



Hydrogeological Study - Update

Sandy Cove Drive
Prince Edward County, Ontario

Prepared for:

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Prince Edward County, ON
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TABLE OF CONTENTS

1.0 Introduction	1
1.1 Initiation and Objective	1
1.1 Scope of Work	1
2.0 Background	2
2.1 Site Information	2
2.2 Surficial Soil Conditions	2
2.3 Background Geology	2
3.0 Well Construction	4
4.0 Water Quantity	5
4.1 Background	5
4.2 Test Well TW1	5
5.0 Interference	8
5.1 Test Well TW1	8
5.2 Discussion of Results	8
6.0 Water Quality	9
6.1 TW1	9
7.0 Conclusions and Recommendations	12
8.0 Limitations	14
Appendix A Figures	
Appendix B Subject Property Well Record	
Appendix C MECP Water Well Summary Records	
Appendix D Test Well Drawdown and Recovery Data	
Appendix E Laboratory Analytical Certificates	
Appendix F Precipitation Data	



1.0 INTRODUCTION

1.1 Initiation and Objective

ASC Environmental Inc. (ASC) was retained by Krystofer Destun (*Client*) to conduct a Hydrogeological Assessment in support of a severance application in accordance with The County of Prince Edward provision for consent. ASC understands that the severance application will be developed with a single family residential building, and the new well will service the new construction. We understand that the subject property encompasses approximately 33.39 hectares (5.08 hectares slated for severance) located along the west side of Sandy Cove Drive, the north side of Sunrise Drive, and the east side of Massassauga Road, Prince Edward County, Ontario. A site location plan is shown on Drawing No. 1 in Appendix A.

The purpose of the hydrogeological study was to assess the viability of one dug well (TW1) to support the proposed severance. The study evaluated whether groundwater quality and quantity are sufficient to support the residential development without adversely impacting upon existing neighbouring wells.

One (1) dug well (MECP Tag #A350571) was advanced on July 24, 2023, on the severed portion of the subject property by Frank's Drilling and Blasting Ltd. (Well Contractor's Licence # 6881).

1.1 Scope of Work

The agreed scope of work included the following efforts:

- Review available Ministry of Environment, Conservation and Parks (MECP) well water records and historical data for the local area.
- Chlorinate the existing test well and circulate water until between 50 and 200 ppm, residual chlorine is measured in the well water.
- Undertake one (1) six-hour pumping test (with recovery) on the dug well.
- Monitor water levels in adjacent wells during pumping.
- Collect well water sample in the final hour of the pumping test (approximate 5.5-hour mark) following confirmation of zero chlorine residual.
- Submit well water sample to a certified laboratory for the required suite of parameters, as indicated in the MECP D-5-5 Procedure.
- Prepare a hydrogeological assessment report, in accordance with the MECP D-5-5 Procedure, including well construction protocols, water quality, water quantity, potential well interference and potential for suitable well and septic on the retained portion.
- Additional work included further well development, rechlorination and TW1 resample.



2.0 BACKGROUND

2.1 Site Information

The subject property is located along the east side of Massassauga Road with additional road frontage along Sunrise Drive and Sandy Cove Drive in Prince Edward County, ON. The subject property encompasses approximately 33.39 hectares and generally consists of forested lands with a cleared portion for proposed residential development. The Massassauga Point Conservation Area is located north adjacent. The proposed severed parcel is approximately 5.08 Ha in size with approximately 200 metres of road frontage along the west side of Sandy Cove Drive. The Bay of Quinte is located approximately 280 metres east of the severed parcel. A site location plan is shown on Drawing No. 1 in Appendix A.

The site topography on the subject property is sloped downward from the southwest to the northeast towards The Bay of Quinte. The surrounding land use within a 250 m radius consists primarily of agricultural and rural residential properties.

2.2 Surficial Soil Conditions

The physiographic area is described as Clay Plains and Limestone Plains. The subject property is intersected by Clay Plains in the northwest and Limestone Plains in the southeast. The severed parcel and TW1 are located within the Limestone Plains region.¹

Reported well drilling observations for TW1 indicate topsoil from surface to approximately 0.3 m, underlain by clay to approximately 1.3 m, underlain by limestone bedrock. The test well was completed in the limestone bedrock at a depth of approximately 6.91 m. Water was encountered in the limestone bedrock at a depth of approximately 4.0 m at time of well construction. The well record is presented in Appendix B.

The MECP online database of well records within a 500 m radius indicate surficial soils consisting of clay, shale, topsoil, stones, and loam.² Bedrock is reported encountered at depths of approximately 0.3 m to 2.6 m below ground surface (bgs).

2.3 Background Geology

Bedrock geology in the study area consists of Limestone, dolostone, shale, arkose, and sandstone of the Ottawa Group; Simcoe Group; Shadow Lake Formation.

Nineteen (19) water well summary records (within a 500-metre radius of the test well area) were available for review from the MECP online database (see Appendix C). Review of the well records found eleven (11) domestic wells and eight (8) abandoned wells due to insufficient water supply or poor water quality. Reported well depths ranged from

¹ Chapman, L.J. and Putnam, D.F. 1972. Physiography of Southern Ontario. Map 2227.

² Ministry of the Environment, Conservation, and Parks. 2021. Map: Well Records.



approximately 7.01 m to 57.91 m. Fresh water was reported to be encountered in the limestone bedrock (fractures and joints) at depths ranging from 1.52 m to 48.16 m below ground surface (bgs).



3.0 WELL CONSTRUCTION

Frank's Drilling and Blasting Ltd. (Well Contractor's Licence # 6881) advanced TW1 on July 24, 2023. The well was dug for the purpose of domestic water supply in support of the proposed severance. The well location is shown in Drawing No. 2 in Appendix A and the well record is included in Appendix B.

The well record for TW1 indicated that the annular space between the concrete casing and native materials was sealed with clay from ground surface to approximately 2.5 mbgs. The well record for TW1 shows that the concrete casing extends to a depth of approximately 6.91 m. The well casing extends approximately 0.55 m above ground surface.

The well record for TW1 indicated topsoil from surface to 0.3 m, underlain by clay to a depth of approximately 1.30 m, underlain by limestone bedrock. The test well was completed in the limestone bedrock at a depth of approximately 6.91 m. Water was reported encountered in the limestone bedrock at a depth of approximately 4.0 m. The well record is included in Appendix B.

Visual observations during field work indicated that the well was constructed within an area of potential high seasonal water table. On this basis, ASC recommends modifications to site grading to prevent surface water and other foreign materials from potentially pooling around the base of the concrete casing. If during site grading the height of the casing becomes less than 0.4 meters above ground surface, ASC recommends extending the concrete casing to meet Ontario's Revised Regulation (RRO) 903, Wells, amended to Ontario Regulation (O Reg) 372/07, under the *Ontario Water Resources Act*. The test well location is shown on Drawing No. 2 in Appendix A.

No other sources of potential contamination were evident during the site work on the subject property.

We understand that water will be supplied using submersible pump. Pump installation shall be undertaken in accordance with RRO 903 (Section 17).

Copy of the test well record is attached in Appendix B.



4.0 WATER QUANTITY

4.1 Background

The quantity of groundwater available for the test well was investigated through one (1) scheduled 6-hour pumping test in accordance with The County of Prince Edward Guideline and MECP Procedure D-5-5 to assess water quantity for the proposed residential severance. The pumping test for TW1 was conducted on October 16, 2024, and was undertaken for a total period of approximately 6 hours. Referencing Government of Canada precipitation data (Belleville) for the fifteen (15) days prior to the pumping test showed approximately 13.2 mm of rainfall. On this basis, the pumping test was not undertaken during a period of heavy precipitation. The Belleville October 2024 precipitation data can be found in Appendix F.

Referencing MECP D-5-5 guidelines, the minimum pumping rate per person based on peak demand is 3.75 L/min, with a minimum acceptable pumping rate for the proposed development is 15 L/min. At the time of the pumping test ASC understood that the proposed severance may be developed with a single family three-bedroom dwelling (3 + 1), which the minimum pumping rate would be 15 L/min.

The well record for TW1 indicated a recommended pump rate of 28 L/min. Therefore, on this basis, the test well was pumped at a rate of 24 L/min for purposes of assessing peak demand and long term well yield.

Bedrock hydrogeological values of transmissivity were calculated from the pumping data by the Jacob method, which assumes the heterogeneous limestone bedrock aquifer is analogous to a homogeneous, confined, porous media aquifer of infinite horizontal extent. Recognizing that the limestone bedrock water bearing unit is unconfined, the Jacob method sufficiently estimates the aquifer parameters to assess well hydrogeological conditions.

4.2 Test Well TW1

TW1 is approximately 7.0 metres deep (from the top of the casing), completed in the limestone bedrock. Prior to the initiation of pumping, the static water level was measured to be approximately 1.01 m from the top of the casing. The water in the well was pumped at a rate of 24 L/min for a total of 360 minutes, yielding approximately 8,640 litres of water. Maximum drawdown was measured at approximately 0.47 m over the duration of the test. At the completion of the pumping test, approximately 92% of the total well water supply was remaining. Specific capacity calculated over the final 60 minutes of the pumping test was found to be approximately 300 litres/minute/metre. A plot of drawdown versus time relationship is shown in Appendix D.

Section 4.3.1 of the Ministry of Environment, Conservation and Parks (MECP) (*previously known as the Ministry of Environment*) D-5-5 Procedure, Technical Guideline for Private



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Wells: Water Supply Assessment indicates that water level recovery must be monitored in the test well for the lesser of 95% recovery or 24 hours. Total drawdown over the 6-hour period of pumping was measured at approximately 0.47 m, observed recovery within the 24-hour period was measured at 25%. Additional recovery beyond the 24-hour period showed approximately 50%; 44 hours following pump shutdown. At pump shutdown, approximately 5.4 m of water supply (3,900 litres) was remaining in the dug well. The well had been pumped at a rate of 24 lpm for the 360 minutes duration of the pumping test resulting in 8,640 litres of water supply from the well, with less than 0.5 m of drawdown over the six hour period.

Taking into account the diameter of the well (0.96 m) and height of water (hw = 5.9 m) pre-pumping; a volume of water of approximately 4,270 litres was initially available. At a pumping rate of 24 litres per minute the well drew down only 0.47 m for the full duration of the 6-hour pumping test, resulting in producing 8,640 litres of water which is approximately two (2) well volumes and equivalent to 5 times the daily requirement of a 3-bedroom home.

While we acknowledge that the well did not fully recover within the 24 hours, we believe that atmospheric conditions and the aggressive pumping rate (24 lpm) likely influenced recovery. We are of the opinion that a lower pumping rate of 15 lpm, would have demonstrated peak demand and, on a percentage basis, would have resulted in a drawdown of approximately 0.29 m with limited hydrogeological stress upon the water supply. Therefore on these basis, we are of the opinion that adequate long term water supply is available from TW1 to meet peak demand during seasonal dry periods, to support the proposed single family residential severance.

Referencing the County of Prince Edward's Hydrogeological servicing guideline, the seasonally dry period is considered to be between the months of June and October. Utilizing peak demand daily water level requirement of 1,800 L/day, it is concluded that test well TW1 is able support peak demand conditions during seasonal dry conditions.

The transmissivity (T) after approximately 100 minutes of pumping was calculated to be approximately $1.18 \times 10^{-4} \text{ m}^2/\text{s}$. Hydraulic Conductivity ($K = T/b$), where $b = 6.07 \text{ m}$ (represents approximate aquifer thickness at time of pumping), was determined to be approximately $K = 1.95 \times 10^{-5} \text{ m/s}$. The test well recovery and transmissivity data may be found in Appendix D.

As indicated above and based on the considered number of bedrooms expected (3 + 1) for the proposed severance, a minimum pumping rate of 15 lpm is required with a resulting water requirement of 1800 litres/day during peak demand. Peak demand (pumping at 24 lpm) was reached approximately 75 minutes into the pumping test, with a measured drawdown of approximately 0.11 m. Additional drawdown recorded over the remainder of the pumping test was 0.36 m. This indicates that the well sufficiently met "peak demand"



conditions.

Based on the observations from the drawdown versus time relationship and data collected from TW1, it is concluded that the long-term yield of TW1 is sufficient to meet the domestic supply requirements in accordance with the MECP Procedure D-5-5 and the County of Prince Edward requirements.

Furthermore, ASC revisited the site on May 6, 2025, to further develop and resample TW1. Test well TW1 was aggressively pumped at an average rate of approximately 40 lpm for a total of 240 minutes, yielding approximately 9,250 litres of water. Maximum drawdown recorded over the period of pumping was approximately 0.24 m. The test well TW1 recovered 25% within 10 minutes following pump shutdown. ASC recognizes the resample event was conducted during typical spring freshet conditions.

ASC is of the opinion based on the results of the hydrogeological study that the retained lot can be serviced by well (likely dug) in accordance with MECP D-5-5. Based on the size of the retained lands sufficient area is present to provide for private septic services (raised bed) in accordance with MECP D-5-4.

Drawdown and recovery measurements obtained during the pumping test are presented in Appendix D.



5.0 INTERFERENCE

The effects of interference were monitored during well development and pumping from the test well. Neighbouring observation wells were utilized during pumping to assess potential interference. Observation well locations are shown on Drawing No. 2.

5.1 Test Well TW1

Two (2) observation wells, located at 56 Sandy Cove Drive (OW1) and 16 Sandy Cove Drive (OW2) were utilized to assess potential interference during the TW1 pumping test. The observation wells were located approximately 240 and 290 metres horizontal distance from the subject test well. See Table 1 below, for observation well information.

Table 1. Test Well – TW1 Neighbouring wells involved in hydrogeological assessment at the subject property.

Observation Well ID	Well type	Observation Well Address	Distance from Test Well (m)
OW1	Dug	56 Sandy Cove Drive	240
OW2	Dug	16 Sandy Cove Drive	290

5.2 Discussion of Results

Potential water quantity problems resulting from mutual well interference are not expected for the test well TW1. No drawdown was measured in the observation wells during the TW1 pumping test.

On this basis, ASC is of the opinion that potential well interference will not likely create adverse conditions to the existing neighbouring well supply. Copies of the residential water level measurements recorded during the pumping test are presented in Appendix C.

6.0 WATER QUALITY

A well water sample was collected from the test well and stored in a cooler with ice and transported to a Canadian Association of Laboratory Accreditation (CALA) certified laboratory in Kingston, Ontario. Chemical and bacteriological parameter analyses were undertaken in accordance with the MECP Procedure D-5-5 and compared to the Ontario Drinking Water Quality Objectives (ODWO).

Results of analyses for the test well (TW1) are presented in the following section.

6.1 TW1

One (1) water sample was collected from the test well during the last hour of the pumping test (approximate 5.5-hour mark) on October 16, 2024.

Bacteriological parameter analyses met the MECP Procedure D-5-5 and ODWO for Total Coliform (3 cfu/100ml), E. Coli (0 cfu/100ml), and Fecal Coliform (0 cfu/100ml) from the sample collected on October 16, 2024.

ASC revisited the site on January 21, 2025 and May 6, 2025, to further develop TW1 and resample for bacteriological parameters. Bacteriological results met the MECP Procedure D-5-5 and ODWO demonstrating improved water quality with well development.

The health-related limit for Turbidity is 1 NTU (Nephelometric Turbidity Unit) and the laboratory sample result showed 2.7 NTU, in the sample collected on October 16, 2024. Field turbidity results showed 0 NTU prior to the collection of the sample. We believe that handling time prior to analyses may have resulted in precipitate in solution for the laboratory analyses result. Following additional well development, Turbidity result from the January, 2025 re-sample showed 1.2 NTU confirming with well development; turbidity will not be a concern for future users.

The health-related limit for sodium is 20 mg/L and the aesthetic objective is 200 mg/L. Sample results for TW1 taken on October 16, 2024, showed exceedance to the aesthetic objective. The health-related limit for sodium is a “warning level” and where this level is exceeded the local Medical Health Officer shall be notified in order to alert individuals with relevant medical conditions. ASC personnel identified the elevated sodium result as an uncharacteristic (anomalous) concentration and following additional site reconnaissance, and communication with the well contractor; additional well development was undertaken consisting of pumping, recovery and re-pumping so as to introduce formation water into the well. Resampling was conducted on January 21, 2025, and sodium results were within the health related limits, sample results showed sodium concentration of 14.2 mg/L.

Remaining health related parameters met the MECP Procedure D-5-5 and ODWO.



The ODWO concentration limit for colour is 5 TCU (True Colour Units) and maximum concentration considered reasonably treatable is 7 TCU. Sample analyses for TW1 taken on January, 2025, identified a colour concentration 9 TCU. Elevated colour concentrations are associated with the presence of organic compounds present in the water source. On this basis, additional well development was undertaken. Following additional development, ASC returned to the site on May 6, 2025, to confirm colour concentration. Resample results for TW1 from May 6, 2025, met the MECP Procedure D-5-5, sample results identified colour concentration of <2 TCU.

The ODWO concentration and maximum treatable concentration for Chloride is 250 mg/L. Sample analyses for TW1 taken on October 16, 2024, identified elevated chloride concentration. As indicated above (see sodium results), additional well development was undertaken consisting of pumping full well volumes. Following this well development, ASC returned to the site on January 21, 2025. Resample results for TW1 from January 21, 2025, met the MECP Procedure D-5-5, sample results showed chloride concentration of 16.7 mg/L.

The operational guideline for hardness is 80-100 mg/L and the ODWO level is 500 mg/L. Initial sampling results from October, 2024 showed elevated TDS and hardness. Following additional development, ASC returned to the site on January 21, 2025, to confirm hardness and TDS. Resample results, met the MECP Procedure D-5-5, sample results identified hardness of 189 mg/L and a TDS concentration of 220 mg/L.

Hardness and TDS in water usually occur when elevated concentrations of calcium, magnesium, and chlorides are present in water. Elevated concentrations of hardness may result in scale build-up and mineral deposits on hot water heaters and plumbing fixtures, corrosion or encrustation of metal fixtures or appliances. Hard water can be readily treated through ion exchange water softening.

The ODWO concentration for Iron is 0.3 mg/L and the maximum treatable concentration is 5.0 mg/L to 10.0 mg/L. Sample analyses for TW1 taken on October 16, 2024, identified an Iron concentration of 0.342 mg/L. Elevated concentrations of Iron may cause staining of plumbing fixtures and laundry. Elevated concentrations of Iron can be readily treated through ion exchange water softeners or Manganese greensand filters. Following additional development, ASC returned to the site on January 21, 2025, to confirm iron concentration. Resample results, met the MECP Procedure D-5-5, sample results identified iron concentration of 0.009 mg/L.

Nitrate and Nitrite concentrations following the January 21, 2025 sample event, showed <0.05 mg/l. Therefore on this basis, down gradient nitrate and nitrite concentrations resulting from the proposed residential severance will not be a concern to existing adjacent down gradient users.



To ensure safe drinking water is provided to future residents, we recommend contracting a professional water quality specialist to confirm health related and aesthetic treatment options. At a minimum, we recommend disinfection (i.e. UV light) of the water source to ensure bacteriological free groundwater for consumption purposes and as a precaution consideration for reverse osmosis treatment (we recommend confirming reverse osmosis with a water quality specialist).

Results of laboratory sample analyses are presented in Appendix E.



7.0 CONCLUSIONS AND RECOMMENDATIONS

- Based on the field work, well development and pumping tests conducted, results indicate that sufficient quantity of groundwater supply from the limestone bedrock aquifer for TW1 is available to meet peak demand for normal domestic use for the proposed severance. We are of the opinion that adequate long term supply is available to meet peak demand conditions during seasonal dry periods to support the proposed single family residential severance.
- ASC is of the opinion based on the results of the hydrogeological study that the retained lot can be serviced by well (likely dug) in accordance with MECP D-5-5.
- Bacteriological parameter analyses met the MECP Procedure D-5-5 and ODWO.
- The health-related limit for Turbidity is 1 NTU (Nephelometric Turbidity Unit) and the laboratory sample result showed 2.7 NTU and 1.2 NTU in the samples collected on October 16, 2024, and January 21, 2025, indicating improved turbidity with well development.
- The health-related limit for sodium is 20 mg/L and the aesthetic objective is 200 mg/L. Initial sample result from October 16, 2024, showed elevated sodium concentration. The health-related limit for sodium is a “warning level” and where this level is exceeded the local Medical Health Officer shall be notified in order to alert individuals with relevant medical conditions. ASC personnel identified the elevated sodium result as an uncharacteristic anomalous concentration and further well development consisting of full volume well pumping and recovery was undertaken. Subsequent sampling on January 21, 2025 showed sodium concentration result within the health related limit; sample result showed sodium concentration of 14.2 mg/L.
- Following additional well development, colour resample results (<2 TCU) from May 6, 2025, met the MECP Procedure D-5-5 limit.
- The operational guideline for hardness is 80-100 mg/L and the ODWO level is 500 mg/L. Sample analyses in the initial sample collected on October 16, 2024, identified elevated hardness and TDS. Sample results from the sample collected for TW1 on January 21, 2025, identified hardness and TDS levels within the ODWO.
- Nitrate and Nitrite concentrations following the January 21, 2025 sample event, showed <0.05 mg/l. Therefore on this basis, down gradient nitrate and nitrite concentrations resulting from single family residential severance (3+1) will not be a concern to existing adjacent down gradient users. Based on the fine grained



nature and shallow soil cover, Class IV (OBC) raised septic bed would be considered appropriate for sewage treatment for the proposed severance.

- Based on the size of the retained lands (approximately 28 hectares) sufficient area is present to provide for private septic services (Class IV (OBC) raised septic bed) in accordance with MECP D-5-4.
- Visual observations during field work indicated that the well was constructed within an area of potential high seasonal water table. On this basis, ASC recommends modifications to site grading to prevent surface water and other foreign materials from potentially pooling around the base of the concrete casing. If during site grading modification the casing is less than 0.4 meters above ground surface, ASC recommends extending the concrete casing to meet Ontario's Revised Regulation (RRO) 903, Wells, amended to Ontario Regulation (O Reg) 372/07, under the *Ontario Water Resources Act*.
- Based on the observations from the drawdown versus time relationship and well supply remaining following pumping test, and data collected from TW1, it is concluded that the long-term yield of TW1 is sufficient to meet the domestic supply requirements in accordance with the MECP Procedure D-5-5 and the County of Prince Edward servicing guidelines.
- Potential water quantity problems resulting from mutual well interference are not expected for the test well TW1. No drawdown was measured in the observation wells during the TW1 pumping test. On this basis, ASC is of the opinion that the minimal measured influence indicates potential well interference will not create adverse conditions to the existing neighbouring well supply.
- To ensure safe drinking water is provided to future residents, we recommend contracting a professional water quality specialist to confirm health related and aesthetic treatment options. At a minimum, we recommend disinfection (i.e. UV light) of the water source to ensure bacteriological free groundwater for consumption purposes and consideration for point source reverse osmosis treatment (we recommend confirming with a water quality specialist).

-



8.0 LIMITATIONS

ASC Environmental (ASC) was retained by Krystofer Destun (*Client*) to undertake a Hydrogeological Assessment for one (1) dug well located along Sandy Cove Drive, Prince Edward County, Ontario, for purposes of a proposed residential severance.

The scope of work for this assessment included:

- Undertaking a six-hour pumping test with recovery on the test well (TW1).
- Monitoring adjacent residential wells during pumping to assess potential interference.
- Collection of well water sample, following confirmation of zero residual chlorine within the last hour of the pumping test (approximate 5.5-hour mark).
- Submission of sample to a certified laboratory for the required suite of parameters.
- Preparation of a hydrogeological assessment report, addressing well construction, water quality and quantity, and potential interference.
- Additional work included further development and resampling of TW1.

The findings reported in this document are based on the tasks completed by ASC under the mutually agreed upon scope of work. Professional judgement, experience with similar investigations, and available data collected within the scope of work form the basis for this report. ASC has prepared this report using information understood to be factual and correct and shall not be responsible for conditions arising from information or facts that were inaccurate, concealed, or not fully disclosed at the time of investigation.

ASC Environmental Inc. makes no other representations whatsoever, including those concerning the legal significance of its findings, or as to other legal matters touched on in this report, including, but not limited to, ownership of any property, or the application of any law to the facts set forth herein. With respect to regulatory compliance issues, regulatory statutes are subject to interpretation and these interpretations may change over time.

The nature of the investigation makes it possible that contrary conditions may be identified due to seasonal or meteorological changes that are beyond the control of ASC. Groundwater sampling results are current at the time of sampling only, seasonal conditions and future changes to the property may influence groundwater quality. The passage of time affects the information provided in the report. Environmental conditions of a Site can change. Opinions relating to the Site conditions are based upon information that existed at the time that the conclusions were formulated. ASC does not certify or warrant the future environmental/hydrogeological status of the property.

This document has been prepared by ASC Environmental Inc., for the sole use of *Krystofer Destun* and *assignees* to assess hydrogeological conditions related to the



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Yours truly,

ASC Environmental Inc.



Paul Johnston, M.Sc., P. Eng. QP_{ESA}
President

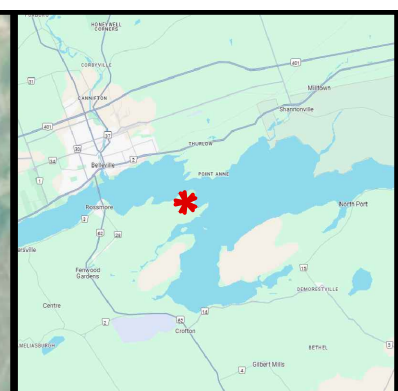
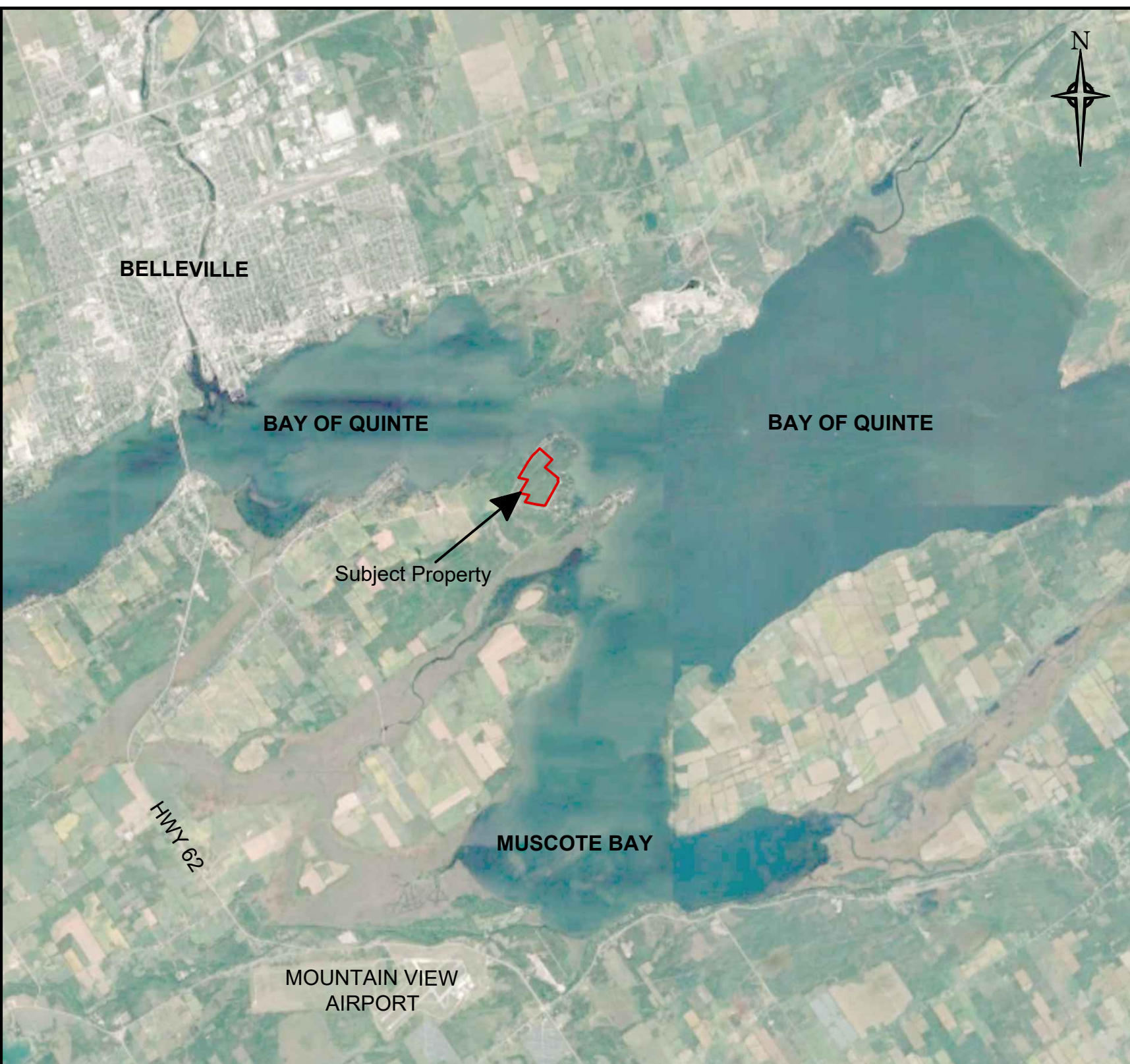


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APPENDIX A Drawings



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LEGEND	
	SUBJECT PROPERTY LOCATION
	APPROXIMATE SUBJECT PROPERTY BOUNDARY

DRAWING TITLE	
Site Location Plan	

FIGURE NO.	DRAWN BY
01	T. Cook

PROJECT
Hydrogeological Assessment

CLIENT
Krystofer Destun

LOCATION
Part Lot 5 Concession 1, Ameliasburgh, ON

<u>PROJECT NO.</u> ASC-972	<u>SCALE:</u> 
<u>DATE</u> 22-May-2025	



1305 Princess St
Kingston, ON, K7M 3E3

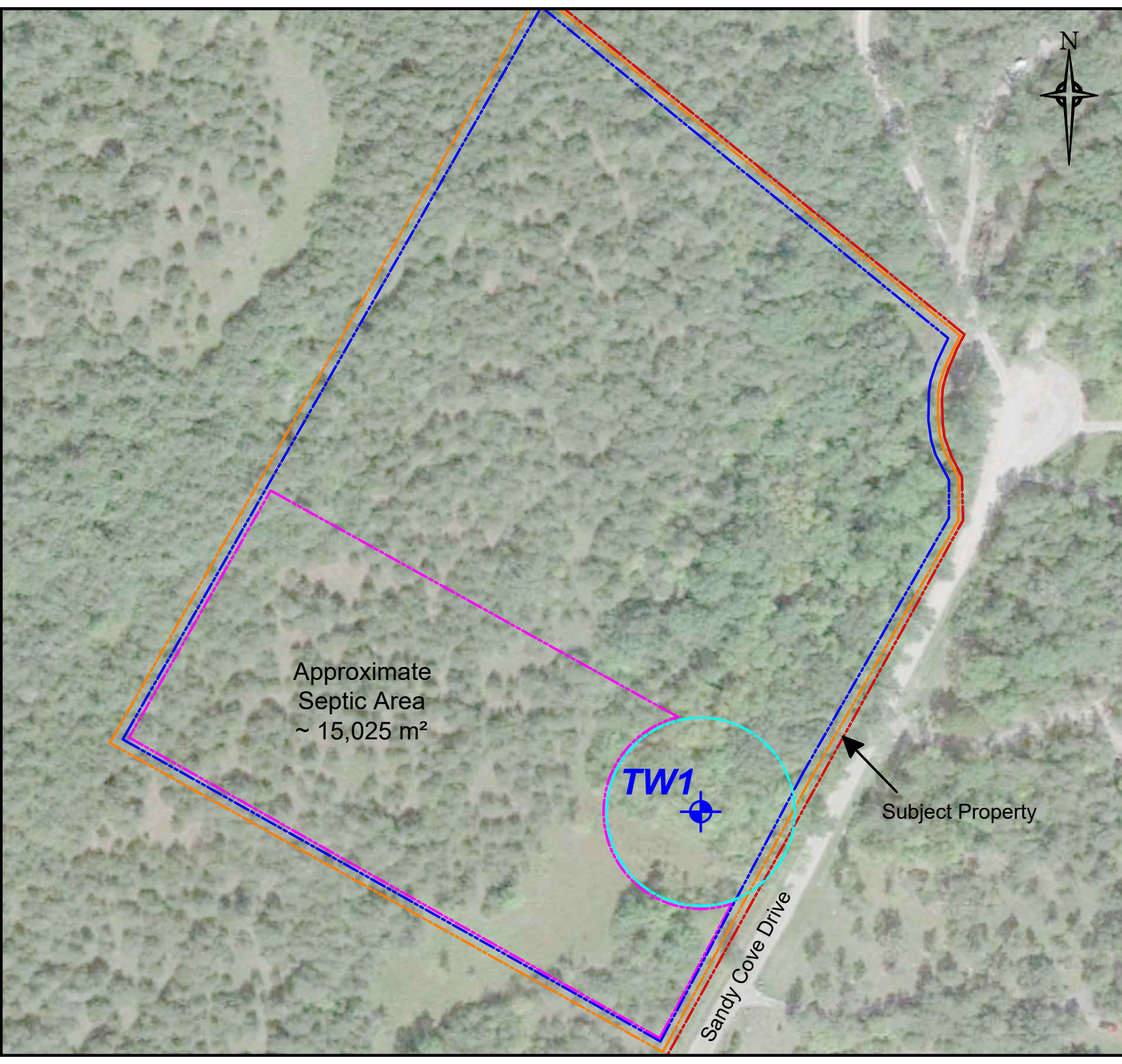
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Subject Property



LEGEND	
	APPROXIMATE SUBJECT PROPERTY BOUNDARY
	APPROXIMATE SEVERED PROPERTY BOUNDARY
	APPROXIMATE LOCATION OF TEST WELL
	APPROXIMATE LOCATION OF OBSERVATION WELL
DRAWING TITLE Site Layout Plan	
FIGURE NO. 02	DRAWN BY T. Cook
PROJECT Hydrogeological Assessment	
CLIENT Krystofer Destun	
LOCATION Part Lot 5 Concession 1, Ameliasburgh, ON	
PROJECT NO. ASC-972	SCALE:
DATE 22-May-2025	
 1305 Princess St Kingston, ON, K7M 3E3 (613)634-5596 www.ascenvironmental.ca	



LEGEND	
	APPROXIMATE SUBJECT PROPERTY BOUNDARY
	APPROXIMATE SEVERED PROPERTY BOUNDARY
	APPROXIMATE 3 METRE PROPERTY LINE SETBACK PER OBC
	APPROXIMATE 30 METRE DUG WELL SETBACK PER OBC
	APPROXIMATE AREA AVAILABLE FOR CLASS 4 SEPTIC SYSTEM
	APPROXIMATE LOCATION OF TEST WELL

DRAWING TITLE	
Septic Service Setbacks	

FIGURE NO.	DRAWN BY
03	T. Cook

PROJECT
Hydrogeological Assessment

CLIENT
Krystofer Destun

LOCATION
Part Lot 5 Concession 1, Ameliasburgh, ON

PROJECT NO.	SCALE:
ASC-972	

DATE
22-May-2025



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APPENDIX B

Subject Property Well Record



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Measurements recorded in: ☒ Metric ☐ Imperial

Page 1 of 1

Well Owner's Information

First Name KRISTOFER	Last Name/Organization DESTLIN	E-mail Address krystoferdetsune@gmail.com	☐ Well Constructed by Well Owner
Mailing Address (Street Number/Name) 27 HASTINGS PARK DR.	Municipality BELLEVILLE	Province ON	Postal Code K8P5G4
		Telephone No. (inc. area code) 613 921 2645	

Well Location

Address of Well Location (Street Number/Name) 65 SANDY COVE DR.	Township ROSSMORE/AMELIABURGH	Lot PT 5	Concession 1
County/District/Municipality PRINCE EDWARD COUNTY	City/Town/Village BELLEVILLE	Province Ontario	Postal Code K8N4Z7
UTM Coordinates NAD 83 18 314 901 4890086	Municipal Plan and Sublot Number 49R2806	Other	

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	To
BLACK	TOPSOIL			0	.3
BROWN	CLAY			.3	1.3
BLUE	LIMESTONE			1.3	6.91

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

Method of Construction		Well Use	
☐ Cable Tool	☐ Diamond	☐ Public	☐ Commercial
☐ Rotary (Conventional)	☐ Jetting	☒ Domestic	☐ Municipal
☐ Rotary (Reverse)	☐ Driving	☐ Livestock	☐ Test Hole
☐ Boring	☒ Digging	☐ Irrigation	☐ Cooling & Air Conditioning
☐ Air percussion		☐ Industrial	
☐ Other, specify		☐ Other, specify	

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From	To	
90	CONCRETE	7.6	0	6.91	☒ Water Supply
					☐ Replacement Well
					☐ Test Hole
					☐ Recharge Well
					☐ Dewatering Well
					☐ Observation and/or Monitoring Hole
					☐ Alteration (Construction)
					☐ Abandoned, Insufficient Supply
					☐ Abandoned, Poor Water Quality
					☐ Abandoned, other, specify
					☐ Other, specify

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

☐ Insufficient Supply

☐ Abandoned, Poor Water Quality

☐ Abandoned, other, specify

☐ Other, specify

Water Details		Hole Diameter	
Water found at Depth (m/ft) ☐ Gas ☐ Other, specify	Kind of Water: ☒ Fresh ☐ Untested	Depth (m/ft) From	To
Water found at Depth (m/ft) ☐ Gas ☐ Other, specify	Kind of Water: ☐ Fresh ☐ Untested		
Water found at Depth (m/ft) ☐ Gas ☐ Other, specify	Kind of Water: ☐ Fresh ☐ Untested		

Business Name of Well Contractor FRANK'S DRILLING & BLASTING LTD		Well Contractor's Licence No. 0181811
Business Address (Street Number/Name) P.O. BOX 100		Municipality NEWBURGH
Province ONT	Postal Code K8K2S0	Business E-mail Address info@fdbltd.com
Bus. Telephone No. (inc. area code) 613 378 2178		
Name of Well Technician (Last Name, First Name) FAER, GREG		
Well Technician's Licence No. 2161013	Signature of Technician and/or Contractor	Date Submitted 2023/08/14

Results of Well Yield Testing			
After test of well yield, water was: ☒ Clear and sand free ☐ Other, specify		Draw Down	
If pumping discontinued, give reason:		Time (min)	Water Level (m/ft)
Pump intake set at (m/ft) 6.91		Static Level	4.24
Pumping rate (l/min / GPM) 675		1	1
Duration of pumping hrs + 60 min		2	2
Final water level end of pumping (m/ft) 6.76		3	3
If flowing give rate (l/min/GPM)		4	4
Recommended pump depth (m/ft) 6.91		5	5
Recommended pump rate (l/min/GPM) 28		10	10
Well production (l/min/GPM)		15	15
Disinfected? ☒ Yes ☐ No		20	20
		25	25
		30	30
		40	40
		50	50
		60	60

Map of Well Location	
Please provide a map below following instructions on the back.	
Comments:	
Well owner's information package delivered ☒ Yes ☐ No	Date Package Delivered 2023/08/14
Date Work Completed 2023/08/24	Ministry Use Only
	Audit No. 2407648
	Received

APPENDIX C

MECP Water Well Summary Records



ASC Environmental Inc.
1305 Princess Street,
Kingston, ON K7M 3E3
Tel: (613) 634-5596

Well # 3
UTM 18Z 315155E
5R 4889952N
Elev. 5R 20250



31C3W

GROUND WATER BRANCH

MAR 53 No. 278

ONTARIO WATER
RESOURCES COMMISSION

The Ontario Water Resources Commission Act

WATER WELL RECORD

Basin 24 Prince Edward Township, ~~Ameliasburg~~ Ameliasburg
County or District
Con. 2 Lot 48 Date completed 26 2 1964
(day month year)
Address Belleville R.R. 7

Casing and Screen Record

Inside diameter of casing 6 1/4"
Total length of casing 6'
Type of screen none
Length of screen none
Depth to top of screen none
Diameter of finished hole 6 1/4"

Pumping Test

Static level 2'
Test-pumping rate 2 G.P.M.
Pumping level dry
Duration of test pumping 1 hr.
Water clear or cloudy at end of test clear
Recommended pumping rate 2 G.P.M.
with pump setting of 20' feet below ground surface

Well Log

Overburden and Bedrock Record

	From ft.	To ft.
Clay	0'	2'
Shale Limestone	2'	5'
Soft Limestone	5'	23'

Water Record

Depth(s) at which water(s) found	Kind of water (fresh, salty, sulphur)
5'	fresh

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

Tenting Area

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

Drilling or Boring Firm Thos Donaldson

Address 56 Holmes Rd. Belleville

Licence Number 1306

Name of Driller or Borer Florn Donaldson

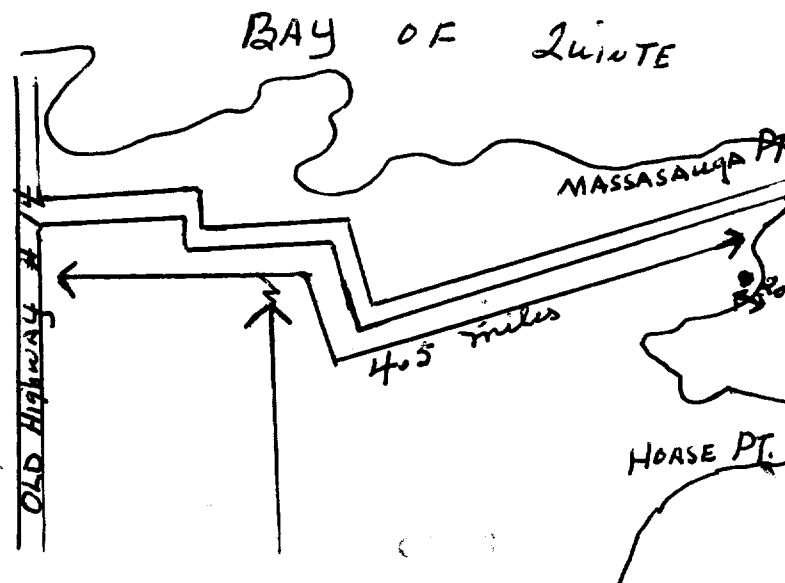
Address Belleville R.R. 5

Date February 26th. 1964

Thos Donaldson
(Signature of Licensed Drilling or Boring Contractor)

Location of Well

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





Ministry
of the
Environment

Ontario

The Ontario Water Resources Act

WATER WELL RECORD

1. PRINT ONLY IN SPACES PROVIDED
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11

5304364

53001

CON

102

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON. BLOCK, TRACT, SURVEY, ETC.	LOT
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET	
				FROM	TO
Brown	earth			0	3
Brown	limestone		shale	3	11
Blue	limestone			11	75
Grey	limestone			75	104
Blue	limestone			104	173

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

41	WATER RECORD
WATER FOUND AT - FEET	KIND OF WATER
10-13	1 ☐ FRESH 3 ☐ SULPHUR
15-18	2 ☒ SALTY 4 ☐ MINERAL
20-23	1 ☐ FRESH 3 ☐ SULPHUR
25-28	2 ☐ SALTY 4 ☐ MINERAL
30-33	1 ☐ FRESH 3 ☐ SULPHUR
34-40	2 ☐ SALTY 4 ☐ MINERAL

51	CASING & OPEN HOLE RECORD		
INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET
10-11	1 ☒ STEEL	2 ☐ GALVANIZED	FROM TO
12-16	3 ☐ CONCRETE	4 ☐ OPEN HOLE	13-16
17-18	1 ☐ STEEL	2 ☐ GALVANIZED	19-20
21-23	3 ☐ CONCRETE	4 ☐ OPEN HOLE	24-25
26-27	1 ☐ STEEL	2 ☐ GALVANIZED	28-30
31-32	3 ☐ CONCRETE	4 ☐ OPEN HOLE	

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

61	PLUGGING & SEALING RECORD
DEPTH SET AT - FEET	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)
FROM TO	
10-13	2 annular cement grout
14-17	
18-21	173 filled in
22-25	
26-29	
30-33	
34-40	

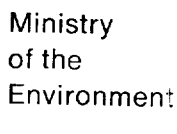
71	PUMPING TEST	
PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☐ BAILER	GPM	15-16 HOURS 17-18 MINS
STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING
19-21	22-24	15 MINUTES 26-28 30 MINUTES 29-31 45 MINUTES 32-34 60 MINUTES 35-37
FEET	FEET	FEET
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☐ CLEAR 2 ☐ CLOUDY
RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☐ DEEP	FEET	GPM

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

LOCATION OF WELL
IN DIAGRAM BELOW, SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE. INDICATE NORTH BY ARROW.
DRILLERS REMARKS #1 well

CONTRACTOR	NAME OF WELL CONTRACTOR	LICENCE NUMBER
	JACK KNOX	3202
	ADDRESS	
	Shenburnie Ontario	
	NAME OF DRILLER OR BORER	LICENCE NUMBER
	Arnold Munro	3745
	SIGNATURE OF CONTRACTOR	SUBMISSION DATE
		DAY MO. YR.

OFFICE USE ONLY	DATA SOURCE	CONTRACTOR	DATE RECEIVED
		3202	29 01 85
	DATE OF INSPECTION	INSPECTOR	
	REMARKS		
	WDE		



5304687

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COUNTY OR DISTRICT		TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE		CON., BLOCK, TRACT, SURVEY, ETC.		LOT	
Prince Edward		Ameliasburgh		II		49 & 50	
R.R.#7 Belleville						DATE COMPLETED	
						48 53	
						DAY 3 MO 3 YR 87	
ING		RC	ELEVATION	RC	BASIN CODE		

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

[illegible]

31

32

10 14 15 21 32 42

41	WATER RECORD			
WATER FOUND AT - FEET	KIND OF WATER			
10-13	1 ☐ FRESH	3 ☒ SULPHUR	7.5	
61	2 ☐ SALTY	4 ☐ MINERAL		
15-18	1 ☐ FRESH	3 ☐ SULPHUR	10	
	2 ☐ SALTY	4 ☐ MINERAL		
20-23	1 ☐ FRESH	3 ☐ SULPHUR	2.4	
	2 ☐ SALTY	4 ☐ MINERAL		
25-28	1 ☐ FRESH	3 ☐ SULPHUR	2.9	
	2 ☐ SALTY	4 ☐ MINERAL		
30-33	1 ☐ FRESH	3 ☐ SULPHUR	3.4	
	2 ☐ SALTY	4 ☐ MINERAL		

51 CASING & OPEN HOLE RECORD					
INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET		
			FROM	TO	
10-11	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	22	
17-18	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		22	64	
24-25	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE				

SCREEN	SIZE(S) OF OPENING (SLOT NO.)	DIAMETER	LENGTH
	31-33	34-38	39-40
	INCHES		
MATERIAL AND TYPE	DEPTH TO TOP OF SCREEN		FEET
		41-44	10
		FEET	

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

PUMPING TEST	PUMPING TEST METHOD		PUMPING RATE		DURATION	
	1 ☐ PUMP 2 ☒ BAILER		25 GPM		1 15-14 HOURS 0 17-18 MINS	
	STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING			1 ☒ PUMPING 2 ☐ RECOVERY
	19-21	22-24	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
	20 FEET	28 FEET	26-28 FEET	28 FEET	28 FEET	35-37 FEET
	IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST			
38-41 GPM		FEET		1 ☒ CLEAR 2 ☐ CLOUDY		
RECOMMENDED PUMP TYPE		RECOMMENDED PUMP SETTING		RECOMMENDED PUMPING RATE		
☐ SHALLOW ☒ DEEP		55 FEET		25 GPM		

54 FINAL STATUS OF WELL	1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL	☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED
55-56 WATER USE	1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL ☐ OTHER _____	5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING ☐ NOT USED
57 METHOD OF DRILLING	1 ☒ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION	1 ☐ BORING 2 ☐ DIAMOND 3 ☐ JETTING 4 ☐ DRIVING

LOCATION OF WELL

IN DIAGRAM BELOW SHOW DISTANCES OF WELL FROM ROAD AND LOT LINE INDICATE NORTH BY ARROW

HWY 62

0.7 mi.

CTY RD. 28

UPPER MASSACHUSETTS RD.

3.5 mi.

2 mi.

100'

DRILLERS REMARKS:

05234

CONTRACTOR	NAME OF WELL CONTRACTOR		LICENCE NUMBER	
	CHALK WELL DRILLING LTD.		1507	
	ADDRESS			
	P. P. #6 Nananee			
CONTRACTOR	NAME OF DRILLER OR BORE		LICENCE NUMBER	
	R. Ian Chalk		T-0047	
	SIGNATURE OF CONTRACTOR		SUBMISSION DATE	
	CHALK WELL DRILLING LTD.		DAY 3 MO. 3 YR. 82	

OFFICE USE ONLY	DATA SOURCE	58 CONTRACTOR	59-62	DATE RECEIVED	43 RD	87
	DATE OF INSPECTION		INSPECTOR		FEB 03 1988	
 CSS.ES						



The Ontario Water Resources Act

WATER WELL RECORD

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

192

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot
	Ameliasburgh	II	8
	Address	Date completed	
	Box # 3, Bellville Ont	day 21 month 01 year 98	

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

[illegible]

31

32

41		10 11 12 13 14 15 16 17 18 19 20 21				WATER RECORD	
Water found at - feet		Kind of water					
10-13	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas	14				
15-18	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas	19				
20-23	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas	24				
25-28	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas	29				
30-33	1 ☐ Fresh 2 ☐ Salty	3 ☐ Sulphur 4 ☐ Minerals 5 ☐ Gas	34				

51 CASING & OPEN HOLE RECORD				
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
10-11 6 1/4	1 ☒ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	12 .188	0	13-16 6'4"
17-18 6	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☒ Open hole 5 ☐ Plastic	19	6	20-23 135
24-25	1 ☐ Steel 2 ☐ Galvanized 3 ☐ Concrete 4 ☐ Open hole 5 ☐ Plastic	26		27-30

SCREEN	Sizes of opening (Slot No.)	31-33	Diameter	34-36	Length	39-41
			inches		feet	
	Material and type			Depth at top of screen	41-44	35
				feet		

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

71	Pumping test method		Pumping rate		Duration of pumping	
	☐ Pump ☒ Bailer		1		11-14 GPM 1 Hours 0 Mins	
	Static level		Water level end of pumping		25 Water levels during	
	☐ Pumping ☐ Recovery		15 minutes 30 minutes 45 minutes 60 minutes		19-21 22-24 25-28 29-31 32-34 35-37	
	35 feet		135 feet		feet feet feet feet	
PUMPING TEST	If flowing give rate		Pump intake set at		Water at end of test	
	38-41 GPM		feet		42	
	☐ Clear ☐ Cloudy		☐ Clear ☐ Cloudy		☐ Clear ☐ Cloudy	
Recommended pump type		Recommended pump setting		Recommended pump rate		
☐ Shallow ☐ Deep		feet		43-45 46-49 GPM		

FINAL STATUS OF WELL

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

WATER USE 55-56

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

METHOD OF CONSTRUCTION 57

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

LOCATION OF WELL

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

LOWR MASSACHUSETTS RD

SUNRISE DRIVE

0.1 km

75'

0

30'

LOT LINE

180450

Name of Well Contractor	Well Contractor's Licence No.	58	Contractor	59-62	Date received	63-68
CHALK WELL DRILLING LTD.	1507		1507		MAR 09 1998	
Address			Date of inspection	Inspector		
R. R. # 6 Napanee						
Name of Well Technician	Well Technician's Licence No.		Remarks			
Kevin Chalk	T 0627					
Signature of Technician/Contractor	Submission date					
CHALK WELL DRILLING LTD.	day 21 mo 01 yr 98					



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

Municipality **53001** Con. **CON** **02**

County or District	Township/Borough/City/Town/Village Ameliasburgh	Con block tract survey, etc. II	Lot 8
	Address R. R. # 7, Belleville, Ont.	Date completed 2 day 2 month 98 year	

[illegible][illegible]

31

32

41		10		14		15		21	
WATER RECORD									
Water found at - feet				Kind of water					
10-13				1	☐ Fresh	3	☐ Sulphur	11	
				2	☐ Salty	4	☐ Minerals		
DRY						6	☐ Gas		
15-18				1	☐ Fresh	3	☐ Sulphur	19	
				2	☐ Salty	4	☐ Minerals		
						6	☐ Gas		
20-23				1	☐ Fresh	3	☐ Sulphur	24	
				2	☐ Salty	4	☐ Minerals		
						6	☐ Gas		
23-28				1	☐ Fresh	3	☐ Sulphur	29	
				2	☐ Salty	4	☐ Minerals		
						6	☐ Gas		
30-33				1	☐ Fresh	3	☐ Sulphur	34	
				2	☐ Salty	4	☐ Minerals		
						6	☐ Gas		

CASING & OPEN HOLE RECORD				
51	52			
Inside diam inches	Material	Wall thickness inches	Depth - feet	
			From	To
10-11	☒ 1 Steel ☐ 2 Galvanized ☐ 3 Concrete ☐ 4 Open hole ☐ 5 Plastic	12		13-16
6 1/4"		.188	0	5
17-18	☐ 1 Steel ☐ 2 Galvanized ☐ 3 Concrete ☒ 4 Open hole ☐ 5 Plastic	19		20-23
6"			4	128
24-25	☐ 1 Steel ☐ 2 Galvanized ☐ 3 Concrete ☐ 4 Open hole ☐ 5 Plastic	26		27-30

SCREEN	54	63	72	81	90		
	SIZES OF OPENING (Slot No.)		31-33	Diameter	34-38	Length	39-44
				inches		feet	
	Material and type			Depth at top of screen			35
							feet

61	PLUGGING & SEALING RECORD			
☐ Annular space		☐ Abandonment		
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)		
From	To			
10-13	14-17			
18-21	22-25			
26-29	30-33			
	80			

71	Pumping test method		10	Pumping rate		11-14	Duration of pumping		15-16	17-18
	☐ Pump ☐ Bailer					GPM	 Hours Mins			
	Static level		25	Water levels during		☐ Pumping ☐ Recovery				
	19-21 Water level end of pumping		22-24	15 minutes 26-28 30 minutes 29-31		45 minutes 32-34 60 minutes 35-37				
	feet		feet	feet		feet		feet		feet
If flowing give rate			38-41	Pump intake set at			Water at end of test			42
GPM				feet			☐ Clear ☐ Cloudy			
Recommended pump type				Recommended pump setting			Recommended pump rate			46-49
☐ Shallow ☐ Deep				feet						GPM

FINAL STATUS OF WELL

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

WATER USE 55-56

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

METHOD OF CONSTRUCTION 5/

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

LOCATION OF WELL

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

Diagram illustrating the location of a well relative to Lower Mission Rd and Sunrise Drive.

The diagram shows a rectangular lot bounded by Lower Mission Rd (top) and Sunrise Drive (left). The well is located within the lot, with distances of 15' and 18' indicated from the lot lines. A north arrow points towards the upper right.

180453

Name of Well Contractor	Well Contractor's Licence No.
CHALK WELL DRILLING LTD.	1507
Address	
R. R. # 6, Napanee, Ontario	
Name of Well Technician	Well Technician's Licence No.
K. Chalk	T-0627
Signature of Technician/Contractor	Submission date
CHALK WELL DRILLING LTD.	da 2 mo 98

MINISTRY USE ONLY	Data source	58	Contractor	59-62	Date received	63-68
	1507		MAR 09 1998			
Date of inspection			Inspector			
Remarks						

Ministry of
Environment
and Energy

The Ontario Water Resources Act WATER WELL RECORD

Mark correct box with a checkmark, where applicable.

11

5306437
#3

Municipality
53001

Con.
CON

02

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot
	Ameliasburgh	II	8
	Address	Date completed	
	R. R. # 7, Belleville, Ont.	10 day 02 month 98 year	

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

[illegible][illegible]

41		10				15				21			
WATER RECORD													
Water found at - feet		Kind of water											
DRY	10-13	1	☐ Fresh	3	☐ Sulphur	14							
		2	☐ Salty	4	☐ Minerals								
	15-18	1	☐ Fresh	3	☐ Sulphur	19							
		2	☐ Salty	4	☐ Minerals								
	20-23	1	☐ Fresh	3	☐ Sulphur	24							
		2	☐ Salty	4	☐ Minerals								
	25-28	1	☐ Fresh	3	☐ Sulphur	29							
		2	☐ Salty	4	☐ Minerals								
	30-33	1	☐ Fresh	3	☐ Sulphur	34							
		2	☐ Salty	4	☐ Minerals								

CASING & OPEN HOLE RECORD					
Inside diam inches	Material	Wall thickness inches	Depth - feet		
			From	To	
10-11 6 1/4"	☒ Steel ☐ Galvanized ☐ Concrete ☐ Open hole ☐ Plastic	.188	0	5	
17-18 6"	☐ Steel ☐ Galvanized ☐ Concrete ☒ Open hole ☐ Plastic		5	125	
24-25	☐ Steel ☐ Galvanized ☐ Concrete ☐ Open hole ☐ Plastic				

SCREEN	Sizes of opening (Slot No.)	31-33	Diameter	34-38	Length	39-40
			inches		feet	
	Material and type	Depth at top of screen			30	
					feet	

61		PLUGGING & SEALING RECORD	
☐ Annular space		☐ Abandonment	
Depth set at - feet		Material and type (Cement grout, bentonite, etc.)	
From	To		
10-15	14-17		
18-21	22-25		
26-29	30-33	80	

71	Pumping test method		10		Pumping rate		11-14		Duration of pumping		15-18	
	1 ☐ Pump 2 ☐ Bailer						GPM				Hours Mins	
	Static level		25		Water levels during		1 ☐ Pumping		2 ☐ Recovery			
	19-21		22-24		15 minutes		30 minutes		45 minutes		60 minutes	
					26-28		29-31		32-34		35-37	
	feet		feet		feet		feet		feet		feet	
PUMPING TEST	If flowing give rate		38-41		Pump intake set at				Water at end of test		42	
	GPM				feet				☐ Clear ☐ Cloudy			
	Recommended pump type				Recommended pump setting		43-45		Recommended pump rate		46-49	
	☐ Shallow ☐ Deep				feet						GPM	

FINAL STATUS OF WELL			54
1 ☒ Water supply	5 ☐ Abandoned, insufficient supply	9 ☐ Unfinished	
2 ☐ Observation well	6 ☐ Abandoned, poor quality	10 ☐ Replacement well	
3 ☐ Test hole	7 ☐ Abandoned (Other)		
4 ☐ Recharge well	8 ☐ Dewatering		

WATER USE			55-56
1 ☒ Domestic	5 ☐ Commercial	9 ☐ Not used	
2 ☐ Stock	6 ☐ Municipal	10 ☐ Other	
3 ☐ Irrigation	7 ☐ Public supply		
4 ☐ Industrial	8 ☐ Cooling & air conditioning		

METHOD OF CONSTRUCTION			57
1 ☒ Cable tool	5 ☐ Air percussion	9 ☐ Driving	
2 ☐ Rotary (conventional)	6 ☐ Boring	10 ☐ Digging	
3 ☐ Rotary (reverse)	7 ☐ Diamond	11 ☐ Other	
4 ☐ Rotary (air)	8 ☐ Jetting		

LOCATION OF WELL

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

Diagram illustrating the location of a well relative to a road and lot lines.

The road is labeled **LOWER MASSACHUSETTS RD.** and **SUNRISE DRIVE**.

The lot line is labeled **LOT LINE**.

The well is located at a distance of **35'** from the bottom lot line and **60'** from the right lot line.

A north arrow points towards the top right.

The distance from the road to the lot line is marked as **1.4 KM**.

180459

Name of Well Contractor CHALK WELL DRILLING LTD.	Well Contractor's Licence No. 1507
Address R. R. # 6, Napanee, Ontario	
Name of Well Technician Kevin Chalk	Well Technician's Licence No. T-0627
Signature of Technician/Contractor CHALK WELL DRILLING LTD.	Submission date 10 mo 02 yr 98

MINISTRY USE ONLY	Data source	58	Contractor	59-62	Date received	63-68	69
			1507		MAR 09 1998		
	Date of inspection		Inspector				
	Remarks						



Well Tag **A 024651** per below

Well Record
Regulation 903 Ontario Water Resources Act
page **1** of **1**

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

Well Owner's Information and Location of Well Information

										Ministry Use Only															
MUN						CON										LOT									

Prince Mowat

Ameliasburgh

PC. 475 | Dian

RR#/Street Number/Name
Sunrise Drive

City/Town/Village
Belleville

Site/Compartment/Block/Tract etc.
Reg Plan 47R-7890 Pt. 1

GPS Reading

NAD

Zone

Easting

Northing

Unit Make/Model

Mode of Operation:	
--------------------	--

☐ Undifferentiated

X Averaged

83

18

314481

4889827

Garmin ETREX

☐ Differentiated, specify _____

	09	18	31	47	64	100	222	7
Log of Overburden and Bedrock Materials (see instructions)								

[illegible]

Hole Diameter			Construction Record				Test of Well Yield					
Depth	Metres	Diameter	Inside diam centimetres	Material	Wall thickness centimetres	Depth		Pumping test method	Draw Down		Recovery	
From	To	Centimetres				From	To		Time min	Water Level Metres	Time min	Water Level Metres
0	6	25.4	15.8	☒ Steel ☐ Fibreglass	.48	0	6.7	Pump intake set at - (metres) 20.0	Static Level	7.0		10.0
6	21.3	15.5		☐ Plastic ☐ Concrete				Pumping rate - (litres/min) 36	1	7.8	1	9.1
				☐ Galvanized				Duration of pumping 1 hrs + 0 min	2	8.1	2	8.7
Water Record												
Water found at _____ Metres / Kind of Water												
19.8 Untested												
☐ Gas ☐ Salty ☐ Sulphur												
☐ Other: _____												
☐ m ☐ Fresh ☐ Sulphur												
☐ Gas ☐ Salty ☐ Minerals												
☐ Other: _____												
☐ m ☐ Fresh ☐ Sulphur												
☐ Gas ☐ Salty ☐ Minerals												
☐ Other: _____												
After test of well yield, water was												
☒ Clear and sediment free												
☐ Other, specify _____												
Chlorinated ☒ Yes ☐ No												

Plugging and Sealing Record			☒ Annular space	☐ Abandonment
Depth set at - Metres		Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)	
From	To			
6	0	Bentonite	.20	

Method of Construction			
☐ Cable Tool	☒ Rotary (air)	☐ Diamond	☐ Digging
☐ Rotary (conventional)	☐ Air percussion	☐ Jetting	☐ Other
☐ Rotary (reverse)	☐ Boring	☐ Driving	

Water Use

☒ Domestic ☐ Industrial ☐ Public Supply ☐ Other

☐ Stock ☐ Commercial ☐ Not used

☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning

Final Status of Well			
☒ Water Supply	☐ Recharge well	☐ Unfinished	☐ Abandoned, (Other)
☐ Observation well	☐ Abandoned, insufficient supply	☐ Dewatering	
☐ Test Hole	☐ Abandoned, poor quality	☐ Replacement well	

Well Contractor/Technician Information			
Name of Well Contractor CHALK WELL DRILLING LTD.		Well Contractor's Licence No. 1507	
Business Address (street name, number, city etc.) R. R. # 5, Napanee, Ontario			
Name of Well Technician (last name, first name) Kevin Chalk		Well Technician's Licence No. T-0627	
Signature of Technician/Contractor x CHALK WELL DRILLING LTD.		Date Submitted YYYY MM DD 2006 03 15	

Location of Well		
In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.		
Audit No.	z 23808	
Date Well Completed	YYYY	MM DD
	2006	03 15
Was the well owner's information	☒ Yes ☐ No	
Date Delivered	YYYY	MM DD
	2006	03 15

Ministry Use Only	
Data Source	Contractor
Date Received	1507
YYYY MM DD	YYYY MM DD
JUL 11 2006	
Remarks	Well Record Number

Instructions for Completing Form

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

Ministry Use Only

Well Owner's Information and Location of Well

County/District/Municipality: **PRINCE EDWARD** Township: **AMELIA BURK** Lot: **PART 4 OF 455** Concession: **HASLETTS PLAN**

RR#/Street Number/Name: **168 SUNRISE DRIVE** City/Town/Village: **PRINCE EDWARD** Site/Compartment/Block/Tract etc.

GPS Reading: NAD **83** Zone **18** Easting **314977** Northing **4889674** Unit Make/Model: **GARMIN RINO** Mode of Operation: ☒ Undifferentiated ☐ Averaged ☐ Differentiated, specify _____

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth From	Metres To
BROWN	TOP SOIL	STONES	18cm FROZEN 22 SOFT	0	40
BROWN	SHALE		HAZARD	40.	2.60
GREY	LIMESTONE			2.60	10.90

Hole Diameter			Construction Record				Test of Well Yield					
Depth From	Metres To	Diameter Centimetres	Inside diam centimetres	Material	Wall thickness centimetres	Depth From	Metres To	Pumping test method	Draw Down Time min	Water Level Metres	Recovery Time min	Water Level Metres
0	6	21.90	15.23	Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized ☐	48.	0	6	Pump	Static Level	2.82		2.82
6	10.90							1	2.87	1	2.87	
10.90	15.23							2	2.90	2	2.82	
Water Record Water found at: 9.50 Metres / Kind of Water: ☒ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: _____ ☐ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: _____ ☐ m ☐ Fresh ☐ Sulphur ☐ Gas ☐ Salty ☐ Minerals ☐ Other: _____ After test of well yield, water was: ☐ Clear and sediment free ☐ Other, specify _____ Chlorinated: ☒ Yes ☐ No			Screen Outside diam: ☐ Steel ☐ Fibreglass ☐ Plastic ☐ Concrete ☐ Galvanized ☐ Slot No. _____ No Casing or Screen ☒ Open hole			Recommended pump rate: 156.50 (litres/min) Recommended pump depth: 10 metres If flowing give rate - (litres/min): _____ If pumping discontinued, give reason: _____						
Plugging and Sealing Record ☐ Annular space ☐ Abandonment Depth set at - Metres: From 6 To 0 Material and type (bentonite slurry, neat cement slurry) etc.: CEMENT SLURRY Volume Placed (cubic metres): 7 FT3			Location of Well In diagram below show distances of well from road, lot line, and building. Indicate north by arrow. 									
Method of Construction ☐ Cable Tool ☐ Rotary (air) ☐ Diamond ☐ Digging ☐ Rotary (conventional) ☐ Air percussion ☐ Jetting ☐ Other ☐ Rotary (reverse) ☐ Boring ☐ Driving			Water Use ☐ Domestic ☐ Industrial ☐ Public Supply ☐ Other ☐ Stock ☐ Commercial ☐ Not used ☐ Irrigation ☐ Municipal ☐ Cooling & air conditioning									
Final Status of Well ☒ Water Supply ☐ Recharge well ☐ Unfinished ☐ Abandoned, (Other) ☐ Observation well ☐ Abandoned, insufficient supply ☐ Dewatering ☐ Test Hole ☐ Abandoned, poor quality ☐ Replacement well			Ministry Use Only Data Source: _____ Contractor: 6005 Date Received: MAR 28 2007 Date of Inspection: _____ Remarks: _____ Well Record Number: _____									
Well Contractor/Technician Information Name of Well Contractor: PRINCE EDWARD WELL DRILLERS Well Contractor's Licence No.: 6005 Business Address (street name, number, city etc.): RR3 PICTON K0R2F0 Name of Well Technician (last name, first name): McKEE GLENNON Well Technician's Licence No.: 12826 Signature of Technician/Contractor: <i>[Signature]</i> Date Submitted: 2007 03 14			0506E (09/03) Contractor's Copy ☐ Ministry's Copy ☐ Well Owner's Copy ☐									



Instructions for Completing Form

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- Questions regarding completing this application can be directed to the Water Well Management Coordinator at 416-235-6203.
- All metre measurements shall be reported to 1/10th of a metre.
- Please print clearly in blue or black ink only.

Ministry Use Only

Address of Well Location (County/District/Municipality)		Township		Lot	Concession
PRINCE EDWARD		AMELIASTOWN		PART 3 OF 425	
RR#/Street Number/Name		City/Town/Village		Site/Compartment/Block/Tract etc.	
CIVIC #160 SUNRISE DR.				HASLETTS PLAN 1875	
GPS Reading	NAD	Zone	Easting	Northing	Unit Make/Model
	83	18	314899	4889688	GAIMIN
Mode of Operation:					☒ Undifferentiated ☐ Averaged
					☐ Differentiated, specify

Log of Overburden and Bedrock Materials (see instructions)

General Colour	Most common material	Other Materials	General Description	Depth	Metres
				From	To
BROWN	TOP SOIL	STONES	10 cm FROZEN 30 SOFT	0	50 cm
BROWN	SHALE		LAYERED	50 cm	1.60
GREY	LIMESTONE		HARD	1.60	13.90

Hole Diameter			Construction Record				Test of Well Yield			
Depth	Metres	Diameter	Inside diam	Material	Wall thickness	Depth	Metres	Pumping test method	Draw Down	Recovery
From	To	Centimetres	centimetres		centimetres	From	To		Time min	Water Level Metres
0	6	21.90						Pump A		
6	13.90	15.23						Pump intake set at - (metres) 13	Static Level	3.30
								Pumping rate - (litres/min) 64	1	3.82
								Duration of pumping 1 hrs + min	2	3.89
								Final water level end of pumping 3.89 metres	3	1.11
								Recommended pump type. ☐ Shallow ☒ Deep	4	1.11
								Recommended pump depth. 13 metres	5	1.11
								Recommended pump rate. 136.50 + (litres/min)	10	1.11
								If flowing give rate - (litres/min)	15	1.11
								If pumping discontinued, give reason.	20	1.11
									25	1.11
									30	1.11
									40	1.11
									50	1.11
									60	3.89

Plugging and Sealing Record			☒ Annular space ☐ Abandonment
Depth set at - Metres	Material and type (bentonite slurry, neat cement slurry) etc.	Volume Placed (cubic metres)	
6	0	CEMENT SLURRY	7.5 FT3

Method of Construction			
☒ Cable Tool	☐ Rotary (air)	☐ Diamond	☐ Digging
☐ Rotary (conventional)	☐ Air percussion	☐ Jetting	☐ Other
☐ Rotary (reverse)	☐ Boring	☐ Driving	

Water Use			
☒ Domestic	☐ Industrial	☐ Public Supply	☐ Other
☐ Stock	☐ Commercial	☐ Not used	
☐ Irrigation	☐ Municipal	☐ Cooling & air conditioning	

Final Status of Well			
☐ Water Supply	☐ Recharge well	☐ Unfinished	☐ Abandoned, (Other)
☐ Observation well	☐ Abandoned, insufficient supply	☐ Dewatering	
☐ Test Hole	☐ Abandoned, poor quality	☐ Replacement well	

Well Contractor/Technician Information	
Name of Well Contractor	Well Contractor's Licence No.
PRINCE EDWARD WELL DRILLERS	6005
Business Address (street name, number, city etc.)	
RR3 P.O. BOX 210	
Name of Well Technician (last name, first name)	Well Technician's Licence No.
McKEE GLENDON	72826
Signature of Technician/Contractor	Date Submitted
x Glendon McKee	2007 03 14

Location of Well	
In diagram below show distances of well from road, lot line, and building. Indicate north by arrow.	
Audit No.	Date Well Completed
Z 43380	2007 03 05
Was the well owner's information package delivered?	Date Delivered
☒ Yes ☐ No	2007 03 01

Ministry Use Only	
Data Source	Contractor
	6005
Date Received	Date of Inspection
MAR 28 2007	
Remarks	Well Record Number



Measurements recorded in: ☐ Metric ☐ Imperial

Well Tag No. *(Place Sticker and/or Print Below)*

A145656

Regulation 903 Ontario Water Resources Act

Page of

Address of Well Location (Street Number/Name) Same AS ABOVE				Township AMELIASBURG		Lot MASSASAUGA PT.		Concession	
County/District/Municipality PRINCE EDWARD				City/Town/Village		Province Ontario		Postal Code K8N 4J2	
UTM Coordinates				Municipal Plan and Sublot Number		Other			
Zone Easting Northing NAD 8 3 18 315043 48 89773									

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BROWN	TOP SOIL	STONES	SOFT	0	2
BROWN	SHALE		POROUS	2	5
GREY	LIMESTONE		HARD	5	100
			CEMENT	0	5
			$\frac{3}{8}$ HOLE PLUG	5	2
			OVERBURDEN	2	0

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

Method of Construction		Well Use		
☒ Cable Tool	☐ Diamond	☐ Public	☐ Commercial	☐ Not used
☐ Rotary (Conventional)	☐ Jetting	☐ Domestic	☐ Municipal	☐ Dewatering
☐ Rotary (Reverse)	☐ Driving	☐ Livestock	☐ Test Hole	☐ Monitoring
☐ Boring	☐ Digging	☐ Irrigation	☐ Cooling & Air Conditioning	
☐ Air percussion		☐ Industrial		
☐ Other, <i>specify</i> _____		☐ Other, <i>specify</i> <u>DRY</u>		

Construction Record - Casing					Status of Well
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		
			From	To	
6 ¹ / ₄	STEEL	188	0	20	☐ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, (Refuse to Use)
PULLED					

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

☐ Insufficient Supply

☐ Abandoned, Poor Water Quality

☐ Abandoned, other, specify Dry

☐ Other, specify _____

Water Details		Hole Diameter			
Water found at Depth _____ (m/ft) <u>ABANDONED</u>	Kind of Water: ☐ Fresh ☐ Untested <u>Gas</u> ☐ Other, specify _____	Depth (m/ft)	From	To	Diameter (cm/in)
Water found at Depth _____ (m/ft) <u>22</u>	Kind of Water: ☐ Fresh ☐ Untested <u>Gas</u> ☐ Other, specify _____		<u>0</u>	<u>20</u>	<u>8 5/8</u>
Water found at Depth _____ (m/ft) ☐ Gas ☐ Other, specify _____	Kind of Water: ☐ Fresh ☐ Untested		<u>20</u>	<u>100</u>	<u>6 1/4</u>

Well Contractor and Well Technician Information				
Business Name of Well Contractor			Well Contractor's Licence No.	
PRINCE EDWARD DRILLERS			6005	
Business Address (Street Number/Name)			Municipality	
22 JOHNSON ST PICTON				
Province	Postal Code	Business E-mail Address		
ONT	K0K2T0			
Bus. Telephone No. (inc. area code)		Name of Well Technician (Last Name, First Name)		
6134765457		MCKEE GLENDON		
Well Technician's Licence No.	Signature of Technician and/or Contractor		Date Submitted	
2826	Glendon McKee		2014 0723	

Results of Well Yield Testing

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

Map of Well Location

Please provide a map below following instructions on the back.

SANDY COVE Pt.

210°

10°

SUNRISE Pt.

CR

Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
	Date Work Completed	Audit No. Z193178
☒ Yes ☐ No	20140625 20140715	AUG 01 2014 Received

Measurements recorded in: ☐ Metric ☐ Imperial

A145655

Address of Well Location (Street Number/Name) SAME AS ABOVE				Township AMELIASBURG		Lot MASSASAUGA PT.		Concession	
County/District/Municipality PRINCE EDWARD				City/Town/Village		Province Ontario		Postal Code K8N4Z3	
UTM Coordinates		Zone	Easting	Northing		Municipal Plan and Sublot Number		Other	
NAD		8	3	18	314960	4887643			

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
BROWN	TOP SOIL	STONES	SOFT	0	2
BROWN	SHALE		POROUS	2	6
GREY	LIMESTONE		HARD	6	190
			CEMENT	190	5
			3/8" HOLE, PLUG	5	3
			OVERBURDEN	3	0

Annular Space			
Depth Set at (m/ft)		Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
From	To		
		ABAN DONE	

Method of Construction		Well Use		
☒ Cable Tool	☐ Diamond	☐ Public	☐ Commercial	☒ Not used
☐ Rotary (Conventional)	☐ Jetting	☐ Domestic	☐ Municipal	☐ Dewatering
☐ Rotary (Reverse)	☐ Driving	☐ Livestock	☐ Test Hole	☐ Monitoring
☐ Boring	☐ Digging	☐ Irrigation	☐ Cooling & Air Conditioning	
☐ Air percussion		☐ Industrial		
☐ Other, <i>specify</i> _____		☐ Other, <i>specify</i> <u>DAY</u>		

Construction Record - Casing					Status of Well
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)		
			From	To	
6 1/4	STEEL	.188	0	20	☐ Water Supply ☐ Replacement Well ☐ Test Hole ☐ Recharge Well ☐ Dewatering Well ☐ Observation and/or Monitoring Hole ☐ Alteration (Construction) ☐ Abandoned, Insufficient Supply
	PULLED				

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

☐ Abandoned, Poor Water Quality

☐ Abandoned, other, specify dry

☐ Other, specify _____

Insufficient Supply

Water Details		Hole Diameter		
Water found at Depth _____ (m/ft) ☐ Gas ☐ Other, <i>specify</i> _____	Kind of Water: ☐ Fresh ☐ Untested	Depth (m/ft) From	To	Diameter (cm/in)
Water found at Depth _____ (m/ft) ☐ Gas ☐ Other, <i>specify</i> _____	Kind of Water: ☐ Fresh ☐ Untested	0	20	8 ³ / ₈
Water found at Depth _____ (m/ft) ☐ Gas ☐ Other, <i>specify</i> _____	Kind of Water: ☐ Fresh ☐ Untested	20	190	6 ¹ / ₄

Well Contractor and Well Technician Information									
Business Name of Well Contractor						Well Contractor's Licence No.			
PRINCE EDWARD WELL DRILLERS						6005			
Business Address (Street Number/Name)						Municipality			
22 JOHNSON ST. PICTON									
Province		Postal Code		Business E-mail Address					
ONT		K0K2T0							
Bus. Telephone No. (inc. area code)				Name of Well Technician (Last Name, First Name)					
6134765457				MCKEE GLENDON					
Well Technician's Licence No.		Signature of Technician and/or Contractor				Date Submitted			
2826		Glendon McKee				20140723			

Results of Well Yield Testing

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

Map of Well Location

Please provide a map below following instructions on the back.



SANDY
BAY
DR.

1790

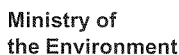
Synthesis of CA.

Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only
	Date Work Completed	

☒ Yes
☐ No

2014 06 25
 2014 07 10
 Audit No. Z 193176
 AUG 01 2014



Tag#: A155935

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: ☐ Metric ☒ Imperial

Page of

Well Owner's Information

First Name QUALITY MECHANICAL	Last Name / Organization	E-mail Address UNK			☐ Well Constructed by Well Owner
Mailing Address (Street Number/Name) 1806 Casey Road	Municipality Belleville	Province Ontario	Postal Code K8N 4Z6	Telephone No. (inc. area code) 613 969-8809	

Well Location

Address of Well Location (Street Number/Name) 210 Sunrise Drive				Township Ameliasburgh		Lot 4 & 5		Concession			
County/District/Municipality Prince Edward				City/Town/Village Prince Edward				Province Ontario		Postal Code UNK	
UTM Coordinates		Zone	Easting	Northing		Municipal Plan and Sublot Number				Other	
NAD 83		18	315188	4889650		Hasletts Plan (1975) Point A					

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
				From	To
Grey	Stones		Loose	0	1
Brown	Loam		Psaked	1	3
Grey	Limestone		Broken	3	5
Grey	Limetone		Hard	5	69

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m ³ /ft ³)
8.5	0	Bentonite	2.1

Method of Construction

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

Well Use

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

Construction Record - Casing

Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft)	
			From	To
6.25	Steel	.188	0	8.5

Status of Well

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

Construction Record - Screen

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

Water Details

Water found at Depth 12 (m/ft) ☐ Gas	Kind of Water: ☐ Fresh ☒ Untested ☐ Other, specify _____
Water found at Depth 64 (m/ft) ☐ Gas	Kind of Water: ☐ Fresh ☒ Untested ☐ Other, specify _____
Water found at Depth (m/ft) ☐ Gas	Kind of Water: ☐ Fresh ☐ Untested ☐ Other, specify _____

Hole Diameter

Depth (m/ft)		Diameter (cm/in)
From	To	
0	8.5	10"
8.5	69	6"

Well Contractor and Well Technician Information

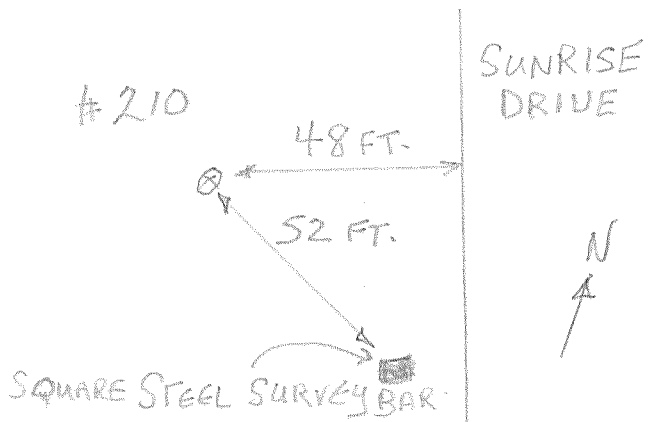
Business Name of Well Contractor Chalk Well Drilling Ltd.		Well Contractor's Licence No. 1 5 0 7	
Business Address (Street Number/Name) 31 Johnson's Side Road		Municipality Napanee	
Province Ontario	Postal Code K7R 3L1	Business E-mail Address chalkwel kos.net	
Bus. Telephone No. (inc. area code) 613 388-2809	Name of Well Technician (Last Name, First Name) Chalk, Kevin 		
Well Technician's Licence No. 0 6 2 7	Signature of Technician and/or Contractor Kevin Chalk	Date Submitted 2014 07 18	

Results of Well Yield Testing

After test of well yield, water was:	Draw Down		Recovery	
☒ Clear and sand free	Time (min)	Water Level (m/ft)	Time (min)	Water Level (m/ft)
☐ Other, <i>specify</i> _____	Static Level	. 6		1 2 . 6
If pumping discontinued, give reason:	1	2 . 7	1	9 . 9
Pump intake set at (m/ft) 6 6	2	3 . 7	2	7 . 8
Pumping rate (l/min / GPM) 5 g . p . m .	3	4 . 8	3	6 . 4
Duration of pumping 1 hrs + 0 min	4	5 . 6	4	5 . 0
Final water level end of pumping (m/ft) 1 2 . 6	5	6 . 4	5	4 . 1
If flowing give rate (l/min / GPM)	10	7 . 8	10	1 . 9
	15	8 . 4	15	1 . 3
	20	8 . 9	20	1 . 0
Recommended pump depth (m/ft) 6 5	25	9 . 4	25	. 8
Recommended pump rate (l/min / GPM) 5 g . p . m .	30	10 . 3	30	. 7
Well production (l/min / GPM) 5 g . p . m .	40	11 . 4	40	. 7
Disinfected?	50	12 . 0	50	. 6
☒ Yes ☐ No	60	12 . 6	60	. 6

Map of Well Location

Please provide a map below following instructions on the back.



Comments:

Well owner's information package delivered	Date Package Delivered	Ministry Use Only Audit No. z 179574 Received OCT 08 2014
	Date Work Completed	
☒ Yes ☐ No	2014 07 18 2014 07 18	



Measurements recorded in: ☐ Metric ☒ Imperial

Page of

Address of Well Location (Street Number/Name) 86 Sunrise		Township		Lot	Concession
County/District/Municipality Prince Edward County		City/Town/Village Belleville		Province Ontario	Postal Code
UTM Coordinates Zone Easting Northing NAD 83 18 31 1456 9488918118		Municipal Plan and Sublot Number P+ Lt 4-5 Hasletts pl p10nt APT 3 47A3983		Other	

Overburden and Bedrock Materials/Abandonment Sealing Record (see instructions on the back of this form)					
General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft)	
Brown	Muck		loose	0	4
Grey	Shale			4	9
Grey	limestone			9	64'

Annular Space			Results of Well Yield Testing			
Depth Set at (m/ft)	Type of Sealant Used (Material and Type)	Volume Placed (m³/ft³)	After test of well yield, water was: ☒ Clear and sand free ☐ Other, specify		Draw Down	
0 20	3/8 Holeplug		If pumping discontinued, give reason:		Time (min)	Water Level (m/ft)
			Pump intake set at (m/ft) 55		Static Level	
			Pumping rate (l/min / GPM) 5		1	23' 7"
			Duration of pumping 1 hrs + min		2	25' 2"
			Final water level end of pumping (m/ft) 40' 1"		3	26' 2"
			If flowing give rate (l/min / GPM)		4	27' 2"
			Recommended pump depth (m/ft) 55		5	28' 1"
			Recommended pump rate (l/min / GPM) 3		10	31' 4"
			Well production (l/min / GPM) 5		15	33' 6"
			Disinfected? ☒ Yes ☐ No		20	35' 2"
					25	36' 4"
					30	37' 3"
					40	38' 6"
					50	39' 5"
					60	40' 1"

Method of Construction		Well Use		
☒ Cable Tool	☐ Diamond	☐ Public	☐ Commercial	☐ Not used
☐ Rotary (Conventional)	☐ Jetting	☒ Domestic	☐ Municipal	☐ Dewatering
☐ Rotary (Reverse)	☐ Driving	☐ Livestock	☐ Test Hole	☐ Monitoring
☐ Boring	☐ Digging	☐ Irrigation	☐ Cooling & Air Conditioning	
☐ Air percussion		☐ Industrial		
☐ Other, specify		☐ Other, specify		

Construction Record - Casing				Status of Well	
Inside Diameter (cm/in)	Open Hole OR Material (Galvanized, Fibreglass, Concrete, Plastic, Steel)	Wall Thickness (cm/in)	Depth (m/ft) From To	☒ Water Supply	
6 1/4	Steel	0.188	2' 5" 20	☐ Replacement Well	
				☐ Test Hole	
				☐ Recharge Well	
				☐ Dewatering Well	
				☐ Observation and/or Monitoring Hole	
				☐ Alteration (Construction)	
				☐ Abandoned, Insufficient Supply	
				☐ Abandoned, Poor Water Quality	
				☐ Abandoned, other, specify	
				☐ Other, specify	

Construction Record - Screen				Status of Well	
Outside Diameter (cm/in)	Material (Plastic, Galvanized, Steel)	Slot No.	Depth (m/ft) From To	☐ Water Supply	
				☐ Replacement Well	
				☐ Test Hole	
				☐ Recharge Well	
				☐ Dewatering Well	
				☐ Observation and/or Monitoring Hole	
				☐ Alteration (Construction)	
				☐ Abandoned, Insufficient Supply	
				☐ Abandoned, Poor Water Quality	
				☐ Abandoned, other, specify	
				☐ Other, specify	

Water Details		Hole Diameter	
Water found at Depth (m/ft) ☐ Gas ☒ Fresh ☐ Untested	Kind of Water: ☒ Fresh ☐ Untested	Depth (m/ft) From To	Diameter (cm/in)
57 (m/ft)		0 20	8 in
		20 64	6 1/2

Well Contractor and Well Technician Information			
Business Name of Well Contractor Holmes Hydrofracturing	Well Contractor's Licence No. 7141513		
Business Address (Street Number/Name) 1848 County rd 9	Municipality Napanee		
Province Ont	Postal Code K7R1B3	Business E-mail Address sean@holmeshydrofracturing.com	
Bus. Telephone No. (inc. area code) 613 539 2991	Name of Well Technician (Last Name, First Name) Holmes Sean		
Well Technician's Licence No. 3151619	Signature of Technician and/or Contractor	Date Submitted 2019/04/04	

Map of Well Location	
Please provide a map below following instructions on the back.	
Comments:	
Well owner's information package delivered ☒ Yes ☐ No	Date Package Delivered 2019/04/04
Date Work Completed 2019/04/04	Ministry Use Only
	Audit No. Z298593
	APR 04 2019
	Received

APPENDIX D

Test Well Drawdown and Recovery Data



ASC Environmental Inc.
1305 Princess Street,
Kingston, ON K7M 3E3
Tel: (613) 634-5596

Table 1. Water Quality Field Measurements.							
		Field Water Quality Analysis			Test Well:	TW1	
		Project No.:	ASC-972		Date:	16-Oct-24	
		Client:	Krystofer Destun		Recorded By:	T.C.	
		Location:	Sandy Cove Drive, Prince Edward County, ON				
		Started pumping 24 L/min at 7:20 am					
Pumping Test Elapsed Time (min)	Odour	Temperature (°C)	pH	Conductivity (µS)	Total Dissolved Solids (ppm)	Turbidity NTU	Chlorine (Total) (mg/L)
5	Sulphur	12	8.04	4000+	2000+	0	0.13
30	Sulphur	13.2	7.47	4000+	2000+	0	0.08
60	Sulphur	13.2	7.40	4000+	2000+	0	0.03
90	Sulphur	13.2	7.30	4000+	2000+	0	0.00
130	Sulphur	13.7	7.31	4000+	2000+	0	0.00
150	Sulphur	13.8	7.28	4000+	2000+	0	0.00
180	Sulphur	13.9	7.26	4000+	2000+	0	0.00
210	Sulphur	14.0	7.20	4000+	2000+	0	0.00
240	Sulphur	14.0	7.19	4000+	2000+	0	0.00
270	Sulphur	14.3	7.90	4000+	2000+	0	0.00
300	Sulphur	14.3	7.18	4000+	2000+	0	0.00
330	Sulphur	14.6	7.19	4000+	2000+	0	0.00
360	Sulphur	PUMP OFF					
Notes	1. Test well water circulated at 250 ppm chlorine residual for 120 minutes prior to pumping 2. Water was primarily clear with sulphur odour						
Field Analysis Equipment							
Chlorine :		Hach DR 900 Colorimeter					
Temp./pH/Cond./TDS :		Hanna Instruments HI98129					
Turbidity :		Hach DR 900 Colorimeter					

Table 2. Test Well drawdown during pumping test.

	Pumping Test - Drawdown			Test Well: TW1	
	Project No.:	ASC-972		Date:	16-Oct-2024
	Client:	Krystofer Destun		Recorded By: T.C.	
	Location:	Sandy Cove Drive, Prince Edward County, ON			
Pumping Rate (Q) (L/min)	Elapsed Time (ET) (min)	Well Level (WL) (m)	Drawdown (DD) (m)		
24	0	1.01	0.00		
24	1	1.01	0.00		
24	2	1.01	0.00		
24	3	1.02	0.01		
24	4	1.02	0.01		
24	5	1.02	0.01		
24	6	1.02	0.01		
24	7	1.02	0.01		
24	8	1.02	0.01		
24	9	1.03	0.02		
24	10	1.03	0.02		
24	15	1.03	0.02		
24	20	1.04	0.03		
24	25	1.05	0.04		
24	30	1.05	0.04		
24	35	1.06	0.05		
24	40	1.07	0.06		
24	45	1.08	0.07		
24	50	1.08	0.07		
24	60	1.10	0.09		
24	70	1.11	0.10		
24	80	1.12	0.11		
24	90	1.13	0.12		
24	100	1.15	0.14		
24	120	1.17	0.16		
24	140	1.20	0.19		
24	160	1.22	0.21		
24	180	1.25	0.24		
24	200	1.27	0.26		
24	225	1.30	0.29		
24	250	1.34	0.33		
24	275	1.37	0.36		
24	300	1.40	0.39		
24	350	1.47	0.46		
24	360	1.48	0.47		
TW1	(m)		L/min	m³/day	
Δs _{0-1min}	1.01	Q _{0-1min}	20.00	28.8	
Δs _{1-10min}	0.01	Q _{1-10min}	20.00	28.8	
Δs _{10-100min}	0.45	Q _{10-100min}	20.00	28.8	
Δs _{100-1000min}	0.62	Q _{100-1000min}	20.00	28.8	
	m²/day	m²/s			
T _{0-1min}	5.20	6.02E-05			
T _{1-10min}	369.18	4.27E-03			
T _{10-100min}	11.76	1.36E-04			
T _{100-1000min}	8.52	9.86E-05			
Notes					
1			Δs	Drawdown over one Log Cycle based on Trend Line	
Q	Volumetric Flow Rate		L/min	Litres per Minute	
T	Coefficient of Transmissivity		gpm	Gallon per Minute	

ASC Environmental Inc.
ASC-972, Krystofer Destun, Sandy Cove Drive,
Prince Edward County, ON

Figure 1. TW1 Pumping Test Drawdown

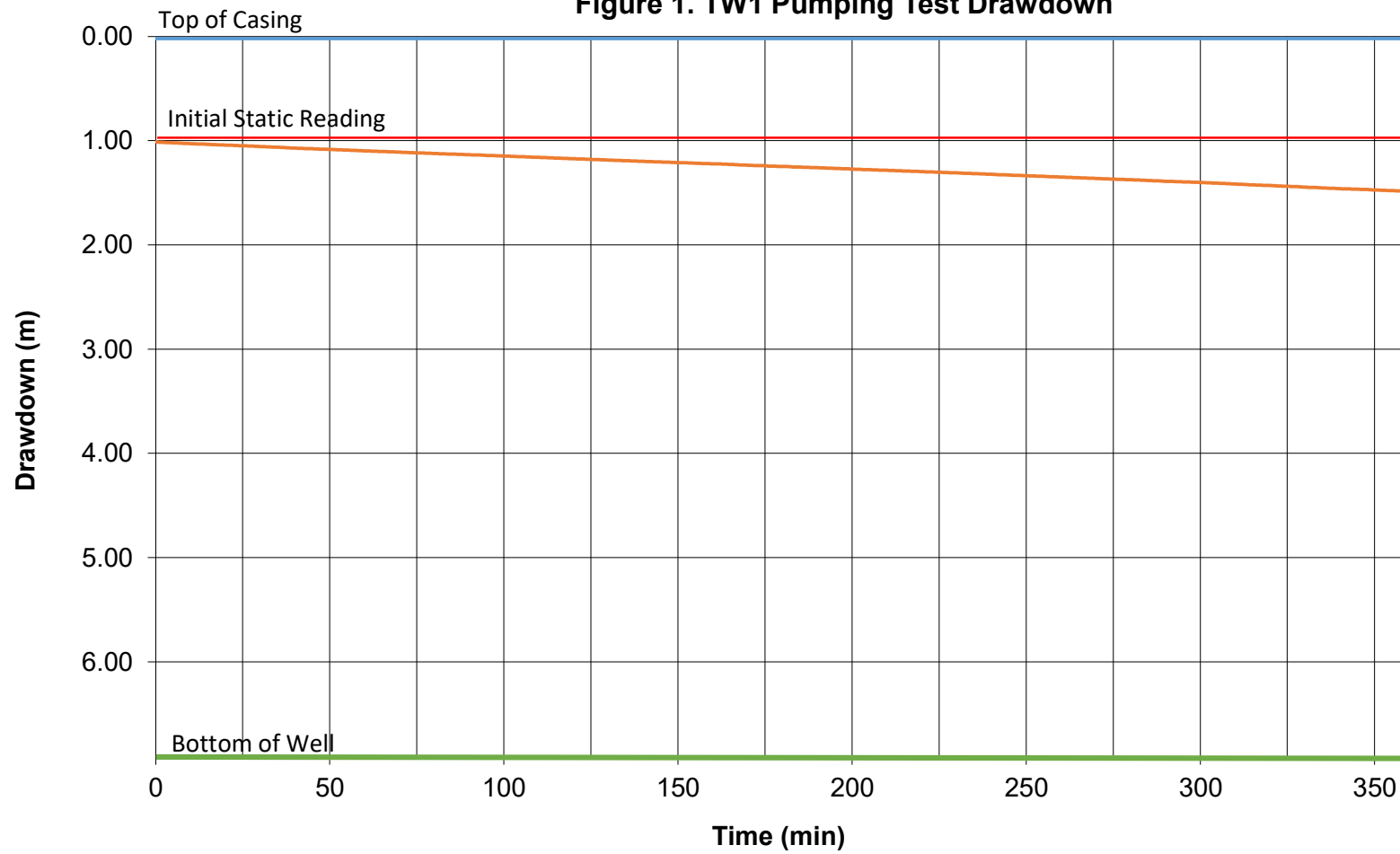


Table 3. Observation well drawdown during pumping test.											
			Pumping Test - Drawdown					Test Well:	TW1		
			Project No.:		ASC-972			Date:	16-Oct-2024		
			Client:		Krystofer Destun			Pumping start time			
			Location:		Sandy Cove Drive, Prince Edward County, ON			7 20	AM		
56 Sandy Cove Drive (OW1)					16 Sandy Cove Drive (OW2)						
WL	WL	DD	Time		ET	WL	WL	DD	Time		ET
(ft)	(m)	(m)	H:Min		(min)	(ft)	(m)	(m)	H:Min		(min)
8.661	2.64	0.000	7	10	0	7.644	2.33	0.000	7	3	0
8.661	2.64	0.000	8	35	75	7.644	2.33	0.000	8	29	69
8.661	2.64	0.000	9	41	141	7.644	2.33	0.000	9	36	136
8.661	2.64	0.000	10	30	190	7.644	2.33	0.000	10	26	186
8.661	2.64	0.000	11	35	255	7.644	2.33	0.000	11	30	250
8.629	2.63	-0.010	12	30	310	7.644	2.33	0.000	12	27	307
8.629	2.63	-0.010	15	0	460	7.644	2.33	0.000	13	55	395
Distance to Observation Wells (metres)											
56 Sandy Cove Drive (OW1)					240						
16 Sandy Cove Drive (OW2)					290						

ASC Environmental Inc.
ASC-972, Krystofer Destun, Sandy Cove Drive
Prince Edward County, ON
Figure 2. Pumping Test Influence on Neighbouring Wells
TW1 Pumping Test Zone of Influence

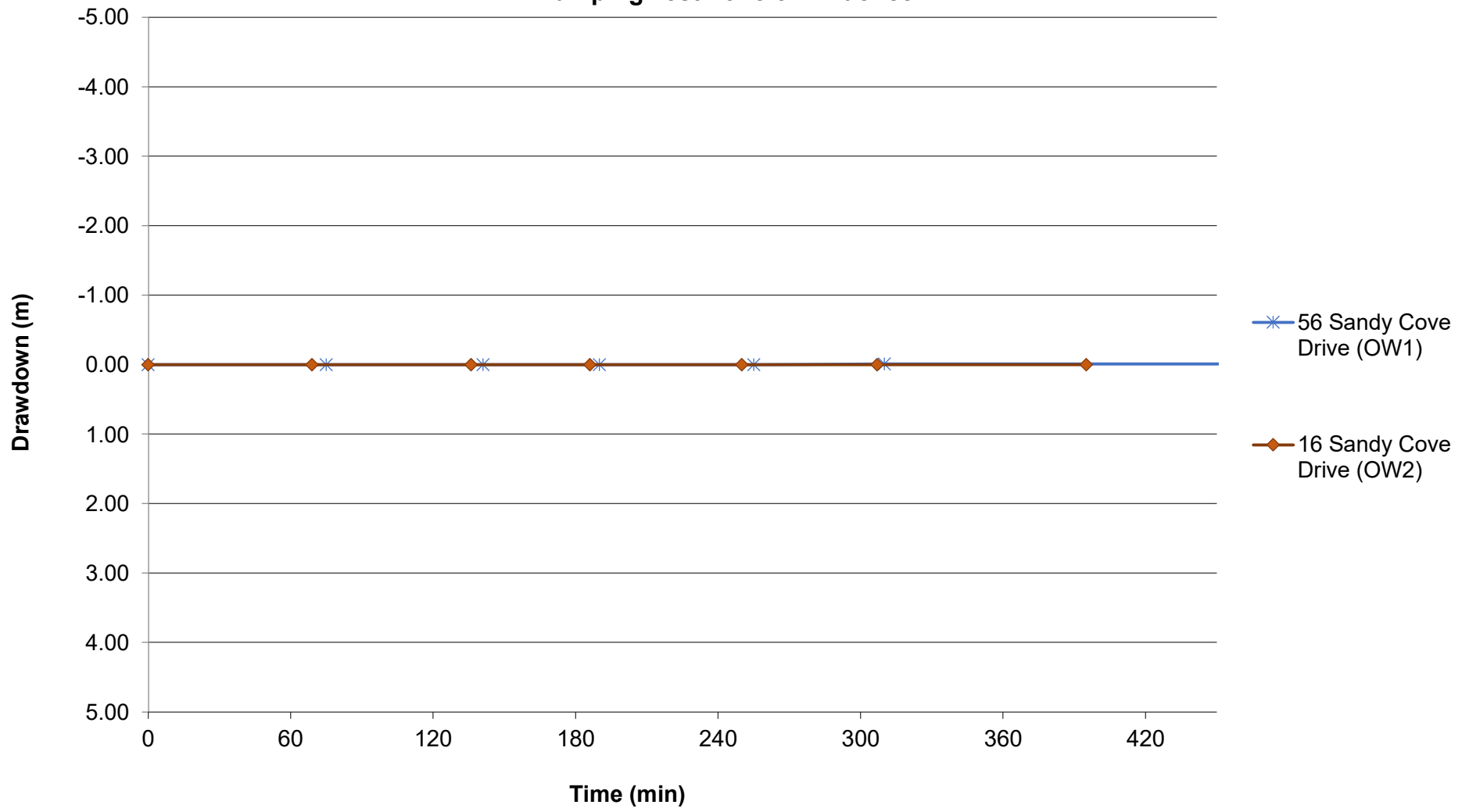
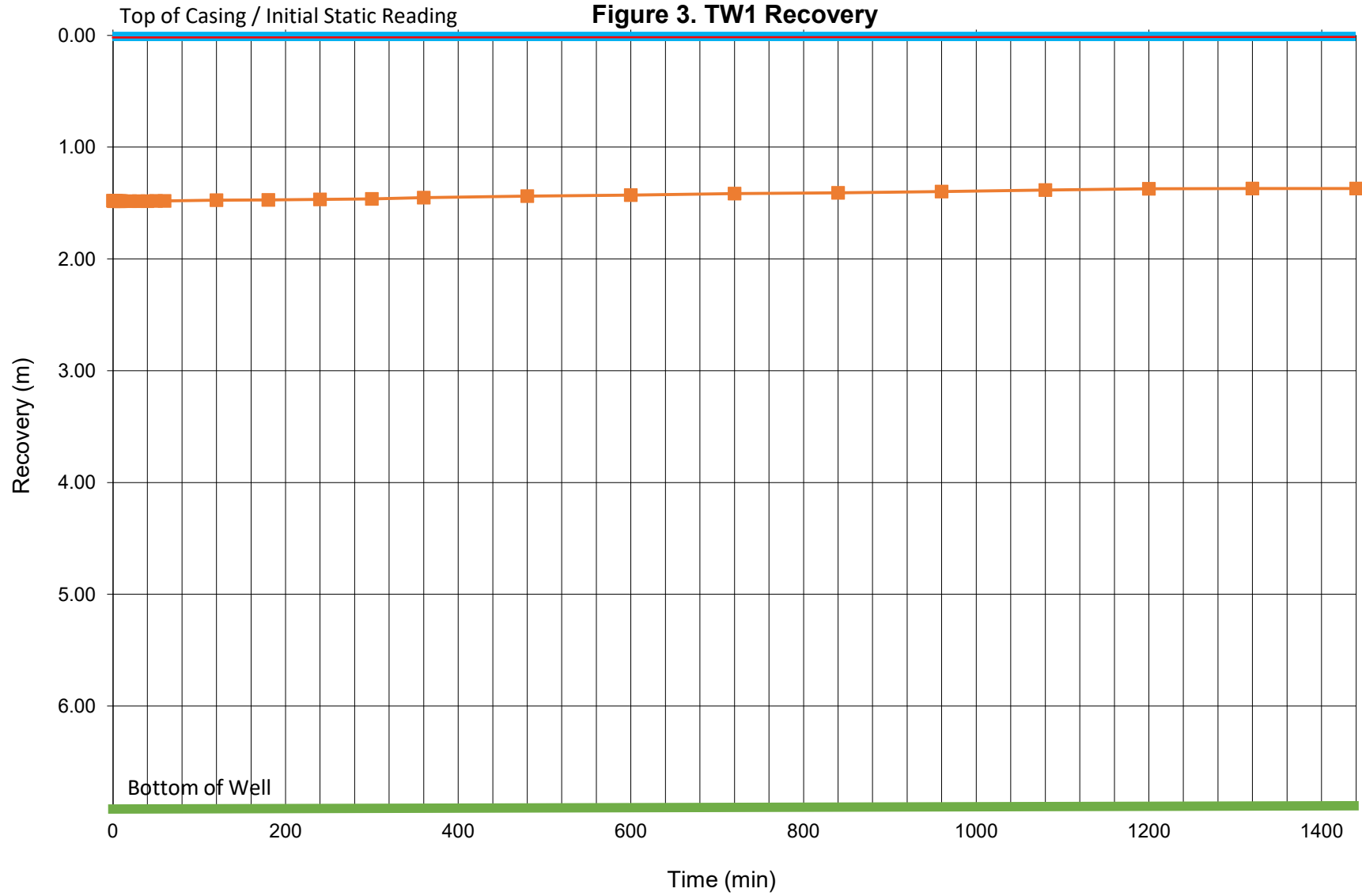


Table 4. Test well recovery after pumping test.

		Pumping Test - Recovery		Test Well:	TW1
		Project No.:	ASC-972	Date:	16-Oct-24
		Client:	Krystofer Destun		Recorded By: T.C.
		Location:	Sandy Cove Drive, Prince Edward County, ON		
		Test Well			
Pumping	Elapsed Time	Well Level (WL)	Drawdown		
	(min)	(m)	(m)		
0	0	1.48	0.47		
0	1	1.48	0.47		
0	2	1.48	0.47		
0	3	1.48	0.47		
0	4	1.48	0.47		
0	5	1.48	0.47		
0	6	1.48	0.47		
0	7	1.48	0.47		
0	8	1.48	0.47		
0	9	1.48	0.47		
0	10	1.48	0.47		
0	20	1.48	0.47		
0	30	1.48	0.47		
0	40	1.48	0.47		
0	50	1.48	0.47		
0	60	1.48	0.47		
0	120	1.48	0.47		
0	180	1.47	0.46		
0	240	1.47	0.46		
0	300	1.46	0.45		
0	360	1.45	0.44		
0	480	1.44	0.43		
0	600	1.43	0.42		
0	720	1.42	0.41		
0	840	1.41	0.40		
0	960	1.40	0.39		
0	1080	1.39	0.38		
0	1200	1.37	0.36		
0	1320	1.37	0.36		
0	1440	1.37	0.36		
WL at 95% Recovery =		1.03			

ASC Environmental Inc.
ASC-972, Krystofer Destun, Sandy Cove Drive,
Prince Edward County, ON
Figure 3. TW1 Recovery



APPENDIX E

Laboratory Analytical Certificates



ASC Environmental Inc.
1305 Princess Street,
Kingston, ON K7M 3E3
Tel: (613) 634-5596

C.O.C.: G 130177

REPORT No: 24-032473 - Rev. 0

Report To:

ASC Environmental
1305 Princess St.
Kingston, ON K7M 3E3

CADUCEON Environmental Laboratories

285 Dalton Ave
Kingston, ON K7K 6Z1

Attention: Tanner Cook

DATE RECEIVED: 2024-Oct-17
DATE REPORTED: 2024-Oct-22
SAMPLE MATRIX: Ground Water

CUSTOMER PROJECT: ASC-972
P.O. NUMBER:

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Anions (Liquid)	1	OTTAWA	LMACGREGOR	2024-Oct-17	A-IC-01	SM 4110B
Colour (Liquid)	1	OTTAWA	STAILLON	2024-Oct-22	A-COL-01	SM 2120C
Cond/pH/Alk Auto (Liquid)	1	OTTAWA	SBOUDREAU	2024-Oct-17	COND-02/PH-02/A LK-02	SM 2510B/4500H/ 2320B
Coliforms - DC Media (Liquid)	1	KINGSTON	BBURTCH	2024-Oct-17	ECTC-001	MECP E3407
DOC/DIC (Liquid)	1	OTTAWA	TPRICE	2024-Oct-18	C-OC-01	EPA 415.2
Fecal Coliforms (Liquid)	1	KINGSTON	BBURTCH	2024-Oct-17	FC-001	SM 9222D
HPC MF (Liquid)	1	KINGSTON	BBURTCH	2024-Oct-17	HPC-001	SM 9215D
Ion Balance (Calc.)	1	OTTAWA	TPRICE		CP-028	MECP E3196
ICP/OES (Liquid)	1	OTTAWA	APRUDYVUS	2024-Oct-21	D-ICP-01	SM 3120B
Ammonia & o-Phosphate (Liquid)	1	KINGSTON	JYEARWOOD	2024-Oct-18	NH3-001	SM 4500NH3
Phenols (Liquid)	1	KINGSTON	EHINCH	2024-Oct-18	PHEN-01	MECP E3179
Sulphide (Liquid)	1	KINGSTON	EHINCH	2024-Oct-17	H2S-001	SM 4500-S2
Tannins (Liquid)	1	KINGSTON	EHINCH	2024-Oct-18	TAN-001	SM 5550
TP & TKN (Liquid)	1	KINGSTON	YLIEN	2024-Oct-21	TPTKN-001	MECP E3516.2
Turbidity (Liquid)	1	OTTAWA	PLUSSIER	2024-Oct-17	A-TURB-01	SM 2130B

R.L. = Reporting Limit

NC = Not Calculated

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



Michelle Dubien
Data Specialist

CADUCEON Environmental Laboratories Certificate of Analysis

Final Report
REPORT No: 24-032473 - Rev. 0

		Client I.D.	TW1-1
		Sample I.D.	24-032473-1
		Date Collected	2024-10-16
Parameter	Units	R.L.	-
Total Coliform (DC Media)	CFU/100mL	1	3
E coli (DC Media)	CFU/100mL	1	0
Background (DC Media)	CFU/100mL	1	>200
Heterotrophic Plate Count	CFU/1mL	10	520
Fecal Coliform	CFU/100mL	1	0
Alkalinity(CaCO3) to pH4.5	mg/L	5	158
TDS (Calc. from Cond.)	mg/L	3	16600
Conductivity @25°C	uS/cm	1	27600
pH @25°C	pH units	-	7.56
Colour	TCU	2	<2
Turbidity	NTU	0.1	2.7
Fluoride	mg/L	0.1	<7.0
Chloride	mg/L	0.5	14500
Nitrate (N)	mg/L	0.05	<4.00
Nitrite (N)	mg/L	0.05	<4.00
Sulphate	mg/L	1	136
Phosphorus (Total)	mg/L	0.01	0.02
Total Kjeldahl Nitrogen	mg/L	0.1	18.8
Ammonia (N)-Total (NH3+NH4)	mg/L	0.05	14.2
Dissolved Organic Carbon	mg/L	0.2	0.7
Tannin & Lignin	mg/L	0.5	<0.5



Michelle Dubien
Data Specialist

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		Client I.D.	TW1-1
		Sample I.D.	24-032473-1
		Date Collected	2024-10-16
Parameter	Units	R.L.	-
Sulphide	mg/L	0.01	<0.04 (3.)
Phenolics	mg/L	0.001	0.006
Hardness (as CaCO ₃)	mg/L as CaCO ₃	0.02	9080
Calcium	mg/L	0.02	1650
Iron	mg/L	0.005	0.342
Magnesium	mg/L	0.02	1210
Manganese	mg/L	0.001	0.092
Potassium	mg/L	0.1	243
Sodium	mg/L	0.2	5030
Anion Sum	meq/L	-	415
Cation Sum	meq/L	-	413
% Difference	%	-	0.222
TDS (Ion Sum Calc)	mg/L	1	22900
Conductivity Calc	µmho/cm	-	15600 (12)

Comments:

12. Unable to calculate ion balance due to sample matrix
3. Elevated RL due to sample matrix interferences/dilution



Michelle Dubien
Data Specialist

Paracel ID: 2502031



Paracel Order Number

(Lab Use Only)

2502031

Chain Of Custody

(Lab Use Only)

No 73280

Client Name: <u>ASC Environmental</u>	Project Ref: <u>ASC-972</u>	Page <u>1</u> of <u>1</u>
Contact Name: <u>Josh Bell</u>	Quote #:	Turnaround Time ☐ 1 day ☐ 3 day ☐ 2 day ☒ Regular Date Required: _____
Address: <u>Kingston, ON</u>	PO #:	
Telephone: <u>613-876-6534</u>	E-mail: <u>ON File</u>	

☐ REG 153/04 ☐ REG 406/19 ☐ Table 1 ☐ Res/Park ☐ Med/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ Table _____ For RSC: ☐ Yes ☐ No	Other Regulation ☐ REG 558 ☐ PWQO ☐ CCME ☐ MISA ☐ SU - Sani ☐ SU - Storm Mun: _____ ☒ Other: _____	Matrix Type: S (Soil/Sed.) GW (Ground Water) SW (Surface Water) SS (Storm/Sanitary Sewer) P (Paint) A (Air) O (Other)	Required Analysis																
Sample ID/Location Name	Matrix	Air Volume	# of Containers	Sample Taken		TDS	Chloride												
1 <u>TW1-2</u>	<u>GW</u>		<u>2</u>	Date	Time	<u>X</u>	<u>X</u>												
2																			
3																			
4																			
5																			
6																			
7																			
8																			
9																			
10																			

Comments: <u>Metals bottle submitted on hold.</u>		Method of Delivery: <u>Walk in</u>	
Relinquished By (Sign): <u>[Signature]</u>	Received at Depot: <u>CRB</u>	Received at Lab: <u>[Signature]</u>	Verified By: <u>Racey Cooper</u>
Relinquished By (Print): <u>Josh Bell</u>	Date/Time: <u>Jan 6 12:42</u>	Date/Time: <u>Jan 7 10:51</u>	Date/Time: <u>Jan 06 14:52</u>
Date/Time: <u>6-Jan-25</u>	Temperature: <u>11.3</u> °C	Temperature: <u>1.1</u> °C	pH Verified: ☒ By: <u>[Signature]</u>

C.O.C.: G 131529

REPORT No: 25-001931 - Rev. 0

Report To:

ASC Environmental
1305 Princess St.
Kingston, ON K7M 3E3

CADUCEON Environmental Laboratories

285 Dalton Ave
Kingston, ON K7K 6Z1

Attention: Josh Bell

DATE RECEIVED: 2025-Jan-21
DATE REPORTED: 2025-Jan-27
SAMPLE MATRIX: Ground Water

CUSTOMER PROJECT: ASC-972
P.O. NUMBER:

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Anions (Liquid)	1	OTTAWA	LMACGREGOR	2025-Jan-23	A-IC-01	SM 4110B
Colour (Liquid)	1	OTTAWA	STAILLON	2025-Jan-23	A-COL-01	SM 2120C
Cond/pH/Alk Auto (Liquid)	1	OTTAWA	SLOZO	2025-Jan-22	COND-02/PH-02/A LK-02	SM 2510B/4500H/ 2320B
Coliforms - DC Media (Liquid)	1	KINGSTON	BBURTCH	2025-Jan-21	ECTC-001	MECP E3407
DOC/DIC (Liquid)	1	OTTAWA	TPRICE	2025-Jan-23	C-OC-01	EPA 415.2
Fecal Coliforms (Liquid)	1	KINGSTON	BBURTCH	2025-Jan-21	FC-001	SM 9222D
HPC MF (Liquid)	1	KINGSTON	BBURTCH	2025-Jan-21	HPC-001	SM 9215D
Ion Balance (Calc.)	1	OTTAWA	TPRICE		CP-028	MECP E3196
ICP/OES (Liquid)	1	OTTAWA	APRUDYVUS	2025-Jan-24	D-ICP-01	SM 3120B
Ammonia & o-Phosphate (Liquid)	1	KINGSTON	KDIBBITS	2025-Jan-23	NH3-001	SM 4500NH3
Phenols (Liquid)	1	KINGSTON	EHINCH	2025-Jan-24	PHEN-01	MECP E3179
Sulphide (Liquid)	1	KINGSTON	MWILSON	2025-Jan-23	H2S-001	SM 4500-S2
Tannins (Liquid)	1	KINGSTON	EHINCH	2025-Jan-22	TAN-001	SM 5550
TP & TKN (Liquid)	1	KINGSTON	YLIEN	2025-Jan-23	TPTKN-001	MECP E3516.2
Turbidity (Liquid)	1	OTTAWA	PLUSSIER	2025-Jan-22	A-TURB-01	SM 2130B

R.L. = Reporting Limit

NC = Not Calculated

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



Michelle Dubien
Data Specialist

CADUCEON Environmental Laboratories Certificate of Analysis

Final Report
REPORT No: 25-001931 - Rev. 0

		Client I.D.	TW1-3
		Sample I.D.	25-001931-1
		Date Collected	2025-01-21
Parameter	Units	R.L.	-
Total Coliform (DC Media)	CFU/100mL	1	96
E coli (DC Media)	CFU/100mL	1	1
Background (DC Media)	CFU/100mL	1	>200
Heterotrophic Plate Count	CFU/1mL	10	340
Fecal Coliform	CFU/100mL	1	0
Alkalinity(CaCO3) to pH4.5	mg/L	5	170
TDS (Calc. from Cond.)	mg/L	3	220
Conductivity @25°C	uS/cm	1	427
pH @25°C	pH units	-	7.96
Colour	TCU	2	9
Turbidity	NTU	0.1	1.2
Fluoride	mg/L	0.1	0.3
Chloride	mg/L	0.5	16.7
Nitrate (N)	mg/L	0.05	<0.05
Nitrite (N)	mg/L	0.05	<0.05
Sulphate	mg/L	1	21
Phosphorus (Total)	mg/L	0.01	0.03
Total Kjeldahl Nitrogen	mg/L	0.1	0.6
Ammonia (N)-Total (NH3+NH4)	mg/L	0.05	0.31
Dissolved Organic Carbon	mg/L	0.8	4.9
Tannin & Lignin	mg/L	0.5	<0.5



Michelle Dubien
Data Specialist

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

CADUCEON Environmental Laboratories Certificate of Analysis

Final Report
REPORT No: 25-001931 - Rev. 0

		Client I.D.	TW1-3
		Sample I.D.	25-001931-1
		Date Collected	2025-01-21
Parameter	Units	R.L.	-
Sulphide	mg/L	0.01	<0.01
Phenolics	mg/L	0.001	<0.001
Hardness (as CaCO3)	mg/L as CaCO3	0.02	189
Calcium	mg/L	0.02	61.1
Iron	mg/L	0.005	0.009
Magnesium	mg/L	0.02	8.80
Manganese	mg/L	0.001	0.002
Potassium	mg/L	0.1	6.4
Sodium	mg/L	0.2	14.2
Anion Sum	meq/L	-	4.33
Cation Sum	meq/L	-	4.58
% Difference	%	-	2.80
Ion Ratio	-	-	0.946
Sodium Adsorption Ratio	-	-	0.451
TDS (Ion Sum Calc)	mg/L	1	232
TDS(calc.)/EC(actual)	-	-	0.542
Conductivity Calc	µmho/cm	-	433
Conductivity Calc / Conductivity	-	-	1.01
Langelier Index(25°C)	-	-	0.545
Saturation pH (25°C)	-	-	7.42



Michelle Dubien
Data Specialist

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

C.O.C.: G113007

REPORT No: 25-012376 - Rev. 0

Report To:

ASC Environmental
 1305 Princess St.
 Kingston, ON K7M 3E3

CADUCEON Environmental Laboratories

285 Dalton Ave
 Kingston, ON K7K 6Z1

Attention: Tanner Cook

DATE RECEIVED: 2025-May-07
 DATE REPORTED: 2025-May-09
 SAMPLE MATRIX: Ground Water

CUSTOMER PROJECT: ASC-972
 P.O. NUMBER:

Analyses	Qty	Site Analyzed	Authorized	Date Analyzed	Lab Method	Reference Method
Colour (Liquid)	1	OTTAWA	STAILLON	2025-May-09	A-COL-01	SM 2120C
Coliforms - DC Media (Liquid)	1	KINGSTON	BBURTCH	2025-May-07	ECTC-001	MECP E3407
Fecal Coliforms (Liquid)	1	KINGSTON	BBURTCH	2025-May-07	FC-001	SM 9222D

R.L. = Reporting Limit

NC = Not Calculated

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

		Client I.D.	TW1-4
		Sample I.D.	25-012376-1
		Date Collected	2025-05-06
Parameter	Units	R.L.	-
Total Coliform (DC Media)	CFU/100mL	1	0
E coli (DC Media)	CFU/100mL	1	0
Fecal Coliform	CFU/100mL	1	0
Colour	TCU	2	<2



Michelle Dubien
Data Specialist

APPENDIX F

Precipitation Data



ASC Environmental Inc.
1305 Princess Street,
Kingston, ON K7M 3E3
Tel: (613) 634-5596



Government
of Canada

Gouvernement
du Canada

[Home](#) > [Environment and natural resources](#) > [Weather, Climate and Hazard](#) > [Past weather and climate](#) > [Historical Data](#)



Notices

INTERRUPTION IN SERVICE AVAILABILITY. Please be advised that the Historical Climate Data website will be unavailable due to planned maintenance on Thursday January 23, 2025, from 1:00 PM - 1:30 PM EST (18:00-18:30 UTC). We appreciate your patience and please [contact us](#) if you have any questions or concerns.

Daily Data Report for October 2024

BELLEVILLE ONTARIO Current Station Operator: CCN

Latitude: 44°09'02.052" N **Longitude:** 77°23'41.046" W
Elevation: 76.20 m **Climate ID:** 6150689
WMO ID: **TC ID:**

DAY	Max Temp °C °F	Min Temp °C °F	Mean Temp °C °F	Heat Deg Days °C °F	Cool Deg Days °C °F	Total Rain mm in	Total Snow cm in	Total Precip mm in	Snow on Grnd cm in	Dir of Max Gust 10's deg	Spd of Max Gust km/h mi/h
01 †	21.0	13.0	17.0	1.0	0.0	4.0	0.0	4.0	0		
02 †	20.0	13.0	16.5	1.5	0.0	0.4	0.0	0.4	0		
03 †	20.5	8.5	14.5	3.5	0.0	0.0	0.0	0.0	0		
04 †	24.0	11.0	17.5	0.5	0.0	0.6	0.0	0.6	0		
05 †	20.0	9.0	14.5	3.5	0.0	0.0	0.0	0.0	0		
06 †	21.5	8.5	15.0	3.0	0.0	3.8	0.0	3.8	0		
07 †	18.5	9.5	14.0	4.0	0.0	1	0.0	1	0		
08 †	17.5	7.5	12.5	5.5	0.0	0.0	0.0	0.0	0		
09 †	13.5	5.0	9.3	8.7	0.0	4.4	0.0	4.4	0		
10 †	15.0	1.5	8.3	9.7	0.0	0.0	0.0	0.0	0		
11 †	18.5	4.5	11.5	6.5	0.0	0.0	0.0	0.0	0		

DAY	<u>Max Temp</u> °C °F	<u>Min Temp</u> °C °F	<u>Mean Temp</u> °C °F	<u>Heat Deg Days</u> °C °F	<u>Cool Deg Days</u> °C °F	<u>Total Rain</u> mm in	<u>Total Snow</u> cm in	<u>Total Precip</u> mm in	<u>Snow on Grnd</u> cm in	<u>Dir of Max Gust</u> 10's deg	<u>Spd of Max Gust</u> km/h mi/h
12 †	17.0	8.5	12.8	5.2	0.0	0.0	0.0	0.0	0		
13 †	12.0	5.5	8.8	9.2	0.0	0.0	0.0	0.0	0		
14 †	12.0	5.0	8.5	9.5	0.0	0.0	0.0	0.0	0		
15 †	12.0	1.0	6.5	11.5	0.0	I	0.0	I	0		
16											
17 †	16.0	1.0	8.5	9.5	0.0	0.0	0.0	0.0	0		
18 †	18.0	2.0	10.0	8.0	0.0	0.0	0.0	0.0	0		
19 †	17.0	3.5	10.3	7.7	0.0	0.0	0.0	0.0	0		
20 †	19.5	4.5	12.0	6.0	0.0	0.4	0.0	0.4	0		
21 †	23.0	13.5	18.3	0.0	0.3	0.0	0.0	0.0	0		
22 †	22.0	10.0	16.0	2.0	0.0	0.0	0.0	0.0	0		
23 †	21.5	9.5	15.5	2.5	0.0	0.0	0.0	0.0	0		
24 †	13.5	2.5	8.0	10.0	0.0	0.0	0.0	0.0	0		
25 †	13.0	0.5	6.8	11.2	0.0	0.0	0.0	0.0	0		
26 †	14.0	4.0	9.0	9.0	0.0	0.0	0.0	0.0	0		
27 †	12.0	5.5	8.8	9.2	0.0	0.0	0.0	0.0	0		
28 †	10.0	2.0	6.0	12.0	0.0	0.0	0.0	0.0	0		
29 †	14.5	3.5	9.0	9.0	0.0	9.8	0.0	9.8	0		
30 †	22.0	12.0	17.0	1.0	0.0	0.0	0.0	0.0	0		
31											
Sum				179.9 [^]	0.3 [^]	23.4 [^]	0.0 [^]	23.4 [^]			
Avg	17.2 [^]	6.4 [^]	11.8 [^]								
Xtrm	24.0 [^]	0.5 [^]				9.8 [^]	0.0 [^]	9.8 [^]		<u>M</u>	<u>M</u>
Summary, average and extreme values are based on the data above.											

Legend

- A = Accumulated
- C = Precipitation occurred, amount uncertain
- E = Estimated
- F = Accumulated and estimated
- L = Precipitation may or may not have occurred
- M = Missing
- N = Temperature missing but known to be > 0
- S = More than one occurrence
- T = Trace
- Y = Temperature missing but known to be < 0
- [empty] = Indicates an unobserved value
- ^ = The value displayed is based on incomplete data
- † = Data that is not subject to review by the National Climate Archives