5 columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From/To. Rows: 6 1/2 inch steel, 6 inch open hole.

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

Table with 5 columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From/To.

Water Details

Table with 2 columns: Water found at Depth (m/ft), Kind of Water: Fresh Untested Gas Other, specify. Row: 116ft, Fresh.

Hole Diameter

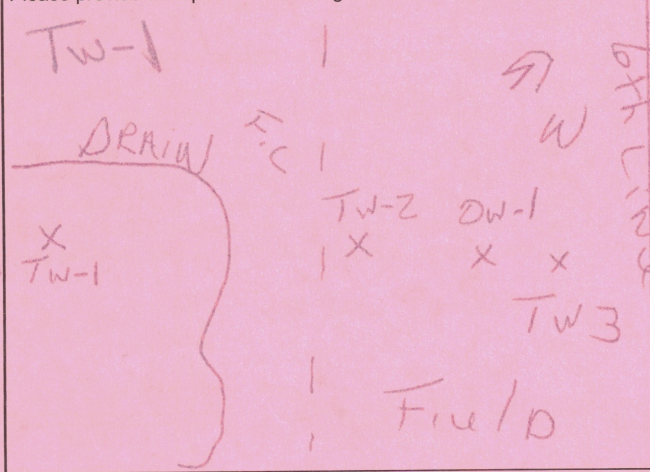
Table with 3 columns: Depth (m/ft) From/To, Diameter (cm/in). Rows: 0 to 68ft, 9.5 inch; 68ft to 122ft, 6 inch.

Well Contractor and Well Technician Information

Business Name of Well Contractor: KEITH LANG WELL DRILLING INC, Well Contractor's Licence No.: 7154, Business Address: 251 ELDON ST GODERICH, Province: ONT, Postal Code: N7A3R9, Business E-mail Address: KEITH LANG, Bus. Telephone No. (inc. area code): 519 524 8154, Name of Well Technician (Last Name, First Name): KEITH LANG, Well Technician's Licence No.: T446, Signature of Technician and/or Contractor: [Signature], Date Submitted: 2023 5 29

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well owner's information package delivered: Yes No, Date Package Delivered: 2023 5 29, Date Work Completed: YYY Y MM DD

Ministry Use Only, Audit No.: Z399649, Received:

Tag#: A359026

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name, Last Name/Organization, E-mail Address, Mailing Address, Municipality, Province, Postal Code, Telephone No.

Well Location

Address of Well Location, Township, Lot, Concession, County/District/Municipality, City/Town/Village, Province, Postal Code, UTM Coordinates, Zone, Easting, Northing, Municipal Plan and Sublot Number, Other

Overburden and Bedrock Materials/Abandonment Sealing Record

Table with columns: General Colour, Most Common Material, Other Materials, General Description, Depth (m/ft) From, To

Annular Space table with columns: Depth Set at (m/ft) From, To, Type of Sealant Used, Volume Placed

Method of Construction and Well Use checkboxes

Construction Record - Casing table with columns: Inside Diameter, Open Hole OR Material, Wall Thickness, Depth (m/ft) From, To

Status of Well checkboxes

Construction Record - Screen table with columns: Outside Diameter, Material, Slot No., Depth (m/ft) From, To

Water Details and Hole Diameter tables

Well Contractor and Well Technician Information form

Results of Well Yield Testing table with columns: Draw Down, Recovery, Time, Water Level

Map of Well Location section with handwritten notes and diagrams

Ministry Use Only section with Audit No. and Date Work Completed

Tag#: A359028

Measurements recorded in: Metric Imperial

Well Owner's Information

First Name: WILL O HOMES, Last Name/Organization: P.O BOX 55 REINHART PLACE 187, Municipality: PETERSBURG, Province: ONT, Postal Code: N0B1H0, Telephone No. (inc. area code):

Well Location

Address of Well Location (Street Number/Name): 55 REINHART PLACE 187, Township: PILKINGTON, Lot: 17, Concession: 5, County/District/Municipality: WELLINGTON, City/Town/Village: PETERSBURG, Province: Ontario, Postal Code: N0B1H0

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 BROWN CLAY & STONES, GRAY CLAY & GRAVEL STONES, BROWN LIMESTONE, GRAY LIMESTONE.

Annular Space

Table with 4 columns: Depth Set at (m/ft) From/To, Type of Sealant Used (Material and Type), Volume Placed (m³/ft³). Row: 0 to 73ft, BENTONITE SLURRY, 150gal.

Results of Well Yield Testing

Table with 4 columns: Time (min), Water Level (m/ft), Time (min), Water Level (m/ft). Includes sections for Draw Down and Recovery with various test results.

Method of Construction

Well Use

Checkboxes for Method of Construction (Cable Tool, Rotary, Boring, etc.) and Well Use (Public, Commercial, Domestic, etc.).

Construction Record - Casing

Status of Well

Table with 5 columns: Inside Diameter (cm/in), Open Hole OR Material, Wall Thickness (cm/in), Depth (m/ft) From/To, Status of Well. Rows for 6 inch steel and 6 inch open hole.

Construction Record - Screen

Table with 5 columns: Outside Diameter (cm/in), Material, Slot No., Depth (m/ft) From/To, Status of Well.

Water Details

Hole Diameter

Table with 4 columns: Water found at Depth (m/ft), Kind of Water, Depth (m/ft) From/To, Diameter (cm/in). Rows for 142ft, 154ft, and 73ft.

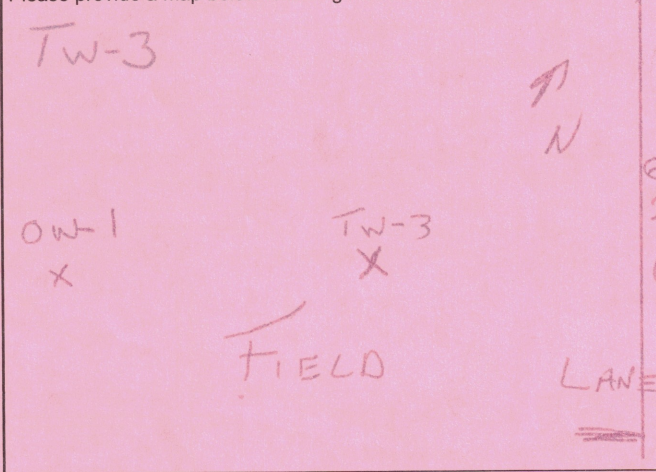
Well Contractor and Well Technician Information

Business Name of Well Contractor: KEITH LANG WELL DRILLING INC, Well Contractor's Licence No.: 7154, Business Address: 251 ELDON ST GODERICH, Province: ONT, Postal Code: N7A3R9

Bus. Telephone No. (inc. area code): 519 524 8199, Name of Well Technician (Last Name, First Name): KEITH LANG, Well Technician's Licence No.: T446, Signature of Technician and/or Contractor: [Signature], Date Submitted: 2023 5 16

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well owner's information package delivered: Yes, Date Package Delivered: 2023 5 16, Date Work Completed: 2023 5 16, Ministry Use Only: Audit No. Z399640, Received:

**APPENDIX G:
CERTIFICATES OF ANALYSIS FOR GROUNDWATER QUALITY
SAMPLES FROM TEST WELLS**



Your Project #: 420099-2
 Site Location: .
 Your C.O.C. #: 939779-04-01

Attention: Abdi Faarah

GM BluePlan Engineering Limited
 650 Woodlawn Rd W
 Block C, Unit 2
 Guelph, ON
 CANADA N1K 1B8

Report Date: 2023/06/26
 Report #: R7689456
 Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C310050

Received: 2023/06/20, 07:20

Sample Matrix: Water
 # Samples Received: 4

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	4	N/A	2023/06/22	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	4	N/A	2023/06/23	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	4	N/A	2023/06/22	CAM SOP-00463	SM 23 4500-Cl E m
Colour	4	N/A	2023/06/26	CAM SOP-00412	SM 23 2120C m
Conductivity	4	N/A	2023/06/22	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	4	N/A	2023/06/23	CAM SOP-00446	SM 23 5310 B m
Hardness (calculated as CaCO3)	4	N/A	2023/06/23	CAM SOP 00102/00408/00447	SM 2340 B
Metals Analysis by ICPMS (as received) (2)	4	N/A	2023/06/22	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	4	N/A	2023/06/23		
Anion and Cation Sum	4	N/A	2023/06/23		
Total Coliforms/ E. coli, CFU/100mL	4	N/A	2023/06/20	CAM SOP-00551	MECP-E3407
Fecal coliform, (CFU/100mL)	4	N/A	2023/06/20	CAM SOP-00552	
Total Ammonia-N	4	N/A	2023/06/22	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (3)	3	N/A	2023/06/21	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Nitrate & Nitrite as Nitrogen in Water (3)	1	N/A	2023/06/22	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	4	2023/06/21	2023/06/22	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	4	N/A	2023/06/22	CAM SOP-00461	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C)	4	N/A	2023/06/23		Auto Calc
Sat. pH and Langelier Index (@ 4C)	4	N/A	2023/06/23		Auto Calc
Sulphate by Automated Turbidimetry	4	N/A	2023/06/22	CAM SOP-00464	SM 23 4500-SO42- E m
Total Dissolved Solids (TDS calc)	4	N/A	2023/06/23		Auto Calc
Turbidity	4	N/A	2023/06/22	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are



Your Project #: 420099-2
Site Location: .
Your C.O.C. #: 939779-04-01

Attention: Abdi Faarah

GM BluePlan Engineering Limited
650 Woodlawn Rd W
Block C, Unit 2
Guelph, ON
CANADA N1K 1B8

Report Date: 2023/06/26
Report #: R7689456
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C310050

Received: 2023/06/20, 07:20

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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, 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) Metals analysis was performed on the sample 'as received'.
- (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:

Ashton Gibson, Project Manager
Email: Ashton.Gibson@bureauveritas.com
Phone# (905)817-5765

=====
This report has been generated and distributed using a secure automated process.

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



BUREAU
VERITAS

Bureau Veritas Job #: C310050
Report Date: 2023/06/26

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: .
Sampler Initials: AF

RCAP - COMPREHENSIVE (DRINKING WATER)

Bureau Veritas ID		WDU485		WDU486	WDU487	WDU488		
Sampling Date		2023/06/19 11:08		2023/06/19 12:33	2023/06/19 15:45	2023/06/19 16:55		
COC Number		939779-04-01		939779-04-01	939779-04-01	939779-04-01		
	UNITS	TW-01-S1	QC Batch	TW-01-S2	TW-03-S1	TW-03-S2	RDL	QC Batch
Calculated Parameters								
Anion Sum	me/L	3.66	8740464	3.66	4.23	4.22	N/A	8740464
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	180	8740459	180	200	200	1.0	8740459
Calculated TDS	mg/L	190	8740146	190	220	220	1.0	8740146
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.4	8740459	2.3	2.2	2.7	1.0	8740459
Cation Sum	me/L	3.77	8740464	3.71	4.52	4.43	N/A	8740464
Hardness (CaCO3)	mg/L	120	8740138	120	170	170	1.0	8740138
Ion Balance (% Difference)	%	1.49	8740463	0.760	3.34	2.40	N/A	8740463
Langelier Index (@ 20C)	N/A	0.466	8740460	0.442	0.585	0.661		8740460
Langelier Index (@ 4C)	N/A	0.216	8740461	0.192	0.335	0.412		8740461
Saturation pH (@ 20C)	N/A	7.70	8740460	7.71	7.48	7.49		8740460
Saturation pH (@ 4C)	N/A	7.95	8740461	7.96	7.73	7.74		8740461
Inorganics								
Total Ammonia-N	mg/L	0.090	8745089	0.10	0.31	0.28	0.050	8745089
Conductivity	umho/cm	390	8742839	350	410	400	1.0	8742839
Dissolved Organic Carbon	mg/L	0.56	8746572	0.50	1.2	1.2	0.40	8746572
Orthophosphate (P)	mg/L	<0.010	8743432	<0.010	<0.010	<0.010	0.010	8743432
pH	pH	8.17	8742848	8.15	8.07	8.15		8742848
Dissolved Sulphate (SO4)	mg/L	4.2	8743480	3.9	6.9	5.2	1.0	8743480
Alkalinity (Total as CaCO3)	mg/L	180	8742868	180	200	210	1.0	8742868
Dissolved Chloride (Cl-)	mg/L	<1.0	8743476	<1.0	<1.0	<1.0	1.0	8743476
Nitrite (N)	mg/L	<0.010	8743386	<0.010	<0.010	0.010	0.010	8742941
Nitrate (N)	mg/L	<0.10	8743386	<0.10	<0.10	<0.10	0.10	8742941
Metals								
Aluminum (Al)	ug/L	22	8743681	<4.9	6.9	<4.9	4.9	8743681
Antimony (Sb)	ug/L	<0.50	8743681	<0.50	<0.50	<0.50	0.50	8743681
Arsenic (As)	ug/L	1.8	8743681	1.7	<1.0	<1.0	1.0	8743681
Barium (Ba)	ug/L	34	8743681	32	40	43	2.0	8743681
Beryllium (Be)	ug/L	<0.40	8743681	<0.40	<0.40	<0.40	0.40	8743681
Boron (B)	ug/L	68	8743681	68	59	57	10	8743681
Cadmium (Cd)	ug/L	<0.090	8743681	<0.090	<0.090	<0.090	0.090	8743681
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable								



BUREAU
VERITAS

Bureau Veritas Job #: C310050
Report Date: 2023/06/26

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: .
Sampler Initials: AF

RCAP - COMPREHENSIVE (DRINKING WATER)

Bureau Veritas ID		WDU485		WDU486	WDU487	WDU488		
Sampling Date		2023/06/19 11:08		2023/06/19 12:33	2023/06/19 15:45	2023/06/19 16:55		
COC Number		939779-04-01		939779-04-01	939779-04-01	939779-04-01		
	UNITS	TW-01-S1	QC Batch	TW-01-S2	TW-03-S1	TW-03-S2	RDL	QC Batch
Calcium (Ca)	ug/L	27000	8743681	26000	40000	39000	200	8743681
Chromium (Cr)	ug/L	<5.0	8743681	<5.0	<5.0	<5.0	5.0	8743681
Cobalt (Co)	ug/L	<0.50	8743681	<0.50	<0.50	<0.50	0.50	8743681
Copper (Cu)	ug/L	<0.90	8743681	<0.90	<0.90	<0.90	0.90	8743681
Iron (Fe)	ug/L	110	8743681	<100	340	<100	100	8743681
Lead (Pb)	ug/L	<0.50	8743681	<0.50	<0.50	<0.50	0.50	8743681
Magnesium (Mg)	ug/L	13000	8743681	13000	17000	17000	50	8743681
Manganese (Mn)	ug/L	12	8743681	9.5	15	7.2	2.0	8743681
Molybdenum (Mo)	ug/L	4.6	8743681	4.5	1.2	0.81	0.50	8743681
Nickel (Ni)	ug/L	<1.0	8743681	<1.0	<1.0	<1.0	1.0	8743681
Phosphorus (P)	ug/L	<100	8743681	<100	<100	<100	100	8743681
Potassium (K)	ug/L	710	8743681	690	1000	1100	200	8743681
Selenium (Se)	ug/L	<2.0	8743681	<2.0	<2.0	<2.0	2.0	8743681
Silicon (Si)	ug/L	5500	8743681	5400	5400	5400	50	8743681
Silver (Ag)	ug/L	<0.090	8743681	<0.090	<0.090	<0.090	0.090	8743681
Sodium (Na)	ug/L	30000	8743681	30000	24000	24000	100	8743681
Strontium (Sr)	ug/L	240	8743681	230	580	640	1.0	8743681
Thallium (Tl)	ug/L	<0.050	8743681	<0.050	<0.050	<0.050	0.050	8743681
Titanium (Ti)	ug/L	<5.0	8743681	<5.0	<5.0	<5.0	5.0	8743681
Uranium (U)	ug/L	0.33	8743681	0.31	0.12	0.10	0.10	8743681
Vanadium (V)	ug/L	<0.50	8743681	<0.50	<0.50	<0.50	0.50	8743681
Zinc (Zn)	ug/L	<5.0	8743681	<5.0	<5.0	<5.0	5.0	8743681
RDL = Reportable Detection Limit								
QC Batch = Quality Control Batch								



BUREAU
VERITAS

Bureau Veritas Job #: C310050
Report Date: 2023/06/26

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: .
Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WDU485	WDU486	WDU487			WDU487		
Sampling Date		2023/06/19 11:08	2023/06/19 12:33	2023/06/19 15:45			2023/06/19 15:45		
COC Number		939779-04-01	939779-04-01	939779-04-01			939779-04-01		
	UNITS	TW-01-S1	TW-01-S2	TW-03-S1	RDL	QC Batch	TW-03-S1 Lab-Dup	RDL	QC Batch
Inorganics									
Colour	TCU	<2	<2	<2	2	8746775	<2	2	8746775
Turbidity	NTU	0.8	0.1	1.9	0.1	8742695			
RDL = Reportable Detection Limit QC Batch = Quality Control Batch Lab-Dup = Laboratory Initiated Duplicate									

Bureau Veritas ID		WDU488		
Sampling Date		2023/06/19 16:55		
COC Number		939779-04-01		
	UNITS	TW-03-S2	RDL	QC Batch
Inorganics				
Colour	TCU	<2	2	8746775
Turbidity	NTU	0.4	0.1	8742695
RDL = Reportable Detection Limit QC Batch = Quality Control Batch				



BUREAU
VERITAS

Bureau Veritas Job #: C310050
Report Date: 2023/06/26

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: .
Sampler Initials: AF

MICROBIOLOGY (WATER)

Bureau Veritas ID		WDU485	WDU486	WDU487	WDU488	
Sampling Date		2023/06/19 11:08	2023/06/19 12:33	2023/06/19 15:45	2023/06/19 16:55	
COC Number		939779-04-01	939779-04-01	939779-04-01	939779-04-01	
	UNITS	TW-01-S1	TW-01-S2	TW-03-S1	TW-03-S2	QC Batch
Microbiological						
Fecal coliform	CFU/100mL	0	0	0	0	8740898
Background	CFU/100mL	550	28	280	6	8740880
Total Coliforms	CFU/100mL	0	1	0	0	8740880
Escherichia coli	CFU/100mL	0	0	0	0	8740880
QC Batch = Quality Control Batch						



BUREAU
VERITAS

Bureau Veritas Job #: C310050
Report Date: 2023/06/26

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: .
Sampler Initials: AF

TEST SUMMARY

Bureau Veritas ID: WDU485
Sample ID: TW-01-S1
Matrix: Water

Collected: 2023/06/19
Shipped:
Received: 2023/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8742868	N/A	2023/06/22	Kien Tran
Carbonate, Bicarbonate and Hydroxide	CALC	8740459	N/A	2023/06/23	Automated Statchk
Chloride by Automated Colourimetry	KONE	8743476	N/A	2023/06/22	Massarat Jan
Colour	SPEC	8746775	N/A	2023/06/26	Viorica Rotaru
Conductivity	AT	8742839	N/A	2023/06/22	Kien Tran
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8746572	N/A	2023/06/23	Gyulshen Idriz
Hardness (calculated as CaCO3)		8740138	N/A	2023/06/23	Automated Statchk
Metals Analysis by ICPMS (as received)	ICP/MS	8743681	N/A	2023/06/22	Azita Fazaeli
Ion Balance (% Difference)	CALC	8740463	N/A	2023/06/23	Automated Statchk
Anion and Cation Sum	CALC	8740464	N/A	2023/06/23	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	8740880	N/A	2023/06/20	Farhana Rahman
Fecal coliform, (CFU/100mL)	PL	8740898	N/A	2023/06/20	Yizhou Han
Total Ammonia-N	LACH/NH4	8745089	N/A	2023/06/22	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8743386	N/A	2023/06/22	Chandra Nandlal
pH	AT	8742848	2023/06/21	2023/06/22	Kien Tran
Orthophosphate	KONE	8743432	N/A	2023/06/22	Massarat Jan
Sat. pH and Langelier Index (@ 20C)	CALC	8740460	N/A	2023/06/23	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8740461	N/A	2023/06/23	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8743480	N/A	2023/06/22	Massarat Jan
Total Dissolved Solids (TDS calc)	CALC	8740146	N/A	2023/06/23	Automated Statchk
Turbidity	AT	8742695	N/A	2023/06/22	Gurpartee Kaur

Bureau Veritas ID: WDU486
Sample ID: TW-01-S2
Matrix: Water

Collected: 2023/06/19
Shipped:
Received: 2023/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8742868	N/A	2023/06/22	Kien Tran
Carbonate, Bicarbonate and Hydroxide	CALC	8740459	N/A	2023/06/23	Automated Statchk
Chloride by Automated Colourimetry	KONE	8743476	N/A	2023/06/22	Massarat Jan
Colour	SPEC	8746775	N/A	2023/06/26	Viorica Rotaru
Conductivity	AT	8742839	N/A	2023/06/22	Kien Tran
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8746572	N/A	2023/06/23	Gyulshen Idriz
Hardness (calculated as CaCO3)		8740138	N/A	2023/06/23	Automated Statchk
Metals Analysis by ICPMS (as received)	ICP/MS	8743681	N/A	2023/06/22	Azita Fazaeli
Ion Balance (% Difference)	CALC	8740463	N/A	2023/06/23	Automated Statchk
Anion and Cation Sum	CALC	8740464	N/A	2023/06/23	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	8740880	N/A	2023/06/20	Farhana Rahman
Fecal coliform, (CFU/100mL)	PL	8740898	N/A	2023/06/20	Yizhou Han
Total Ammonia-N	LACH/NH4	8745089	N/A	2023/06/22	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8742941	N/A	2023/06/21	Chandra Nandlal
pH	AT	8742848	2023/06/21	2023/06/22	Kien Tran
Orthophosphate	KONE	8743432	N/A	2023/06/22	Massarat Jan
Sat. pH and Langelier Index (@ 20C)	CALC	8740460	N/A	2023/06/23	Automated Statchk



BUREAU
VERITAS

Bureau Veritas Job #: C310050
Report Date: 2023/06/26

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: .
Sampler Initials: AF

TEST SUMMARY

Bureau Veritas ID: WDU486
Sample ID: TW-01-S2
Matrix: Water

Collected: 2023/06/19
Shipped:
Received: 2023/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sat. pH and Langelier Index (@ 4C)	CALC	8740461	N/A	2023/06/23	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8743480	N/A	2023/06/22	Massarat Jan
Total Dissolved Solids (TDS calc)	CALC	8740146	N/A	2023/06/23	Automated Statchk
Turbidity	AT	8742695	N/A	2023/06/22	Gurpartee K AUR

Bureau Veritas ID: WDU487
Sample ID: TW-03-S1
Matrix: Water

Collected: 2023/06/19
Shipped:
Received: 2023/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8742868	N/A	2023/06/22	Kien Tran
Carbonate, Bicarbonate and Hydroxide	CALC	8740459	N/A	2023/06/23	Automated Statchk
Chloride by Automated Colourimetry	KONE	8743476	N/A	2023/06/22	Massarat Jan
Colour	SPEC	8746775	N/A	2023/06/26	Viorica Rotaru
Conductivity	AT	8742839	N/A	2023/06/22	Kien Tran
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8746572	N/A	2023/06/23	Gyulshen Idriz
Hardness (calculated as CaCO3)		8740138	N/A	2023/06/23	Automated Statchk
Metals Analysis by ICPMS (as received)	ICP/MS	8743681	N/A	2023/06/22	Azita Fazaeli
Ion Balance (% Difference)	CALC	8740463	N/A	2023/06/23	Automated Statchk
Anion and Cation Sum	CALC	8740464	N/A	2023/06/23	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	8740880	N/A	2023/06/20	Farhana Rahman
Fecal coliform, (CFU/100mL)	PL	8740898	N/A	2023/06/20	Yizhou Han
Total Ammonia-N	LACH/NH4	8745089	N/A	2023/06/22	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8742941	N/A	2023/06/21	Chandra Nandlal
pH	AT	8742848	2023/06/21	2023/06/22	Kien Tran
Orthophosphate	KONE	8743432	N/A	2023/06/22	Massarat Jan
Sat. pH and Langelier Index (@ 20C)	CALC	8740460	N/A	2023/06/23	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8740461	N/A	2023/06/23	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8743480	N/A	2023/06/22	Massarat Jan
Total Dissolved Solids (TDS calc)	CALC	8740146	N/A	2023/06/23	Automated Statchk
Turbidity	AT	8742695	N/A	2023/06/22	Gurpartee K AUR

Bureau Veritas ID: WDU487 Dup
Sample ID: TW-03-S1
Matrix: Water

Collected: 2023/06/19
Shipped:
Received: 2023/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Colour	SPEC	8746775	N/A	2023/06/26	Viorica Rotaru



BUREAU
VERITAS

Bureau Veritas Job #: C310050
Report Date: 2023/06/26

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: .
Sampler Initials: AF

TEST SUMMARY

Bureau Veritas ID: WDU488
Sample ID: TW-03-S2
Matrix: Water

Collected: 2023/06/19
Shipped:
Received: 2023/06/20

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8742868	N/A	2023/06/22	Kien Tran
Carbonate, Bicarbonate and Hydroxide	CALC	8740459	N/A	2023/06/23	Automated Statchk
Chloride by Automated Colourimetry	KONE	8743476	N/A	2023/06/22	Massarat Jan
Colour	SPEC	8746775	N/A	2023/06/26	Viorica Rotaru
Conductivity	AT	8742839	N/A	2023/06/22	Kien Tran
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8746572	N/A	2023/06/23	Gyulshen Idriz
Hardness (calculated as CaCO ₃)		8740138	N/A	2023/06/23	Automated Statchk
Metals Analysis by ICPMS (as received)	ICP/MS	8743681	N/A	2023/06/22	Azita Fazaeli
Ion Balance (% Difference)	CALC	8740463	N/A	2023/06/23	Automated Statchk
Anion and Cation Sum	CALC	8740464	N/A	2023/06/23	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	8740880	N/A	2023/06/20	Farhana Rahman
Fecal coliform, (CFU/100mL)	PL	8740898	N/A	2023/06/20	Yizhou Han
Total Ammonia-N	LACH/NH ₄	8745089	N/A	2023/06/22	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8742941	N/A	2023/06/21	Chandra Nandlal
pH	AT	8742848	2023/06/21	2023/06/22	Kien Tran
Orthophosphate	KONE	8743432	N/A	2023/06/22	Massarat Jan
Sat. pH and Langelier Index (@ 20C)	CALC	8740460	N/A	2023/06/23	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8740461	N/A	2023/06/23	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8743480	N/A	2023/06/22	Massarat Jan
Total Dissolved Solids (TDS calc)	CALC	8740146	N/A	2023/06/23	Automated Statchk
Turbidity	AT	8742695	N/A	2023/06/22	Gurpartee Kaur



BUREAU
VERITAS

Bureau Veritas Job #: C310050
Report Date: 2023/06/26

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: .
Sampler Initials: AF

GENERAL COMMENTS

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C310050

Report Date: 2023/06/26

QUALITY ASSURANCE REPORT

GM BluePlan Engineering Limited

Client Project #: 420099-2

Site Location: .

Sampler Initials: AF

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8742695	Turbidity	2023/06/22			99	80 - 120	<0.1	NTU	6.2	20
8742839	Conductivity	2023/06/22			102	85 - 115	<1.0	umho/cm	0.39	10
8742848	pH	2023/06/22			102	98 - 103			0.54	N/A
8742868	Alkalinity (Total as CaCO3)	2023/06/22			96	85 - 115	<1.0	mg/L	1.4	20
8742941	Nitrate (N)	2023/06/21	106	80 - 120	105	80 - 120	<0.10	mg/L	3.7	20
8742941	Nitrite (N)	2023/06/21	105	80 - 120	107	80 - 120	<0.010	mg/L	NC	20
8743386	Nitrate (N)	2023/06/22	103	80 - 120	106	80 - 120	<0.10	mg/L	NC	20
8743386	Nitrite (N)	2023/06/22	103	80 - 120	104	80 - 120	<0.010	mg/L	NC	20
8743432	Orthophosphate (P)	2023/06/22	93	75 - 125	95	80 - 120	<0.010	mg/L	NC	20
8743476	Dissolved Chloride (Cl-)	2023/06/22	NC	80 - 120	96	80 - 120	<1.0	mg/L	0.11	20
8743480	Dissolved Sulphate (SO4)	2023/06/22	NC	75 - 125	99	80 - 120	<1.0	mg/L	0.19	20
8743681	Aluminum (Al)	2023/06/22	103	80 - 120	101	80 - 120	<4.9	ug/L		
8743681	Antimony (Sb)	2023/06/22	112	80 - 120	105	80 - 120	<0.50	ug/L		
8743681	Arsenic (As)	2023/06/22	101	80 - 120	99	80 - 120	<1.0	ug/L		
8743681	Barium (Ba)	2023/06/22	101	80 - 120	99	80 - 120	<2.0	ug/L		
8743681	Beryllium (Be)	2023/06/22	101	80 - 120	97	80 - 120	<0.40	ug/L		
8743681	Boron (B)	2023/06/22	106	80 - 120	102	80 - 120	<10	ug/L		
8743681	Cadmium (Cd)	2023/06/22	104	80 - 120	101	80 - 120	<0.090	ug/L		
8743681	Calcium (Ca)	2023/06/22	NC	80 - 120	98	80 - 120	<200	ug/L		
8743681	Chromium (Cr)	2023/06/22	100	80 - 120	98	80 - 120	<5.0	ug/L		
8743681	Cobalt (Co)	2023/06/22	99	80 - 120	97	80 - 120	<0.50	ug/L		
8743681	Copper (Cu)	2023/06/22	102	80 - 120	99	80 - 120	<0.90	ug/L		
8743681	Iron (Fe)	2023/06/22	101	80 - 120	99	80 - 120	<100	ug/L		
8743681	Lead (Pb)	2023/06/22	101	80 - 120	98	80 - 120	<0.50	ug/L	NC	20
8743681	Magnesium (Mg)	2023/06/22	100	80 - 120	99	80 - 120	<50	ug/L		
8743681	Manganese (Mn)	2023/06/22	100	80 - 120	99	80 - 120	<2.0	ug/L		
8743681	Molybdenum (Mo)	2023/06/22	107	80 - 120	103	80 - 120	<0.50	ug/L		
8743681	Nickel (Ni)	2023/06/22	100	80 - 120	98	80 - 120	<1.0	ug/L		
8743681	Phosphorus (P)	2023/06/22	105	80 - 120	114	80 - 120	<100	ug/L		
8743681	Potassium (K)	2023/06/22	101	80 - 120	99	80 - 120	<200	ug/L		
8743681	Selenium (Se)	2023/06/22	104	80 - 120	101	80 - 120	<2.0	ug/L		



BUREAU
VERITAS

Bureau Veritas Job #: C310050

Report Date: 2023/06/26

QUALITY ASSURANCE REPORT(CONT'D)

GM BluePlan Engineering Limited

Client Project #: 420099-2

Site Location: .

Sampler Initials: AF

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8743681	Silicon (Si)	2023/06/22	101	80 - 120	99	80 - 120	<50	ug/L		
8743681	Silver (Ag)	2023/06/22	103	80 - 120	102	80 - 120	<0.090	ug/L		
8743681	Sodium (Na)	2023/06/22	98	80 - 120	98	80 - 120	<100	ug/L		
8743681	Strontium (Sr)	2023/06/22	102	80 - 120	100	80 - 120	<1.0	ug/L		
8743681	Thallium (Tl)	2023/06/22	102	80 - 120	97	80 - 120	<0.050	ug/L		
8743681	Titanium (Ti)	2023/06/22	103	80 - 120	100	80 - 120	<5.0	ug/L		
8743681	Uranium (U)	2023/06/22	113	80 - 120	108	80 - 120	<0.10	ug/L		
8743681	Vanadium (V)	2023/06/22	101	80 - 120	97	80 - 120	<0.50	ug/L		
8743681	Zinc (Zn)	2023/06/22	102	80 - 120	99	80 - 120	<5.0	ug/L		
8745089	Total Ammonia-N	2023/06/22	99	75 - 125	103	80 - 120	<0.050	mg/L	1.1	20
8746572	Dissolved Organic Carbon	2023/06/23	95	80 - 120	98	80 - 120	<0.40	mg/L	1.2	20
8746775	Colour	2023/06/26			100	80 - 120	<2	TCU	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.

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).



VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Anastassia Hamanov, Scientific Specialist

Farhana Rahman, Senior Analyst

Yizhou Han, Analyst 1

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.

20-Jun-23 07:20

MILWAUKEE

Ashton Gibson
C310050

ENV-1492

DRINKING WATER CHAIN OF CUSTODY RECORD

1, Mississauga, Ontario Canada L5N 2L8 www.bvna.com
800-563-6266 Fax:905-817-5779

Bottle Order #: 939779

COC #: #939779-04-01

Please indicate which regulation applies to the samples being submitted:

170 318/319 243 170Pb

Not regulated (however water is for human consumption)

REPORT TO: CAM FCD-01101/2 Page of

Company Name: #1067 GM BluePlan Engineering Limited
 Attention: Kim Wilkinson
 Address: 650 Woodlawn Rd W Block C, Unit 2 Guelph ON N1K 1B8
 Tel: (519) 824-8150 Project:
 Fax: (519) 824-8089 P.O. #: 40099-2
 Email: info@gmblueplan.ca

Same as Invoice To
 Company Name:
 Attention: Abdi Faarah
 Address:
 Tel: Fax:
 Email: abdi.farah@gmblueplan.ca

Analysis Requested	
Total Coliforms/ E. coli, CFU/100ml	
Fecal coliform, (CFU/100ml)	
Colour	
Turbidity	
RCAP - Comprehensive	

*DRINKING WATER TYPE LEGEND: [R=Raw Water] [T=Treated/POE] [D=Distribution] [P=Plumbing] [S=Standing] [F=Flushed]

Sample Identification/Location	Date Sampled	Time Sampled	*WATER TYPE (R,T,D,P,S,F)	MOE/MOH Adverse Notification Required?		Field Chlorine		Field Turbidity	Field pH	Watertrax SPL#	Resample Y/N?	# of Bottles
				Yes	No	Free	Total					
1 TW-01-S1	2023/06/19	11:08	R		✓							5
2 TW-01-S2		12:23	R		✓							5
3 TW-03-S1		15:45	R		✓							5
4 TW-03-S2		16:55	R		✓							5
5												
6												
7												
8												
9												
10												

REC'D IN WATERLOO

MICRO

IT IS MANDATORY THAT ALL NOTIFICATION INFORMATION BELOW BE COMPLETED PRIOR TO ANALYSIS FOR REGULATED DRINKING WATER SUBMISSIONS.

TAT (TURNAROUND TIME):		ADVERSE NOTIFICATION INFORMATION		LABORATORY USE ONLY	
RUSH TAT MUST HAVE PRIOR APPROVAL		Waterworks Name: .	Medical Officer of Health/Public Health Unit		Received By (Print): TAMMIE DENISON
<input checked="" type="checkbox"/> Regular (5-15 Working Days)		Waterworks Number: .	Name/Region:		Received By (Sign): TAMMIE DENISON
<input type="checkbox"/> RUSH (Specify Below)		Address:	Contact:		Date: 2023/06/20 Time: 07:20
Date Due:		Contact:	Address:		Comments:
RUSH #		Tel: Fax:	Tel: Fax:		Receiving Temp: 6/16/8°C
Sampled By (Print): Abdi Faarah		Sampled By (Sign): AFA	Date: 2023/06/19	Time: 19:30	Cooling Media Present Y/N? <input checked="" type="checkbox"/>
*Relinquished By (Print): Abdi Faarah		*Relinquished By (Sign): AFA	Date: 2023/06/19	Time: 19:30	Metals Preservation Check Y/N? <input checked="" type="checkbox"/>

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

Rep. by 1 RUPINDER 2023/06/20 16:00 3/2/2

62220
REC'D IN WATERLOO



**BUREAU
VERITAS**

Bureau Veritas Job #: C3I0050
Report Date: 2023/06/26

GM BluePlan Engineering Limited
Client Project #: 420099-2
Site Location: .
Sampler Initials: AF

Exceedance Summary Table – DW for Human Consumption
Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						



Your Project #: 420099-2
Your C.O.C. #: n/a

Attention: Abdi Faarah

GM BluePlan Engineering Limited
650 Woodlawn Rd W
Block C, Unit 2
Guelph, ON
CANADA N1K 1B8

Report Date: 2023/06/28
Report #: R7692528
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C311767

Received: 2023/06/21, 07:50

Sample Matrix: Water
Samples Received: 2

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity	2	N/A	2023/06/24	CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	2	N/A	2023/06/24	CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	2	N/A	2023/06/23	CAM SOP-00463	SM 23 4500-Cl E m
Colour	2	N/A	2023/06/26	CAM SOP-00412	SM 23 2120C m
Conductivity	2	N/A	2023/06/24	CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	2	N/A	2023/06/22	CAM SOP-00446	SM 23 5310 B m
Hardness (calculated as CaCO3)	2	N/A	2023/06/28	CAM SOP 00102/00408/00447	SM 2340 B
Metals Analysis by ICPMS (as received) (2)	2	N/A	2023/06/27	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	2	N/A	2023/06/28		
Anion and Cation Sum	2	N/A	2023/06/28		
Total Coliforms/ E. coli, CFU/100mL	2	N/A	2023/06/21	CAM SOP-00551	MECP-E3407
Fecal coliform, (CFU/100mL)	2	N/A	2023/06/21	CAM SOP-00552	
Total Ammonia-N	1	N/A	2023/06/25	CAM SOP-00441	USGS I-2522-90 m
Total Ammonia-N	1	N/A	2023/06/26	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (3)	2	N/A	2023/06/23	CAM SOP-00440	SM 23 4500-NO3I/NO2B
pH	2	2023/06/22	2023/06/24	CAM SOP-00413	SM 4500H+ B m
Orthophosphate	2	N/A	2023/06/23	CAM SOP-00461	SM 23 4500-P E m
Sat. pH and Langelier Index (@ 20C)	2	N/A	2023/06/28		Auto Calc
Sat. pH and Langelier Index (@ 4C)	2	N/A	2023/06/28		Auto Calc
Sulphate by Automated Turbidimetry	2	N/A	2023/06/23	CAM SOP-00464	SM 23 4500-SO42- E m
Total Dissolved Solids (TDS calc)	2	N/A	2023/06/28		Auto Calc
Turbidity	2	N/A	2023/06/22	CAM SOP-00417	SM 23 2130 B m

Remarks:

Bureau Veritas is accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by Bureau Veritas are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCCFP, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in Bureau Veritas' profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and Bureau Veritas in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are



Your Project #: 420099-2
Your C.O.C. #: n/a

Attention: Abdi Faarah

GM BluePlan Engineering Limited
650 Woodlawn Rd W
Block C, Unit 2
Guelph, ON
CANADA N1K 1B8

Report Date: 2023/06/28
Report #: R7692528
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C311767

Received: 2023/06/21, 07:50

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.

Bureau Veritas liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. Bureau Veritas 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 Bureau Veritas, unless otherwise agreed in writing. Bureau Veritas 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 Bureau Veritas, 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) Metals analysis was performed on the sample 'as received'.
- (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:

Ashton Gibson, Project Manager
Email: Ashton.Gibson@bureauveritas.com
Phone# (905)817-5765

=====
This report has been generated and distributed using a secure automated process.

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.



RCAP - COMPREHENSIVE (DRINKING WATER)

Bureau Veritas ID		WED586		WED587		
Sampling Date		2023/06/20 10:30		2023/06/20 15:15		
COC Number		n/a		n/a		
	UNITS	TW-02-S1	QC Batch	TW-02-S2	RDL	QC Batch
Calculated Parameters						
Anion Sum	me/L	3.70	8743874	3.70	N/A	8743874
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	180	8742082	180	1.0	8742082
Calculated TDS	mg/L	190	8742087	190	1.0	8742087
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.5	8742082	2.6	1.0	8742082
Cation Sum	me/L	3.78	8743874	3.73	N/A	8743874
Hardness (CaCO3)	mg/L	130	8742083	130	1.0	8742083
Ion Balance (% Difference)	%	1.10	8743873	0.500	N/A	8743873
Langelier Index (@ 20C)	N/A	0.494	8742085	0.513		8742085
Langelier Index (@ 4C)	N/A	0.244	8742086	0.263		8742086
Saturation pH (@ 20C)	N/A	7.67	8742085	7.67		8742085
Saturation pH (@ 4C)	N/A	7.92	8742086	7.92		8742086
Inorganics						
Total Ammonia-N	mg/L	0.19	8749476	0.19	0.050	8749381
Conductivity	umho/cm	350	8746250	350	1.0	8746250
Dissolved Organic Carbon	mg/L	0.90	8746249	0.81	0.40	8746249
Orthophosphate (P)	mg/L	<0.010	8746293	<0.010	0.010	8746293
pH	pH	8.17	8746245	8.18		8746245
Dissolved Sulphate (SO4)	mg/L	3.6	8746296	3.4	1.0	8746296
Alkalinity (Total as CaCO3)	mg/L	180	8746247	180	1.0	8746247
Dissolved Chloride (Cl-)	mg/L	<1.0	8746278	<1.0	1.0	8746278
Nitrite (N)	mg/L	<0.010	8745834	<0.010	0.010	8745834
Nitrate (N)	mg/L	<0.10	8745834	<0.10	0.10	8745834
Metals						
Aluminum (Al)	ug/L	5.5	8751258	<4.9	4.9	8751258
Antimony (Sb)	ug/L	<0.50	8751258	<0.50	0.50	8751258
Arsenic (As)	ug/L	1.0	8751258	<1.0	1.0	8751258
Barium (Ba)	ug/L	39	8751258	41	2.0	8751258
Beryllium (Be)	ug/L	<0.40	8751258	<0.40	0.40	8751258
Boron (B)	ug/L	61	8751258	62	10	8751258
Cadmium (Cd)	ug/L	<0.090	8751258	<0.090	0.090	8751258
Calcium (Ca)	ug/L	28000	8751258	28000	200	8751258
RDL = Reportable Detection Limit QC Batch = Quality Control Batch N/A = Not Applicable						



BUREAU
VERITAS

Bureau Veritas Job #: C311767
Report Date: 2023/06/28

GM BluePlan Engineering Limited
Client Project #: 420099-2
Sampler Initials: AF

RCAP - COMPREHENSIVE (DRINKING WATER)

Bureau Veritas ID		WED586		WED587		
Sampling Date		2023/06/20 10:30		2023/06/20 15:15		
COC Number		n/a		n/a		
	UNITS	TW-02-S1	QC Batch	TW-02-S2	RDL	QC Batch
Chromium (Cr)	ug/L	<5.0	8751258	<5.0	5.0	8751258
Cobalt (Co)	ug/L	<0.50	8751258	<0.50	0.50	8751258
Copper (Cu)	ug/L	1.1	8751258	<0.90	0.90	8751258
Iron (Fe)	ug/L	120	8751258	110	100	8751258
Lead (Pb)	ug/L	<0.50	8751258	<0.50	0.50	8751258
Magnesium (Mg)	ug/L	15000	8751258	14000	50	8751258
Manganese (Mn)	ug/L	5.1	8751258	4.2	2.0	8751258
Molybdenum (Mo)	ug/L	4.6	8751258	4.1	0.50	8751258
Nickel (Ni)	ug/L	<1.0	8751258	<1.0	1.0	8751258
Phosphorus (P)	ug/L	<100	8751258	<100	100	8751258
Potassium (K)	ug/L	770	8751258	770	200	8751258
Selenium (Se)	ug/L	<2.0	8751258	<2.0	2.0	8751258
Silicon (Si)	ug/L	5600	8751258	5600	50	8751258
Silver (Ag)	ug/L	<0.090	8751258	<0.090	0.090	8751258
Sodium (Na)	ug/L	26000	8751258	26000	100	8751258
Strontium (Sr)	ug/L	310	8751258	310	1.0	8751258
Thallium (Tl)	ug/L	<0.050	8751258	<0.050	0.050	8751258
Titanium (Ti)	ug/L	<5.0	8751258	<5.0	5.0	8751258
Uranium (U)	ug/L	0.43	8751258	0.38	0.10	8751258
Vanadium (V)	ug/L	<0.50	8751258	<0.50	0.50	8751258
Zinc (Zn)	ug/L	<5.0	8751258	<5.0	5.0	8751258
RDL = Reportable Detection Limit QC Batch = Quality Control Batch						



BUREAU
VERITAS

Bureau Veritas Job #: C311767
Report Date: 2023/06/28

GM BluePlan Engineering Limited
Client Project #: 420099-2
Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID		WED586		WED587		
Sampling Date		2023/06/20 10:30		2023/06/20 15:15		
COC Number		n/a		n/a		
	UNITS	TW-02-S1	RDL	TW-02-S2	RDL	QC Batch
Inorganics						
Colour	TCU	<2	2	<2	2	8746775
Turbidity	NTU	0.6	0.1	0.36	0.04	8744649
RDL = Reportable Detection Limit						
QC Batch = Quality Control Batch						



BUREAU
VERITAS

Bureau Veritas Job #: C311767
Report Date: 2023/06/28

GM BluePlan Engineering Limited
Client Project #: 420099-2
Sampler Initials: AF

MICROBIOLOGY (WATER)

Bureau Veritas ID		WED586	WED587	
Sampling Date		2023/06/20 10:30	2023/06/20 15:15	
COC Number		n/a	n/a	
	UNITS	TW-02-S1	TW-02-S2	QC Batch
Microbiological				
Fecal coliform	CFU/100mL	0	0	8744083
Background	CFU/100mL	450	59	8744055
Total Coliforms	CFU/100mL	0	0	8744055
Escherichia coli	CFU/100mL	0	0	8744055
QC Batch = Quality Control Batch				



BUREAU
VERITAS

Bureau Veritas Job #: C311767
Report Date: 2023/06/28

GM BluePlan Engineering Limited
Client Project #: 420099-2
Sampler Initials: AF

TEST SUMMARY

Bureau Veritas ID: WED586
Sample ID: TW-02-S1
Matrix: Water

Collected: 2023/06/20
Shipped:
Received: 2023/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8746247	N/A	2023/06/24	Kien Tran
Carbonate, Bicarbonate and Hydroxide	CALC	8742082	N/A	2023/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	8746278	N/A	2023/06/23	Alina Dobreanu
Colour	SPEC	8746775	N/A	2023/06/26	Viorica Rotaru
Conductivity	AT	8746250	N/A	2023/06/24	Kien Tran
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8746249	N/A	2023/06/22	Gyulshen Idriz
Hardness (calculated as CaCO3)		8742083	N/A	2023/06/28	Automated Statchk
Metals Analysis by ICPMS (as received)	ICP/MS	8751258	N/A	2023/06/27	Azita Fazaeli
Ion Balance (% Difference)	CALC	8743873	N/A	2023/06/28	Automated Statchk
Anion and Cation Sum	CALC	8743874	N/A	2023/06/28	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	8744055	N/A	2023/06/21	Rayane Gama Santos
Fecal coliform, (CFU/100mL)	PL	8744083	N/A	2023/06/21	Yizhou Han
Total Ammonia-N	LACH/NH4	8749476	N/A	2023/06/26	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8745834	N/A	2023/06/23	Chandra Nandlal
pH	AT	8746245	2023/06/22	2023/06/24	Kien Tran
Orthophosphate	KONE	8746293	N/A	2023/06/23	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8742085	N/A	2023/06/28	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8742086	N/A	2023/06/28	Automated Statchk
Sulphate by Automated Turbidimetry	KONE	8746296	N/A	2023/06/23	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8742087	N/A	2023/06/28	Automated Statchk
Turbidity	AT	8744649	N/A	2023/06/22	Gurpartee Kaur

Bureau Veritas ID: WED587
Sample ID: TW-02-S2
Matrix: Water

Collected: 2023/06/20
Shipped:
Received: 2023/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	8746247	N/A	2023/06/24	Kien Tran
Carbonate, Bicarbonate and Hydroxide	CALC	8742082	N/A	2023/06/24	Automated Statchk
Chloride by Automated Colourimetry	KONE	8746278	N/A	2023/06/23	Alina Dobreanu
Colour	SPEC	8746775	N/A	2023/06/26	Viorica Rotaru
Conductivity	AT	8746250	N/A	2023/06/24	Kien Tran
Dissolved Organic Carbon (DOC)	TOCV/NDIR	8746249	N/A	2023/06/22	Gyulshen Idriz
Hardness (calculated as CaCO3)		8742083	N/A	2023/06/28	Automated Statchk
Metals Analysis by ICPMS (as received)	ICP/MS	8751258	N/A	2023/06/27	Azita Fazaeli
Ion Balance (% Difference)	CALC	8743873	N/A	2023/06/28	Automated Statchk
Anion and Cation Sum	CALC	8743874	N/A	2023/06/28	Automated Statchk
Total Coliforms/ E. coli, CFU/100mL	PL	8744055	N/A	2023/06/21	Rayane Gama Santos
Fecal coliform, (CFU/100mL)	PL	8744083	N/A	2023/06/21	Yizhou Han
Total Ammonia-N	LACH/NH4	8749381	N/A	2023/06/25	Prabhjot Kaur
Nitrate & Nitrite as Nitrogen in Water	LACH	8745834	N/A	2023/06/23	Chandra Nandlal
pH	AT	8746245	2023/06/22	2023/06/24	Kien Tran
Orthophosphate	KONE	8746293	N/A	2023/06/23	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	8742085	N/A	2023/06/28	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	8742086	N/A	2023/06/28	Automated Statchk



BUREAU
VERITAS

Bureau Veritas Job #: C311767
Report Date: 2023/06/28

GM BluePlan Engineering Limited
Client Project #: 420099-2
Sampler Initials: AF

TEST SUMMARY

Bureau Veritas ID: WED587
Sample ID: TW-02-S2
Matrix: Water

Collected: 2023/06/20
Shipped:
Received: 2023/06/21

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Sulphate by Automated Turbidimetry	KONE	8746296	N/A	2023/06/23	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	8742087	N/A	2023/06/28	Automated Statchk
Turbidity	AT	8744649	N/A	2023/06/22	Gurparteek KAUR



**BUREAU
VERITAS**

Bureau Veritas Job #: C311767
Report Date: 2023/06/28

GM BluePlan Engineering Limited
Client Project #: 420099-2
Sampler Initials: AF

GENERAL COMMENTS

Results relate only to the items tested.



BUREAU
VERITAS

Bureau Veritas Job #: C311767

Report Date: 2023/06/28

QUALITY ASSURANCE REPORT

GM BluePlan Engineering Limited

Client Project #: 420099-2

Sampler Initials: AF

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8744649	Turbidity	2023/06/22			100	80 - 120	<0.1	NTU	0	20
8745834	Nitrate (N)	2023/06/23	88	80 - 120	102	80 - 120	<0.10	mg/L	1.1	20
8745834	Nitrite (N)	2023/06/23	102	80 - 120	101	80 - 120	<0.010	mg/L	NC	20
8746245	pH	2023/06/23			102	98 - 103			0.078	N/A
8746247	Alkalinity (Total as CaCO3)	2023/06/23			94	85 - 115	<1.0	mg/L	1.2	20
8746249	Dissolved Organic Carbon	2023/06/22	97	80 - 120	99	80 - 120	<0.40	mg/L	3.2	20
8746250	Conductivity	2023/06/23			101	85 - 115	<1.0	umho/cm	1.1	10
8746278	Dissolved Chloride (Cl-)	2023/06/23	NC	80 - 120	94	80 - 120	<1.0	mg/L	2.6	20
8746293	Orthophosphate (P)	2023/06/23	90	75 - 125	90	80 - 120	<0.010	mg/L	NC	20
8746296	Dissolved Sulphate (SO4)	2023/06/23	NC	75 - 125	92	80 - 120	<1.0	mg/L	1.9	20
8746775	Colour	2023/06/26			100	80 - 120	<2	TCU	NC	25
8749381	Total Ammonia-N	2023/06/25	97	75 - 125	97	80 - 120	<0.050	mg/L	2.2	20
8749476	Total Ammonia-N	2023/06/26	104	75 - 125	104	80 - 120	<0.050	mg/L	NC	20
8751258	Aluminum (Al)	2023/06/27	102	80 - 120	97	80 - 120	<4.9	ug/L	2.8	20
8751258	Antimony (Sb)	2023/06/27	104	80 - 120	101	80 - 120	<0.50	ug/L		
8751258	Arsenic (As)	2023/06/27	102	80 - 120	99	80 - 120	<1.0	ug/L		
8751258	Barium (Ba)	2023/06/27	99	80 - 120	96	80 - 120	<2.0	ug/L		
8751258	Beryllium (Be)	2023/06/27	99	80 - 120	96	80 - 120	<0.40	ug/L		
8751258	Boron (B)	2023/06/27	105	80 - 120	101	80 - 120	<10	ug/L		
8751258	Cadmium (Cd)	2023/06/27	100	80 - 120	97	80 - 120	<0.090	ug/L		
8751258	Calcium (Ca)	2023/06/27	NC	80 - 120	95	80 - 120	<200	ug/L		
8751258	Chromium (Cr)	2023/06/27	99	80 - 120	97	80 - 120	<5.0	ug/L		
8751258	Cobalt (Co)	2023/06/27	99	80 - 120	97	80 - 120	<0.50	ug/L		
8751258	Copper (Cu)	2023/06/27	99	80 - 120	96	80 - 120	<0.90	ug/L		
8751258	Iron (Fe)	2023/06/27	99	80 - 120	98	80 - 120	<100	ug/L		
8751258	Lead (Pb)	2023/06/27	98	80 - 120	96	80 - 120	<0.50	ug/L		
8751258	Magnesium (Mg)	2023/06/27	98	80 - 120	96	80 - 120	<50	ug/L		
8751258	Manganese (Mn)	2023/06/27	101	80 - 120	99	80 - 120	<2.0	ug/L		
8751258	Molybdenum (Mo)	2023/06/27	102	80 - 120	100	80 - 120	<0.50	ug/L		
8751258	Nickel (Ni)	2023/06/27	99	80 - 120	98	80 - 120	<1.0	ug/L		
8751258	Phosphorus (P)	2023/06/27	105	80 - 120	111	80 - 120	<100	ug/L		



BUREAU
VERITAS

Bureau Veritas Job #: C311767

Report Date: 2023/06/28

QUALITY ASSURANCE REPORT(CONT'D)

GM BluePlan Engineering Limited

Client Project #: 420099-2

Sampler Initials: AF

QC Batch	Parameter	Date	Matrix Spike		SPIKED BLANK		Method Blank		RPD	
			% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits
8751258	Potassium (K)	2023/06/27	100	80 - 120	98	80 - 120	<200	ug/L		
8751258	Selenium (Se)	2023/06/27	102	80 - 120	97	80 - 120	<2.0	ug/L		
8751258	Silicon (Si)	2023/06/27	102	80 - 120	98	80 - 120	<50	ug/L		
8751258	Silver (Ag)	2023/06/27	95	80 - 120	98	80 - 120	<0.090	ug/L		
8751258	Sodium (Na)	2023/06/27	94	80 - 120	96	80 - 120	<100	ug/L		
8751258	Strontium (Sr)	2023/06/27	101	80 - 120	99	80 - 120	<1.0	ug/L		
8751258	Thallium (Tl)	2023/06/27	98	80 - 120	96	80 - 120	<0.050	ug/L		
8751258	Titanium (Ti)	2023/06/27	102	80 - 120	96	80 - 120	<5.0	ug/L		
8751258	Uranium (U)	2023/06/27	107	80 - 120	104	80 - 120	<0.10	ug/L		
8751258	Vanadium (V)	2023/06/27	101	80 - 120	99	80 - 120	<0.50	ug/L		
8751258	Zinc (Zn)	2023/06/27	102	80 - 120	100	80 - 120	<5.0	ug/L		

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).



VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere

Cristina Carriere, Senior Scientific Specialist

Rayane Gama Santos

Rayane Gama Santos, Lab Technician

Yizhou Han

Yizhou Han, Analyst 1

Bureau Veritas 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 Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by {0}, {1} responsible for {2} {3} laboratory operations.



**BUREAU
VERITAS**

Bureau Veritas Job #: C311767
Report Date: 2023/06/28

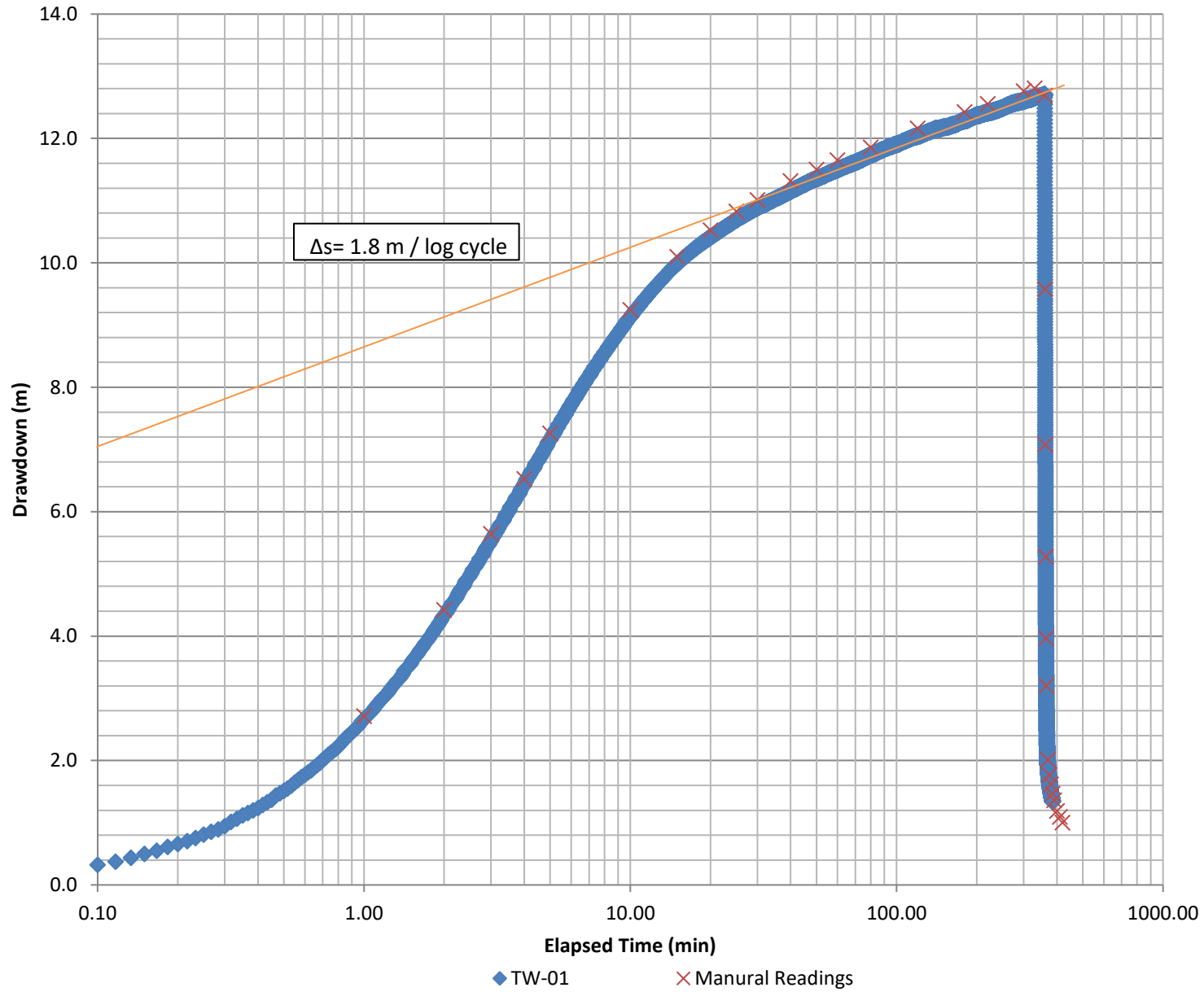
GM BluePlan Engineering Limited
Client Project #: 420099-2
Sampler Initials: AF

Exceedance Summary Table – DW for Human Consumption
Result Exceedances

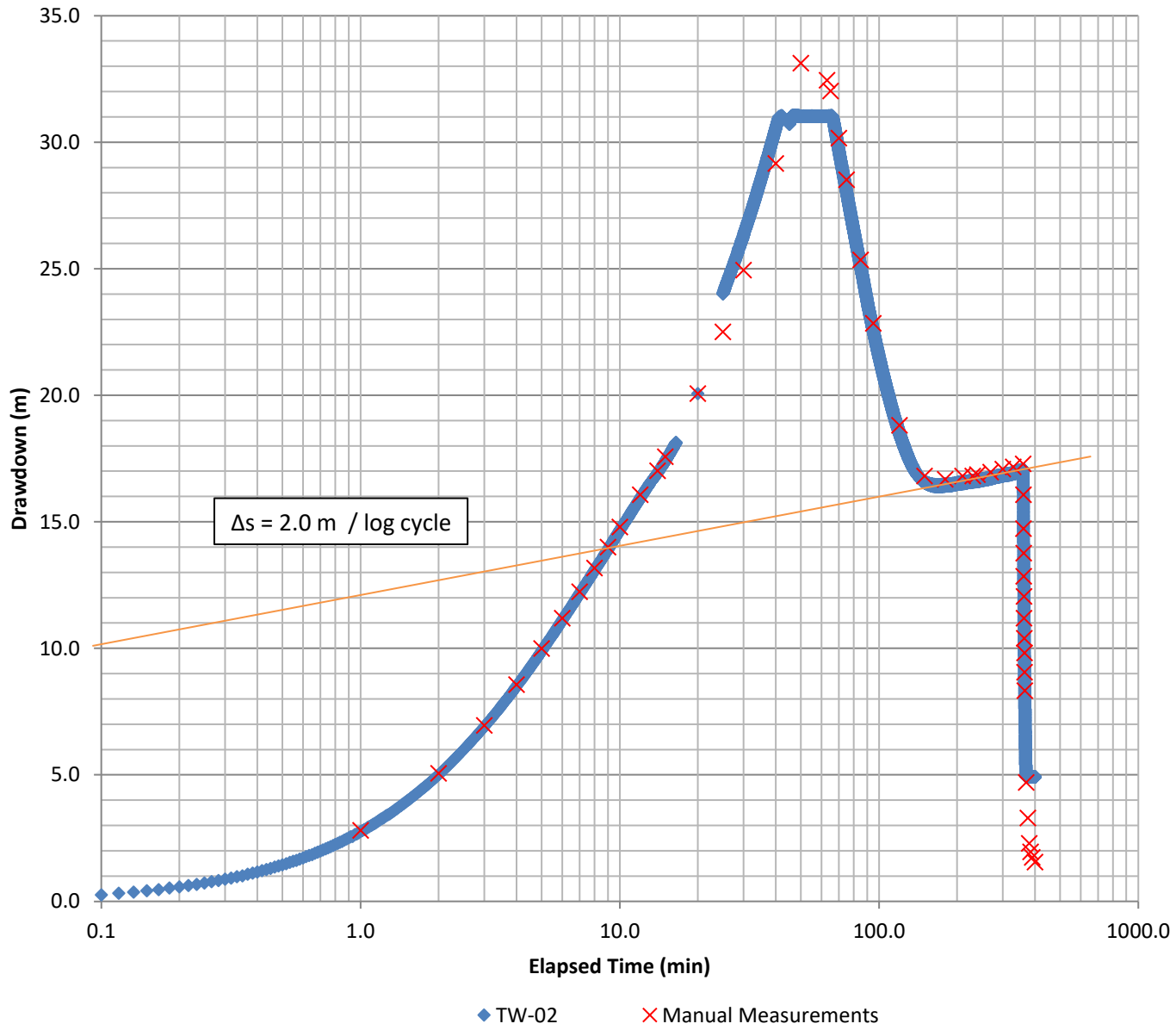
Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						
The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.						

**APPENDIX H:
HYDROGRAPHS OF TEST WELLS DURING PUMPING**

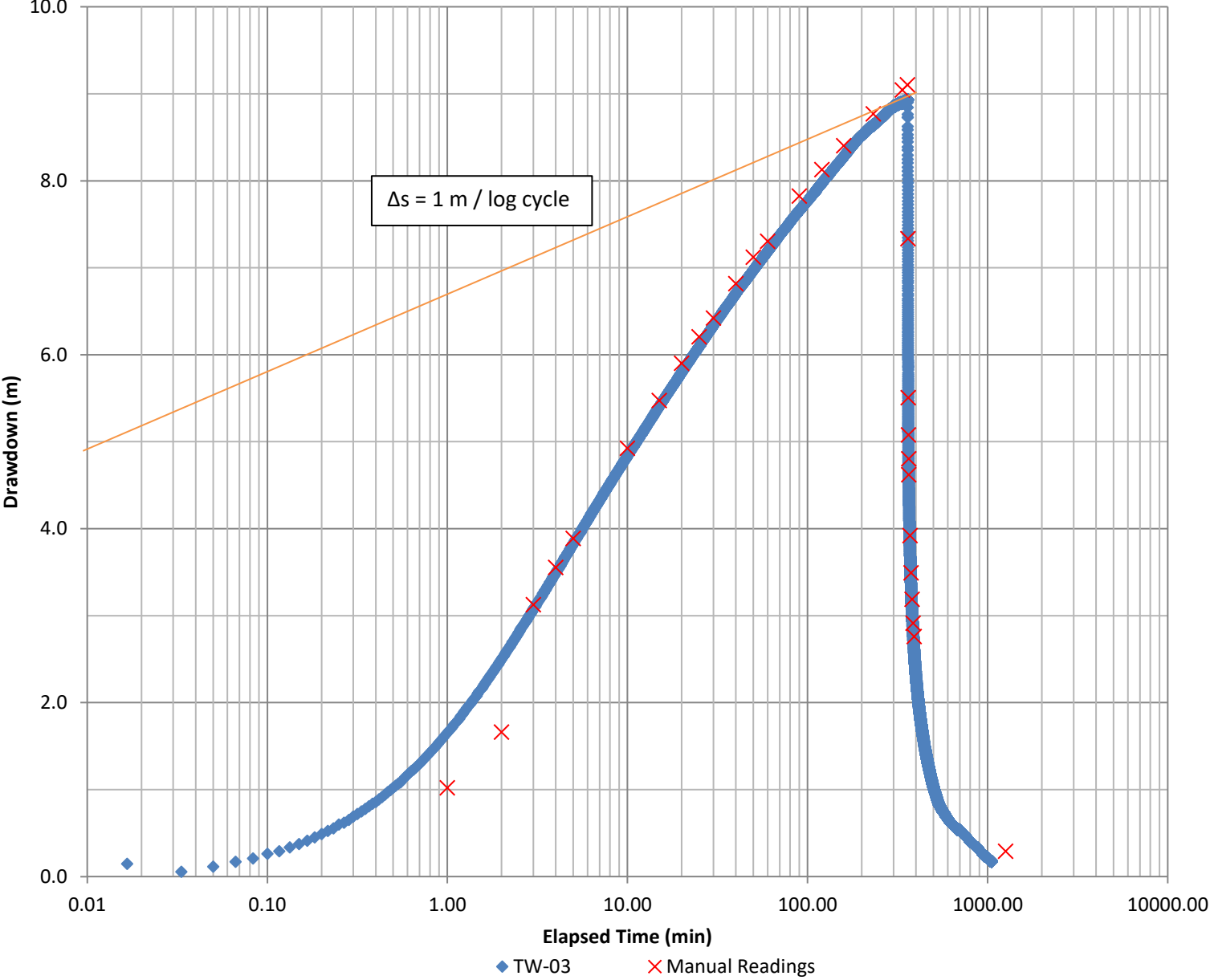
Drawdown of TW-01 During Pumping and Recovery



Drawdown at TW-02 during Pumping and Recovery



Drawdown of TW-03 during Pumping and Recovery



**APPENDIX I:
AQUIFER TEST REPORTS**



GM BluePlan Engineering Ltd.
650 Woodlawn Road W, Unit 2, Block C,
Guelph ON N1K 1B8

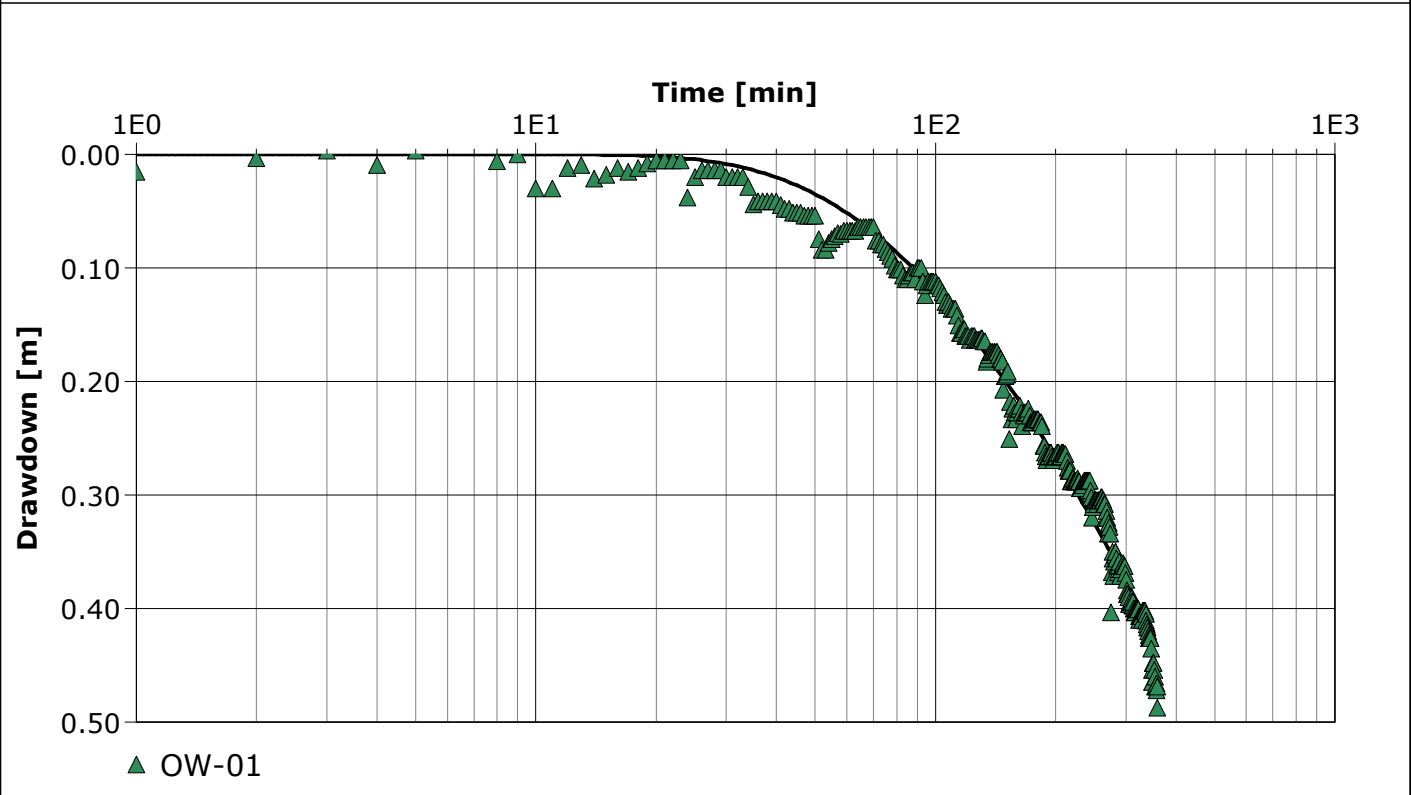
Pumping Test Analysis Report

Project: 5782 6 Line E., Ariss ON

Number: 420099-2

Client: Will O Homes

Location: Ariss, ON	Pumping Test: Pumping Test 1	Pumping Well: TW-01, TW-03
Test Conducted by: GMBP		Test Date: 6/19/2023
Analysis Performed by: GMBP	Theis- OW-01	Analysis Date: 7/10/2023
Aquifer Thickness: 27.80 m		



Calculation using Theis				
Observation Well	Transmissivity [m ² /s]	Hydraulic Conductivity [m/s]	Storage coefficient	
OW-01	2.76×10^{-4}	9.93×10^{-6}	5.51×10^{-4}	



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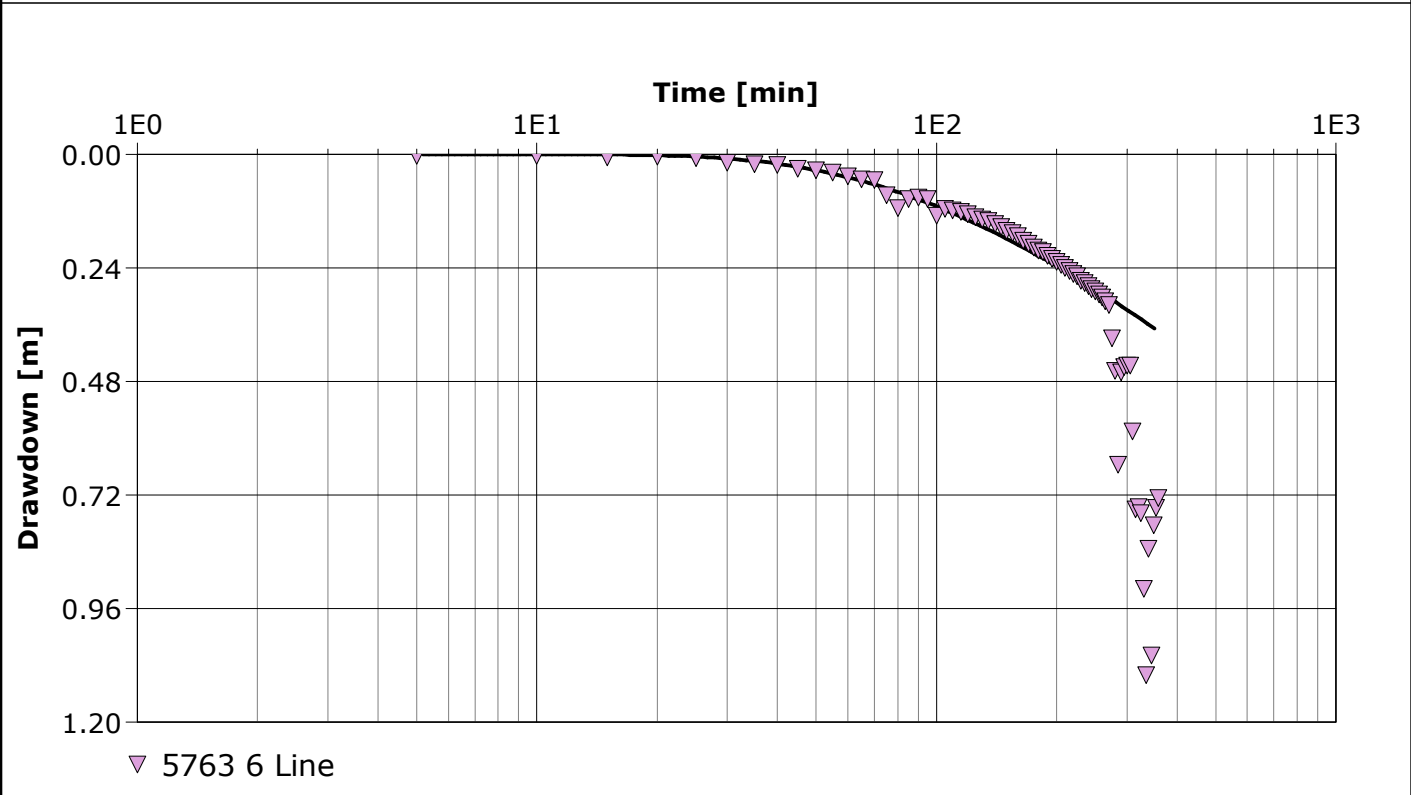
Pumping Test Analysis Report

Project: 5782 6 Line E., Ariss ON

Number: 420099-2

Client: Will O Homes

Location: Ariss, ON	Pumping Test: Pumping Test 1	Pumping Well: TW-01, TW-03
Test Conducted by: GMBP		Test Date: 6/19/2023
Analysis Performed by: GMBP	Theis- 5763 6 Line	Analysis Date: 7/10/2023
Aquifer Thickness: 27.80 m		



Calculation using Theis				
Observation Well	Transmissivity [m ² /s]	Hydraulic Conductivity [m/s]	Storage coefficient	
5763 6 Line	3.29×10^{-4}	1.18×10^{-5}	2.17×10^{-4}	



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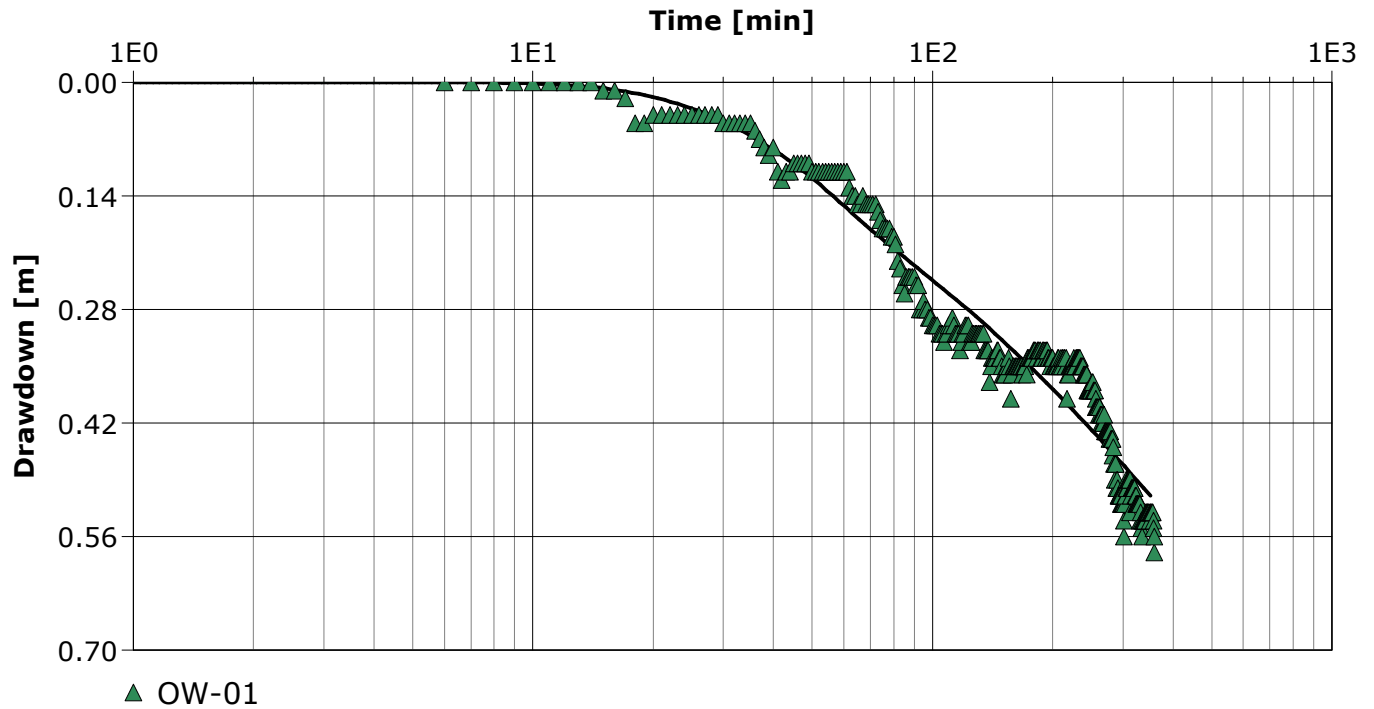
Pumping Test Analysis Report

Project: 5782 6 Line E., Ariss ON

Number: 420099-2

Client: Will O Homes

Location: Ariss, ON	Pumping Test: Pumping Test 2	Pumping Well: TW-02
Test Conducted by:		Test Date: 6/20/2023
Analysis Performed by: GMBP	Theis - OW-01	Analysis Date: 7/10/2023
Aquifer Thickness: 27.80 m	Discharge: variable, average rate 85.88 [m ³ /d]	



Calculation using Theis					
Observation Well	Transmissivity [m ² /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Radial Distance to PW [m]	
OW-01	2.57×10^{-4}	9.24×10^{-6}	2.80×10^{-4}	94.73	



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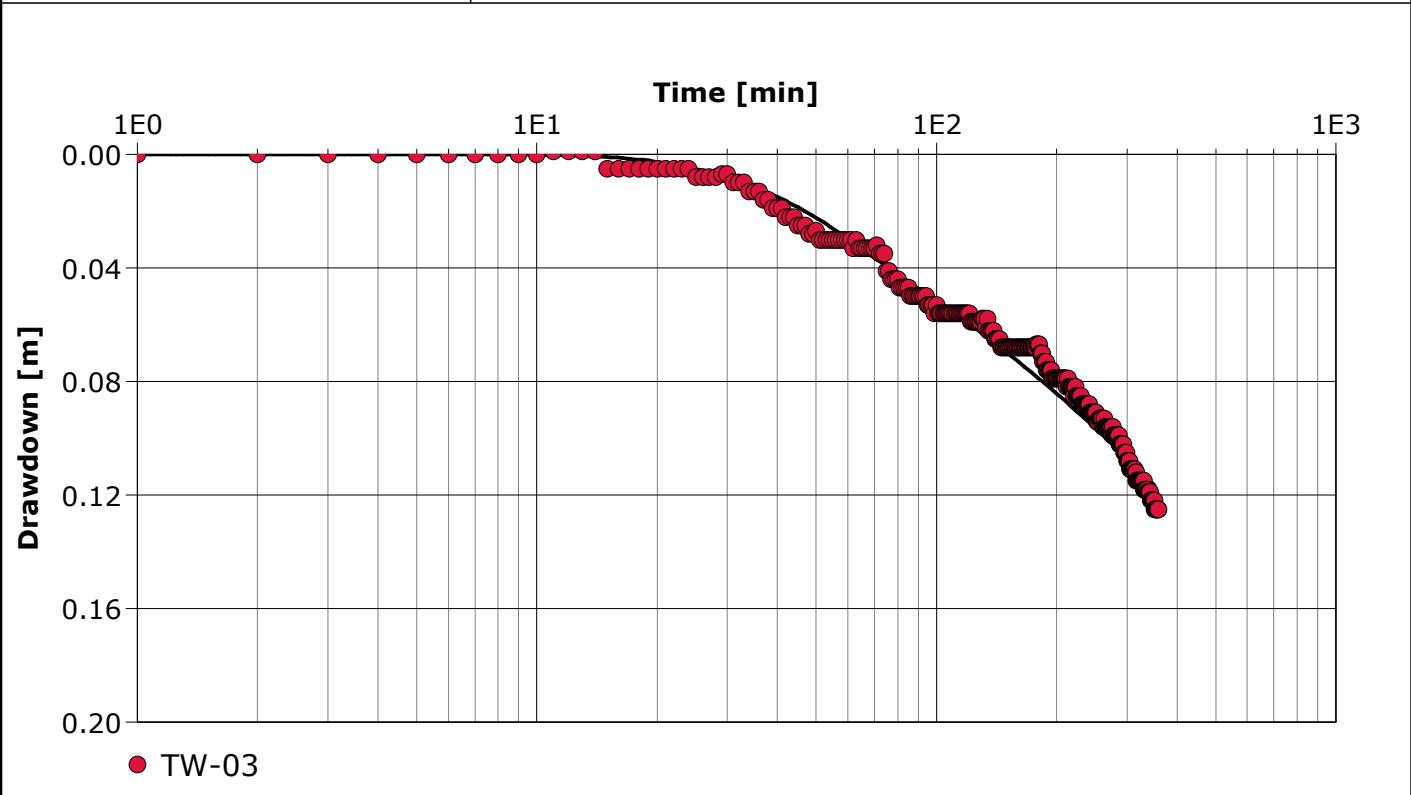
Pumping Test Analysis Report

Project: 5782 6 Line E., Ariss ON

Number: 420099-2

Client: Will O Homes

Location: Ariss, ON	Pumping Test: Pumping Test 2	Pumping Well: TW-02
Test Conducted by:		Test Date: 6/20/2023
Analysis Performed by: GMBP	Theis - TW-03	Analysis Date: 7/10/2023
Aquifer Thickness: 27.80 m	Discharge: variable, average rate 85.88 [m ³ /d]	



Calculation using Theis					
Observation Well	Transmissivity [m ² /s]	Hydraulic Conductivity [m/s]	Storage coefficient	Radial Distance to PW [m]	
TW-03	1.02×10^{-3}	3.66×10^{-5}	3.30×10^{-4}	190.48	