

## **Enhancing our communities**



# 2060 Division Road

FUNCTIONAL SERVICING REPORT

South Shore Homes

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1	June 18, 2020	Draft FSR
2	October 30, 2020	Final FSR

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## 1 Introduction

Tatham Engineering Limited (Tatham) has been retained by South Shore Homes to prepare a Functional Servicing Report (FSR) in support of a draft Plan of Subdivision for a twenty-three-lot rural residential subdivision located in the Township of Severn. A preliminary Stormwater Management (SWM) Report will be submitted under separate cover.

#### 1.1 SITE DESCRIPTION

The Draft Plan of Subdivision is proposed for a 12.2 ha vacant partially wooded lot near the intersection of Division Road West and Highway 12. The property is located within the Bass Lake/Marchmont Settlement Area and is bound by commercial property to the west, existing rural residential to the east and south and residential and wood lot to the north. An overhead hydro transmission corridor crosses the north west corner of the site.

A Key Plan illustrating the site location is shown on the Overall Development Plan (ODP-1) included at the back of this report.

#### 1.2 OBJECTIVES

The primary objectives of this report are to assess the feasibility of the proposed development with respect to servicing and to ensure satisfactory information on these items are presented in support of the proposed Draft Plan of Subdivision. This will involve an evaluation of potable water supply, sanitary sewage treatment and disposal, and drainage and stormwater management as well as traffic impacts.

#### 1.3 GUIDELINES AND BACKGROUND REPORTS

This report was prepared recognizing provincial guidelines on water resources and the environment, and studies including the following publications:

- Engineering Design Criteria. Township of Severn, May 2014;
- Design Guidelines for Sewage Works. Ministry of the Environment, Conservation and Parks (2008); and
- Stormwater Management Planning and Design Manual. The Ministry of the Environment, Conservation and Parks, March 2003.

The following reports pertaining to the site have also been prepared in support of the proposed Draft Plan:



- Stage 1-2 Archaeological Property Assessment, Division Road (Amick Consultants Limited, 2019);
- Hydrogeological Assessment. Ian D. Wilson Associates Limited, November 15, 2019;
- Environmental Impact Statement. Terrastory Environmental Consulting Inc., October 2020;
- Preliminary Stormwater Management Report. Tatham Engineering Limited, June 2020; and
- Traffic Impact Brief. Tatham Engineering Limited, October 2020.

#### 1.4 PROPOSED DEVELOPMENT SUMMARY

The proposed rural residential development consists of twenty-three residential lots located on the northwest of Division Road and Highway 12 in the Township of Severn. The Draft Plan of Subdivision has been prepared by Tatham Engineering Limited and Morgan Planning & Development.

A seasonal wetland area and significant woodlot bisects the property in a north-south direction which will be zoned for Environmental Protection. Accordingly, the development will consist of an east and a west development block comprising of 16 lots and 7 lots respectively.

Access to the site will be provided by internal roadways with separate entrances from Division Road and from Carriage Court to service the two development blocks. The west roadway will be along the west property limit which will provide access to 16 residential lots as well as shared future access to the adjacent commercial property. A reserve block will be maintained at the north limit of the roadway to provide future connection to the development at 3879 Town Line. The east roadway will provide access to 7 residential lots via a cul-de-sac with entry to Carriage Court. A utility corridor and pedestrian walkway will connect between the east and west development blocks.

Potable water will be drawn from individual private wells located on each lot.

Wastewater will be collected and treated via individual septic systems on each lot.

Both wells and septic systems will be developed and approved through the building permit process.



## 2 Background Information

Information regarding the existing topography, ground cover and drainage patterns was obtained through a review of relevant background studies, topographic survey and base mapping.

#### 2.1 TOPOGRAPHY AND EXISTING DRAINAGE CONDITIONS

The existing drainage conditions for the subject property were determined from the available background documents, site visits and a topographic survey. Drainage from the site is described as follows:

- Ontario Soil Survey Map No. 29 for Simcoe County North characterizes the soils on-site as
   Tioga sand loam and hydrologic soil group A;
- The site coverage is primarily dominated by wooded areas, wetland and cultivated crops;
- All runoff from the site (Catchment 101) of approximately 12.8 ha drains as overland flow, at an approximate slope of 2.4% from northwest to southeast to the southwest corner and is conveyed across Carriage Court via existing 1300 mm diameter CSP twin culverts.

#### 2.2 HYDROGEOLOGICAL INVESTIGATION

A hydrogeological investigation was undertaken by Ian D. Wilson Associates Limited during the summer and fall of 2019. The investigation included pumping test of an on-site well and off-site observation well.

Soil conditions from the well drilling log were reported as follows:

**Table 1: Soil Conditions** 

DEPTH (M)	MATERIALS
0 - 0.3	Black Topsoil
0.3 - 3.4	Brown Clay
3.4 - 15.8	Blue Clay with Rocks, Hard
15.8 - 18.0	Blue Clay, Soft
18.0 - 21.0	Blue Clay, Medium
21.0 - 22.3	Blue Sand, Medium
22.3 - 24.1	Blue Sand, Coarse



Water was reported to be located in the coarse blue sand at a depth of 22.3m.

In addition, six test pits were excavated throughout the property to characterize soil and shallow groundwater conditions. The test pits were excavated to depths of 1.67m to 2.13m below existing grade. The soil profiles were logged and representative soil samples were collected for classification and further analysis.

In summary the upper native soil profile consists mainly of a fine sand to silty sand, which exhibited a percolation rate in the range of 12min/cm to 30min/cm, depending on silt content.

The seasonal water table was observed at varying depths from 0.61m to no observation within the depth of the test pit.

A copy of the hydrogeological investigation is included as Appendix A

#### 2.3 GEOTECHNICAL INVESTIGATION

A geotechnical investigation is underway at this time in support of detailed design. Preliminary assumptions based on the soil conditions observed through the Hydrogeological investigation will include removal of topsoil, compaction of excavated materials, and engineered fill for site grading, foundations, underground services and pavement construction.

#### 2.4 ENVIRONMENTAL IMPACT STATEMENT

An environmental impact statement was prepared by Terrastory Environmental Consultants Inc. Three environmentally significant areas have been identified on-site. The areas are located at the southwest corner, along Division Road West and in the centre of the property. The areas are comprised of seasonal wetlands and significant woodlots. Environmental buffers have been established for each of the environmentally significant areas respectively.

The complete environmental impact statement is provided under separate cover.

#### 2.5 ARCHAEOLOGICAL INVESTIGATION

A Stage 1-2 Archaeological Property Assessment was undertaken by Amick Consultants Limited in March 2020. As a result of the Stage 2 property assessment, no archaeological resources were encountered and consequently the proposed development is clear of any archaeological concern. A copy of the draft Stage 1-2 Archaeological Assessment is included in Appendix C.



## 3 Grading and Drainage

Existing grading and drainage patterns will be generally maintained to the extent possible with all site drainage ultimately flowing to the outlet at Carriage Court and Division Road West. A stormwater management facility will be constructed in the southwest corner of the site to provide quantity and quality stormwater control. A detailed stormwater management report is provided under separate cover.

In general, proposed site grades raised above the existing topography to provide suitable lot development envelopes while achieving minimum Township lot grading standards.

- Split drainage will be used on Lots 1-13, 17-23; and
- Rear to front grading will be used on Lots 14-16.

Preliminary grading elevations and drainage patterns are shown on Drawing ODP-1.



## 4 Servicing

#### 4.1 WATER SUPPLY

The hydrogeologic investigation provides an account of the observed hydrogeological conditions related to water supply.

The average well within 500m of the proposed development is of drilled construction, completed in the lower overburden aquifer to a depth of 37.2m and yields 36 litres of fresh-quality water per minute over an average period of 4.4 hours. This average yield exceeds the maximum water demand for a normal four-bedroom home specified by the MECP (18 L/min without inline storage.)

A test well was drilled on site in support of the hydrogeologic investigation to confirm the observations made from wells on surrounding properties. A total of about 5,040 litres of water were pumped from the well during the 6-hour pumping test. The OBC recommends a design flow of 1,600 L/day for a 3-bedroom home and 2,000L/day for a 4-bedroom home. Accordingly, the test well is capable of supplying these yields and the presence of upwards of four regional overburden aquifers confirm the likelihood of obtaining an adequate potable water supply is favorable. Individual drilled wells will be advanced on each lot during the building permit stage.

### 4.2 SEWAGE DISPOSAL

The hydrogeologic investigation concluded the development (according to MECP Guidelines) can support the proposed 23 lots on individual sewage disposal systems. This can be achieved with conventional sewage disposal systems.

In the western upland portion of the site, based on low water table conditions, fully in-ground tile beds are considered viable. Over the remaining lower portions of the site, partially raised tile beds will be required due to the observed emergent groundwater and evidence of seasonally elevated water table conditions.

For preliminary site design purposes, a conservative soil T-time of 35min/cm was recommended. Individual lot specific test pits will be excavated as part of the septic design and building permit process.

#### 4.3 UTILITIES

Division Road is currently serviced with overhead hydro on the north side of the corridor. It is assumed the existing hydro supply is adequate to service the proposed development. This will



be confirmed at the final design stage. Hydro will be provided to each lot with underground servicing.

An overhead hydro transmission corridor crosses the north-west quadrant of the site. Hydro will be contacted during the detail design process to confirm any building and development restrictions within the limits of their easement however it is expected all structures will need to be clear of the transmission corridor.

Union Gas was contacted and confirmed gas is available on Division Road and Carriage Court. It is assumed the existing gas infrastructure is adequate to service the proposed development. This will be confirmed at the final design stage.

Bell and Rogers have been contacted but have not yet confirmed what existing plant is available to service the proposed development. Based on the proximity of other subdivisions in the Marchmont Settlement area it is anticipated both services will be available to the development.

As noted above a utility corridor will be provided between the east and west blocks of the development to provide connectivity between each side of the development.



## 5 Roadways and Transportation

Tatham undertook a Traffic Impact Study (TIS) to investigate impacts from the proposed development on surrounding roads.

Access to the site will be provided by internal roadways with separate entrances from Division Road and from Carriage Court to service the two development blocks. The west roadway will be along the west property limit which will provide access to 16 residential lots as well as shared access to the adjacent commercial property. A reserve block will be maintained at the north limit of the roadway to provide future connection to the development at 3879 Town Line. The east roadway will provide access to seven residential lots via a cul-de-sac with entry to Carriage Court.

The proposed roads have been designed with a rural cross section in accordance with the Township of Severn's typical rural road cross section detail (Std No. 201) which includes a 6.6m paved surface with 1.2m wide granular shoulders and open ditches. Entrances to Division Road and Carriage Court will be established in accordance with OPSD 300.010 (side road intersection).

A utility corridor and pedestrian walkway will connect between the east and west development blocks. The walkway will be designed in accordance with the Township of Severn asphalt walkway detail (Std No. 304).

The TIS is provided under separate cover.



## 6 Summary

The proposed development will consist of twenty-three rural residential lots. Existing drainage patterns will be generally maintained, with stormwater conveyed via open ditches to a stormwater management facility and ultimately the existing outlet at the south-east quadrant of the site.

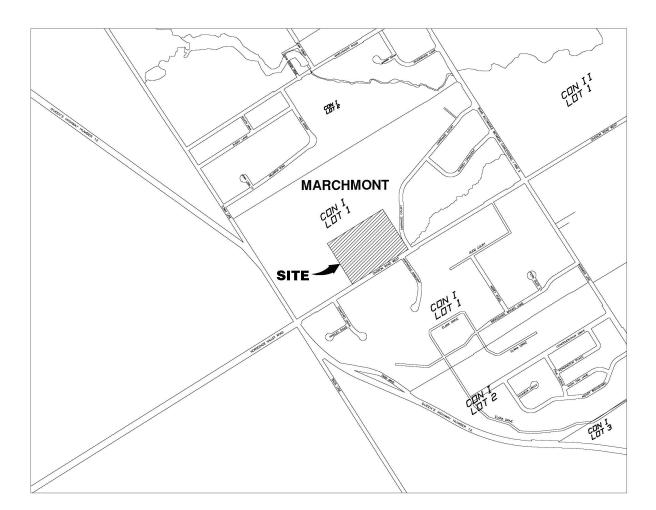
Water supply will be provided by individual drilled wells. The proposed development will be serviced with private individual sewage systems. The proposed wells, septic systems and lot grading will be developed on a lot by lot basis with their specific site development grading plans which will be approved through the building permit process.

Existing hydro and gas are available on Division Road and the capacity of both to service the proposed development will be confirmed during final design. The availability of communications plant (i.e. telephone, cable TV, coaxial cable etc.) will also be confirmed during final design.

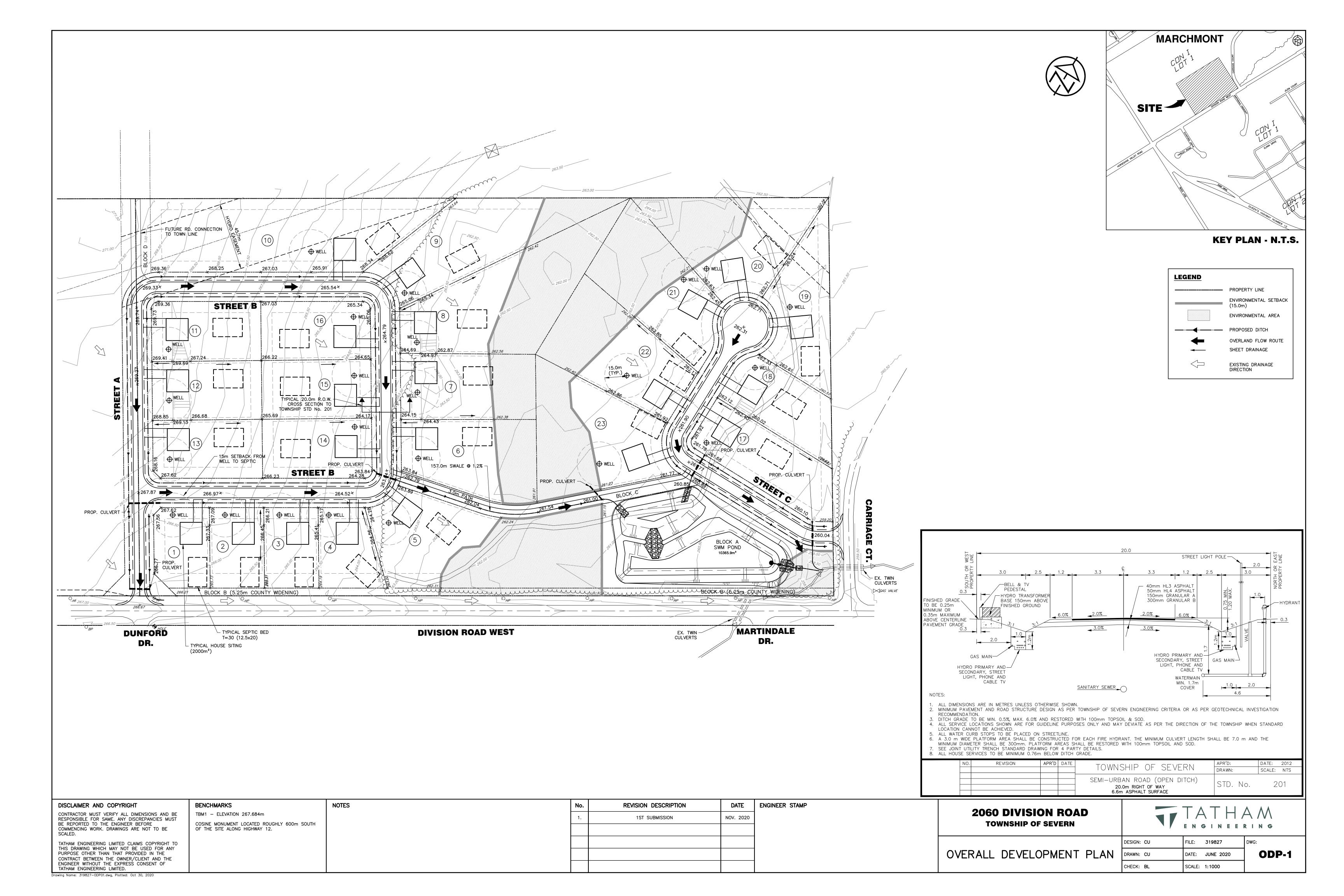
Detailed design of these systems will be provided at the final design stage, but the work completed to date confirms appropriate site servicing and stormwater management strategies can support the development without adverse impacts on the adjacent properties and roadways.



Figure 1: Key Plan







Appendix A: Hydrogeological Assessment

HYDROGEOLOGICAL ASSESSMENT PROPOSED SUBDIVISION SOUTH SHORE CADEN ESTATES INC. PART OF LOT 1, CONCESSION 1ND TOWNSHIP OF SEVERN (ORILLIA)

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Project 2019-21 November 15, 2019

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## HYDROGEOLOGICAL ASSESSMENT PROPOSED SUBDIVISION SOUTH SHORE CADEN ESTATES INC. PART OF LOT 1, CONCESSION 1ND TOWNSHIP OF SEVERN (ORILLIA)

### 1.0 **INTRODUCTION**

It is proposed to develop a 23-Lot residential subdivision on a 12.2ha parcel of land located in Part of Lot 1, Concession 1ND, Geographic Township of Orillia, within the western periphery of the Community of Marchmont. Figure 1 shows the location and proposed layout of the proposed development.

It is proposed to service the subdivision with individual water wells and private subsurface sewage disposal systems.

This hydrogeological assessment has been prepared to summarizes the geological and hydrogeological setting of the site, subsurface conditions, sewage system suitability, sewage impact potential and potable groundwater potential for the development.

## 2.0 SITE SETTING, GEOLOGY AND HYDROGEOLOGY

The subject lands are located on a rectangular parcel located on the north side of Division Road West, generally between the intersections of Dunford Drive to the west and Carriage Court to the east. Frontage along Division Road West is about 470m, and the depth of the site is about 270m. The western half of the lands are cleared and mainly in fallow, and the eastern half of the lands are mainly forested. A hydro easement crosses the northwest corner of the site. Lands surrounding the site are forested to the north, residential to the east, a mix of residential and forested lands to the south and commercial properties to the west. The site exhibits a rolling topography, with an overall slope to the east, and total site relief is in the range of 12 metres.

The proposed development is located within the Simcoe Uplands physiographic Region of southern Ontario, an area characterized by a series of broad, rolling till plains separated by steep-sided, flat-floored valleys. The Ontario Geological Survey Open File Map 200 "Quaternary Geology of the Eastern Half of the Barrie and Elmvale Map Areas" describes the upper soils across the site as stony silty sand to sand glacial till.

According to the records of wells in the general area and the 2005 North Simcoe Municipal Groundwater Study, the overburden is approximately 40 to 55 metres thick in the vicinity of Marchmont, depending on relative land surface elevation. Local well records report the upper overburden to consist primarily of a surficial granular deposit overlying a relatively deep, fine-grained deposit described as hardpan or clay. An

intermediate depth granular deposit and a lower overburden granular deposit are commonly reported in local well records.

The bedrock beneath the site consists of limestone, minor dolostone and shale of the Middle Ordovician Simcoe Group of rock.

Local wells are typically completed in one of four aquifers. Several shallow dug/bored wells are reported to be completed in the upper granular deposit at depths of up to 9m, many of these wells deeper than the granular deposit to allow for in-well storage. A small number of local wells are reported to be completed in a intermediate depth aquifer at depths of 15 to 24m. Most wells are locally completed in a deep overburden aquifer atop the bedrock at a common depth range of 30 to 40m. A smaller number of wells are completed in the bedrock aquifer. The bedrock is known generally to yield lower quantities of often aesthetically poorer water.

## 3.0 LOCAL WATER WELLS

To establish well yield and basic water quality probabilities, up-to-date Ministry of the Environment, Conservation and Parks (MECP) records for water wells located within approximately 500 metres of the proposed development were reviewed. The MECP water well record database contains the records for 55 water wells within the review area, not including geotechnical/environmental well records or well upgrade/abandonment records. Copies of the MECP well records for the 55 water wells located within 500m of the proposed development are included in the appendix.

The following summarizes the reported well record information within the review area.

Number of well records: 55
Drilled Construction: 37

Dug/Bored Construction: 18, mostly completed by a local contractor prior to 1974

Sandpoint Construction: 0
Unknown Construction: 0

Completed in Overburden: 50 (91%) Completed in Bedrock: 5 (9%)

The following summarizes the reported well performance data:

	Maximum	Minimum	Average
Well Depth (m)	85	6.1	37.2
Test Rate (L/min)	114	9	36
Test Period (Hours)	36	0.4	4.4

Reported Water Quality:

Fresh: 48 or 87% (no objectionable tastes or odours)

Sulphurous: none Mineralized/Saline: 1 or 2%

Quality Not Reported: 6 or 11% (becoming common for recent wells, as

contractors increasingly refrain from reporting "fresh"

quality without chemical analysis confirmation)

Dry Well: none

The average well within about 500 metres of the proposed development is of drilled construction, completed in the lower overburden aquifer to a depth of 37.2 metres and yields 36 litres of fresh-quality water per minute over an average period of 4.4 hours. This average yield exceeds the maximum water demand of a normal four bedroom home specified by the MECP (i.e. 18L/min without inline storage).

It should be noted that the above summary and analysis is based solely on information contained in the MECP water well record database as reported by drilling contractors and is not subject to quality control, however the overall analytical summary is favourable.

### 4.0 **GROUNDWATER SUPPLY**

#### 4.1 Test Well Construction - Test Well 1:

The following information was derived from the well record completed by the drilling contractor, Lone Star Drilling Services Ltd. Figure 1 shows the location of TW1. A copy of the water well record for TW1 is included in the appendix.

#### Contractor's Log of Formations Penetrated

Depth (m)	<u>Materials</u>
0 - 0.3 0.3 - 3.4 3.4 - 15.8 15.8 - 18.0 18.0 - 21.0 21.0 - 22.3	black topsoil brown clay blue clay with rocks, hard blue clay, soft blue clay, medium blue sand, medium
22.3 - 24.1	blue sand, coarse

Water was reported to have been located in the coarse blue sand at a depth of 22.3m below grade.

Casing Record:

Total Length:

23.2m

Setting:

0.6m above grade to 22.6m below grade

Diameter:

15.88cm ID

Wall Thickness:

0.48cm

Material:

steel

Well Screen:

12.7cm OD (5 inch telescopic), 10-slot stainless steel

screen set from 22.6m to 24.1m

Annular Seal:

Bentonite - grade to 6.1m

## 4.2 Pumping Test - Test Well 1:

Test Well 1 was subjected to a 6 hour pumping test at a rate of 14 L/min on August 22, 2019, beginning at 11:30am. Water levels were observed in the test well on a regular basis during pumping and for an 848 minute period of recovery after pumping ceased. Water levels were also observed on a regular basis in nearby OW1, located about 200m southwest of TW1. Water levels were observed using an electronic water level meter. Pumping rates were controlled by an in-line valve and confirmed using a calibrated container. Water was discharged from the well about 20m to the south.

Figure 2 is a semi-logarithmic plot of the test results showing the drawdown of the water level in TW1 versus the elapsed time from the start of pumping and residual drawdown versus the ratio of time from the start of pumping to the time from the end of pumping (ratio t/t'). The raw pumping test data are included in the appendix.

The water level in Test Well 1 lowered 1.19m during the first minute of pumping, and assumed a steepening downward trend with minor fluctuations due to pumping rate corrections. After about ten minutes of pumping, a relatively stable, steep downward water level trend was established. After about sixty minutes, the downward trend of the of the water level began to slowly moderate, and continued to moderate until the conclusion of the pumping test.

The final water level in the well was 18.99m below grade. Final drawdown was 13.72m, which represents 79 percent of available drawdown (17.3m) in the well above the top of the well screen.

Following the conclusion of pumping, the water level rose to 5.88m below the original static water level (57% recovery) within 30 minutes of the conclusion of the pumping test, but recovered to 0.20m below the original static water level (98% recovery) after 848 minutes of recovery.

A total of about 5,040 litres of water were pumped from the well during the 6 hour pumping test. The Ontario Building Code recommends a design flow of 1,600L/day for a 3-bedroom home and 2,000L/day for a 4-bedroom home, and TW1 is more than capable of supplying these yields.

#### 4.3 Interference Observations:

During the TW1 well testing program, water levels were observed on a regular basis in OW1 (MECP Well No. 57-7671), located approximately 200m southwest of TW1. OW1 is a 7.3m deep bored well, and is likely completed in the upper overburden aquifer, to a shallower depth than TW1. Attempts were made to obtain permission to observe other local wells completed in the same aquifer setting as TW1 (i.e. the intermediate-depth overburden aquifer), however only one other off-site well was made available for observation (due to other properties' access limitations, buried casings or inability to obtain observation permission) at 3978 Dunford Drive. This unrecorded drilled well was determined to have a static water level of 34m below grade and, based on other well record data in the vicinity, will be completed in the bedrock aquifer and was not observed as this well will be hydraulically isolated from TW1 by more than 40m of overburden deposits.

During the TW1 pumping test, the water level in OW1 lowered 0.06m by the conclusion of testing. OW1 was in occasional use, supplying the domestic requirements of the commercial office on the property immediately to the west. Figure 3 illustrates the water level observations at OW1. The observation data are included in the appendix.

There were no complaints of water level interference reported during the drilling program or the well testing period.

## 4.4 Well Testing Summary and Discussion:

The following provides a summary of the well testing results:

	Test Well 1
Date of Test	August 22, 2019
Static Water Level (m below grade)	5.27
Final Water Level Drawdown (m)	13.72
Final Pumping Water Level (m below grade)	18.99
Pumping Rate (L/min)	14
Duration	6 hours
Specific Capacity (L/min/m)	1.0
Available Drawdown Above Well Screen (m)	3.6
Percent Available Drawdown Used	79%
Coefficient of Transmissivity (m²/day)	0.6
Safe Yield (L/min)	14L/min

Notes:

The coefficient of transmissivity was calculated using the Cooper and Jacob modified non-equilibrium method using an assumed drawdown of 8.5m/log cycle for TW1 (based on an extrapolation of the drawdown trend between 7 and 20 minutes). A coefficient of storage was not determined as the minor water level change at OW1 was more likely a result of domestic withdrawals from OW1.

The above analysis indicates that TW1 is capable of supplying the normal domestic requirements of a 4-Bedroom home (2,000L/day, per Ontario Building Code), however MECP Procedure D-5-5 recommends that a water supply be capable of supplying 18.75L/min for a period of 120 minutes each day. In-line storage, such as an over-sized pressure tank, can be utilized to meet such peak demand if so required.

As discussed above, available information indicates that there are upwards of four aquifers (three overburden and one bedrock) present in the area, and TW1 has been completed in the intermediate-depth overburden aquifer. Based on known local conditions and the well record survey detailed in Section 3.0, it is anticipated that future on-site water wells will mainly be completed either in the intermediate or lower overburden aquifers, with a smaller number in the bedrock aquifer. As such, off-site interference potential and impact potential to each aquifer will be reduced.

### 4.5 Groundwater Quality:

Samples of water were collected from TW1 at the conclusion of the pumping test and were subjected to general chemistry and bacteriological analyses. The samples were collected in laboratory-supplied bottles, stored in ice-packed coolers and submitted to Bureau Veritas Laboratories for analysis under chain of custody.

The TW1 samples were reported to contain a Total Coliform count of 8CFU/100mL, no detectable E. Coli bacteria, and an acceptably low level of background bacteria (12 CFU/100mL). Low levels of Total Coliform bacteria in the water from newly-drilled water wells are not uncommon due to residual effects from the disruption of the drilling process, and in a properly-constructed well such as TW1, will diminish in a short period of time. Prior to placing TW1 into service and after duty pump installation, the well will be required to be re-disinfected. It is recommended that the well be re-sampled for bacteriological analysis after that time.

The water from TW1 was slightly alkaline with a pH value of 8.25. The water from TW1 is moderately hard, with a hardness value of 200mg/L as CaCO<sub>3</sub>. The values are typical for groundwater in southern Ontario.

All chemical parameters determined were at acceptable levels under the current Ontario Drinking Water Quality Standards. Chemical parameters indicative of potential surface water influence (i.e. sodium, chloride, dissolved organic carbon, nitrite, nitrate) were all at non-detectable to low levels in the water from TW1.

A copy of the laboratory analytical results is included in the appendix.

### 5.0 **SUBSURFACE ASSESSMENT**

### 5.1 Test Pits:

To characterize soil and shallow groundwater conditions, six exploratory test pits were completed using excavating equipment within accessible portions of the subject lands on August 22, 2019. The test pits were completed to depths of 1.67 to 2.13m below grade. The soil profiles were logged and representative soil samples were collected for classification and further analysis. Figure 1 shows the approximate test pit locations.

Six representative soil samples were subjected to an analysis of grain size to provide estimates of soil permeability. The following summarizes the results of the analyses:

Sample	Depth (m)	Grain Size Distribution Estimated Coefficient				Estimated T-time	
		Clay %	Silt %	Sand %	Gravel %	of Permeability (cm/sec)	(minutes/ cm)
TP1 S1	0.5	3	23	69	5	1x10⁻⁴	15
TP2 S2	1.2	15	46	35	4	8x10 <sup>-6</sup>	35
TP3 S3	0.5	3	8	89	0	2x10 <sup>-3</sup>	12
TP4 S4	1.2	15	44	41	0	1x10 <sup>-5</sup>	35
TP6 S5	0.5	11	27	62	0	1x10 <sup>-5</sup>	30

Note: The above coefficients of permeability and T-times are estimates based on field observation, grain-size analysis, experience with similar soils and guidelines published under the Ontario Building Code.

Copies of the grain-size curves and logs of the test pits are included in the appendix.

In summary, the upper native soil profile consists mainly of a fine sand to silty fine sand, which exhibits a percolation rate in the range of 12min/cm to 30min/cm, depending on silt content. The upper sand is underlain by a silt and sand with some clay glacial till which exhibits a percolation rate in the range of 35min/cm.

### 5,2 Watertable:

The following provides a summary of observed emergent groundwater and observed evidence of seasonally-elevated watertable conditions in the test pit soil profiles (i.e. soil discolouration and/or mottling):

	Emergent Groundwater	Seasonal Watertable
Test Pit 1	dry to 1.67m	None
Test Pit 2	dry to 1.83m	None
Test Pit 3	0.61m	0.61m
Test Pit 4	0.76m	0.76m
Test Pit 5	1.22m	1.22m
Test Pit 6	1.52m	1.52m
Test Pit 2 Test Pit 3 Test Pit 4 Test Pit 5	dry to 1.83m 0.61m 0.76m 1.22m	None 0.61m 0.76m 1.22m

### 5.3 Preliminary Sewage System Design:

To support individual subsurface sewage disposal systems, the proposed lots must be physically large enough to allow the installation of sewage disposal systems under the current requirements of the Ontario Building Code. For a Class 4 subsurface sewage disposal system to operate effectively, the leaching bed must be located in soil with a percolation rate (T-time) of between 1 and 50 minutes per centimetre and the base of the absorption trenches must be situated at least 0.9m above the high ground water table, bedrock or a soil with a permeability of greater than 50 minutes per centimetre. To achieve a normal, in-ground installation, the high groundwater table, rock or soil with a permeability of greater than 50 min/cm must be situated at least 1.5 to 1.8 metres below grade.

In the western  $\frac{1}{3}$  upland portion of the site, based on low watertable conditions, fully inground tile beds are considered viable. Over the remaining lower portions of the site, partially raised tile beds will be required due to observed emergent groundwater and evidence of seasonally elevated watertable conditions in the soil profile. In the central  $\frac{1}{3}$  of the site, the bases of tile bed trenches should be set no lower than 0.29m above current grade. In the eastern  $\frac{1}{3}$  of the site, the bases of tile bed trenches should be set no lower than 0.32m below current grade.

For preliminary site design purposes, a conservative soil T-time of 35min/cm is recommended, this based on the permeability of the underlying silt and sand glacial till.

Lot and sewage system envelope-specific test pits are recommended at sewage system/building permit stage, at the time of building permit application on each particular lot.

## 5.4 <u>Sewage Impact Assessment:</u>

Under the current Ministry of the Environment, Conservation and Parks (MECP) "Technical Guideline For Individual On-Site Sewage Systems: Water Quality Impact Risk Assessment" (Procedure D-5-4), each proposed development of five lots or greater utilizing individual on-site sewage systems requires an assessment of groundwater impact potential. The purpose of the assessment is to ensure that the discharge from the individual on-site sewage systems will have a minimal effect on groundwater and the present or potential use of adjacent properties. Following the determination of background shallow groundwater nitrate levels, the assessment involves a three-step process, with the need to advance to the next step dependant on the requirements of the previous step. Where the background nitrate content of shallow groundwater exceeds 10 mg/L, additional development cannot normally be supported.

The nitrate content of groundwater samples collected from TW1 was non-detectable.

Under Step 1 of the guideline, for developments where the lot size for each private residence within the development is one hectare or larger (with no lots being less than 0.8ha in area), the risk that the limits imposed by the guideline may be exceeded is

considered acceptable with no additional hydrogeologic assessment. As the proposed lots are less than 0.8ha in area, Step 1 of the guideline does not apply.

Step 2 of the guideline is applicable where groundwater resources can be confidently demonstrated to be hydraulically isolated from potential sewage pathways. As an upper overburden aquifer is present in the vicinity (but not recommended for potable groundwater purposes), Step 2 of the guideline does not apply.

Under Step 3 of the guideline, a mass-balance calculation is used to determine the minimum size of the proposed lots. Under the current MECP guideline only infiltrating precipitation and the volume of water contained in the sewage may be considered as dilutants for the nitrate contained in septic effluent. To establish the infiltration rate, the percentage of the local water surplus which may infiltrate is calculated using the Rational Method approach. According to the available information, the uppermost soil profile consists fine sand to silty fine sand (infiltration factor 30%), the overall relief is rolling to hilly (as defined by MECP) (infiltration factor 15%) and the cover will be a mix of cleared areas and woodland (infiltration factor 15%), all resulting in an infiltration factor of 60%. According to the 2015 Severn Sound Source Protection Area Approved Assessment Report, the water surplus for the North River sub-watershed is 405mm per year (978mm/year precipitation, 573mm/year actual evapotranspiration). As such, the annual infiltration rate will be 243mm (60% of 405mm), representing 25% of average annual precipitation in the sub-watershed (978mm/year). The infiltration rate is reduced by a factor of 10% over the entire property area to account for future impervious surfaces due to urbanization of the property, to 219mm/year. Based on a total site area of 12.2ha, annual infiltration will be 2.67x10<sup>7</sup>L/year.

The following mass-balance formula is used to calculate the impact of the proposed development under the MECP guideline:

$$Q_TC_T = Q_SC_S + Q_PC_P$$

Where:

 $Q_T$  = Sum of  $Q_S$  and  $Q_P$ 

 $C_T$  = Maximum nitrate concentration (10mg/L)

Q<sub>s</sub> = Volume of sewage (1000 L/day/lot, per MECP guideline)

 $C_s$  = Nitrate content of sewage (40 mg/L)

 $Q_p = Infiltration (2.67x10^7 L/year)$ 

C<sub>P</sub> = Nitrate content of shallow groundwater (effectively zero)

Therefore:

$$(Q_S + 2.67 \times 10^7 \text{L/year}) \times 10 \text{mg/L} = (Q_S \times 40 \text{mg/L}) + (2.67 \times 10^7 \text{L/year} \times 0 \text{mg/L})$$
  
 $Q_S = 8.9 \times 10^6 \text{L/year}$ 

Based on the MECP-prescribed daily average sewage volume of 1,000L/day/lot (for the purposes of impact assessment), a total of 24.4 lots are supportable under the MECP guideline. As such, the current proposal for the development of 23 lots is considered acceptable under the criteria of MECP Procedure D-5-4.

The above assessment approach, conducted in accordance with MECP Guidelines, does not consider sewage dilution by groundwater flow-through nor does it consider denitrification processes in the subsurface. As such, the assessment will over-estimate the actual degree of groundwater impact of the proposed lots, this considered a safety factor.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

- 1. Based on regional hydrogeological information available for this assessment and local water well records, upwards of four regional overburden aquifers are likely present beneath the site and the likelihood of obtaining an adequate potable groundwater supply on the proposed subdivision is favourable.
- 2. The on-site test well, completed in the intermediate-depth overburden aquifer, has a safe yield of 14L/min, which exceeds MECP daily yield requirements for residential wells, and is suitable for domestic use. In-line storage (such as oversized pressure tanks) may be required to meet peak water demand.
- 3. Regional hydrogeologic information indicates that the lower overburden and bedrock aquifers are also viable in the area. These deeper aquifers present alternative sources of potable groundwater for the on-site lots. Adequate water supplies can be obtained on each proposed lot from either of the intermediate or deep overburden aquifers or the bedrock aquifer.
- Only drilled wells completed in accordance with Ontario Regulation 903 to either
  of the intermediate or deep overburden aquifers or the bedrock aquifer are
  recommended.
- 5. The bacteriological quality of water from properly constructed drilled wells will be acceptable. Due to low levels of Total Coliform bacteria in the water from newly-drilled TW1, prior to placing TW1 into service and after duty pump installation, the well will be required to be re-disinfected. It is recommended that the well be re-sampled for bacteriological analysis after that time.
- 6. The chemical quality of water from properly constructed drilled wells will be acceptable.
- 7. Based on an acceptable rate of recovery after testing, observed aquifer response during testing, and the likelihood that on-site wells will be divided between three aquifers, off-site interference potential is considered low. Widely-spaced drilled wells in normal domestic use represent an acceptable water supply with a low risk of disruptive water level interference.
- 8. Based on observed watertable conditions, in the western ½ upland portion of the site, fully in-ground tile beds are considered viable. Over the remaining lower portions of the site, partially raised tile beds will be required due to observed emergent groundwater and evidence of seasonally elevated watertable

conditions in the soil profile. In the central 1/3 of the site, the bases of tile bed trenches should be set no lower than 0.29m above current grade. In the eastern 1/3 of the site, the bases of tile bed trenches should be set no lower than 0.32m below current grade.

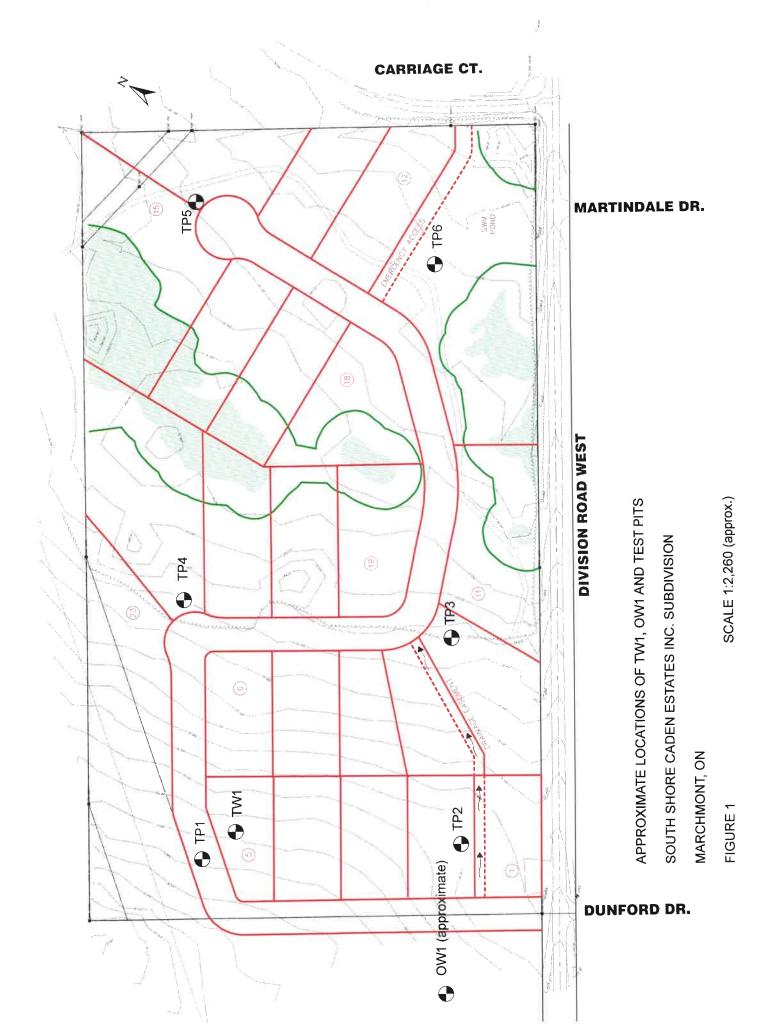
- 9. For preliminary site design purposes, a conservative soil T-time of 35min/cm is recommended, this based on the permeability of the underlying silt and sand glacial till.
- Lot and sewage system envelope-specific test pits are recommended at sewage 10. system/building permit stage, at the time of building permit application on each particular lot.
- Under MECP Procedure D-5-4, the impact of the currently proposed 23 lot 11. subdivision will be acceptable using conventional subsurface sewage disposal systems.
- From a groundwater supply and sewage disposal/impact perspectives, the 12. proposed development of 23 single detached residential lots serviced by individual on-site wells and individual on-site sewage services, is considered appropriate, safe and viable subject to the conclusions, limitations and recommendations outlined in this report.

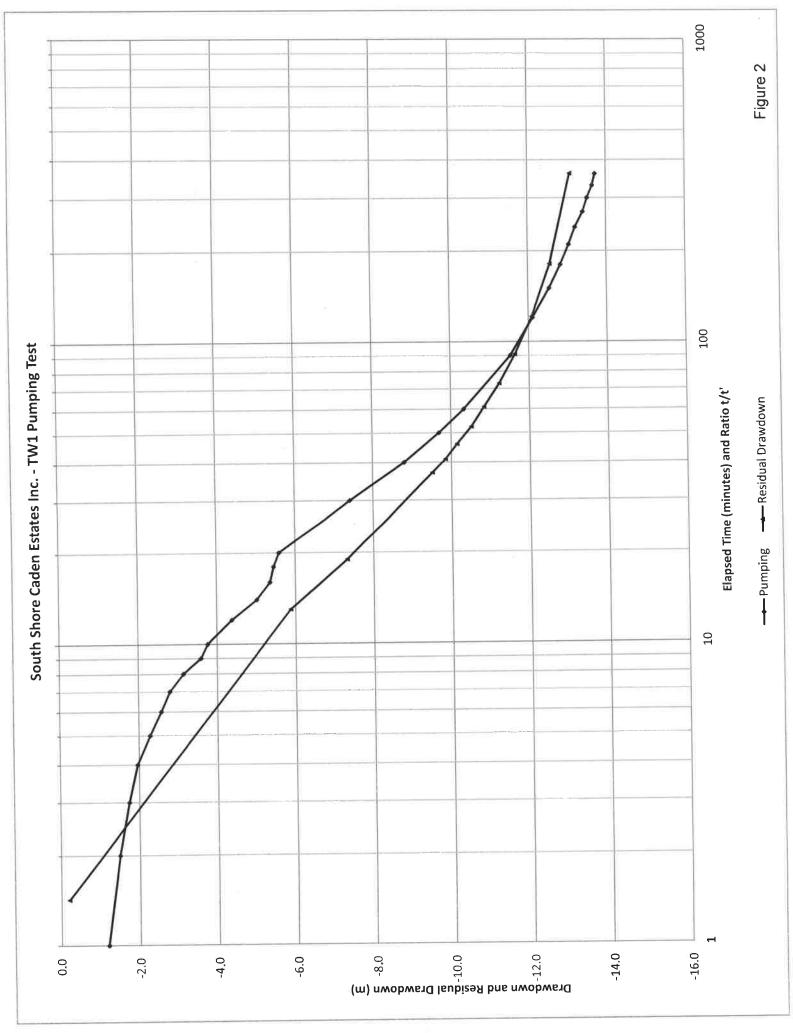
IAN D. WILSON ASSOCIATES LIMITED

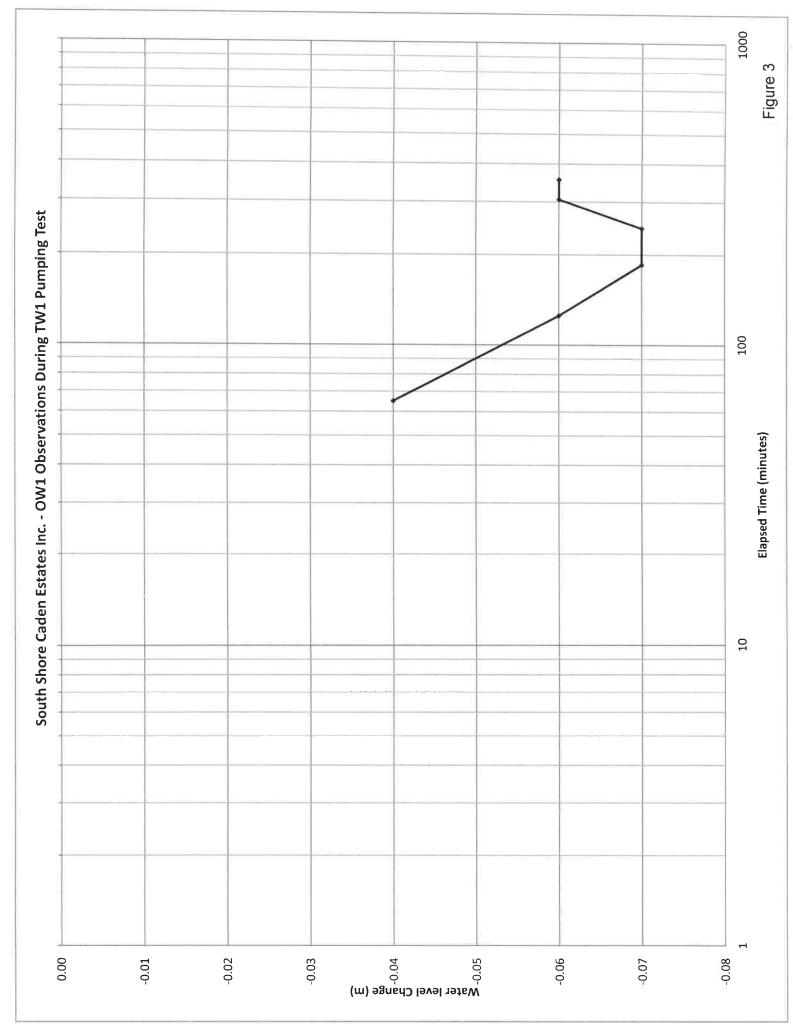
GEOFFREY B. RETHER PRACTISING MEMBER 0426 NTARIO

Geoffrey Re November

# FIGURES AND APPENDIX







## Pumping Test Data South Shore Caden Estates Inc. TW1

Date of Test:

22-Aug-19

Static Water Level:

6.61m below top of casing

Measuring Point Elevation:

1.34m above grade

Pumping Rate:

14L/min

Note: \* Recovery shown as ratio t/t'

Elapsed	Recovery	Pumping	Water Level	Recovery	Residual
Fime (min.)*	Elapsed Time	Water Level	Drawdown	Water Level	Drawdown
	(min.)	(m btoc)	(m)	(m btoc)	(m)
C		6.61	0.00		
1		7.80	-1.19		
2		8.10	-1.49		
3		8.35	-1.74		
4		8.57	-1.96		
5		8.89	-2.28		
6		9.18	-2.57		
7		9.40	-2.79		
8		9.75	-3.14		
Ç		10.20	-3.59		
10		10.37	-3.76		
12		10.99			
14		11.63	-5.02		
16		11.97	-5.36		
18	3	12.06	-5.45		
20		12.20	-5.59		
30		14.02	-7.41		
40		15.41	-8.80		
50		16.30	-9.69		
60		16.94	-10.33		
90		18.14	-11.53		
120		18.72	-12.11		
150		19.15	-12.54		
180		19.44			
210		19.66			
240		19.82			
270		20.02	-13.41		
300		20.13			
330		20.26			
360	+	20.33			
361		1		19.69	-13.0
181		2		19.17	-12.5
121		3		18.70	-12.0
91		4		18.26	

73	5		17.85	-11.24
61	6		17.46	-10.85
52.4	7		17.13	-10.52
46	8		16.76	-10.15
41	9		16.46	-9.85
37	10		16.13	-9.52
19	20		13.94	-7.33
13	30		12.49	-5.88
1.4	848		6.81	-0.20

#### Observation Well Data South Shore Caden Estates inc.

#### **OW1 Water Levels During TW1 Pumping Test**

Elapsed	Water Level	Water Level
Time (min.)	(m btoc)	Change
		(m)
-20	1.44	0.00
65	1.48	-0.04
125	1.50	-0.06
185	1.51	-0.07
245	1.51	-0.07
305	1.50	-0.06
355	1.50	-0.06

#### Completed August 22, 2019

#### **TEST PIT LOGS**

T - 1 D:4 4	
Test Pit 1	Metariala
Depth (m)	<u>Materials</u>
0 - 0.31	dark brown TOPSOIL
0.31 - 0.58	red-brown, lightly compact, dry silty fine SAND with traces of clay and gravel
	(estimated percolation rate 15 min/cm)
0.58 - 1.67	grey-brown, compact, dry sandy SILT and SAND till with some clay and traces
0.00 1.01	of gravel, stony (estimated percolation rate 35 min/cm)
	of graver, story (commuted percentilist visits as a second
	No emergent groundwater or soil mottling.
	• Sample 1 - 0.5m

Sample 1 - 0.5m

Clay = 3%

Silt = 23%

Sand = 69%

Gravel = 5%

Test Pit 2	
Depth (m)	<u>Materials</u>
0 - 0.31	dark brown TOPSOIL
0.31 - 0.64	red-brown, lightly compact, dry silty fine SAND with traces of clay and gravel
5.5.	(estimated percolation rate 15 min/cm)

grey-brown, compact, dry sandy SILT and SAND till with some clay and traces 0.64 - 1.82 of gravel, stony (estimated percolation rate 35 min/cm)

No emergent groundwater or soil mottling.

Sample 2 - 1.2m

Clay = 15%

Silt = 46%

Sand = 35%

Gravel = 4%

Test Pit 3	
Depth (m)	Materials
0 - 0.31	dark brown TOPSOIL
0.31 - 0.89	red-brown, lightly compact, dry to wet fine SAND with traces of silt and clay
	(estimated percolation rate 12 min/cm)
0.89 - 1.98	grey-brown, compact, wet sandy SILT and SAND till with some clay, stony
	(estimated percolation rate 35 min/cm)

- Emergent groundwater and soil mottling below 0.61m.
- Sample 3 0.5m

Clay = 3%

Silt = 8%

Sand = 89%

Gravel = 0%

#### **TEST PIT LOGS**

#### Completed August 22, 2019

Test Pit 4	
Depth (m)	<u>Materials</u>
0 - 0.25	dark brown TOPSOIL
0.25 - 0.81	red-brown, lightly compact, dry to wet fine SAND with traces of silt and clay (estimated percolation rate 12 min/cm)
0.81 - 1.82	grey-brown, compact, wet sandy SILT and SAND till with some clay, stony (estimated percolation rate 35 min/cm)

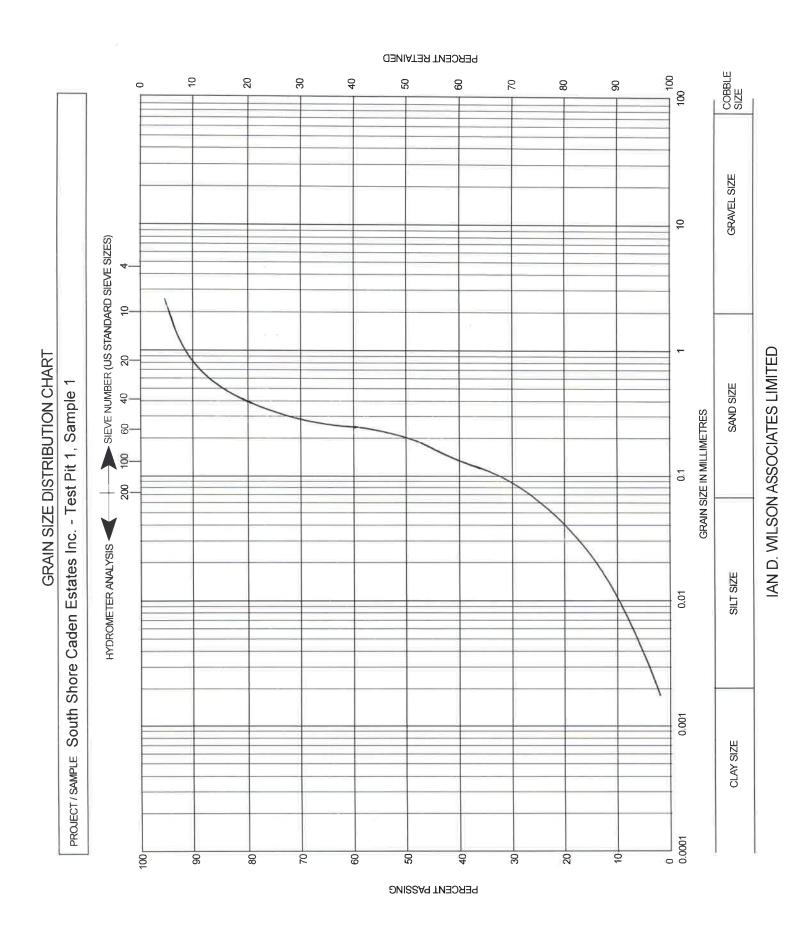
- Emergent groundwater and soil mottling below 0.76m.
- Sample 4 1.2m
  - Clay = 15%
  - Silt = 44%
  - Sand = 41%
  - Gravel = 0%

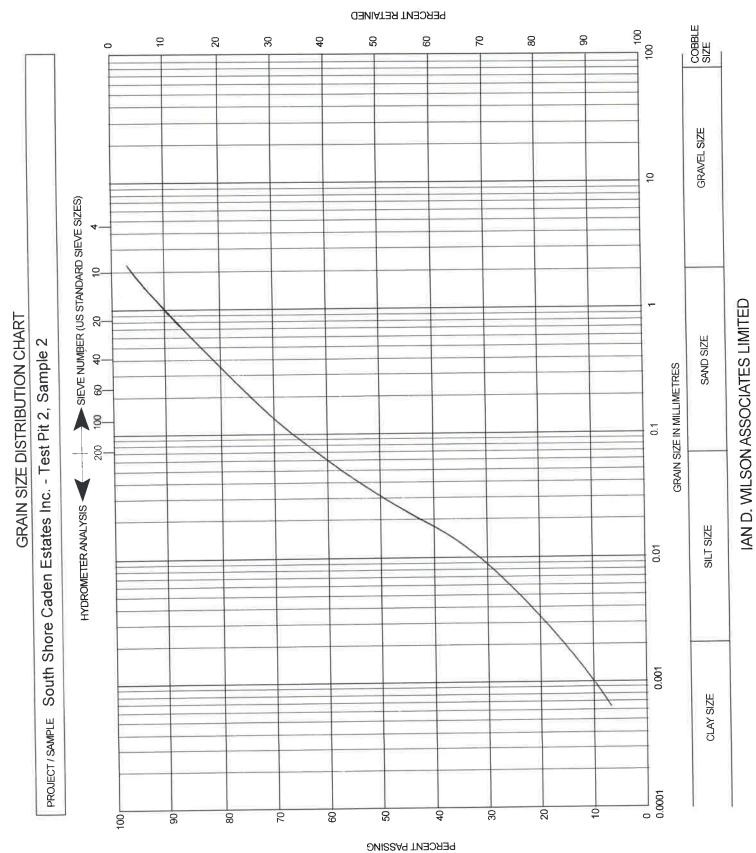
Test Pit 5 Depth (m) 0 - 0.35 0.35 - 1.42 1.42 - 2.13	Materials dark brown TOPSOIL red-brown, lightly compact, dry to wet silty fine SAND with some clay (estimated percolation rate 30 min/cm) grey-brown, compact, wet sandy SILT and SAND till with some clay, stony (estimated percolation rate 35 min/cm)

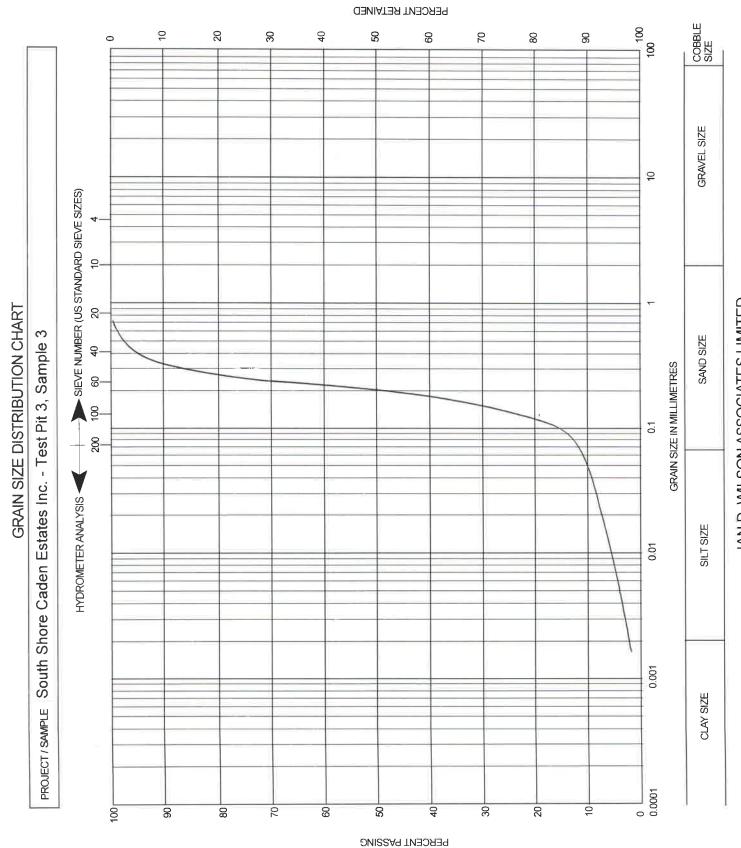
Emergent groundwater and soil mottling below 1.22m.

Test Pit 6	
Depth (m)	<u>Materials</u>
0 - 0.25	dark brown TOPSOIL
0.25 - 0.78	red-brown, lightly compact, dry silty fine SAND with some clay (estimated percolation rate 30 min/cm)
0.78 - 1.82	grey-brown, compact, dry to wet sandy SILT and SAND till with some clay, stony (estimated percolation rate 35 min/cm)

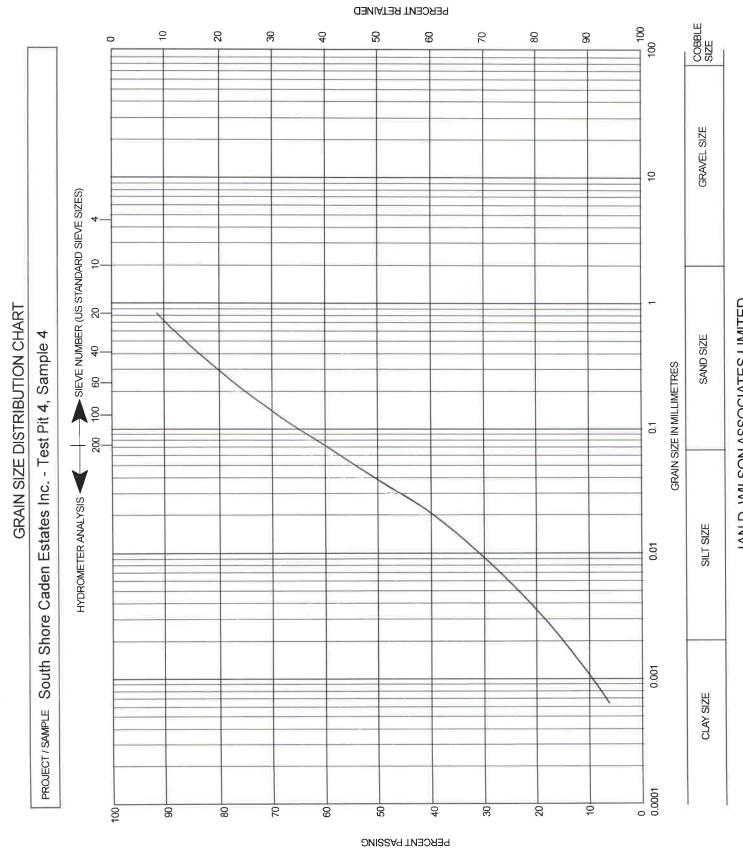
- Emergent groundwater and soil mottling below 1.52m.
- Sample 5 0.5m
  - Clay = 11%
  - Silt = 27%
  - Sand = 62%
  - Gravel = 0%



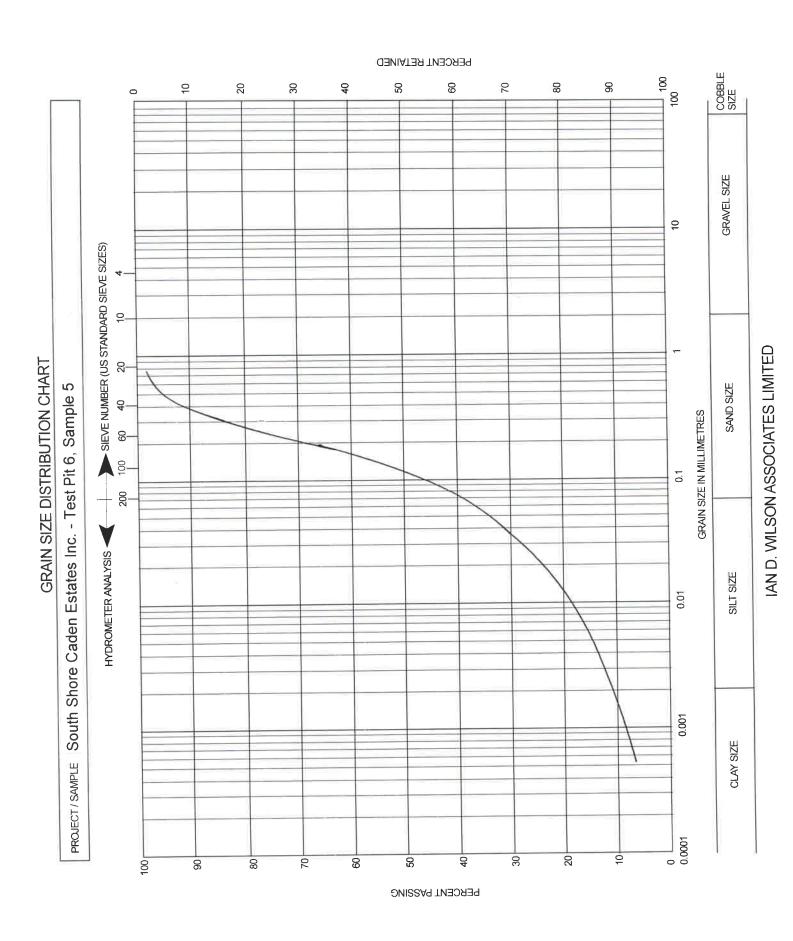




IAN D. WILSON ASSOCIATES LIMITED



IAN D. WILSON ASSOCIATES LIMITED





Site Location: MARCHMONT

Your C.O.C. #: n/a

**Attention: Geoff Rether** 

Ian D Wilson Associates Ltd PO Box 299 76722 Airport Rd Clinton, ON CANADA NOM 1L0

Report Date: 2019/08/28

Report #: R5857619 Version: 1 - Final

#### **CERTIFICATE OF ANALYSIS**

BV LABS JOB #: B9N5854 Received: 2019/08/23, 10:37

Sample Matrix: Water # Samples Received: 1

# Samples Received: 1					
Augliege	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Reference
Alkalinity Alkalinity	2 Quantity	N/A		CAM SOP-00448	SM 23 2320 B m
Carbonate, Bicarbonate and Hydroxide	1	N/A		CAM SOP-00102	APHA 4500-CO2 D
Chloride by Automated Colourimetry	1	N/A		CAM SOP-00463	SM 4500-Cl E m
Colour	1	N/A		CAM SOP-00412	SM 23 2120C m
Conductivity	1	N/A		CAM SOP-00414	SM 23 2510 m
Dissolved Organic Carbon (DOC) (1)	1	N/A	2019/08/26	CAM SOP-00446	SM 23 5310 B m
Hardness (calculated as CaCO3)	1	N/A	2019/08/26	CAM SOP	SM 2340 B
Transition as easely		•		00102/00408/00447	
Lab Filtered Metals by ICPMS	1	2019/08/24	2019/08/26	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference)	1	N/A	2019/08/28	<b>;</b>	
Anion and Cation Sum	1	N/A	2019/08/27	,	
Total Coliforms/ E. coli, CFU/100mL	1	N/A	2019/08/23	CAM SOP-00551	MOE E3407
Total Ammonia-N	1	N/A	2019/08/27	' CAM SOP-00441	USGS I-2522-90 m
Nitrate (NO3) and Nitrite (NO2) in Water (2)	1	N/A	2019/08/26	CAM SOP-00440	SM 23 4500-NO3I/NO2B
Нд	1	2019/08/24	2019/08/27	' CAM SOP-00413	SM 4500H+ B m
Orthophosphate	1	N/A	2019/08/26	CAM SOP-00461	EPA 365.1 m
Sat. pH and Langelier Index (@ 20C)	1	N/A	2019/08/28	3	
Sat. pH and Langelier Index (@ 4C)	1	N/A	2019/08/28	3	
Sulphate by Automated Colourimetry	1	N/A	2019/08/20	CAM SOP-00464	EPA 375.4 m
Total Dissolved Solids (TDS calc)	1	N/A	2019/08/28	3	
Turbidity	1	N/A	2019/08/20	5 CAM SOP-00417	SM 23 2130 B m

#### Remarks:

Bureau Veritas Laboratories are accredited to ISO/IEC 17025 for specific parameters on scopes of accreditation. Unless otherwise noted, procedures used by BV Labs are based upon recognized Provincial, Federal or US method compendia such as CCME, MELCC, EPA, APHA.

All work recorded herein has been done in accordance with procedures and practices ordinarily exercised by professionals in BV Labs profession using accepted testing methodologies, quality assurance and quality control procedures (except where otherwise agreed by the client and BV Labs in writing). All data is in statistical control and has met quality control and method performance criteria unless otherwise noted. All method blanks are reported; unless indicated otherwise, associated sample data are not blank corrected. Where applicable, unless otherwise noted, Measurement Uncertainty has not been accounted for when stating conformity to the referenced standard.



Site Location: MARCHMONT

Your C.O.C. #: n/a

Attention: Geoff Rether

lan D Wilson Associates Ltd PO Box 299 76722 Airport Rd Clinton, ON CANADA NOM 1LO

Report Date: 2019/08/28

Report #: R5857619 Version: 1 - Final

#### **CERTIFICATE OF ANALYSIS**

**BV LABS JOB #: B9N5854** Received: 2019/08/23, 10:37

BV Labs liability is limited to the actual cost of the requested analyses, unless otherwise agreed in writing. There is no other warranty expressed or implied. BV Labs has been retained to provide analysis of samples provided by the Client using the testing methodology referenced in this report. Interpretation and use of test results are the sole responsibility of the Client and are not within the scope of services provided by BV Labs, unless otherwise agreed in writing. BV Labs is not responsible for the accuracy or any data impacts, that result from the information provided by the customer or their agent.

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.

Results relate to samples tested. When sampling is not conducted by BV Labs, results relate to the supplied samples tested.

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 $Reference\ Method\ suffix\ "m"\ indicates\ test\ methods\ incorporate\ validated\ modifications\ from\ specific\ reference\ methods\ to\ improve\ performance.$ 

- \* 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** 



Bureau Veritas Laboratories

28 Aug 2019 11:54:07

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Ashton Gibson, Project Manager Email: Ashton.Gibson@bvlabs.com

Phone# (905)817-5765

\_\_\_\_\_\_

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lan D Wilson Associates Ltd Site Location: MARCHMONT

Sampler Initials: GR

#### **RCAP - COMPREHENSIVE (LAB FILTERED)**

BV Labs ID		KPH840		
Sampling Date		2019/08/22 17:15		
COC Number		n/a		
	UNITS	MM-TW1	RDL	QC Batch
Calculated Parameters				
Anion Sum	me/L	4.29	N/A	6296820
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	180	1.0	6296108
Calculated TDS	mg/L	230	1.0	6296824
Carb. Alkalinity (calc. as CaCO3)	mg/L	2.9	1.0	6296108
Cation Sum	me/L	4.38	N/A	6296820
Hardness (CaCO3)	mg/L	200	1.0	6297104
lon Balance (% Difference)	%	1.01	N/A	6296110
Langelier Index (@ 20C)	N/A	0.690		6296821
Langelier Index (@ 4C)	N/A	0.441		6296822
Saturation pH (@ 20C)	N/A	7.56		6296821
Saturation pH (@ 4C)	N/A	7.80		6296822
Inorganics				
Total Ammonia-N	mg/L	ND	0.050	6300237
Conductivity	umho/cm	390	1.0	6298360
Dissolved Organic Carbon	mg/L	ND	0.50	6298352
Orthophosphate (P)	mg/L	ND	0.010	6298604
рН	рН	8.25		6298361
Dissolved Sulphate (SO4)	mg/L	21	1.0	6298603
Alkalinity (Total as CaCO3)	mg/L	180	1.0	6298358
Dissolved Chloride (CI-)	mg/L	8.4	1.0	6298602
Nitrite (N)	mg/L	ND	0.010	6298353
Nitrate (N)	mg/L	ND	0.10	6298353
Metals				
Dissolved Aluminum (AI)	ug/L	ND	5.0	6296955
Dissolved Antimony (Sb)	ug/L	ND	0.50	6296955
Dissolved Arsenic (As)	ug/L	ND	1.0	6296955
Dissolved Barium (Ba)	ug/L	120	2.0	629695
Dissolved Beryllium (Be)	ug/L	ND	0.50	6296955
Dissolved Boron (B)	ug/L	14	10	6296955
Dissolved Cadmium (Cd)	ug/L	ND	0.10	629695
Dissolved Calcium (Ca)	ug/L	38000	200	629695
Dissolved Chromium (Cr)	ug/L	ND	5.0	629695
Dissolved Cobalt (Co)	ug/L	ND	0.50	629695
RDL = Reportable Detection Limit				
QC Batch = Quality Control Batch				
N/A = Not Applicable	12			
ND = Not detected		0 I K		



Report Date: 2019/08/28

lan D Wilson Associates Ltd Site Location: MARCHMONT

Sampler Initials: GR

#### RCAP - COMPREHENSIVE (LAB FILTERED)

BV Labs ID		KPH840		
Sampling Date		2019/08/22 17:15		
COC Number		n/a		
	UNITS	MM-TW1	RDL	QC Batch
Dissolved Copper (Cu)	ug/L	ND	1.0	6296955
Dissolved Iron (Fe)	ug/L	ND	100	6296955
Dissolved Lead (Pb)	ug/L	ND	0.50	6296955
Dissolved Magnesium (Mg)	ug/L	25000	50	6296955
Dissolved Manganese (Mn)	ug/L	16	2.0	6296955
Dissolved Molybdenum (Mo)	ug/L	1.0	0.50	6296955
Dissolved Nickel (Ni)	ug/L	ND	1.0	6296955
Dissolved Phosphorus (P)	ug/L	ND	100	6296955
Dissolved Potassium (K)	ug/L	1400	200	6296955
Dissolved Selenium (Se)	ug/L	ND	2.0	6296955
Dissolved Silicon (Si)	ug/L	7900	50	6296955
Dissolved Silver (Ag)	ug/L	ND	0.10	6296955
Dissolved Sodium (Na)	ug/L	9000	100	6296955
Dissolved Strontium (Sr)	ug/L	450	1.0	6296955
Dissolved Thallium (TI)	ug/L	ND	0.050	6296955
Dissolved Titanium (Ti)	ug/L	ND	5.0	6296955
Dissolved Uranium (U)	ug/L	2.6	0.10	6296955
Dissolved Vanadium (V)	ug/L	ND	0.50	629695
Dissolved Zinc (Zn)	ug/L	ND	5.0	629695

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

ND = Not detected



lan D Wilson Associates Ltd Site Location: MARCHMONT

Sampler Initials: GR

#### **RESULTS OF ANALYSES OF WATER**

BV Labs ID		KPH840		
Sampling Date		2019/08/22 17:15		
COC Number		n/a		
	UNITS	MM-TW1	RDL	QC Batch
Inorganics				
Colour	TCU	ND	2	6298401
Turbidity	NTU	1.8	0.1	6298417
RDL = Reportable Detection	Limit			
QC Batch = Quality Control	Batch			
ND = Not detected				



BV Labs Job #: B9N5854 Ian D Wilson Associates Ltd

Report Date: 2019/08/28 Site Location: MARCHMONT

Sampler Initials: GR

#### **MICROBIOLOGY (WATER)**

BV Labs ID		KPH840	
Sampling Date		2019/08/22 17:15	
COC Number		n/a	
	UNITS	MM-TW1	QC Batch
Microbiological			
Background	CFU/100mL	12	6298046
Total Coliforms	CFU/100mL	8	6298046
Escherichia coli	CFU/100mL	0	6298046
QC Batch = Quality Cor	trol Batch		



Ian D Wilson Associates Ltd Site Location: MARCHMONT

Sampler Initials: GR

#### **TEST SUMMARY**

BV Labs ID: KPH840 Sample ID: MM-TW1

Matrix: Water

Collected: 2019/08/22

Shipped:

Received: 2019/08/23

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	6298358	N/A	2019/08/27	Surinder Rai
Carbonate, Bicarbonate and Hydroxide	CALC	6296108	N/A	2019/08/27	Automated Statchk
Chloride by Automated Colourimetry	KONE	6298602	N/A	2019/08/27	Deonarine Ramnarine
Colour	SPEC	6298401	N/A	2019/08/26	Christine Pham
Conductivity	AT	6298360	N/A	2019/08/27	Surinder Rai
Dissolved Organic Carbon (DOC)	TOCV/NDIR	6298352	N/A	2019/08/26	Mandeep Kaur
Hardness (calculated as CaCO3)		6297104	N/A	2019/08/26	Automated Statchk
Lab Filtered Metals by ICPMS	ICP/MS	6296955	2019/08/24	2019/08/26	John Bowman
Ion Balance (% Difference)	CALC	6296110	N/A	2019/08/28	Automated Statchk
Anion and Cation Sum	CALC	6296820	N/A	2019/08/27	Automated Statchk
Total Coliforms/ E. coli, CFU/100ml.	PL	6298046	N/A	2019/08/23	Farhana Rahman
Total Ammonia-N	LACH/NH4	6300237	N/A	2019/08/27	Mazin Wakai
Nitrate (NO3) and Nitrite (NO2) in Water	LACH	6298353	N/A	2019/08/26	Amanpreet Sappal
рН	AT	6298361	2019/08/24	2019/08/27	Surinder Rai
Orthophosphate	KONE	6298604	N/A	2019/08/26	Alina Dobreanu
Sat. pH and Langelier Index (@ 20C)	CALC	6296821	N/A	2019/08/28	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	6296822	N/A	2019/08/28	Automated Statchk
Sulphate by Automated Colourimetry	KONE	6298603	N/A	2019/08/26	Alina Dobreanu
Total Dissolved Solids (TDS calc)	CALC	6296824	N/A	2019/08/28	Automated Statchk
Turbidity	AT	6298417	N/A	2019/08/26	Kazzandra Adeva



lan D Wilson Associates Ltd Site Location: MARCHMONT

Sampler Initials: GR

#### **GENERAL COMMENTS**

Results relate only to the items tested.



lan D Wilson Associates Ltd Site Location: MARCHMONT

Sampler Initials: GR

#### **QUALITY ASSURANCE REPORT**

QA/QC								
3atch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limi
296955	JBW	Matrix Spike	Dissolved Aluminum (Al)	2019/08/26		99	%	80 - 12
			Dissolved Antimony (Sb)	2019/08/26		104	%	80 - 12
			Dissolved Arsenic (As)	2019/08/26		99	%	80 - 12
			Dīssolved Barium (Ba)	2019/08/26		96	%	80 - 12
			Dissolved Beryllium (Be)	2019/08/26		102	%	80 - 12
			Dissolved Boron (B)	2019/08/26		95	%	80 - 12
			Dissolved Cadmium (Cd)	2019/08/26		102	%	80 - 12
			Dissolved Calcium (Ca)	2019/08/26		NC	%	80 - 1
			Dissolved Chromium (Cr)	2019/08/26		94	%	80 - 1
			Dissolved Cobalt (Co)	2019/08/26		96	%	80 - 1
			Dissolved Copper (Cu)	2019/08/26		100	%	80 - 1
			Dissolved Iron (Fe)	2019/08/26		100	%	80 - 1
			Dissolved Lead (Pb)	2019/08/26		98	%	80 - 1
			Dissolved Magnesium (Mg)	2019/08/26		NC	%	80 - 1
			Dissolved Manganese (Mn)	2019/08/26		100	%	80 - 1
			Dissolved Malybdenum (Mo)	2019/08/26		102	%	80 - 1
			Dissolved Nickel (Ni)	2019/08/26		95	%	80 - 3
			Dissolved Phosphorus (P)	2019/08/26		106	%	80 - 3
				2019/08/26		100	%	80 - :
			Dissolved Potassium (K)	2019/08/26		99	%	80 -
			Dissolved Selenium (Se)			94	%	80 -
			Dissolved Silicon (Si)	2019/08/26		91	%	80 -
			Dissolved Silver (Ag)	2019/08/26		NC	%	80 -
			Dissolved Sodium (Na)	2019/08/26		NC NC	%	80 -
			Dissolved Strontium (Sr)	2019/08/26 2019/08/26		100	%	80 -
			Dissolved Thallium (TI)			99	%	80 -
			Dissolved Titanium (Ti)	2019/08/26		95	%	80 -
			Dissolved Uranium (U)	2019/08/26		99	%	80 -
			Dissolved Vanadium (V)	2019/08/26		99	%	80 -
			Dissolved Zinc (Zn)	2019/08/26				80 -
296955	JBW	Spiked Blank	Dissolved Aluminum (Al)	2019/08/26		103	%	
			Dissolved Antimony (Sb)	2019/08/26		103	%	80 -
			Dissolved Arsenic (As)	2019/08/26		102	%	80 -
			Dissolved Barium (Ba)	2019/08/26		101	%	80 -
			Dissolved Beryllium (Be)	2019/08/26		103	%	80 -
			Dissolved Boron (B)	2019/08/26		99	%	80 -
			Dissolved Cadmium (Cd)	2019/08/26		103	%	80 -
			Dissolved Calcium (Ca)	2019/08/26		102	%	80 -
			Dissolved Chromium (Cr)	2019/08/26		100	%	80 -
			Dissolved Cobalt (Co)	2019/08/26		101	%	80 -
			Dissolved Copper (Cu)	2019/08/26		103	%	80 -
			Dissolved Iron (Fe)	2019/08/26		103	%	80 -
			Dissolved Lead (Pb)	2019/08/26		99	%	80 -
			Dissolved Magnesium (Mg)	2019/08/26		102	%	80 -
			Dissolved Manganese (Mn)	2019/08/26		102	%	80 -
			Dissolved Molybdenum (Mo)	2019/08/26		105	%	80 -
			Dissolved Nickel (Ni)	2019/08/26		100	%	80 -
			Dissolved Phosphorus (P)	2019/08/26		115	%	80 -
			Dissolved Potassium (K)	2019/08/26		102	%	80 -
			Dissolved Selenium (Se)	2019/08/26		101	%	80 -
			Dissolved Silicon (Si)	2019/08/26		103	%	80 -
			Dissolved Silver (Ag)	2019/08/26		100	%	80 -
			Dissolved Sodium (Na)	2019/08/26		97	%	80 -



lan D Wilson Associates Ltd Site Location: MARCHMONT

Sampler Initials: GR

#### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC	174	OC Turns	Darameter	Date Analyzed	Value	Recovery	UNITS	QC Limit
Batch	Init	QC Type	Parameter Dissolved Strontium (Sr)	2019/08/26	Value	101	%	80 - 120
				2019/08/26		101	%	80 - 120
			Dissolved Thallium (TI) Dissolved Titanium (Ti)	2019/08/26		103	%	80 - 120
			Dissolved Tranium (11) Dissolved Uranium (U)	2019/08/26		99	%	80 - 120
			Dissolved Vanadium (V)	2019/08/26		100	%	80 - 120
			Dissolved Variation (V) Dissolved Zinc (Zn)	2019/08/26		104	%	80 - 12
200055	IDIAL	Method Blank	Dissolved Aluminum (Al)	2019/08/26	ND,	104	ug/L	00 11
296955	JBW	ivietnoù Bjank			RDL=5.0		-	
			Dissolved Antimony (Sb)	2019/08/26	ND, RDL=0.50		ug/L	
			Dissolved Arsenic (As)	2019/08/26	ND, RDL=1.0		ug/L	
			Dissolved Barium (Ba)	2019/08/26	ND, RDL=2.0		ug/L	
			Dissolved Beryllium (Be)	2019/08/26	ND, RDL=0.50		ug/L	
			Dissolved Boron (B)	2019/08/26	ND, RDL=10		ug/L	
			Dissolved Cadmium (Cd)	2019/08/26	ND, RDL=0.10		ug/L	
			Dissolved Calcium (Ca)	2019/08/26	ND, RDL=200		ug/L	
			Dissolved Chromium (Cr)	2019/08/26	ND, RDL=5.0		ug/L	
			Dissolved Cobalt (Co)	2019/08/26	ND, RDL=0.50		ug/L	
			Dissolved Copper (Cu)	2019/08/26	ND, RDL=1.0		ug/L	
			Dissolved Iron (Fe)	2019/08/26	ND, RDL=100		ug/L	
			Dissolved Lead (Pb)	2019/08/26	ND, RDL=0.50		ug/L	
			Dissolved Magnesium (Mg)	2019/08/26	ND, RDL=50		ug/L	
			Dissolved Manganese (Mn)	2019/08/26	ND, RDL=2.0		ug/L	
			Dissolved Molybdenum (Mo)	2019/08/26	ND, RDL=0.50		ug/L	
			Dissolved Nickel (Ni)	2019/08/26	ND, RDL=1.0		ug/L	
			Dissolved Phosphorus (P)	2019/08/26	ND, RDL=100		ug/L	
			Dissolved Potassium (K)	2019/08/26	ND, RDL=200		ug/L	
			Dissolved Selenium (Se)	2019/08/26	ND, RDL=2.0		ug/L	
			Dissolved Silicon (Si)	2019/08/26	ND, RDL=50		ug/L	
			Dissolved Silver (Ag)	2019/08/26	ND, RDL=0.10		ug/L	
			Dissolved Sodium (Na)	2019/08/26	ND, RDL=100		ug/L	



an D Wilson Associates Ltd Site Location: MARCHMONT

Sampler Initials: GR

#### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC Batch	Init	QC Type	Parameter	Date Analyzed	Value	Recovery	UNITS	QC Limit
			Dissolved Strontium (Sr)	2019/08/26	ND, RDL=1.0		ug/L	
			Dissolved Thallium (TI)	2019/08/26	ND, RDL=0.050		ug/L	
			Dissolved Titanium (Ti)	2019/08/26	ND, RDL=5.0		ug/L	
			Dissolved Uranium (U)	2019/08/26	ND, RDL=0.10		ug/L	
			Dissolved Vanadium (V)	2019/08/26	ND, RDL=0.50		ug/L	
			Dissolved Zinc (Zn)	2019/08/26	ND, RDL=5.0		ug/L	
296955	JBW	RPD	Dissolved Antimony (Sb)	2019/08/26	NC		%	20
			Dissolved Arsenic (As)	2019/08/26	NC		%	20
			Dissolved Barium (Ba)	2019/08/26	1.8		%	20
			Dissolved Beryllium (Be)	2019/08/26	NC		%	20
			Dissolved Boron (B)	2019/08/26	0.66		%	20
			Dissolved Cadmium (Cd)	2019/08/26	NC		%	20
			Dissolved Chromium (Cr)	2019/08/26	NC		%	20
			Dissolved Cobalt (Co)	2019/08/26	1.7		%	20
			Dissolved Copper (Cu)	2019/08/26	NC		%	20
			Dissolved Lead (Pb)	2019/08/26	NC		%	20
			Dissolved Molybdenum (Mo)	2019/08/26	4.0		%	20
			Dissolved Nickel (Ni)	2019/08/26	7.2		%	20
			Dissolved Ricker (NV)  Dissolved Selenium (Se)	2019/08/26	NC		%	20
			Dissolved Silver (Ag)	2019/08/26	NC		%	20
			Dissolved Sodium (Na)	2019/08/26	2.1		%	20
			Dissolved Souldin (Na) Dissolved Thallium (TI)	2019/08/26	NC		%	20
			Dissolved Transam (11)	2019/08/26	1.3		%	20
			Dissolved Oranidin (O)  Dissolved Vanadium (V)	2019/08/26	NC		%	20
				2019/08/26	NC		%	20
			Dissolved Zinc (Zn)	2019/08/26	,,,,	91	%	80 - 1
6298352	KRM	Matrix Spike	Dissolved Organic Carbon	2019/08/26		98	%	80 - 1
6298352 6298352	KRM	Spiked Blank Method Blank	Dissolved Organic Carbon Dissolved Organic Carbon	2019/08/26	= ND, RDL=0.50	30	mg/L	
	III/DA 4	nnn	Dissolved Organic Carbon	2019/08/26	0.81		%	20
6298352	KRM	RPD	=	2019/08/26	0.04	103	%	80 - 1
6298353	ASP	Matrix Spike	Nitrite (N)	2019/08/26		99	%	80 - 1
		5 '1 1 Dll-	Nitrate (N)	2019/08/26		104	%	80 - 1
6298353	ASP	Spiked Blank	Nitrite (N) Nitrate (N)	2019/08/26		101	%	80 - 1
6298353	ASP	Method Blank	Nitrite (N)	2019/08/26	ND, RDL=0.010		mg/L	
			Nitrate (N)	2019/08/26	ND, RDL=0.10		mg/L	
£2002E2	ACD	RPD	Nitrite (N)	2019/08/26	NC		%	20
6298353	ASP	חרט	Nitrate (N)	2019/08/26	0.0066		%	20
C200250	CALL	Spiked Blank	Alkalinity (Total as CaCO3)	2019/08/26		95	%	85 - 1
6298358 6298358	SAU	Method Blank	Alkalinity (Total as CaCO3)	2019/08/26	ND, RDL=1.0		mg/L	
6200250	CALL	DDD	Alkalinity (Total as CaCO3)	2019/08/26	1.7		%	20
6298358	SAU	RPD Spiked Blank	Conductivity	2019/08/26	_,_	101	%	85 - 3
6298360	SAU	Spiked Blank	Conductivity	2019/08/26	ND,		umho/cm	
6298360	SAU	Method Blank	Conductivity	_020,00,20	RDL=1.0		•	



lan D Wilson Associates Ltd Site Location: MARCHMONT

Sampler Initials: GR

#### QUALITY ASSURANCE REPORT(CONT'D)

QA/QC		.007	Danier at an	Date Analyzed	Value	Recovery	UNITS	QC Limits
Batch	Init	QC Type	Parameter	2019/08/26	0.96	Recovery	%	25
6298360	SAU	RPD	Conductivity	2019/08/26	0.50	102	%	98 - 103
6298361	SAU	Spiked Blank	pH		0.63	102	%	N/A
6298361	SAU	RPD	pH	2019/08/26	0.03	100	%	80 - 120
6298401	CP	Spiked Blank	Colour	2019/08/26	ND DDI -2	100	TCU	00 - 120
6298401	CP	Method Blank	Colour	2019/08/26	ND,RDL=2		%	25
6298401	CP	RPD	Colour	2019/08/26	NC	108	%	85 - 115
6298417	KAD	Spiked Blank	Turbidity	2019/08/26	NB	108	70 NTU	93 - 113
6298417	KAD	Method Blank	Turbidity	2019/08/26	ND, RDL=0.1		NIO	
6298417	KAD	RPD	Turbidity	2019/08/26	0.79		%	20
6298602	DRM	Matrix Spike	Dissolved Chloride (Cl-)	2019/08/27		111	%	80 - 120
6298602	DRM	Spiked Blank	Dissolved Chloride (CI-)	2019/08/27		102	%	80 - 120
6298602	DRM	Method Blank	Dissolved Chloride (CI-)	2019/08/27	ND, RDL=1.0		mg/L	
6298602	DRM	RPD	Dissolved Chloride (Cl-)	2019/08/27	0.98		%	20
6298603	ADB	Matrix Spike	Dissolved Sulphate (SO4)	2019/08/26		NC	%	75 - 125
6298603	ADB	Spiked Blank	Dissolved Sulphate (SO4)	2019/08/26		101	%	80 - 120
6298603	ADB	Method Blank	Dissolved Sulphate (SO4)	2019/08/26	ND, RDL=1.0		mg/L	
6298603	ADB	RPD	Dissolved Sulphate (SO4)	2019/08/26	0.27		%	20
6298604	ADB	Matrix Spike	Orthophosphate (P)	2019/08/26		109	%	75 - 125
6298604	ADB	Spiked Blank	Orthophosphate (P)	2019/08/26		100	%	80 - 120
6298604	ADB	Method Blank	Orthophosphate (P)	2019/08/26	ND, RDL=0.010		mg/L	
6298604	ADB	RPD	Orthophosphate (P)	2019/08/26	NC		%	25
6300237	MT4		Total Ammonia-N	2019/08/27		100	%	75 - 125
6300237	MT4		Total Ammonia-N	2019/08/27		99	%	80 - 120
6300237	MT4	'	Total Ammonia-N	2019/08/27	ND, RDL=0.050		mg/L	
6300237	MT4	RPD	Total Ammonia-N	2019/08/27	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).



Ian D Wilson Associates Ltd Site Location: MARCHMONT Sampler Initials: GR

#### **VALIDATION SIGNATURE PAGE**

The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).

Marcule	
Anastassia Hamanov, Scientific Specialist	
Franken Rahman	
Farhana Rahman	

BV Labs has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

### RECORD OF TW1 AND LOCAL WELL RECORDS WITHIN 500m

#### ntario

Well Record Ministry of the Environment Well Tag No. (Place Sticker and/or Print Below) and Climate Change Regulation 903 Ontario Water Resources Act Page Measurements recorded in: Metric Metric Imperial Well Owner's Information ☐ Well Constructed F-mail Address Last Name / Organization First Name by Well Owner Postni Code Telephone No. (inc. area code) Province Municipality Mailing Address (Street Number/Name) Well Location Concession Address of Well Location (Street Number/Name) SIE WEST Postal Code Province City/Town/Village County/District/Municipality Ontario Other Municipal Plan and Subjet Number UTM Coordinates Zone Easting NAD 8 3 1 7 6 1 80 10 6 Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form) Depth (m/ft) Other Materials General Description Most Common Material Results of Well Yield Testing Annular Space Recovery Draw Down Uter test of well yield, water was: Type of Sealant Used (Muterial and Type) Volume Placed Depth Set at (m/ft) Water Level Time Water Level Clear and sand free (m/ll)Other, specify State If pumping discontinued, give reason 1 1 Pump intake set at (m/ft) 2 2 3 3 Pumping rate (/min / GPM) Well Use Method of Construction 4 4 ☐ Diamond Commercial Notwood Cable Tool Public Duration of pumping Dewstering
Monitoring Dispersion Li Municipal 5 5 ☐ Rotary (Conventional) 5 hrs + Detting: Test Hole Robary (Roverse) Driving Livestock Final water level and of pumping (mfl) Cooling & Air Conditioning 10 [ Impation: 10 ☐ Boring Digging ☐ Industrial Air percussion
Other, specify 15 Citter, specify If flowing give rate (Vmin / GPM) Status of Well Construction Record - Casing 20 20 Water Supply Recommended pump depth (m/ft) Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plaulic, Sheel) Wall Thickness (cris/n) Depth (m/ff) 25 25 Replacement Well Diameter From To (anviru) Test Hole Recommended pump rate (I/min / GPM) 30 30 Recharge Well STEE ☐ Denistering Well 40 Observation antifor Monitoring Hole Wolf production (Ilmin / GFM) 50 50 Alteration (Construction) 60 60 Yes No Abundaned, Insufficient Supply Map of Well Location Construction Record - Screen Abendoned, Poor Please provide a map below following instructions on the back Whiter Closity Depth (mill) Clumide Abundaned, other, From specify. Other, specify **Hole Diameter** Water Details Water found at Depth Kind of Water: Fresh Quintested Depth (m/ll) (cmārd (m/ft) Gas Other, specify
Water found at Depth Kind of Water Fresh Unitested (m/ft) Gas Other, specify Water found at Dopth Kind of Water Fresh Untested (m/lt) Gas Other, specify

Well Contractor and Well Technician Information H LUY # Business Name of Well Contractor Well Contractor's Licence No. Communits Municipality Business Address (Street Number/Name) nice Postal Code Busines Business E-mail Address Ministry Use Only Date Package Delivered Well givner information Audit No. 20 95 Bus Telephone No. finc. ama coxte). Name of Well Technician (Last Name, First Name). package delivered

Well Technician's Licence No. Signature of Technician and/or Contractor Date Submitted

0506E (2014/11)

Date Work Completed

RIGHT AT INCH

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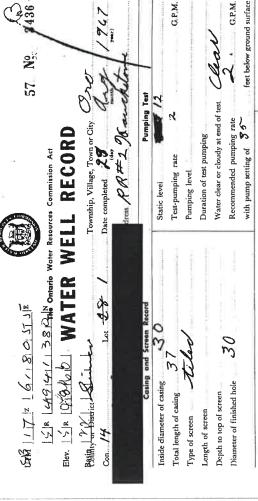
W. II.	with pump sett	o Jo Sur	with pump setting of 60 feet below ground surface	Jus punoas we
Meli Log			Wate	Water Record
Overburden and Bedrock Record	From ft.	유#	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
200	o	ئر		
Charter Latino	~	120		
doubt I clauseur	120	126		
Lemoter makent	9 < /	2	Se /	here
, ,				0

In diagram below show distances of well from road and lot line. Indicate north by arrow. (Signature of Licensed Drilling or Boring Contractor) of the letter

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

Drilling or Boring Firm

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



G.P.M.

Water clear or cloudy at end of test

Duration of test pumping 2 2

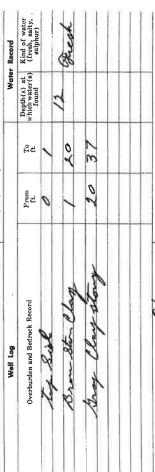
Pumping level / 20 Test-pumping rate 10

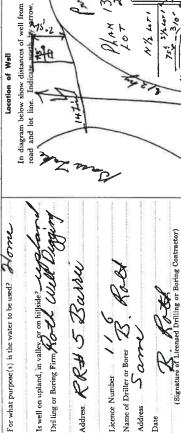
Type of screen Cook. #18 Set

Depth to top of screen /72

Length of screen &

Total length of casing +86126





Form 7 15M-60-4138 OWRC COPY

.SS SX

MEW FAIN INF

Day 28/65

Form 7 15M-60-4138 OWRC COPY

Licence Number / 337 Name of Driller or Borer

Address

1: Con 1/2	CODED
01016121	21/121/1
717 1/1/	1/101/10
17 1 170	7

5705446-

The Ontario Water Resources Commission Act

31D/12E

LL RECORD  Township Nilage, Town or Gity  To a skir. L.	Date completed 18 (i.t. 68  month tress R. R. ORILLIA	Pumping Test	Static levei 72'	Test-pumping rate 10',
WATER WE	Lot	Culing and street Record		Total length of casing 187

For what purpose(s) is the water to be used?	Location of Well
Te wall of unland in valley or on hillings	In diagram below/show distances road and lot line. Indicate nort
Drilling or Boring Firm	A STATE OF THE STA
Address	MEDONTE A GOO!
Licence Number	7100 - 20 +00
Name of Driller or Borer	CT4/20 22
Date To 1 / 68	
(Signature of Licensed Drilling or Boring Contractor)	//

Form 7 15M-60-4138 OWRC COPY

listances of well from cate north by arrow,

31 P/12 E el.B. G.P.M. feet below ground surface Water Record Water clear or cloudy at end of test Cle J R Pumping Test with pump setting of 20Township, Village, Town or City A Recommended pumping rate WATER WELL RECORD Duration of test pumping 5705814 Pumping level 00 JIM [117] 2 [6] 17171910] Gay XIE 1418 419141/151810CODED 32 Bin mool Som Lot Well Log :lev. 15TR 10181215T Inside diameter of casing Diameter of finished hole Total length of casing Depth to top of screen County or District Type of screen Length of screen 12/2/ nist Con.

Overburden and Bedrock Record	From ft.	<b>6</b> 4	Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
2				
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For what purpose(s) is the water to be used?	Location of Well
house	In diagram below thow distances of well from
Is well on upland, in valley, or on hillside? Lypland	road and lot line. Indicate north by arrow.
Drilling or Boring Firm	MEDOUTE 1508 good Price Corners
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feet below ground surface G.P.M. G.P.M char P#2 On Water clear or cloudy at end of test Recommended pumping rate with pump setting of Duration of test pumping Test pumping rate Pumping level Static levei MMISSION 36in 3000 and Screen Record Lot Inside diameter of casing Diameter of finished hole Depth to top of screen. Total length of casing Length of screen Type of screen

Just Depth(s) at Kind of water which water(s) (fresh, salty, sulphur) Water Record 35K Bottom 50 £4 27 From day Overburden and Bedrock Record Well Log Stating New &

61 PLUGGING & SEALING RECORD

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MATERIAL AND TIPE

For what purpose(s) is the water to be used? Is well on upland, in valley, or on hillside? Name of Driller or Borer Drilling or Boring Fign Licence Number Address Address

Drilling or Boring Contractor)

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Ш In descend below how distances of well from rose and lot line. Indicate horth by arrow. 1WAY#12 y Boss Lak W 44 4 12

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WATER WELL RECORD

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### Well ID

Well ID Number: 5707671 Well Audit Number: Well Tag Number:

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

### Well Location

Township	ORILLIA TOWNSHIP
Lot	001
Concession	NDOI
County/District/Municipality	SIMCOE
City/Town/Village	1
Province	NO
Postal Code	n/a
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UTM Coordinates	Easting. 618174 60 Northing: 4942064.00
Municipal Plan and Sublot Number	1
Other	

# Overburden and Bedrock Materials Interval

	•
Depth From 0 ft	15 ft
General Description	
Other Materials STNS	STNS
Seneral Colour Most Common Material Other Materials C	CLAY
General Colour BRWN	GREY

# Annular Space/Abandonment Sealing Record

Depth Depth Type of Sealant Used Volume From To (Material and Type) Placed

# Method of Construction & Well Use

Method of Construction Well Use Borng

### Status of Well

# Construction Record - Casing

Inside Open Hole or material Prom To

Jameter CONCRETE 24 ft

# Construction Record - Screen

Outside Material Depth Depth Diameter Material From To

# Well Contractor and Well Technician Information

Well Contractor's Licence Number 4608

## Results of Well Yield Testing

CLOUDY 1 h 0 m BAILER S GPM GPM 23 ft If pumping discontinued, give reason Pump intake set at After test of well yield, water was Recommended pump depth Recommended pump rate Pumping Rate
Duration of Pumping
Final water level If flowing give rate

## Draw Down & Recovery

Draw Down Time(min) Draw Down Water level Recovery Time(min) Recovery Water level SWL 9ft 10 15 15 20 20 20 30 40 40 60 11 B 13 A 15 ft 9 ft

Water Details

Water Found at Depth Kind Fresh 15 ft 24 ft

Hole Diameter

Depth Depth Diameter From To

Audit Number:

Date Well Completed: November 04, 1970

Date Well Record Received by MOE: December 03, 1970

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The Ontario Water Resources Commission Act

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The Ontario Water Resources Commission Act
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The Ontario Water Resources Commission Act

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Ministry of the (B)

WATER WELL RECORD

Concession # 1 5723747

-#2, Orillia, Ontario 

Simcoe County

DATE COMPACTED 18413

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# WATER WELL RECORD

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15 Derby St., Orillia, Ont. L3V5R4

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FINAL STATUS OF WELL

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The Onlario Water Resources Act
WATER WELL RECORD

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G. Hart & Sons Well Brilling Ltd Coccessions of Bas 850, R.F.F. Fenelon Falls, Ontario

Ministry of the Environment Ontario

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Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD 5731185

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County or District SIM COE QT1 7719 4 7719

The Ontario Water Resources Act WATER WELL RECORD

100 POOLS Con block test survey, etc. Lot 2

BOX 102. ORILLIA, ONT L3V 6H9 CONDENSE AT BOOTH ...

	907	LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)	MATERIALS (see instructions)	Charle	1
General colour	Most common material	Other materials	General description	From	Te
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BROWN	CLA Y	SAND		25	35
GREY	CLAY			35	06
GRE Y	CLAV	GRAVEL		06	105
Menus	CLAY	GRAVEL	HARD PACKED	105	105 150
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The Ontario Water Resources Act WATER WELL RECORD

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The Ontario Water Resources Act WATER WELL RECORD =

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### Well ID

Well ID Number 7269633 Well Audit Number 2212636 Well Tag Number 4185845

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

## Well Location

Address of Well Location	22 BRIANNE CRESCENT
Township	ORO TOWNSHIP
Lot	001
Concession	CON 14
County/District/Municipality	SIMCOE
City/Town/Village	PRICES CORNER
Province	NO
Postal Code	n/a
UTM Coordinates	NAD83 — Zone 17 Easting: 618011 00
Municipal Plan and Sublot Number	140 tuting 4741300 00
Other	
Topics a payor a description of their securities a securities of their securities of the securities of	

# Overburden and Bedrock Materials Interval

General Colour	General Colour Most Common Material Other Materials General Description	Other Materials	General Description	Depth From	Depth To
BRWN	CLAY	STNS	GRVL	0.11	23.5 m
BRWN	SAND	SILT		23.5 m	23.8 m
GREY	CLAY			23 8 m	46 m
BRWN	SAND		DRY	46 m	476m
GREY	CLAY	SALAS		47.6 m	56.1 m
GREY	LMSN			56.1 m	619m

# Annular Space/Abandonment Sealing Record

Depth Depth Type of Scalant Used Volume From To (Material and Type) Placed 0m 7m BENTONITE GROUT

# Method of Construction & Well Use

Method of Construction Well Use Rotary (Convent.)

### Status of Well

Water Supply

## Construction Record - Casing

Depth To	56.4 m	410m
Depth	ш9-	S6.4 m
Open Hole or material	STEEL	ODEN UOI E
Inside Diameter	15.5 cm	

## Construction Record - Screen

Outside Material Depth Depth Diameter

# Well Contractor and Well Technician Information

Well Contractor's Licence Number: 5528

## Results of Well Yield Testing

After test of well yield, water was	CLOUDY
If pumping discontinued, give reason	
Pump intake set at	49 m
Pamping Rate	24 LPM
Duration of Pumping	1 h 0 m
Final water level	37.4 m
If flowing give rate	
Recommended pump depth	49 m
Recommended pump rate	_25 LPM
Well Production	
Disinfactad?	>

## Draw Down & Recovery

Draw Down Time(min)	Draw Down Time(min) Draw Down Water level	Recovery Time(min)	Recovery	Recovery Water level
SWL	16.21 m			
_	17 91 m			
2	18.32 m	2		
3	18.7 m	3		
4	19.49 ш	4		
5	20,35 m	5		
10	24,2 m	10		
15	27 48 m	15		
20	29.38 m	20		
25	31.3 ш	25		
30	33.1 т	30		
40	35 05 m	40		
45		45		
50	36.5 m	50		
09	37.4 m	09		
Water Details				
Water Found at Depth	Kind			
61 m	Untested			

### Hole Diameter

Diameter	26 cm	22 cm	15 cm
Depth To	7 m	26 m	61.9 ш
Depth From	m 0	7 m	26 m

## Audit Number: Z212636

Date Well Completed: August 03, 2016

Date Well Record Received by MOE: August 19, 2016

Updated June 28, 2018
RateRate
Sharelacebook Iwitter Print
Tags

### Well ID

Well 1D Number 7285225 Well Audit Number 7240130 Well Tag Number 4185890

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

## Well Location

Address of Well Location	12 BREANNA BLVD
Township	ORO TOWNSHIP
Lot	100
Concession	CON 14
County/District/Municipality	SIMCOE
City/Town/Village	PRICES CORNER
Province	NO
Postal Code	tı/a
UTM Coordinates	NAD83 — Zone 17 Easting, 617873.00 Northing: 4941666.00
Municipal Plan and Sublot Number	,
Other	

# Overburden and Bedrock Materials Interval

General Colour	· Most Common Material Other Materials General Description	Other Materials	General Description	Depth From	To pth
GREY	77.1.	STNS	and the same and the same state of the same stat	0 m	47.2 m
GREY	SAND		HARD	47.2 m	48.8 m
GREY	TILL	STINS		48.8 m	60.7 m
GREY	TMSN			60.7 m	62.8 m

# Annular Space/Abandonment Sealing Record

Depth Depth Type of Sealant Used Volume From To (Material and Type) Placed 0 m 7 m BENTONITE 400

# Method of Construction & Well Use

Method of Construction Well Use Rotary (Convent.)

### Status of Well

Water Supply

## Construction Record - Casing

Inside Diameter	Open Hole or material	Depth From	Depth To
15.5 cm	STEEL	ш9-	61.5 m
	OPEN HOLE	615 m	628 ш

## Construction Record - Screen

Outside Material Depth Depth Diameter Material From To

# Well Contractor and Well Technician Information

Well Contractor's Licence Number: 5528

## Results of Well Yield Testing

After test of well yield, water was	CLEAR
If pumping discontinued, give reason	
Pump intake set at	49 m
Pumping Rate	28 LPM
Duration of Pumping	1 h:0 m
Final water level	19.96 m
If Rowing give rate	
Recommended pump depth	49 m
Recommended pump rate	28 LPM
Well Production	
Disinfected?	Υ.

## Draw Down & Recovery

SWL         1705m         187m           1         1837m         1857m           2         1836m         2           3         1855m         3         1825m           4         1868m         4         1818m           5         1879m         5         1818m           10         1904m         10         1818m           20         193m         20         20           25         1943m         20         40           40         1968m         40         45           50         1996m         60         60           Water Details	Draw Down Time(min)	Draw Down Water level	Recovery Time(min)	Recovery Water level
18 m   1	SWL	17.05 m		
18.3 m   2   18.3 6 m   18.3 6 m   18.5 m   19.5 m   19.5 m   19.5 m   20   20   20   20   20   20   20	_	18 m	_	18.57 m
18.53 m   3   18.25 m   18.25 m   18.65 m   18.65 m   4   18.18 m   19.04 m   5   18.15 m   19.04 m   19.04 m   20   20   20   20   20   20   20	2	18.3 m	2	18.36 m
18.68 m	3	18 53 m	3	18.25 m
18.15 m   5   18.15 m   19.04 m   10   10   10   10   10   10   10	4	18 68 ш	4	18.18 m
19.04 m 10 19.2 m 15 19.3 m 20 19.43 m 25 19.64 m 30 19.68 m 40 45 19.96 m 60	2	18.79 m	5	18.15 m
19.2 m   15   19.3 m   20   19.43 m   20   19.43 m   25   19.54 m   30   19.68 m   40   45   19.96 m   60   1	10	19.04 ш	10	
19 33 m	15	19.2 m	15	
19.43 m 25 19.54 m 30 19.68 m 40 45 19.81 m 50 19.96 m 60	20	19.33 m	20	
19.54 m 30 19.68 m 40 45 45 19.96 m 60	25	19 43 m	25	
19 68 m 40 45 19 81 m 50 19 96 m 60	30	19 S4 m	30	
45 19 96 m 60 Kind	40	19 68 m	40	
19 81 m 19 96 m Kind	45		45	
19 96 m Kind	90	m 18 61	50	
1.1	09	19 96 m	99	
1 1	Water Details			
	Water Found at Depth	Kind		

### Hole Diameter

Diameter	26 ст	22 cm	15 cm
Depth To	7 m	61.7 m	628 т
Depth	E 0	7 m	61.7 m

## Audit Number: Z240130

Date Well Completed: January 11, 2017

Date Well Record Received by MOE: April 13, 2017

Updated June 28, 2018 RateRate Sharefacebook twitter Print Tags

### Well ID

Well ID Number: 7274447 Well Audit Number: Z239098 Well Tag Number: A210368

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

## Well Location

Address of Well Location	2073 HAWLEY ROAD
Township	ORILLIA TOWNSHIP
Lot	1001
Concession	SD 01
County/District/Municipality	SIMCOE
City/Towa/Village	Orillia
Province	NO
Postal Code	n/a
Anny description in this construction of the first of the	NAD83 — Zone 17
UTM Coordinates	Easting: 618302.00
Municipal Plan and Sublet Number	rouning. 174107.00
Other	

# Overburden and Bedrock Materials Interval

General Colour	Most Common Material	Other Materials	General Description	Depth From	Depth To
BRWN	SAND	CLAY	A STATE OF THE PROPERTY OF T	0.0	18 ft
GREY	CLAY	GRVL		18 ft	75 A
BRWN	HPAN		STNY	75 ft	192 ft
GREY	LMSN		ROCK	192 ft	220 ft

# Annular Space/Abandonment Sealing Record

 Depth
 Depth
 Type of Sealant Used
 Volume

 From
 To
 (Material and Type)
 Placed

 0f
 25 ft
 E.Z SEAL BENTONITE

# Method of Construction & Well Use

Method of Construction Well Use Air Percussion

## Status of Well

Water Supply

## Construction Record - Casing

Depth To	194 ft
Depth From	0 ft
Open Hole or material	STEEL
Inside	6 inch

## Construction Record - Screen

Outside Material Depth Depth Diameter

# Well Contractor and Well Technician Information

Well Contractor's Licence Number 5224

## Results of Well Yield Testing

8	CLEAR
If pumping discontinued, give reason END OF TEST	END OF TEST
Pump intake set at	190 ft
Pumping Rate	12 GPM
Duration of Pumping	2 h.0 m
Final water level	185 ft
If flowing give rate	
Recommended pump depth	180 ft
Recommended pump rate	10 GPM
Well Production	
THE PARTY OF THE P	,

## Draw Down & Recovery

raw Down Time(min)	Draw Down Time(min) Draw Down Water level Recovery Time(min) Recovery Water level	Recovery Time(min)	Recovery Wa	ater level
SWL	85.5 ft			
	89.3 ft		178.8 ft	
	93 1 ft	2	172.6 ft	
	96.9 ft	3	166.4 ft	
	100.7 ft	4	161 1 ft	
	104.5 ft	5	155.8 ft	
0	118 ft	10	129.3 ft	
\$	131 S ft	15	114.8 ft	
20	145 ft	20	100 3 ft	
25	158.5 ft	25	93.2 ft	
30	1683 ft	30	875 A	
40	183 I ft	40	85.5 ft	
45		45		
90	185 ft	90	85.5 ft	
99	185 ft	99	85 S A	

### Water Details

Water Found at Depth Kind 220 ft Fresh

### Hole Diameter

Depth Depth Diameter From To Diameter Oft 220 ft 6 inch

Audit Number: Z239098

Date Well Completed:

Date Well Record Received by MOE: November 07, 2016

Updated June 28, 2018 RateEate Sharefacebook twitter Print Tags

Ministry of the Environment Well Record Well Tag No. (Place Sticker and/or Print Below) and Climate Change Regulation 903 Ontario Water Resources Act A256076 Measurements recorded in: Metric I Imperial Paga Well Owner's Information □ Weil Constructed Last Name / Organization E-mail Address South Shows Cardon Estates In torenes percelivace Municipality Postal Code Telephone No. (inc. area code) Mailing Address (Street Number/Name) Province Selzero 34 Grace Ches Ora - Medante 705 331314170 Well Location Township Shares Address of Well Location (Street Number/Name) Part That DIVITION ROAD WAS County/District/Municipality City/Town/Village Postal Code Ontario 143 MODEL UTM Coordinates Zone , Easting Municipal Plan and Sublot Number Northing Pot 5 12 41373 NAD 813 1 7 611 18 2 12 16 419 14 12 12 13 Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form) Most Common Material Dupin (m/ti) Other Materials General Description Brown Blue 50 (msy Blue Results of Well Yield Tusting Annular Space Draw Down Recovery
Time Water Level Time Water Level Type of Sealant Used (Material and Type) Volume Placed After test of well yield, water was: Depth Set at (m/ft) From To (m' n') Clear and sand free (m/lt) (min) Other, specify Bentonite Static If pumping discontinued, give reason. Lovel 1 T. Pump intake set at (m/ft) 2 778 3 3 48.9 Pumping rate (Imin / GPM) Woll Use Method of Construction 4 4 Not beed [ Commercial Cable Tool [] Dumond Duration of pumping Rotary (Conventional) [ ] Jentury (C) Domestic Municipal ... Dewatering 5 5 5 brs + roin 46.4 Test Hole Mor Monitoring Livestock
Imigation Rotary (Reverse) Ditting Final water level end of pumping (mit) Boring Digging 10 10 Other specify Air percussion 60 15 15 Other, apecify if flowing give rate (Vines / GPM) Status of Well Construction Record - Casing 20 20 C) Water Supply Recommended pump depth (m/fl) Inside Diamete (cm/n) Open Hole OR Material (Galvanized, Fibregland, Covicrete, Plastic, Steel) Depth (mitt) Well 25 25 33.9 Replacement Well To From: Test Hole Recommended pump rate (Vmin / GPM) 30 30 Pachargo Well 774 37 FE Dewatering Well 40 40 Observation and/or Monitoring Hole Well production (Imm / GPM) 50 50 Attention (Communition) Disinfected? You No 60 60 54 Abendoned, Insufficient Supply Map of Well Location Construction Record - Screen Abandoned, Poor Please provide a map below following instructions on the back Water Cuality Depth (mitt) Material (Plantic, Galvanized, Steel) Abandaned other To From specify #/0 3. Steel Cither, specify Hole Diameter Water Details Diamets Water found at Depth Kind of Water DIFrosh Suntested Depth (m/ft) (am/in) 7 (m/h) Ges: Other, specify
Water found at Depth Kind of Water. Fresh [ Untested 90 (m/tt) Gas Other, specify
Water found at Depth Kind of Water. Fresh Unitested 79 74 (m/ft) Gas Gother specify 74 79

Well Contractor and Well Technician Information HUQUE Business Name of Well Contractor Well Contractor's Licence No. Business Address (Street Number/Name) 7 6 6 3 Monicipality Comments Business Address (Street Number/Name).

Province Postal Code Business E-mail Address

Bus Telephone No. (Inc. area sody). Name of Well Technician (Last Name, First Name).

Well Technician's Licence No. Signature of Technician and/or Contractor Date Submitted. Date Package Delivered Ministry Use Only Well owner information puckage delivered Date Work Completed -Yes I No PIBLIF PIBLIP BURN PARSAGO © Queen's Printer for Ontario, 2014 Well Owner's Copy

Appendix B: Stage 1-2 Archaeological Property Assessment



#### 1.0 PROJECT REPORT COVER PAGE

**LICENSEE INFORMATION:** 

Contact Information: Michael B. Henry CD BA FRAI FRSA

Marilyn E. Cornies BA CAHP Southwestern District Office

553 Dufferin Avenue London, ON N6B 2A5 Phone: (419) 432-4435

Email: mhenry@amick.ca/mcornies@amick.ca

www.amick.ca

Licensee: Michael B. Henry CD BA FRAI FRSA

Ontario Archaeology Licence: P058

PROJECT INFORMATION:

Corporate Project Number: 19803

MHSTCI Project Number: P058-1760-2019

Investigation Type: Stage 1-2 Archaeological Property Assessment

Project Name: Division Road.

Project Location: Parts 7, 8, 9, 10 & 11 of Plan 51R-41373, Part of Lot 1,

Concession 1 Northern Division (Geographic Township

of Orillia), Township of Severn, County of Simcoe

Project Designation Number: Not Currently Available

MHSTCI FILING INFORMATION:

Site Record/Update Form(s): N/A
Date of Report Filing: TBD

Type of Report: ORIGINAL

#### 2.0 EXECUTIVE SUMMARY

This report describes the results of the 2019 Stage 1-2 Archaeological Assessment of Parts 7, 8, 9, 10 & 11 of Plan 51R-41373, Part of Lot 1, Concession 1 Northern Division (Geographic Township of Orillia), Township of Severn, County of Simcoe, conducted by AMICK Consultants Limited. This study was conducted under Professional Archaeologist License #P058 issued to Michael Henry by the Minister of Heritage, Sport, Tourism and Culture Industries for the Province of Ontario. This assessment was undertaken as a requirement under the Planning Act (RSO 1990) and the Provincial Policy Statement (2014) in order to support a Site Plan and companion Zoning By-law Amendment application as part of the presubmission process. Within the land use planning and development context, Ontario Regulation 544/06 under the Planning Act (1990b) requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). Policy 2.6 of the Provincial Policy Statement (PPS 2014) addresses archaeological resources. All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a).

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1-2 Archaeological Assessment of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation concurrently with the Stage 2 Property Assessment high intensity test pit methodology at a five-metre interval between individual test pits on 21 August 2019. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) on behalf of the government and citizens of Ontario.

As a result of the Stage 2 Property Assessment of the study area, no archaeological resources were encountered. Consequently, the following recommendations are made:

- 1. No further archaeological assessment of the study area is warranted;
- 2. The Provincial interest in archaeological resources with respect to the proposed undertaking has been addressed;
- 3. The proposed undertaking is clear of any archaeological concern.

#### 3.0 TABLE OF CONTENTS

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#### 5.0 PROJECT CONTEXT

#### 5.1 DEVELOPMENT CONTEXT

This report describes the results of the 2019 Stage 1-2 Archaeological Assessment of Parts 7, 8, 9, 10 & 11 of Plan 51R-41373, Part of Lot 1, Concession 1 Northern Division (Geographic Township of Orillia), Township of Severn, County of Simcoe, conducted by AMICK Consultants Limited. This study was conducted under Professional Archaeologist License #P058 issued to Michael Henry by the Minister of Heritage, Sport, Tourism and Culture Industries for the Province of Ontario. This assessment was undertaken as a requirement under the Planning Act (RSO 1990) and the Provincial Policy Statement (2014) in order to support a Site Plan and companion Zoning By-law Amendment application as part of the presubmission process. Within the land use planning and development context, Ontario Regulation 544/06 under the Planning Act (1990b) requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI). Policy 2.6 of the Provincial Policy Statement (PPS 2014) addresses archaeological resources. All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a).

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1-2 Archaeological Assessment of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation concurrently with the Stage 2 Property Assessment high intensity test pit methodology at a five-metre interval between individual test pits on 21 August 2019. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) on behalf of the government and citizens of Ontario.

At the time of preparing this report a development plan had not been made available to AMICK Consultants Limited. Instead, a plan of survey showing the limits of the study area has been submitted together with this report to MHSTCI for review and reproduced within this report as Map 4.

#### 5.2.1 GENERAL PRECONTACT OUTLINE

What follows is an outline of Aboriginal occupation in the area during the Pre-Contact Era from the earliest known period, about 9000 B.C. up to approximately 1650 AD. A larger regional synthesis of archaeological data that would include much of Simcoe County has not been undertaken at the time this report was completed (Ellis and Deller, 1990).

#### 5.2.1.1 PALAEO-INDIAN PERIOD (APPROXIMATELY 9000-7500 B.C.)

North of Lake Ontario, evidence suggests that early occupation began around 9000 B.C. People probably began to move into this area as the glaciers retreated and glacial lake levels began to recede. The early occupation of the area probably occurred in conjunction with environmental conditions that would be comparable to modern Sub-Arctic conditions. Due to the great antiquity of these sites, and the relatively small populations likely involved, evidence of these early inhabitants is sparse and generally limited to tools produced from stone or to by-products of the manufacture of these implements. Some sites of this earliest period of First Nations occupation of Simcoe County have been documented to the south and to the west of Kempenfelt Bay.

#### 5.2.1.2 ARCHAIC PERIOD (APPROXIMATELY 8000-1000 B.C.)

By about 8000 B.C. the gradual transition from a post glacial tundra-like environment to an essentially modern environment was largely complete. Prior to European clearance of the landscape for timber and cultivation, the area was characterized by forest. The Archaic Period is the longest and the most apparently stable of the cultural periods identified through archaeology. The Archaic Period is divided into the Early, Middle and Late Sub-Periods, each represented by specific styles in projectile point manufacture. Many more sites of this period are found throughout Ontario, than of the Palaeo-Indian Period. This is probably a reflection of two factors: the longer period of time reflected in these sites, and a greater population density. The greater population was likely the result of a more diversified subsistence strategy carried out in an environment offering a greater variety of abundant resources. (Smith 2002:58-59)

Current interpretations suggest that the Archaic Period populations followed a seasonal cycle of resource exploitation. Although similar in concept to the practices speculated for the big game hunters of the Palaeo-Indian Period, the Archaic populations utilized a much broader range of resources, particularly with respect to plants. It is suggested that in the spring and early summer, bands would gather at the mouths of rivers and at rapids to take advantage of fish spawning runs. Later in the summer and into the fall season, smaller groups would move to areas of wetlands to harvest nuts and wild rice. During the winter, they would break into yet smaller groups probably based on the nuclear family and perhaps some additional relatives to move into the interior for hunting. The result of such practices would be to create a distribution of sites across much of the landscape. (Smith 2002: 59-60).

The material culture of this period is much more extensive than that of the Palaeo-Indians. Stylistic changes between Sub-Periods and cultural groups are apparent, although the overall quality in production of chipped lithic tools seems to decline. This period sees the introduction of ground stone technology in the form of celts (axes and adzes), manos and metates for grinding nuts and fibres, and decorative items like gorgets, pendants, birdstones, and bannerstones. Bone tools are also evident from this time period. Their presence may be a result of better preservation from these more recent sites rather than a lack of such items in

earlier occupations. In addition, copper and exotic chert types appear during the period and are indicative of extensive trading (Smith 2002: 58-59).

Three First Nations trails known as the Rouge Trail, the Don Trail, and the Humber Trail began on the north shore of Lake Ontario in the Toronto area and terminated on the two branches of the Holland River (Myers 1977: 2). These trails form part of a long established trade and communications network that linked the upper and lower Great Lakes. The route followed the Holland River into the southern end of Lake Simcoe. Also, the route followed the western shore of Lake Simcoe northward to Kempenfelt Bay, and then westward to the end of the bay. A portage was then undertaken to the Nottawasaga River and this river was followed into Georgian Bay at the present location of the Town of Wasaga Beach. This network of trade and communication had been long established by the time Europeans began to operate in the area. The presence of artifacts dating to the Early Archaic Period in close proximity to the upper and lower landings on the Holland River east branch suggests that the use of this system most likely dates back to at least that period.

#### 5.2.1.3 WOODLAND PERIOD (APPROXIMATELY 1000 B.C.-1650 A.D.)

The primary difference in archaeological assemblages that differentiates the beginning of the Woodland Period from the Archaic Period is the introduction of ceramics to Ontario populations. This division is probably not a reflection of any substantive cultural changes, as the earliest sites of this period seem to be in all other respects a continuation of the Archaic mode of life with ceramics added as a novel technology. The seasonally based system of resource exploitation and associated population mobility persists for at least 1500 years into the Woodland Period. (Smith 2002: 61-62)

The Early Woodland Sub-Period dates from about 1000-400 B.C. Many of the artifacts from this time are similar to the late Archaic and suggest a direct cultural continuity between these two temporal divisions. The introduction of pottery represents and entirely new technology that was probably acquired through contact with more southerly populations from which it likely originates. (Smith 2002:62)

The Middle Woodland Sub-Period dates from about 400 B.C.-800 A.D. Within the region including the study area, a complex emerged at this time termed "Point Peninsula". Point Peninsula pottery reflects a greater sophistication in pottery manufacture compared with the earlier industry. The paste and temper of the new pottery is finer and new decorative techniques such as dentate and pseudo-scallop stamping appear. There is a noted Hopewellian influence in southern Ontario populations at this time. Hopewell influences from south of the Great Lakes include a widespread trade in exotic materials and the presence of distinct Hopewell style artifacts such as platform pipes, copper or silver panpipe covers and shark's teeth. The populations of the Middle Woodland participated in a trade network that extended well beyond the Great Lakes Region.

The Late Woodland Sub-Period dates from about 500-1650 A.D. The Late Woodland includes four separate phases: Princess Point, Early Ontario Iroquoian, Middle Ontario Iroquoian and Late Ontario Iroquoian.

The Princess Point phase dates to approximately 500-1000 A.D. Pottery of this phase is distinguished from earlier technology in that it is produced by the paddle method instead of coil and the decoration is characterized by the cord wrapped stick technique. Ceramic smoking pipes appear at this time in noticeable quantities. Princess Point sites cluster along major stream valleys and wetland areas. Maize cultivation is introduced by these people to Ontario. These people were not fully committed to horticulture and seemed to be experimenting with maize production. They generally adhere to the seasonal pattern of occupation practiced by earlier occupations, perhaps staying at certain locales repeatedly and for a larger portion of each year (Smith 2002: 65-66)

The Early Ontario Iroquoian stage dates to approximately 950-1050 A.D. This stage marks the beginning of a cultural development that led to the historically documented Ontario Iroquoian groups that were first contacted by Europeans during the early 1600s (Petun, Neutral, and Huron). At this stage formal semi-sedentary villages emerge. The Early stage of this cultural development is divided into two cultural groups in southern Ontario. The areas occupied by each being roughly divided by the Niagara Escarpment. To the west were located the Glen Meyer populations, and to the east were situated the Pickering people (Smith 2002: 67).

The Middle Ontario Iroquoian stage dates to approximately 1300-1400 A.D. This stage is divided into two sub-stages. The first is the Uren sub-stage lasting from approximately 1300-1350 A.D. The second of the two sub-stages is known as the Middleport sub-stage lasting from roughly 1350-1400 A.D. Villages tend to be larger throughout this stage than formerly (Smith 2002: 67).

The Late Ontario Iroquoian stage dates to approximately 1400-1650 A.D. During this time the cultural divisions identified by early European explorers are under development and the geographic distribution of these groups within southern Ontario begins to be defined. During this period the Huron and Petun become established in their respective homelands familiar to early explorers, traders and missionaries.

#### **5.2.2** GENERAL HISTORICAL OUTLINE

In the seventeenth century Simcoe County was home to the Huron. With the arrival of French priests and Jesuits, missions were established near Georgian Bay. After the destruction of the missions by the Iroquois and the British, Algonquin speaking peoples occupied the area. After the war of 1812, the government began to invest in the military defences of Upper Canada, through the extension of Simcoe's Yonge Street from Lake Simcoe to Penetanguishene on Georgian Bay (Garbutt 2010).

The township of Severn was created on January 1, 1994 through a restructuring of Simcoe County. The new township now encompasses the Village of Coldwater and parts of the Townships of Orillia, Tay, and Medonte (Township of Severn 2013).

Map 2 is a facsimile segment from <u>Hogg's Map of the County of Simcoe</u> (Hogg 1871). Map 2 illustrates the location of the study area and environs as of 1871. The study area is not shown to belong to anyone and there are no structures within or near the study area. However, the settlement of Prices Corners is nearby to the southwest. In addition, a settlement road is depicted as adjacent to the study area to the south. This road is the current Division Road West.

Map 3 is a facsimile segment of the Township of Orillia map reproduced from The Simcoe Supplement in Illustrated Atlas of the Dominion of Canada (Belden, H. & Co. 1881). Map 3 illustrates the location of the study area and environs as of 1881. The study area is not shown to belong to anyone and there are no structures within or near the study area. However, the settlement of Prices Corners is shown to be nearby to the southwest. In addition, this map illustrates an unnamed stream channel situated nearby to the northeast of the study area and a settlement road is depicted as adjacent to the study area to the south. This road is the current Division Road West and the stream channel is a branch of the North River.

It must be borne in mind that inclusion of names of property owners and depictions of structures and other features within properties on these maps were sold by subscription. Property owners paid to include information or details about their properties. While information included within these maps may provide information about the occupation of a property at a specific moment in time when the information was collected, the absence of such information does not necessarily indicate that the property was not occupied.

#### **5.2.3** CURRENT CONDITIONS

The present use of the study area is as an empty lot. The study area is roughly 12.64 hectares in area. The study area includes within it open meadow and woodlot. The western and central portion of the study area had previously been assessed before the client halted the project in 2018. The eastern part of the study area assessed this year is entirely an open meadow. The study area is bounded on the north by woodlot, on the east by residential properties and Carriage Court, on the west by an open field and on the south by Division Road West. The study area is adjacent and to the northeast of the intersection of Division Road West and Dunford Drive. A plan of the study area is included within this report as Map 4. Current conditions encountered during the Stage 1-2 Property Assessment are illustrated in Maps 5 & 6.

#### 5.2.4 SUMMARY OF HISTORICAL CONTEXT

The brief overview of readily available documentary evidence indicates that the study area is situated within an area that was close to historic transportation routes and in an area well populated during the nineteenth century and therefore has potential for sites relating to early

Post-Contact settlement in the region. Background research also indicates the property has potential for significant archaeological resources of Native origins based on proximity to a natural source of potable water in the past.

#### 5.3 ARCHAEOLOGICAL CONTEXT

The Archaeological Sites Database administered by the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) indicates that there are eight (8) previously documented sites within 1 kilometre of the study area. However, it must be noted that this is based on the assumption of the accuracy of information compiled from numerous researchers using different methodologies over many years. AMICK Consultants Limited assumes no responsibility for the accuracy of site descriptions, interpretations such as cultural affiliation, or location information derived from the Archaeological Sites Database administered by MHSTCI. In addition, it must also be noted that a lack of formerly documented sites does not indicate that there are no sites present as the documentation of any archaeological site is contingent upon prior research having been conducted within the study area.

Background research shows that one (1) previous study has taken place within 50m of the study area. For further information see:

AMICK Consultants Limited. (2018). Stage 1-2 Archaeological Assessment of Part of Lot 1, Concession 1, Northern Division (Geographic Township of Orillia), Township of Severn, County of Simcoe. Port McNicoll, Ontario. Archaeological License Report on File With the Ministry of Heritage, Sport, Tourism and Culture Industries, Toronto, Ontario. Filed Under PIF # P038-0939-2017.

Data contained in previous archaeological reports in close proximity to the study area that is relevant to Stage 1 Background Study is defined within the <u>Standards and Guidelines for</u> Consultant Archaeologists in Section 7.5.8 Standard 4 as follows:

"Provide descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the project area, as documented by all available reports that include archaeological fieldwork carried out on the lands to be impacted by this project, or where reports document archaeological sites immediately adjacent (i.e., within 50 m) to those lands."

(MTCS 2011: 126 Emphasis Added)

In accordance with data supplied by MHSTCI for the purposes of completing this study, the above noted report details, "archaeological fieldwork carried out on the lands to be impacted by this project", but the above noted report does not document any known archaeological sites within 50 metres of the study area.

The <u>Standards and Guidelines for Consultant Archaeologists</u> stipulates that the necessity to summarize the results of previous archaeological assessment reports, or to cite MHSTCI File Numbers in references to other archaeological reports, is reserved for reports that are directly

relevant to the fieldwork and recommendations for the study area (S & Gs 7.5.7, Standard 2, MTC 2011: 125). This is further refined and elaborated upon in Section 7.5.8, Standards 4 & 5, MTC 2011:

- "4. Provide descriptions of previous archaeological fieldwork carried out within the limits of, or immediately adjacent to the project area, as documented by all available reports that include archaeological fieldwork carried out on the lands to be impacted by this project, or where reports document archaeological sites immediately adjacent (i.e., within 50m) to those lands."
- "5. If previous findings and recommendations are relevant to the current stage of work, provide the following:
- a. a brief summary of previous findings and recommendations
- b. documentation of any differences in the current work from the previously recommended work
- c. rationale for the differences from the previously recommended work" (Emphasis Added)

The above-noted report does have relevance to the lands to be potentially impacted by the proposed undertaking, it does include fieldwork or recommendations relevant to the study area, but it does not document any sites within 50 metres of the study area. Therefore, there is a requirement to include any summary data for the previous reports.

The study area is situated within an area subject to an archaeological master plan or a similar regional overview study. *The County of Simcoe Official Plan* was fully consolidated on the 7<sup>th</sup> of August, 2007. This official pan provides guidance on considering the economic, social and environmental impacts of any land use or development decisions. This includes consideration for cultural heritage resources, including archaeological artifacts and sites. The plan details how any area thought to hold archaeological potential must undergo an archaeological assessment, and how any cultural heritage resources should be conserved, either in situ, or via removal from the site to preserve any artifacts. However this plan did not include any mapping detailing areas thought to hold archaeological potential within the county (County of Simcoe 2007).

It must be further noted that there are no relevant plaques associated with the study area, which would suggest an activity or occupation within, or in close proximity to, the study area that may indicate potential for associated archaeological resources of significant CHVI.

#### 5.3.1 PRE-CONTACT REGISTERED SITES

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MHSTCI. As a result it was determined that two (2) archaeological sites relating directly to Pre-Contact habitation/activity had been formally registered within the immediate vicinity of

the study area. However, the lack of formally documented archaeological sites does not mean that Pre-Contact people did not use the area; it more likely reflects a lack of systematic archaeological research in the immediate vicinity. Even in cases where one or more assessments may have been conducted in close proximity to a proposed landscape alteration, an extensive area of physical archaeological assessment coverage is required throughout the region to produce a representative sample of all potentially available archaeological data in order to provide any meaningful evidence to construct a pattern of land use and settlement in the past. One (1) of these sites (BdGv-22) is a multi-component site listed as both a Precontact and a Post-contact site. All previously registered Pre-Contact sites are briefly described below in Table 1:

TABLE 1 PRE-CONTACT SITES WITHIN 1KM

Site Name	Borden #	Site Type	Cultural Affiliation
Sopher	BdGu-1	Not Determined	Late Woodland
Mina Ball	BdGv-22	Not Determined	Late Woodland

None of the above noted archaeological sites are situated within 300 metres of the study area. Therefore, they have no impact on determinations of archaeological potential for further archaeological resources related to Pre-Contact activity and occupation with respect to the archaeological assessment of the proposed undertaking.

The southeastern corner of the study area contains a branch of the North River, which is a source of potable water. The distance to water criteria used to establish potential for archaeological sites suggests potential for Pre-Contact occupation and land use in the area in the past.

Table 2 illustrates the chronological development of cultures within southern Ontario prior to the arrival of European cultures to the area at the beginning of the 17<sup>th</sup> century. This general cultural outline is based on archaeological data and represents a synthesis and summary of research over a long period of time. It is necessarily generalizing and is not necessarily representative of the point of view of all researchers or stakeholders. It is offered here as a rough guideline and as a very broad outline to illustrate the relationships of broad cultural groups and time periods.

TABLE 2 PRE-CONTACT CULTURAL CHRONOLOGY FOR SOUTHERN ONTARIO

Years ago	Period	Southern Ontario
250	Terminal Woodland	Ontario and St. Lawrence Iroquois Cultures
1000	Initial Woodland	Princess Point, Saugeen, Point Peninsula, and Meadowood
2000		Cultures
3000		
4000	Archaic	Laurentian Culture
5000		
6000		
7000		

8000	Palaeo-Indian	Plano and Clovis Cultures
9000		
10000		
11000		
		(Wright 1972)

#### 5.3.2 POST-CONTACT REGISTERED SITES

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MHSTCI. As a result it was determined that four (4) archaeological sites relating directly to Post-contact habitation/activity had been formally registered within the immediate vicinity of the study area. One (1) of these sites (BdGv-22) is a multi-component site listed as both a Pre-contact and a Post-contact site. All previously registered Post-contact sites are briefly described below in Table 3:

TABLE 3 POST-CONTACT SITES WITHIN 1KM

Site Name	Borden #	Site Type	Cultural Affiliation
Plough Inn	BdGv-19	Not Determined	Post-Contact
Three Sisters	BdGv-20	Not Determined	Post-Contact
Liefhond	BdGv-21	Not Determined	Post-Contact
Mina Ball	BdGv-22	Not Determined	Post-Contact

Two of the above noted archaeological sites are situated within 300 metres of the study area. Therefore, they demonstrate archaeological potential for further archaeological resources related to Post-Contact activity and occupation with respect to the archaeological assessment of the proposed undertaking.

#### 5.3.3 REGISTERED SITES OF UNKNOWN CULTURAL AFFILIATION

A summary of registered and/or known archaeological sites within a 1-kilometre radius of the study area was gathered from the Archaeological Sites Database, administered by MHSTCI. As a result, it was determined that three (3) archaeological sites relating directly to an unknown cultural affiliation habitation/activity had been formally registered within the immediate vicinity of the study area. All previously registered sites of unknown cultural affiliation are briefly described below in Table 4:

TABLE 4 REGISTERED SITES WITHIN 1KM

Site Name	Borden #	Site Type	Cultural Affiliation
Squire	BdGu-28	Not Determined	Other
Marchmont II	BdGu-29	Not Determined	Other
Marchmont III	BdGu-30	Not Determined	Other

None of the above noted archaeological sites are situated within 300 metres of the study area. Therefore, they have no impact on determinations of archaeological potential for further archaeological resources related to Pre- or Post-contact activity and occupation with respect to the archaeological assessment of the proposed undertaking.

#### **5.3.4** Previous Investigations

AMICK Consultants Limited in December 2017 & June 2018 completed a Stage -21 Archaeological Assessment on the same lands as the study area. The assessment was halted by the client before the entire area could be assessed. Below is a summary of the assessment and the resulting recommendations:

This report describes the results of the 2017 Stage 1-2 Archaeological Assessment of Part of Lot 1, Concession 1, Northern Division (Geographic Township of Orillia), Township of Severn, County of Simcoe, conducted by AMICK Consultants Limited. This study was conducted under Professional Archaeologist License #P038 issued to Marilyn Cornies by the Minister of Tourism, Culture and Sport for the Province of Ontario. This assessment was undertaken as a requirement under the Planning Act (RSO 1990b) and the Provincial Policy Statement (2014) in order to support a Land Retention application and companion Zoning By-law Amendment application as part of the pre-submission process. Within the land use planning and development context, Ontario Regulation 544/06 under the Planning Act (1990b) requires an evaluation of archaeological potential and, where applicable, an archaeological assessment report completed by an archaeologist licensed by the Ministry of Tourism, Culture and Sport (MTCS). Policy 2.6 of the Provincial Policy Statement (PPS 2014) addresses archaeological resources. All work was conducted in conformity with Ontario Ministry of Tourism and Culture (MTC) Standards and Guidelines for Consultant Archaeologists (MTC 2011), the Ontario Heritage Act (RSO 1990a).

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1-2 Archaeological Assessment of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The majority of the study area was subject to property inspection and photographic documentation concurrently with the Stage 2 Property Assessment by high intensity test pit methodology at a five-metre interval between individual test pits and by test pit survey at an interval of ten metres to confirm disturbance on 1 December 2017 and 4-6 June 2018. However, partway through the fieldwork, the client decided they no longer wished to proceed with fieldwork, and so a portion of the study area was not assessed. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Tourism, Culture and Sport (MTCS) on behalf of the government and citizens of Ontario.

As a result of the Stage 2 Property Assessment of the study area, no archaeological resources were encountered. Consequently, the following recommendations are made:

- 1. No further archaeological assessment of the assessed portion of the study area is warranted;
- 2. The Provincial interest in archaeological resources with respect to the proposed undertaking has been addressed within the assessed area;
- 3. The proposed undertaking is clear of any archaeological concern within the assessed area.

[AMICK 2018: 2]

#### 5.3.5 LOCATION AND CURRENT CONDITIONS

The study area is described as Parts 7, 8, 9, 10 & 11 of Plan 51R-41373, Part of Lot 1, Concession 1 Northern Division (Geographic Township of Orillia), Township of Severn, County of Simcoe, conducted by AMICK Consultants Limited. This assessment was undertaken as a requirement under the Planning Act (RSO 1990) and the <u>Provincial Policy Statement</u> (2014) in order to support a Site Plan and companion Zoning By-law Amendment application as part of the pre-submission process.

The present use of the study area is as an empty lot. The study area is roughly 12.64 hectares in area. The study area includes within it open meadow and woodlot. The western and central portion of the study area had previously been assessed before the client halted the project in 2018. The eastern part of the study area assessed this year is entirely an open meadow. The study area is bounded on the north by woodlot, on the east by residential properties and Carriage Court, on the west by an open field and on the south by Division Road West. The study area is adjacent and to the northeast of the intersection of Division Road West and Dunford Drive. A plan of the study area is included within this report as Map 4. Current conditions encountered during the Stage 1-2 Property Assessment are illustrated in Maps 5 & 6.

#### 5.3.6 Physiographic Region

The study area is situated within the Simcoe Lowlands physiographic region. For the most part, at one time, this restricted basin was part of the floor of glacial Lake Algonquin, and its surface beds are deposits of deltaic and lacustrine origin, and not glacial outwash. As a small basin shut in by the Edenvale Moraine, the Minesing flats represent an annex of the glacial Lake Nipissing plains. (Chapman and Putnam 1984: 177-182).

#### 5.3.7 SURFACE WATER

Sources of potable water, access to waterborne transportation routes, and resources associated with watersheds are each considered, both individually and collectively to be the highest criteria for determination of the potential of any location to support extended human activity, land use, or occupation. Accordingly, proximity to water is regarded as the primary

indicator of archaeological resource potential. The <u>Standards and Guidelines for Consultant Archaeologists</u> stipulates that undisturbed lands within 300 metres of a water source are considered to have archaeological potential (MTC 2011: 21).

The southeastern corner of the study area contains a branch of the North River, which is a source of potable water.

#### 5.3.8 CURRENT PROPERTY CONDITIONS CONTEXT

Current characteristics encountered within an archaeological research study area determine if property Assessment of specific portions of the study area will be necessary and in what manner a Stage 2 Property Assessment should be conducted, if necessary. Conventional assessment methodologies include pedestrian survey on ploughable lands and test pit methodology within areas that cannot be ploughed. For the purpose of determining where property Assessment is necessary and feasible, general categories of current landscape conditions have been established as archaeological conventions. These include:

#### 5.3.8.1 BUILDINGS AND STRUCTURAL FOOTPRINTS

A building, for the purposes of this particular study, is a structure that exists currently or has existed in the past in a given location. The footprint of a building is the area of the building formed by the perimeter of the foundation. Although the interior area of building foundations would often be subject to property Assessment when the foundation may represent a potentially significant historic archaeological site, the footprints of existing structures are not typically assessed. Existing structures commonly encountered during archaeological assessments are often residential-associated buildings (houses, garages, sheds), and/or component buildings of farm complexes (barns, silos, greenhouses). In many cases, even though the disturbance to the land may be relatively shallow and archaeological resources may be situated below the disturbed layer (e.g. a concrete garage pad), there is no practical means of assessing the area beneath the disturbed layer. However, if there were evidence to suggest that there are likely archaeological resources situated beneath the disturbance, alternative methodologies may be recommended to study such areas.

The study area contains no buildings or structural footprints.

#### 5.3.8.2 DISTURBANCE

Areas that have been subjected to extensive and deep land alteration that has severely damaged the integrity of archaeological resources are known as land disturbances. Examples of land disturbances are areas of past quarrying, major landscaping, and sewage and infrastructure development (MTC 2011: 18), as well as driveways made of gravel or asphalt or concrete, in-ground pools, and wells or cisterns. Surfaces paved with interlocking brick, concrete, asphalt, gravel and other surfaces meant to support heavy loads or to be long wearing hard surfaces in high traffic areas, must be prepared by the excavation and removal of topsoil, grading, and the addition of aggregate material to ensure appropriate engineering

values for the supporting matrix and also to ensure that the installations shed water to avoid flooding or moisture damage. All hard surfaced areas are prepared in this fashion and therefore have no or low archaeological potential. Major utility lines are conduits that provide services such as water, natural gas, hydro, communications, sewage, and others. These major installations should not be confused with minor below ground service installations not considered to represent significant disturbances removing archaeological potential, such as services leading to individual structures which tend to be comparatively very shallow and vary narrow corridors. Areas containing substantial and deeply buried services or clusters of below ground utilities are considered areas of disturbance, and may be excluded from Stage 2 Property Assessment. Disturbed areas are excluded from Stage 2 Property Assessment due to no or low archaeological potential and often because they are also not viable to assess using conventional methodology.

"Earthwork is one of the major works involved in road construction. This process includes excavation, material removal, filling, compaction, and construction. Moisture content is controlled, and compaction is done according to standard design procedures. Normally, rock explosion at the road bed is not encouraged. While filling a depression to reach the road level, the original bed is flattened after the removal of the topsoil. The fill layer is distributed and compacted to the designed specifications. This procedure is repeated until the compaction desired is reached. The fill material should not contain organic elements, and possess a low index of plasticity. Fill material can include gravel and decomposed rocks of a particular size, but should not consist of huge clay lumps. Sand clay can be used. The area is considered to be adequately compacted when the roller movement does not create a noticeable deformation. The road surface finish is reliant on the economic aspects, and the estimated usage." [Emphasis Added]

(Goel 2013)

The supporting matrix of a hard paved surface cannot contain organic material which is subject to significant compression, decay and moisture retention. Topsoil has no engineering value and must be removed in any construction application where the surface finish at grade requires underlying support.

Installation of sewer lines and other below ground services associated with infrastructure development often involves deep excavation that can remove archaeological potential. This consideration does not apply to relatively minor below ground services that connect structures and facilities to services that support their operation and use. Major servicing corridors will be situated within adjacent road allowances with only minor, narrow and relatively shallow underground services entering into the study area to connect existing structures to servicing mainlines. The relatively minor, narrow and shallow services buried within a residential property do not require such extensive ground disturbance to remove or minimize archaeological potential within affected areas.

The study area does not contain previous disturbances.

#### 5.3.8.3 LOW-LYING AND WET AREAS

Landscape features that are covered by permanently wet areas, such as marshes, swamps, or bodies of water like streams or lakes, are known as low-lying and wet areas. Low-lying and wet areas are excluded from Stage 2 Property Assessment due to inaccessibility.

The study area does not contain low-lying and wet areas.

#### **5.3.8.4 STEEP SLOPE**

Landscape which slopes at a greater than (>) 20 degree change in elevation, is known as steep slope. Areas of steep slope are considered uninhabitable, and are excluded from Stage 2 Property Assessment.

Generally, steep slopes are not assessed because steep slopes are interpreted to have low potential, not due to viability to assess, except in cases where the slope is severe enough to become a safety concern for archaeological field crews. In such cases, the Occupational Health and Safety Act takes precedence as indicated in the introduction to the Standards and Guidelines. AMICK Consultant Limited policy is to assess all slope areas whenever it is safe to do so. Assessment of slopes, except where safety concerns arise, eliminates the invariably subjective interpretation of what might constitute a steep slope in the field. This is done to minimize delays due to conflicts in such interpretations and to increase the efficiency of review.

The study area does not contain areas of steep slope.

#### 5.3.8.5 WOODED AREAS

Areas of the property that cannot be ploughed, such as natural forest or woodlot, are known as wooded areas. These wooded areas qualify for Stage 2 Property Assessment, and are required to be assessed using test pit survey methodology.

The study area does not contain any wooded areas.

#### 5.3.8.6 PLOUGHABLE AGRICULTURAL LANDS

Areas of current or former agricultural lands that have been ploughed in the past are considered ploughable agricultural lands. Ploughing these lands regularly turns the soil, which in turn brings previously buried artifacts to the surface, which are then easily identified during visual inspection. Furthermore, by allowing the ploughed area to weather sufficiently through rainfall, soil is washed off of exposed artifacts at the surface and the visibility of artifacts at the surface of recently worked field areas is enhanced markedly. Pedestrian survey of ploughed agricultural lands is the preferred method of physical assessment because of the greater potential for finding evidence of archaeological resources if present.

The study area does not contain any ploughable lands.

### 5.3.8.7 LAWN, PASTURE, MEADOW

Landscape features consisting of former agricultural land covered in low growth, such as lawns, pastures, meadows, shrubbery, and immature trees. These are areas that may be considered too small to warrant ploughing, (i.e. less than one hectare in area), such as yard areas surrounding existing structures, and land-locked open areas that are technically workable by a plough but inaccessible to agricultural machinery. These areas may also include open area within urban contexts that do not allow agricultural tillage within municipal or city limits or the use of urban roadways by agricultural machinery. These areas are required to be assessed using test pit survey methodology.

The eastern part of the study area is an open meadow. Maps 5 & 6 of this report illustrate the locations of these features.

#### **5.3.9 SUMMARY**

Background research indicates the vicinity of the study area has potential for archaeological resources of Native origins based on proximity to a source of potable water. Background research also suggests potential for archaeological resources of Post-Contact origins based on proximity to previously registered archaeological sites of Post-Contact origins, proximity to a historic roadway, and proximity to areas of documented historic settlement.

The entirety of the study area does exhibit archaeological potential and therefore a Stage 2 Property Assessment is required.

Archaeological potential does not indicate that there are necessarily sites present, but that environmental and historical factors suggest that there may be as yet undocumented archaeological sites within lands that have not been subject to systematic archaeological research in the past.

## 6.0 FIELD WORK METHODS AND WEATHER CONDITIONS

This report confirms that the study area was subject to Stage 2 Property Assessment by high intensity test pit methodology at a five-metre interval between individual test pits on 21 August 2019.

The fieldwork undertaken as a component of this study was conducted according to the archaeological fieldwork standards and guidelines (including weather and lighting conditions). Weather conditions were appropriate for the necessary fieldwork required to complete the Stage 2 Property Assessment and to create the documentation appropriate to this study. The locations from which photographs were taken and the directions toward which the camera was aimed for each photograph are illustrated in Maps 5 & 6 of this report.

Upon completion of the property inspection of the study area, it was determined that select areas would require Stage 2 Property Assessment.

It must be noted that the proponent made a number of efforts to contract local farmers to plough the meadow area that was assessed under the current PIF. However, all farmers who were contacted refused the work because the land had been left fallow for an extended period of time which could pose a risk to their equipment. AMICK Consultants Limited advised the proponent that since there was no one willing to plough the fallowed field, a test pit survey at 5 metre intervals would meet MHSTCI standards in lieu of overgrown vegetation that does not allow ploughing (MTC 2011: Sections 1.2.5 and 2.1.2.1c).

AMICK Consultants Limited has been retained to assess lands as specified by the proponent. As such, AMICK Consultants Limited is constrained by the terms of the contract in place at the time of the Archaeological Assessment and can only enter into lands for which AMICK Consultants Limited has received consent from the owner or their agent(s). The proponent has been advised that the entire area within the planning application must be subject to archaeological assessment and that portions of the planning application may only be excluded if they are of low potential, are not viable to assess, or are subject to planning provisions that would restrict any such areas from any form of ground altering activities.

## **6.1** Property inspection

A detailed examination and photo documentation was carried out on the study area in order to document the existing conditions of the study area to facilitate the Stage 2 Property Assessment. All areas of the study area were visually inspected and select features were photographed as a representative sample of each area defined within Maps 5 & 6. Observations made of conditions within the study area at the time of the inspection were used to inform the requirement for Stage 2 Property Assessment for portions of the study area as well as to aid in the determination of appropriate Stage 2 Property Assessment strategies. The locations from which photographs were taken and the directions toward which the camera was aimed for each photograph are illustrated in Maps 5 & 6 of this report.

### 6.2 TEST PIT SURVEY

In accordance with the <u>Standards and Guidelines for Consultant Archaeologists</u>, test pit survey is required to be undertaken for those portions of the study area where deep prior disturbance had not occurred prior to assessment or which were accessible to survey. Test pit survey is only used in areas that cannot be subject to ploughing or cultivation. This report confirms that the conduct of test pit survey within the study area conformed to the following standards:

1. Test pit survey only on terrain where ploughing is not possible or viable, as in the following examples:

a. wooded areas

[Not Applicable – The study area does not contain any wooded areas]

b. pasture with high rock content

[Not Applicable - The study area does not contain any pastures with high rock content]

c. abandoned farmland with heavy brush and weed growth [As noted in Section 6.0, the proponent was unable to contract a local farmer to plough the meadow due to the risk of equipment damage in a field left to fallow too long. After consultation between AMICK Consultants Limited and the proponent, it was decided that a test pit survey must be conducted as per Standards 1.2.5 and 2.1.2.1c (MTCS 2011).]

d. orchards and vineyards that cannot be strip ploughed (planted in rows 5 m apart or less), gardens, parkland or lawns, any of which will remain in use for several years after the survey

[The study area contained an open meadow that could not be ploughed and was test pit surveyed at an interval of 5m between individual test pits.]

e. properties where existing landscaping or infrastructure would be damaged. The presence of such obstacles must be documented in sufficient detail to demonstrate that ploughing or cultivation is not viable.

[Not Applicable - The study area does not contain the above-mentioned circumstances]

f. narrow (10 m or less) linear survey corridors (e.g., water or gas pipelines, road widening). This includes situations where there are planned impacts 10 m or less beyond the previously impacted limits on both sides of an existing linear corridor (e.g., two linear survey corridors on either side of an existing roadway). Where at the time of fieldwork the lands within the linear corridor meet the standards as stated under the above section on pedestrian survey land preparation, pedestrian survey must be carried out. Space test pits at maximum intervals of 5 m (400 test pits per hectare) in areas less than 300 m from any feature of archaeological potential.

[Not Applicable – The study area does not contain any linear corridors]

- Space test pits at maximum intervals of 5 m (400 test pits per hectare) in areas less than 300 m from any feature of archaeological potential.
   [All test pits were spaced at an interval of 5m between individual test pits]
- 3. Space test pits at maximum intervals of 10 m (100 test pits per hectare) in areas more than 300 m from any feature of archaeological potential.[The entirety of the test pitted areas of the study area were assessed using high intensity test pit methodology at an interval of 5 metres between individual test pits]

- 4. Test pit to within 1 m of built structures (both intact and ruins), or until test pits show evidence of recent ground disturbance.

  [Not Applicable]
- 5. Ensure that test pits are at least 30 cm in diameter. [All test pits were at least 30 cm in diameter]
- 6. Excavate each test pit, by hand, into the first 5 cm of subsoil and examine the pit for stratigraphy, cultural features, or evidence of fill. [Regardless of the interval between individual test pits, all test pits were excavated by hand into the first 5 cm of subsoil where possible and examined for stratigraphy, cultural features, or evidence of fill. In areas where topsoil was not present, test pits were excavated to a minimum of 30cm in depth to ensure that suspected subsoils, if present, were not layers of fill or waterborne materials overlying buried topsoil. If these areas consisted of fill soils, test pits were also excavated a minimum of 30 cm below grade in order to ensure disturbance extended below even deep topsoil layers such as those encountered in agricultural fields to ensure that the depth of disturbance was sufficient to remove archaeological potential in most contexts. Where other evidence indicates locations of potentially significant archaeological sites that may include cultural deposits below fill soils, alternative strategies to explore beneath the fill layers found in some areas may be necessary to complete the Stage 2 Property Assessment. In such cases, further Stage 2 Property Assessment may be recommended following completion of the property survey under conventional methodologies.]
- 7. Screen soil through mesh no greater than 6 mm.

  [All soil was screened through mesh no greater than 6 mm]
- 8. Collect all artifacts according to their associated test pit.

  [Not Applicable No archaeological resources were encountered]
- 9. Backfill all test pits unless instructed not to by the landowner. [All test pits were backfilled]

(MTC 2011: 31-32)

Approximately 23% of the study area consisted of open meadow that was test pit surveyed at an interval of 5 metres between individual test pits. Approximately 77% of the study area had previously been assessed in 2017 and 2018.

## 7.0 RECORD OF FINDS

Section 7.8.2 of the <u>Standards and Guidelines for Consultant Archaeologists</u> (MTC 2011: 137-138) outlines the requirements of the Record of Finds component of a Stage 2 report:

- 1. For all archaeological resources and sites that are identified in Stage 2, provide the following:
  - a. a general description of the types of artifacts and features that were identified
  - b. a general description of the area within which artifacts and features were identified, including the spatial extent of the area and any relative variations in density
  - c. a catalogue and description of all artifacts retained
  - d. a description of the artifacts and features left in the field (nature of material, frequency, other notable traits).
- 2. Provide an inventory of the documentary record generated in the field (e.g. photographs, maps, field notes).
- 3. Submit information detailing exact site locations on the property separately from the project report, as specified in section 7.6. Information on exact site locations includes the following:
  - a. table of GPS readings for locations of all archaeological sites
  - b. maps showing detailed site location information.

## 7.1 ARCHAEOLOGICAL RESOURCES

No archaeological resources of any description were encountered anywhere within the study area.

### 7.2 ARCHAEOLOGICAL FIELDWORK DOCUMENTATION

The documentation produced during the field investigation conducted in support of this report includes: one sketch map, one page of photo log, one page of field notes, and 11 digital photographs.

# 8.0 Analysis and Conclusions

AMICK Consultants Limited was engaged by the proponent to undertake a Stage 1-2 Archaeological Assessment of lands potentially affected by the proposed undertaking and was granted permission to carry out archaeological fieldwork. The entirety of the study area was subject to property inspection and photographic documentation concurrently with the Stage 2 Property Assessment on 21 August 2019, consisting of high-intensity test pit survey at an interval of five metres between individual test pits. All records, documentation, field notes, photographs and artifacts (as applicable) related to the conduct and findings of these investigations are held at the Lakelands District corporate offices of AMICK Consultants Limited until such time that they can be transferred to an agency or institution approved by the Ontario Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) on behalf of the government and citizens of Ontario.

#### 8.1 STAGE 1 ANALYSIS AND CONCLUSIONS

As part of the present study, background research was conducted in order to determine the archaeological potential of the proposed project area.

"A Stage 1 background study provides the consulting archaeologist and Ministry report reviewer with information about the known and potential cultural heritage resources within a particular study area, prior to the start of the field assessment." (OMCzCR 1993)

The evaluation of potential is further elaborated Section 1.3 of the <u>Standards and Guidelines</u> for <u>Consultant Archaeologist</u> (2011) prepared by the Ontario Ministry of Tourism and Culture:

"The Stage 1 background study (and, where undertaken, property inspection) leads to an evaluation of the property's archaeological potential. If the evaluation indicates that there is archaeological potential anywhere on the property, the next step is a Stage 2 assessment."

(MTC 2011: 17)

Features or characteristics that indicate archaeological potential when documented within the study area, or within close proximity to the study area (as applicable), include:

" - previously identified archaeological sites

- water sources (It is important to distinguish types of water and shoreline, and to distinguish natural from artificial water sources, as these features affect site locations and types to varying degrees.):
  - o primary water sources (lakes, rivers, streams, creeks)
  - o secondary water sources (intermittent streams and creeks, springs, marshes, swamps)
  - o features indicating past water sources (e.g., glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, cobble beaches)
  - o accessible or inaccessible shoreline (e.g., high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh)
- elevated topography (e.g., eskers, drumlins, large knolls, plateaux)
- pockets of well-drained sandy soil, especially near areas of heavy soil or rocky ground
- distinctive land formations that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings.
- resource areas, including:
  - o food or medicinal plants (e.g., migratory routes, spawning areas, prairie)
  - o scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert)
  - o early Post-contact industry (e.g., fur trade, logging, prospecting, mining)
- areas of early Post-contact settlement. These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, farmstead complexes),

early wharf or dock complexes, pioneer churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.

- Early historical transportation routes (e.g., trails, passes, roads, railways, portage routes)
- property listed on a municipal register or designated under the Ontario Heritage Actor that is a federal, provincial or municipal historic landmark or site
- property that local histories or informants have identified with possible archaeological sties, historical events, activities, or occupations"

(MTC 2011: 17-18)

The evaluation of potential does not indicate that sites are present within areas affected by proposed development. Evaluation of potential considers the possibility for as yet undocumented sites to be found in areas that have not been subject to systematic archaeological investigation in the past. Potential for archaeological resources is used to determine if property assessment of a study area or portions of a study area is required.

"Archaeological resources not previously documented may also be present in the affected area. If the alternative areas being considered, or the preferred alternative selected, exhibit either high or medium potential for the discovery of archaeological remains an archaeological assessment will be required."

(MCC & MOE 1992: 6-7)

"The Stage 1 background study (and, where undertaken, property inspection) leads to an evaluation of the property's archaeological potential. If the evaluation indicates that there is archaeological potential anywhere on the property, the next step is a Stage 2 assessment."

(MTC 2011: 17)

In addition, archaeological sites data is also used to determine if any archaeological resources had been formerly documented within or in close proximity to the study area and if these same resources might be subject to impacts from the proposed undertaking. This data was also collected in order to establish the relative cultural heritage value or interest of any resources that might be encountered during the conduct of the present study. For example, the relative rarity of a site can be used to assign an elevated level of cultural heritage value or interest to a site that is atypical for the immediate vicinity. The requisite archaeological sites data of previously registered archaeological sites was collected from the Programs and Services Branch, Culture Programs Unit, MHSTCI and the corporate research library of AMICK Consultants Limited. The Stage 1 Background Research methodology also includes a review of the most detailed available topographic maps, historical settlement maps, archaeological management plans (where applicable) and commemorative plaques or monuments. When previous archaeological research documents lands to be impacted by the proposed undertaking or archaeological sites within 50 metres of the study area, the reports documenting this earlier work are reviewed for pertinent information. AMICK Consultants Limited will often modify this basic methodology based on professional judgment to include

additional research (such as, local historical works or documents and knowledgeable informants).

Section 7.7.3 of the <u>Standards and Guidelines for Consultant Archaeologists</u> (MTC 2011: 132) outlines the requirements of the Analysis and Conclusions component of a Stage 1 Background Study.

- 1) "Identify and describe areas of archaeological potential within the project area.
- 2) Identify and describe areas that have been subject to extensive and deep land alterations. Describe the nature of alterations (e.g., development or other activity) that have severely damaged the integrity of archaeological resources and have removed archaeological potential."

#### CHARACTERISTICS INDICATING ARCHAEOLOGICAL POTENTIAL

Section 1.3.1 of the <u>Standards and Guidelines for Consultant Archaeologists</u> specifies the property characteristics that indicate archaeological potential (MTC 2011: 17-18). Factors that indicate archaeological potential are features of the local landscape and environment that may have attracted people to either occupy the land or to conduct activities within the study area. One or more of these characteristics found to apply to a study area would necessitate a Stage 2 Property Assessment to determine if archaeological resources are present. These characteristics are listed below together with considerations derived from the conduct of this study.

Previously Identified Archaeological Sites
 Previously registered archaeological sites have been documented within 300 metres of the study area.

# 2) Water Sources

Primary water sources are described as including lakes, rivers streams and creeks. Close proximity to primary water sources (300 metres) indicates that people had access to readily available sources of potable water and routes of waterborne trade and communication should the study area have been used or occupied in the past.

There are identified primary water sources within 300 metres of the study area. The southeastern corner of the study area contains a branch of the North River, which is a source of potable water.

Secondary water sources are described as including intermittent streams and creeks, springs, marshes, and swamps. Close proximity (300 metres) to secondary water sources indicates that people had access to readily available sources of potable water, at least on a seasonal basis, and in some cases seasonal access to routes of waterborne trade and communication should the study area have been used or occupied in the past.

There are no identified secondary water sources within 300 metres of the study area.

# 3) Features Indicating Past Water Sources

Features indicating past water resources are described as including glacial lake shorelines indicated by the presence of raised sand or gravel beach ridges, relic river or stream channels indicated by clear dip or swale in the topography, shorelines of drained lakes or marshes, and cobble beaches. Close proximity (300 metres) to features indicating past water sources indicates that people had access to readily available sources of potable water, at least on a seasonal basis, and in some cases seasonal access to routes of waterborne trade and communication should the study area have been used or occupied in the past.

There are identified features indicating past water sources within 300 metres of the study area. The study area is situated within an area once under glacial Lake Algonquin. The study area is now located between the old Lake Algonquin shoreline and the current shoreline of Lake Simcoe (Jackson et al., 2000: 415-420). During the transition from the glacial Lake Algonquin to the present Lake Simcoe the shoreline would have receded through the study area. As the receding process is gradual the study area would have been within close proximity to a shoreline providing access to an abundance of natural resources as well as waterborne trade and communication.

### 4) Accessible or Inaccessible Shoreline

This form of landscape feature would include high bluffs, swamp or marsh fields by the edge of a lake, sandbars stretching into marsh, etc.

There are no shorelines within 300 metres of the study area. However, the study area is situated within an area once under glacial Lake Iroquois. The study area is now located between the old Lake Algonquin shoreline and the current shoreline of Lake Simcoe. During the transition from the glacial Lake Algonquin to the present Lake Simcoe the shoreline would have receded through the study area. As the receding process is gradual the study area would have been within close proximity to a shoreline providing access to an abundance of natural resources as well as waterborne trade and communication.

## 5) Elevated Topography

Features of elevated topography that indicate archaeological potential include eskers, drumlins, large knolls, and plateaux.

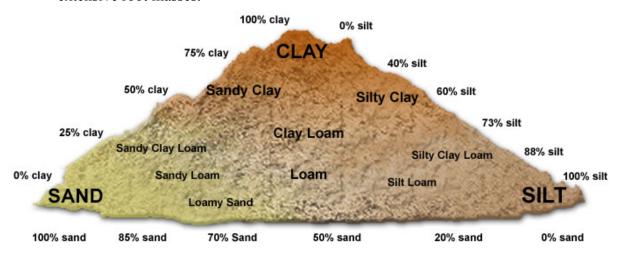
There are no identified features of elevated topography within the study area.

## 6) Pockets of Well-drained Sandy Soil

Pockets of sandy soil are considered to be especially important near areas of heavy soil or rocky ground.

The soil throughout the study area is a dark brown sandy loam, which is consistent with the wider area surrounding the property. Therefore, the presence of this soil has no impact on potential within the study area, as the wider area is not known for clay soils or exposed bedrock.

The image below (Kuhlmann, Stacy 2017) shows the consistencies of soil types and how they compare to one another. The lower percentage of clay allows the soil to break up from the action of ploughing alone when not compacted or bound by extensive root masses.



(Kuhlmann, Stacy 2017)

## 7) Distinctive Land Formations

These are landscape features that might have been special or spiritual places, such as waterfalls, rock outcrops, caverns, mounds, and promontories and their bases. There may be physical indicators of their use, such as burials, structures, offerings, rock paintings or carvings.

There are no identified distinctive land formations within the study area.

#### 8) Resource Areas

Resource areas that indicate archaeological potential include food or medicinal plants (e.g., migratory routes, spawning areas, and prairie), scarce raw materials (e.g., quartz, copper, ochre or outcrops of chert) and resources of importance to early Postcontact industry (e.g., logging, prospecting, and mining).

There are no identified resource areas within the study area.

## 9) Areas of Early Post-Contact Settlement

These include places of early military or pioneer settlement (e.g., pioneer homesteads, isolated cabins, and farmstead complexes), early wharf or dock complexes, pioneer

churches and early cemeteries. There may be commemorative markers of their history, such as local, provincial, or federal monuments or heritage parks.

The study area is situated in close proximity to a historic community identified on the historic atlas map.

## 10) Early Historical Transportation Routes

This includes evidence of trails, passes, roads, railways, portage routes.

The study area is situated within 100 metres of an early settlement road that appears on the Historic Atlas Maps of 1871 and 1881. This historic road corresponds to the road presently known as Division Road West, which is adjacent to the study area.

# 11) Heritage Property

Property listed on a municipal register or designated under the *Ontario Heritage Act* or is a federal, provincial or municipal historic landmark or site.

There are no listed or designated heritage buildings or properties that form a part of the study area. There are no listed or designated heritage buildings or properties that are adjacent to the study area.

## 12) Documented Historical or Archaeological Sites

This includes property that local histories or informants have identified with possible archaeological sites, historical events, activities, or occupations. These are properties which have not necessarily been formally recognized or for which there is additional evidence identifying possible archaeological resources associated with historic properties in addition to the rationale for formal recognition.

There are no known heritage features, or known historic sites, or known archaeological sites within the study area in addition to those formally documented with the appropriate agencies or previously noted under a different criterion.

#### CHARACTERISTICS INDICATING REMOVAL OF ARCHAEOLOGICAL POTENTIAL

Section 1.3.2 of the <u>Standards and Guidelines for Consultant Archaeologists</u> specifies the property characteristics which indicate no archaeological potential or for which archaeological potential has been removed (MTC 2011: 18-19). These characteristics are listed below together with considerations derived from the conduct of this study. The introduction of Section 1.3.2 (MTC 2011: 18) notes that "Archaeological potential can be determined not to be present for either the entire property or a part(s) of it when the area under consideration has been subject to extensive and deep land alterations that have severely damaged the integrity of any archaeological resources. This is commonly referred to as 'disturbed' or 'disturbance', and may include:"

#### 1) Quarrying

There is no evidence to suggest that quarrying operations were ever carried out within the study area.

## 2) Major Landscaping Involving Grading Below Topsoil

Unless there is evidence to suggest the presence of buried archaeological deposits, such deeply disturbed areas are considered to have lost their archaeological potential. Properties that do not have a long history of Post-Contact occupation can have archaeological potential removed through extensive landscape alterations that penetrate below the topsoil layer. This is because most archaeological sites originate at grade with relatively shallow associated excavations into the soil. Pre-Contact sites and early historic sites are vulnerable to extensive damage and complete removal due to landscape modification activities. In urban contexts where a lengthy history of occupation has occurred, properties may have deeply buried archaeological deposits covered over and sealed through redevelopment activities that do not include the deep excavation of the entire property for subsequent uses. Buildings are often erected directly over older foundations preserving archaeological deposits associated with the earlier occupation.

There is no evidence to suggest that major landscaping operations involving grading below topsoil were ever carried out within the study area. Surfaces paved with interlocking brick, concrete, asphalt, gravel and other surfaces meant to support heavy loads or to be long wearing hard surfaces in high traffic areas, must be prepared by the excavation and removal of topsoil, grading, and the addition of aggregate material to ensure appropriate engineering values for the supporting matrix and also to ensure that the installations shed water to avoid flooding or moisture damage. All hard surfaced areas are prepared in this fashion and therefore have no or low archaeological potential. Disturbed areas are excluded from Stage 2 Property Assessment due to no or low archaeological potential and often because they are also not viable to assess using conventional methodology.

### 3) Building Footprints

Typically, the construction of buildings involves the deep excavation of foundations, footings and cellars that often obliterate archaeological deposits situated close to the surface.

There are no buildings within the study area.

### 4) Sewage and Infrastructure Development

Installation of sewer lines and other below ground services associated with infrastructure development often involves deep excavation that can remove archaeological potential.

There is no evidence to suggest that substantial below ground services of any kind have resulted in significant impacts to any significant portion of the study area. Major utility lines are conduits that provide services such as water, natural gas, hydro,

communications, sewage, and others. These major installations should not be confused with minor below ground service installations not considered to represent significant disturbances removing archaeological potential, such as services leading to individual structures which tend to be comparatively very shallow and vary narrow corridors. Areas containing substantial and deeply buried services or clusters of below ground utilities are considered areas of disturbance, and may be excluded from Stage 2 Property Assessment.

"Activities such as agricultural cultivation, gardening, minor grading and landscaping do not necessarily affect archaeological potential."

(MTC 2011: 18)

"Archaeological potential is not removed where there is documented potential for deeply buried intact archaeological resources beneath land alterations, or where it cannot be clearly demonstrated through background research and property inspection that there has been complete and intensive disturbance of an area. Where complete disturbance cannot be demonstrated in Stage 1, it will be necessary to undertake Stage 2 assessment."

(MTC 2011: 18)

#### **SUMMARY**

Table 5 below summarizes the evaluation criteria of the Ministry of Heritage, Sport, Tourism and Culture Industries (MHSTCI) together with the results of the Stage 1 Background Study for the proposed undertaking. Based on the criteria, the property is deemed to have archaeological potential on the basis of proximity to previously registered archaeological sites, proximity to water, proximity to historic communities, and the location of early historic settlement roads adjacent to the study area.

TABLE 5 EVALUATION OF ARCHAEOLOGICAL POTENTIAL

FEATURE OF ARCHAEOLOGICAL POTENTIAL		YES	NO	N/A	COMMENT
				,	If Yes, potential
1	Known archaeological sites within 300m	Υ			determined
PHYSICAL FEATURES					
2	Is there water on or near the property?	Υ			If Yes, what kind of water?
	Primary water source within 300 m. (lakeshore,				If Yes, potential
2a	river, large creek, etc.)	Υ			determined
	Secondary water source within 300 m. (stream,				If Yes, potential
2b	spring, marsh, swamp, etc.)		N		determined
	Past water source within 300 m. (beach ridge,				If Yes, potential
2c	river bed, relic creek, etc.)	Υ			determined
	Accessible or Inaccessible shoreline within 300 m.				If Yes, potential
2d	(high bluffs, marsh, swamp, sand bar, etc.)		N		determined
	Elevated topography (knolls, drumlins, eskers,				If Yes, and Yes for any of 4-
3	plateaus, etc.)		N		9, potential determined
					If Yes and Yes for any of 3,
4	Pockets of sandy soil in a clay or rocky area		N		5-9, potential determined
					If Yes and Yes for any of 3-
	Distinctive land formations (mounds, caverns,				4, 6-9, potential
5	waterfalls, peninsulas, etc.)		N		determined
HISTORIC/PREHISTORIC USE FEATURES					
	Associated with food or scarce resource harvest				If Yes, and Yes for any of 3-
	areas (traditional fishing locations,				5, 7-9, potential
6	agricultural/berry extraction areas, etc.)		N		determined.
					If Yes, and Yes for any of 3-
_					6, 8-9, potential
7	Early Post-Contact settlement area within 300 m.	Υ			determined
	Historic Transportation route within 100 m.				If Yes, and Yes for any 3-7
8	(historic road, trail, portage, rail corridors, etc.)	Υ			or 9, potential determined
	Contains property designated and/or listed under				
	the Ontario Heritage Act (municipal heritage				If Yes and, Yes to any of 3-
9	committee, municipal register, etc.)		N		8, potential determined
APPLICATION-SPECIFIC INFORMATION					
	Local knowledge (local heritage organizations,				If Yes, potential
10	Pre-Contact, etc.)		N		determined
	Recent disturbance not including agricultural				
	cultivation (post-1960-confirmed extensive and				If Yes, no potential or low
	intensive including industrial sites, aggregate				potential in affected part
11	areas, etc.)		N		(s) of the study area.

If YES to any of 1, 2a-c, or 10 Archaeological Potential is confirmed

If YES to 2 or more of 3-9, Archaeological Potential is confirmed

If **YES** to 11 or No to 1-10 Low Archaeological Potential is **confirmed** for at least a portion of the study area.

#### 8.2 STAGE 2 ANALYSIS AND CONCLUSIONS

Section 7.8.3 of the <u>Standards and Guidelines for Consultant Archaeologists</u> (MTC 2011: 138-139) outlines the requirements of the Analysis and Conclusions component of a Stage 2 Property Assessment.

- 1. Summarize all finding from the Stage 2 survey, or state that no archaeological sites were identified.
- 2. For each archaeological site, provide the following analysis and conclusions:
  - a. A preliminary determination, to the degree possible, of the age and cultural affiliation of any archaeological sites identified.
  - b. A comparison against the criteria in 2 Stage 2: Property Assessment to determine whether further assessment is required
  - c. A preliminary determination regarding whether any archaeological sites identified in Stage 2 show evidence of a high level cultural heritage value or interest and will thus require Stage 4 mitigation.

No archaeological sites or resources were found during the Stage 2 survey of the study area.

### 9.0 RECOMMENDATIONS

#### 9.1 STAGE 1 RECOMMENDATIONS

Under Section 7.7.4 of the <u>Standards and Guidelines for Consultant Archaeologists</u> (MTC 2011: 133) the recommendations to be made as a result of a Stage 1 Background Study are described.

- 1) Make recommendations regarding the potential for the property, as follows:

  a. if some or all of the property has archaeological potential, identify areas recommended for further assessment (Stage 2) and areas not recommended for further assessment. Any exemptions from further assessment must be consistent with the archaeological fieldwork standards and guidelines.
  - b. if no part of the property has archaeological potential, recommend that the property does not require further archaeological assessment.
- 2) Recommend appropriate Stage 2 assessment strategies.

### 9.2 STAGE 2 RECOMMENDATIONS

Under Section 7.8.4 of the <u>Standards and Guidelines for Consultant Archaeologists</u> (MTC 2011: 139) the recommendations to be made as a result of a Stage 2 Property Assessment are described.

- 1) For each archaeological site, provide a statement of the following:
  - a. Borden number or other identifying number
  - b. Whether or not it is of further cultural heritage value or interest
  - c. Where it is of further cultural heritage value or interest, appropriate Stage 3 assessment strategies
- 2) Make recommendations only regarding archaeological matters.

  Recommendations regarding built heritage or cultural heritage landscapes should not be included.
- 3) If the Stage 2 survey did not identify any archaeological sites requiring further assessment or mitigation of impacts, recommend that no further archaeological assessment of the property be required.

As a result of the Stage 2 Property Assessment of the study area, no archaeological resources were encountered. Consequently, the following recommendations are made:

- 1. No further archaeological assessment of the study area is warranted;
- 2. The Provincial interest in archaeological resources with respect to the proposed undertaking has been addressed;
- 3. The proposed undertaking is clear of any archaeological concern.

## 10.0 ADVICE ON COMPLIANCE WITH LEGISLATION

While not part of the archaeological record, this report must include the following standard advisory statements for the benefit of the proponent and the approval authority in the land use planning and development process:

- a. This report is submitted to the Minister of Tourism and Culture as a condition of licensing in accordance with Part VI of the Ontario Heritage Act, R.S.O. 1990, c. 0.18. The report is reviewed to ensure that it complies with the standards and guidelines issued by the Minister, and that the archaeological fieldwork and report recommendations ensure the conservation, protection and preservation of the cultural heritage of Ontario. When all matters relating to archaeological sites within the project area of a development proposal have been addressed to the satisfaction of the Ministry of Tourism and Culture, a letter will be issued by the ministry stating that there are no further concerns with regard to alterations to archaeological sites by the proposed development.
- b. It is an offence under Sections 48 and 69 of the Ontario Heritage Act for any party other than a licensed archaeologist to make any alteration to a known archaeological site or to remove any artifact or other physical evidence of past human use or activity from the site, until such time as a licensed archaeologist has completed archaeological fieldwork on the site, submitted a report to the Minister stating that the site has no further cultural heritage value or interest, and the report has been filed in the Ontario Public Register of Archaeological Reports referred to in Section 65.1 of the Ontario Heritage Act.
- c. Should previously undocumented archaeological resources be discovered, they may be a new archaeological site and therefore subject to Section 48 (1) of the Ontario Heritage Act. The proponent or person discovering the archaeological resources must cease alteration of the site immediately and engage a licensed archaeologist to carry out archaeological fieldwork, in compliance with sec. 48 (1) of the Ontario Heritage Act.
- d. The Cemeteries Act, R.S.O. 1990, c. C.4 and the Funeral, Burial and Cremation Services Act, 2002, S.O. 2002, c.33 (when proclaimed in force) require that any person discovering human remains must notify the police or coroner and the Registrar of Cemeteries at the Ministry of Consumer Services.
- e. Archaeological sites recommended for further archaeological fieldwork or protection remain subject to Section 48 (1) of the Ontario Heritage Act and may not be altered, or have artifacts removed from them, except by a person holding an archaeological licence.

## 11.0 BIBLIOGRAPHY AND SOURCES

- AMICK Consultants Limited. (2018). Stage 1-2 Archaeological Assessment of Part of Lot 1, Concession 1, Northern Division (Geographic Township of Orillia), Township of Severn, County of Simcoe. Port McNicoll, Ontario. Archaeological License Report on File With the Ministry of Heritage, Sport, Tourism and Culture Industries, Toronto, Ontario. Filed Under PIF # P038-0939-2017.
- Belden, H. & Co. (1881). Simcoe Supplement in Illustrated Atlas of the Dominion of Canada. H. Belden & Co.: Toronto.
- Chapman, L.J. & D.F. Putnam. (1984). *The Physiography of Southern Ontario (Third Edition)*. Ontario Geological Survey, Special Report #2. Ontario Ministry of Natural Resources, Toronto.
- County of Simcoe. (2007). The County of Simcoe Official Plan. County of Simcoe., Midhurst.
- Dearden and Stanton Ltd. (2018). Plan of Survey of Part of Lot 1, Concession 1 (Geographic Township of North Orillia) Now in the Township of Severn, County of Simcoe. Dearden and Stanton Ltd., Orillia.
- Ellis, C. J., and D. Brian Deller. (1990). "Paleoindians" in The Archaeology of Southern Ontario to A.D. 1650, eds. Chris J. Ellis and Neal Ferris. Occasional Publication of the London Chapter, OAS Number 5, London, Ontario.
- Esri. "Topographic" [basemap]. Scale Not Given. "World Topographic Map". April 12, 2018. http://www.arcgis.com/home/item.html?id=30e5fe3149c34df1ba922e6f5bbf808f. (April 12, 2018).
- Garbutt, Mary. (2010). About Simcoe County. *Simcoe County Branch- Ontario Genealogical Society*. Retrieved 12 May 2010, from URL: http://www.simcoebogs.com/About/ab simcoe.html
- Goel, Tarun (2013). Road Construction: History and Procedure. Bright Hub Engineering. Retrieved 24 May 2015 from URL: <a href="http://www.brighthubengineering.com/structural-engineering/59665-road-construction-history-and-procedure/">http://www.brighthubengineering.com/structural-engineering/59665-road-construction-history-and-procedure/</a>
- Google Earth (Version 6.0.3.2197) [Software]. (2009). Available from http://www.google.com/earth/index.html.
- Google Maps. (2012). Available from: http://maps.google.ca/?utm\_campaign =en&utm\_source=en-ha-na-ca-bk-gm&utm\_medium=ha&utm\_term =google%20maps.
- Hogg, John. (1871). *Hogg's Map of the County of Simcoe* [map]. John Hogg, Collingwood. Retrieved January 23, 2017, from the Ontario Historical County Maps Project in association with University of Toronto Map and Data Library URL: <a href="http://maps.library.utoronto.ca/hgis/countymaps/simcoe/index.html">http://maps.library.utoronto.ca/hgis/countymaps/simcoe/index.html</a>.
- Jackson, L., C. Ellis, A. Morgan, & J. McAndrews. (2000). Glacial Lake Levels and Eastern Great Lakes Paleo-Indians. In *Geoarchaeology* 15(5): 415-440.

- Kuhlmann, Stacy. (2017). *Types of Soil*. Diagram of Soil Types available from http://www.tes.com/lessons/AKChU3fbfZKo9g/types-of-soil.
- Myers, Jay (1977). The Great Canadian Road: A History of Yonge Street. Red Rock Publishing Company, Toronto.
- Ontario Heritage Act, RSO 1990a, Government of Ontario. (Queen's Printer, Toronto).
- Ontario Heritage Amendment Act, SO 2005, Government of Ontario. (Queen's Printer, Toronto).
- Ontario Ministry of Citizenship, Culture and Recreation (OMCzCR). (1993). *Archaeological Assessment Technical Guidelines, Stages 1-3 and Reporting Format.* (Queen's Printer for Ontario 1993)
- Ontario Ministry of Culture (MCL). (2005). Conserving a Future for Our Past: Archaeology, Land Use Planning & Development in Ontario (An Educational Primer and Comprehensive Guide for Non-Specialists). (Heritage & Libraries Branch, Heritage Operations Unit: Toronto).
- Ontario Ministry of Culture and Communications (MCC) & Ministry of Environment (MOE). (1992). Guideline for Preparing the Cultural Heritage Resource Component of Environmental Assessments. (Cultural Programs Branch, Archaeology and Heritage Planning: Toronto).
- Ontario Ministry of Tourism and Culture (MTC). (2011). *Standards and Guidelines for Consultant Archaeologist.* (Programs and Services Branch: Culture Programs Unit, Toronto).
- Ontario Planning Act, RSO 1990b, Government of Ontario. (Queen's Printer, Toronto).
- Provincial Policy Statement (2014). Government of Ontario. (Queen's Printer, Toronto).
- Smith, David G. (2002). "Ten Thousand Years: Aboriginal Heritage in Mississauga." In Mississauga: The First 10,000 Years. Frank Dieterman, Ed. Mississauga Heritage Foundation, Eastendbooks, Toronto.
- Township of Severn (2013). *Township of Severn Mission Statement*. Retrieved 12 June 2013 from http://www.townshipofsevern.com/about.asp
- Wright, J.V. (1972). Ontario Prehistory: an Eleven-thousand-year Archaeological Outline. Archaeological Survey of Canada. National Museum of Man, Ottawa.