Hydrogeological Study

Concession 5, Part of Lot 44,
Milsap Road, Moscow
Township of Stone Mills, ON

Prepared for:

Denis Lahie
1565 Moscow Road,
Moscow, ON
File Nos: B50-2020 DA
B51-2020 DA

Prepared by:

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

File: ASC-660 100r
July 9, 2021

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

TABLE OF CONTENTS

1.0 INTRODUCTION

1.1 Initiation and Objective

ASC Environmental Inc. (ASC) was retained by *Mr. Denis Lahie (Client)* to conduct a hydrogeological assessment in advance of two (2) proposed land severances on Part of Lot 44 Concession 5, Milsap Road, Township of Stone Mills. We understand that the proposed severance lots each encompasses approximately 1.1 hectares in area. A site location plan is shown in Drawing No. 1 in Appendix A. At the request of the Client one pumping test was conducted for the hydrogeological assessment.

The purpose of the hydrogeological study is to assess whether groundwater quality and quantity is sufficient to support the proposed severances for residential land use purposes and determine whether the potential single-family residential developments may have an impact on existing neighbouring wells.

Two (2) drilled wells (MECP Tag # A314756 and #A314757) were recently advanced on the subject property by Jack Knox Well Drilling LTD. (licensed well drillers) to support the hydrogeological study. The test wells (TW1 and TW2) according to well records information were drilled on June 28, 2021. The hydrogeological work was initiated following the authorization from the Client. A site location plan and site layout plan are attached in Appendix A.

1.2 Scope of Work

The agreed scope of work included the following efforts:

- Reviewing available Ministry of Environment, Conservation and Parks (MECP) well water records and historical data for the local area.
- Chlorinate the recently developed well on the east severance lot and circulate water until zero residual chlorine is measured in the well water.
- Undertake one 6-hour pumping test (with recovery) on the recently drilled well at the request of the Client. The pumping test was conducted in accordance with MECP D-5-5 guidelines.
- Monitor water levels in neighbouring wells and west lot during pumping.
- Collect well water samples near the first hour of pumping (if possible) and near the end of the pumping test (approximate 6-hour duration) following zero chlorine residual.
- Submit well water samples 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, and potential well interference for the proposed severances.
- Provide an assessment of the suitability of the properties for individual septic systems.

2.0 BACKGROUND

2.1 Site Information

Each proposed severed lot is approximately a 1.1-hectare vacant parcel of land, with approximately 111 m of road frontage along the south side of Milsap Road. A site layout plan is shown on Drawing No. 2 in Appendix A.

Ground cover consists primarily of grass covered agricultural land and is generally flat. No permanent surface water courses are present on the subject property. The nearest surface water course is an unnamed stream, approximately 400 m northwest of the site. Varty Lake is located approximately 1.5 km southwest of the site. Camden Lake is located approximately 1.7 km west of the site. Surrounding land use within a 500 m radius consists primarily of rural residential and agricultural properties.

2.2 Surficial Soil Conditions

The physiographic area is described as Limestone Plains[1]. Reported well drilling observations on site indicated shallow clay soil cover (approximately 0.60 – 0.76 m) overlying grey shale (to a depth of approximately 1.5 m - 1.8 m) overlying limestone bedrock (see Section 5.0).

The MECP online database of well records[2] within a 250 m radius identified surficial soils consisting of loam, clay and sand, overlying shale and limestone bedrock (see MECP Water Well Summary Records in Appendix C).

2.3 Background Geology

Bedrock geology in the study area consists of a stratigraphic sequence of Paleozoic, Middle Ordovician age limestone bedrock, including the Ottawa and Simcoe group and Shadow Lake Formations consisting of brown lithographic and sub lithographic limestone overlying Precambrian granite bedrock of the Grenville Province including felsic plutonic rocks[3].

2.4 Local Hydrogeology

Eleven (11) water well summary records of local wells (within a 250 metre radius) were available for review from the MECP online database (see Appendix C). Review of the well records identified drilled wells, with fresh water reported to be encountered in limestone bedrock at depths ranging from approximately 10.7 m to 27.7 m as well as one dry well. Reported well depths (from MECP well records) ranged from approximately 5.2 m to 30.5 m. Water is typically encountered in fractures and joints in the limestone and granite bedrock formation.

[1] Chapman, L.J. and Putnam, D.F. 1972. Physiography of Southern Ontario. Map 2227.
[2] Government of Ontario. Well Records. Accessed online at https://www.ontario.ca/environment-and-energy/map-well-records
[3] Ontario Geological Survey. 1991: Bedrock Geology of Ontario, Southern Sheet. Map. 2544.

3.0 WELL CONSTRUCTION

Two (2) drilled wells were advanced on the subject property (TW1 and TW2) by Jack Knox Well Drilling Ltd on June 28, 2020. The wells were drilled for the purpose of drinking water supply assessment for the proposed severances. The test well locations are shown on Drawing No. 2 and the well record is attached in Appendix B.

The well records for TW1 and TW2 show that the annular space between the steel casing and native materials are sealed with cement from surface to a depth of approximately 6 m in accordance with Ontario Regulation (O Reg) 372/07 for a useful aquifer. Regulation 903 (wells) defines a “useful aquifer” as a water-bearing formation that is capable of transmitting water in sufficient quantities to serve as a source of a water supply.

The water well record for TW1 identified native brown clay to a depth of approximately 0.76 metres (m) overlaying shale to a depth of approximately 1.5 m. Beyond the shale was limestone bedrock to a depth of approximately 28.3 m. Beyond the limestone was granite bedrock to a depth of 36.5 m. Water was encountered at a depth of approximately 26.8 m and 33.5 m during drilling.

The water well record for TW2 identified native brown clay to a depth of approximately 0.6 metres (m) overlaying shale to a depth of approximately 1.8 m. Beyond the shale was limestone bedrock to a depth of approximately 28.3 m. Beyond the limestone was granite bedrock to a depth of 36.5 m. Water was encountered at a depth of approximately 25.3 m and 32.9 m during drilling.

Both well records reported that the potential yield from both test wells was 15 gallons per minutes (60 lpm).

Visual observations during field work indicated that the wells were constructed and maintained to prevent surface water and other foreign materials from entering the wells. The height of the casings above grade meet Ontario’s Revised Regulation (RRO) 903, Wells, amended to Ontario Regulation (O Reg) 372/07, under the *Ontario Water Resources Act*.

No sources of contamination were identified on the retained property or proposed severed lots.

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

A copy of the test well records are attached in Appendix B.

4.0 WATER QUANTITY

4.1 Background

The quantity of groundwater available for the test well (TW1) was investigated through a scheduled 6-hour pumping test in accordance with MECP Procedure D-5-5 and Conditions of Provisional Consent. The pumping test was conducted on June 29, 2021.

The test well (TW1 – East Lot) was pumped for a duration of 6 hours (including recovery) at a rate of 20 litres per minute (L/min) for the first 210 minutes and 30 litres per minute for the remainder of the pumping test in order to demonstrate long term well supply yield. Drawdown and recovery measurements obtained during the pumping test are presented in Appendix D.

Bedrock hydrogeological values of transmissivity were calculated from the pumping data by the Jacob method, which assumes the heterogeneous limestone and granite bedrock aquifers are analogous to a homogeneous, confined, porous media aquifer of infinite horizontal extent. Recognizing that the bedrock water bearing units are likely to exhibit unconfining conditions, the Jacob method sufficiently estimates the aquifer parameters to assess well hydrogeological conditions.

4.2 Test Well TW1

TW1 is approximately 36.6 m deep into limestone and granite bedrock. Prior to the initiation of pumping test, the static water level was measured to be approximately 4.2 metres from the top of the casing. The water in the well was pumped at a rate of 20 litres/minute for 210 minutes, and at 30 litres/minutes for a total of 150 minutes yielding approximately 8,700 litres of water during the pumping test. Drawdown was measured at approximately 0.69 metres over the duration of the test, with little to no drawdown response to the increased pumping rate. At the completion of pumping approximately 98% of the total available well supply was remaining. Specific capacity calculated over the entire 360 minutes of the pumping test (pumping at 20 litres/minute to 30 litres/minute) was found to be approximately 33.6 litres/minute/metre. A plot of drawdown versus time shows a semi linear relationship (see Figure 1 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 Wells: Water Supply Assessment requires that water level recovery must be monitored in the test wells for the lesser of 95% recovery or 24 hours. Ninety-five percent (95%) recovery was reached approximately 20 minutes following pump shutdown demonstrating that the well is sufficiently able to recover in accordance with MECP D-5-5 procedure to meet sustained yield during peak conditions.

The transmissivity (T) after approximately 100 minutes of pumping was calculated to be approximately 1.20×10^{-4} m^2/s. Hydraulic Conductivity (K = T/b), where b = 30.5 m (represents approximate aquifer thickness available), was determined to be

approximately K= 3.93 x 10^{-6} m/s. The test well recovery and transmissivity data may be found in Appendix D.

Referencing MECP D-5-5 guideline the minimum pumping rate per person based on peak demand is 3.75 L/min. Therefore, considering a 3-bedroom home (3 + 1), the minimum pumping rate required would be 15 L/min (3.75 L/min * 4). On this basis, the test well could be pumped at a rate of 15 L/min for purposes of assessing peak demand and long term well yield. The pumping test was conducted at a rate of 20 L/min and increased to 30 L/min.

Referencing MECP D-5-5 guideline, “peak demand” occurs for a period of 120 minutes each day. As indicated above based on the considered number of bedrooms expected (3 + 1), a minimum pumping rate of 15 L/min is required with a resulting water requirement of 1800 litres/day during peak demand. Peak demand (20 L/min) was reached approximately 90 minutes into the pumping test, with a measured a drawdown of approximately 0.44 m, increasing the pumping rate to 30 L/min, showed a measured drawdown of an additional 0.31 m. This data suggests that the well sufficiently met “peak demand” conditions with little to no drawdown response during pumping.

In addition, referencing local climate data (Kingston), an average of 22.9 mm of precipitation was recorded for the month of May 2021, and approximately 45.1 mm for June 2021. On this basis, the pumping test was not undertaken during a period of significant precipitation or spring freshet conditions. Climate data for May and June 2021 is shown in Appendix G.

Based on the observations from the drawdown versus time relationship and recovery time, it is concluded that the long-term yield of the well is sufficient to meet normal domestic requirements in accordance with the MECP Procedure D-5-5.

4.3 Test Well TW2

A pumping test was not conducted on TW2. A maximum drawdown of 0.23 m was observed in TW2 during the TW1 pumping test indicating that the well yield supply was not adversely impacted during the pumping test; and in particular when the pumping rate was increased to 30 lpm for test well TW1, no significant positive response to pumping was measured indicating that the two test wells will not likely mutually interfere, and sufficient long term water supply is available in both wells for support of both severances.

5.0 INTERFERENCE

The effects of interference were monitored during well development and pumping from the test well on June 29, 2021. Eight (8) neighbouring observation wells were included during the pumping test to assess potential interference. Observation well locations are shown on Drawing No. 2 in Appendix A.

5.1 Test Well TW1

Eight (8) observation wells, located at 203 Milsap Road (OW1), 231 Milsap Road (OW2), 4358 County Road 6 (OW3), 4318 County Road 6 (OW4), 1587 Moscow Road (OW5), 1577 Moscow Road, 1564 Moscow Road (OW7), and TW2, were monitored to assess potential interference during the pumping test. The observation wells were located approximately 75 to 355 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	Drilled	203 Milsap Road	315
OW2	Drilled	231 Milsap Road	210
OW3	Drilled	4358 County Road 6	75
OW4	Drilled	4318 County Road 6	175
OW5	Drilled	1587 Milsap Road	315
OW6	Drilled	1577 Milsap Road	340
OW7	Drilled	1565 Milsap Road	355
TW2	Drilled	On Site	100

5.2 Discussion of Results

A maximum positive response to pumping was measured in OW3 (0.34 m), OW4 (0.26 m), and TW2 (0.28 m) during the 6-hour pumping test at the increased pumping rate of 30 L/min, indicating no significant response. Water levels returned to pre-pumping levels within 1 hour of pump shut-off.

Potential water quantity problems resulting from mutual well interference are not expected for TW1 and TW2. The measured interference during pumping is an appropriate estimation of the influence for OW1, OW2, OW3, OW4, OW5, OW6, OW7, and TW2, indicating potential well interference will not create adverse conditions to neighbourhood water supply.

Based on the observation well measurements during pumping, the adjacent domestic water supply wells will not be significantly influenced by the proposed land severances. Results of the neighbouring residential water level measurements recorded during the pumping test are presented in Appendix D.

6.0 WATER QUALITY

6.1 Results of Analyses

Two (2) water samples were collected from the test well during the pumping test on June 29, 2021 following in-field determination of zero residual chlorine: one after two hours of pumping and one in the last hour of the test.

The samples were 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).

Bacteriological parameter analyses showed no detection for E. coli, fecal coliform, and total coliform for the test well in the first (two hours into pumping) and second (final hour of pumping) sample submitted.

Chemical analysis results for the test well did not identify elevated health related parameters.

The operational guideline for hardness is 80-100 mg/L and the ODWO level is 500 mg/L. Sample analyses identified hardness of 385 mg/L and 380 mg/L in the test well. Elevated concentration of hardness may result in scale build-up and mineral deposits on hot water heaters and plumbing fixtures. Hard water can be readily treated through ion exchange water softening.

Based on the results of analyses, we recommend that disinfection (i.e., UV light) be provided to future drinking water systems to ensure good quality groundwater for domestic consumption purposes. We recommend contracting a professional water quality specialist to confirm treatment options for both wells.

Results of laboratory sample analyses are presented in Appendix E.

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

7.0 SITE SERVICING

7.1 Septic Systems

Site soil conditions indicate insufficient overburden quality to support in ground leaching systems. Site soil conditions generally consist of clay soils to depths of approximately 0.6 m. Construction of Class 4 raised bed sewage disposal system or equivalent should be constructed and approved by qualified personnel in accordance with the Ontario Building Code requirements. No concerns were identified regarding potential impact from raised septic bed interference.

7.2 Land and Water Use Conflicts

Section 4.6 of the MECP D-5-5 Procedure requires an evaluation into the land and water use conflicts which may exist, within 500 metres of the site. A review of the public records for wells considered to be within 500 metres of the subject property may be found in Section 5.0 above. The area surrounding the subject property is largely rural residential and agricultural activity. No land and water use conflicts were identified.

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

8.0 CONCLUSIONS AND RECOMMENDATIONS

- Based on the field work and pumping test conducted, results indicate that sufficient quantities of groundwater are available for long term domestic use from the bedrock aquifer for the two proposed severances.

- Results of the groundwater chemistry for the required bacteriological parameters were below referenced MECP D-5-5 criteria, following in-field determination of zero chlorine residual.

- The operational guideline for hardness is 80-100 mg/L and the ODWO level is 500 mg/L. Sample analyses identified hardness of 385 mg/L and 380 mg/L in the test well. Hard water can be readily treated through ion exchange water softening.

- The two recently completed test wells were observed to be constructed and maintained to prevent surface water and other foreign materials from entering the wells, in accordance with the current standards of RRO 904 (as amended).

- Based on the observations from the drawdown versus time relationship following the pumping test conducted at 20 – 30 lpm with little to no drawdown, and the demonstrated quick recovery time following pumping; it is concluded that the long-term yield of the wells will be sufficient to meet normal domestic requirements in accordance with MECP Procedure D-5-5.

- Based on results of the pumping test and monitoring results of neighbouring residential well water supplies, water quantity problems resulting from mutual well interference are not expected to be significant. The measured interference during pumping is an appropriate estimation of the influence.

- Surrounding land use within a 500 m radius consists primarily of rural residential and agricultural properties. No land and water use conflicts were identified.

- The nearest surface water course is an unnamed stream, approximately 400 m northwest of the site. Varty Lake is located approximately 1.5 km southwest of the site. Camden Lake is located approximately 1.7 km west of the site.

- Construction of Class 4 raised bed sewage disposal system or equivalent should be constructed and approved by qualified personnel in accordance with the Ontario Building Code requirements. No concerns were identified regarding potential impact from raised septic bed interference.

- Based on the results of analyses, we recommend that disinfection (i.e., UV light) be provided to future drinking water systems to ensure good quality groundwater for domestic consumption purposes. We recommend contracting a professional water quality specialist to confirm treatment options for both wells.

9.0 LIMITATIONS

ASC Environmental (ASC) was retained by *Denis Lahie (Client)* to undertake a Hydrogeological Assessment of the test wells at the subject property for purposes of land severance, located at Part Lot 44, Concession 5, Milsap Road, Township of Stone Mills, Ontario.

The scope of work for this assessment included:

- Reviewing available Ministry of Environment, Conservation and Parks (MECP) well water records and historical data for the local area.
- Chlorinate the recently developed well on the east severance lot and circulate water until zero residual chlorine is measured in the well water.
- Undertake one 6-hour pumping test (with recovery) on the recently drilled well at the request of the Client. The pumping test was conducted in accordance with MECP D-5-5 guidelines.
- Monitor water levels in neighbouring wells and west lot during pumping.
- Collect well water samples near the first hour of pumping (if possible) and near the end of the pumping test (approximate 6-hour duration) following zero chlorine residual.
- Submit well water samples 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, and potential well interference for the proposed severances.
- Provide an assessment of the suitability of the properties for individual septic systems.

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 passage of time affects the information provided in the report. Hydrogeological and 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 hydrogeological/environmental status of the property.

This document has been prepared by ASC for the sole use of *Denis Lahie (Client)* and *its assigns* in support of application for severance related to the subject property. Unauthorized reuse of this document for other purposes, or by any other party, without the express written consent of ASC shall be at such party's sole risk. We appreciate the opportunity to work with you on this project. If you have any questions concerning our report, please contact the undersigned.

Yours truly,

ASC Environmental Inc.

Reviewed by:

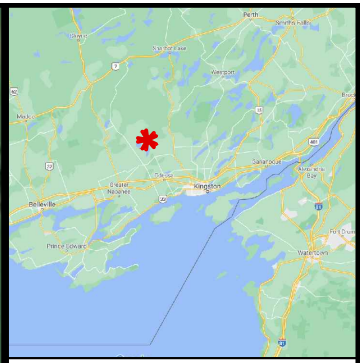
LICENSED PROFESSIONAL ENGINEER
09/07/2021
P. N. JOHNSTON
PROVINCE OF ONTARIO

Sarah McCallum, B.Sc.
Environmental Scientist

Paul Johnston, M.Sc., P. Eng. QP$_{ESA}$
President

APPENDIX A
Drawings

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



LEGEND*

- APPROXIMATE PROPERTY LOCATION
- SUBJECT PROPERTY
- PROPOSED SEVERANCE

DRAWING TITLE
Site Location Plan

FIGURE NO.	DRAWN BY
01	S. Donovan

PROJECT
Hydrogeological Assessment

CLIENT
Denis Lahie

LOCATION
Concession 5, Part of Lot 44,
Milsap Road, Moscow
Township of Stone Mills, ON

PROJECT NO.	SCALE:
ASC-660	0 METRES 150
DATE	
29-Jun-2021	

ASC ENVIRONMENTAL INC.
1305 Princess St
Kingston, ON, K7M 3E3

(613)634-5596
www.asc-environmental.com

*DRAWING INTENDED TO BE PRINTED AND VIEWED IN COLOUR

LEGEND*

- SUBJECT PROPERTY
- PROPOSED SEVERANCE
- TW TEST WELL
- OW OBSERVTION WELL

DRAWING TITLE
Site Layout Plan

FIGURE NO.	DRAWN BY
02	S. Volpato

PROJECT
Hydrogeological Assessment

CLIENT
Denis Lahie

LOCATION
Concession 5, Part of Lot 44, Milsap Road, Moscow
Township of Stone Mills, ON

PROJECT NO.	SCALE:
ASC-660	0 METRES 15
DATE	
29-Jun-2021	

ASC ENVIRONMENTAL INC.
1305 Princess St
Kingston, ON, K7M 3E3

(613)634-5596
www.asc-environmental.com

*DRAWING INTENDED TO BE PRINTED AND VIEWED IN COLOUR

APPENDIX B
Subject Property Well Record

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☐ Metric ☑ Imperial

Well Tag No. (Place Sticker and/or Print Below): Tag#:A314757

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
DENNIS	LABAIE		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
1565 MOSCOW RD	YARKER	ONT	K0K3N0	613 3585538

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
	CAMDEN EAST STONE MILLS	44	5

County/District/Municipality	City/Town/Village	Province	Postal Code
LENNOX & ADDINGTON		Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	355795	4921357		WEST LOT

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BROWN	CLAY			0'	2'
GREY	SHALE			2'	6'
BLUE	LIMESTONE			6'	29'
GREEN	LIMESTONE			29'	64'
BLACK	LIMESTONE			64'	78'
GREEN	LIMESTONE			78'	93'
RED/BLACK	GRANITE			93'	120'
		FREE CHLORINE 120			

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
20	0	CEMENT	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	Depth (m/ft) To
6 1/4"	STEEL	188cm	+2'	20'
6"	OPEN HOLE		20'	120'

Construction Record - Screen

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

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

Water Details

Water found at Depth	Kind of Water	Hole Diameter Depth (m/ft) From	To	Diameter (cm/in)
83' (m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify	0'	20'	10"
108' (m/ft) ☐ Gas	☐ Fresh ☑ Untested ☐ Other, specify	20'	120'	6"
(m/ft) ☐ Gas	☐ Fresh ☐ Untested ☐ Other, specify			

Results of Well Yield Testing

After test of well yield, water was: ☑ Clear and sand free ☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft): 118'

Pumping rate (l/min / GPM): 5GPM

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 14.4

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

Recommended pump depth (m/ft): 115'

Recommended pump rate (l/min/GPM): 5+GPM

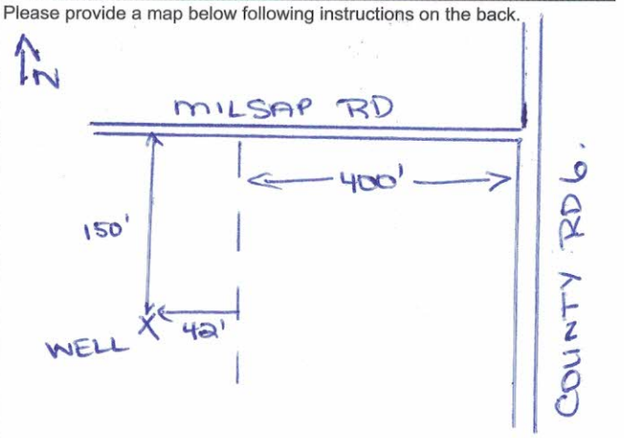
Well production (l/min/GPM): 15GPM

Disinfected? ☑ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	12.3		
1	13	1	13.9
2	13.6	2	13.7
3	13.9	3	13.5
4	14.1	4	13.3
5	14.2	5	13.1
10	14.4	10	12.6
15	14.4	15	12.4
20	14.4	20	12.3
25	14.4	25	12.3
30	14.4	30	12.3
40	14.4	40	12.3
50	14.4	50	12.3
60	14.4	60	12.3

Map of Well Location

Please provide a map below following instructions on the back.



Comments: WEST LOT

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
JACK KNOX WELL DRILLING LTD	3202

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
2580 PERTH RD POBOX 33	GLENBURNIE	ONT	K0H1S0	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
6135466164	KNOX, JOHN	2879		Y Y Y Y M M D D

Well owner's information package delivered: ☐ Yes ☐ No

Date Package Delivered: 2021 06 25

Date Work Completed: Y Y Y Y M M D D

Ministry Use Only

Audit No. Z356325

Received

0506E (2020/06)

Ministry's Copy

Ontario — Ministry of the Environment, Conservation and Parks

Measurements recorded in: ☐ Metric ☑ Imperial

Well Tag No. (Place Sticker and/or Print Below): Tag#:A314756

Well Record

Regulation 903 Ontario Water Resources Act

Page ____ of ____

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
DENNIS	LAHAIE		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)
1565 MOSCOW RD	YARKER	ONT	K0K 3N0	613 358 5538

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
	CAMDEN EAST STONE MILLS	44	5

County/District/Municipality	City/Town/Village	Province	Postal Code
LENNOX & ADDINGTON		Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	355876	4921409		EAST LOT

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BROWN	CLAY			0'	2'6"
GREY	SHALE			2'6"	5'
BLUE	LIMESTONE			5'	28'
GREEN	LIMESTONE			28'	64'
BLACK	LIMESTONE			64'	78'
GREEN	LIMESTONE			78'	93'
BLACK	GRANITE			93'	120'
		FREE CHLORINE 120.			

Annular Space

Depth Set at (m/ft) From	To	Type of Sealant Used (Material and Type)	Volume Placed (m^3/ft^3)
20	0	CEMENT	7

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	Depth (m/ft) To
6 1/4"	STEEL	188cm	+2'	20'
6"	OPEN HOLE		20'	120'

Construction Record - Screen

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

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

Water Details

Water found at Depth (m/ft)	Gas	Kind of Water	Other, specify
88'	☐	☐ Fresh ☑ Untested	
110'	☐	☐ Fresh ☑ Untested	
	☐	☐ Fresh ☐ Untested	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0'	20'	10"
20'	120'	6"

Results of Well Yield Testing

After test of well yield, water was:
☑ Clear and sand free
☐ Other, specify

If pumping discontinued, give reason:

Pump intake set at (m/ft): 118'

Pumping rate (l/min / GPM): 5GPM

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping (m/ft): 13.3

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

Recommended pump depth (m/ft): 115'

Recommended pump rate (l/min/GPM): 5+GPM

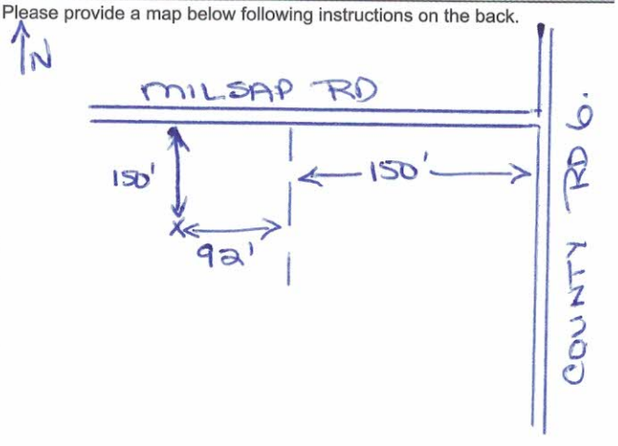
Well production (l/min/GPM): 15 GPM

Disinfected? ☑ Yes ☐ No

	Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level		12.1		
1	12.5		1	13.1
2	12.7		2	12.9
3	12.9		3	12.7
4	13.1		4	12.6
5	13.2		5	12.4
10	13.3		10	12.2
15	13.3		15	12.1
20	13.3		20	12.1
25	13.3		25	12.1
30	13.3		30	12.1
40	13.3		40	12.1
50	13.3		50	12.1
60	13.3		60	12.1

Map of Well Location

Please provide a map below following instructions on the back.



Comments: EAST LOT

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
JACK KNOX WELL DRILLING LTD	3202

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
2580 PERTH RD PO BOX 33	GLENBURNIE	ONT	K0H 1S0	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)	Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted
6135466164	KNOX, JOHN	2879		Y Y Y Y M M D D

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☐ No	2021 06 28	Y Y Y Y M M D D

Ministry Use Only

Audit No. Z356324

Received

Ministry's Copy

APPENDIX C
MECP Water Well Summary Records

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

UTM | | Z | | | | | | E
| 9 | R | | | | | | N
Elev. | 9 | R | 0473
Basin | 24 | | | |

ONTARIO

The Well Drillers Act
Department of Mines, Province of Ontario

37 No. 457

DEPARTMENT OF MINES
MAR 21 1957
TO

Water Well Record

County or Territorial District. Lennox & Addington Township, ~~Village, Town or City~~ ... East
Con. V Lot 24 Street and Number (if in Village, Town or City) ...
Owner Moscow Public School Address Moscow Ontario
Date Completed Feb 1 1957 (day) (month) (year) Cost of Well (excluding pump) ...

Pipe and Casing Record

Casing diameter(s). 6 1/4"
Length(s) of casing(s). 7 1/2"
Type of screen ...
Length of screen ...
Distance from top of screen to ground level ...
Is well a gravel-wall type? no

Pumping Test

Date ~~Jan~~ Feb 1 1957
Static level. 9'
Pumping level. 12 ft
Pumping rate. 20 gal per minute
Duration of test. 4 hours
Distance from cylinder or bowls to ground level ...

Water Record

Kind (fresh or mineral). fresh
Quality (hard, soft, contains iron, sulphur, etc.) hard
Appearance (clear, cloudy, coloured) clear
For what purpose(s) is the water to be used? school
...
How far is well from possible source of contamination? ...
What is the source of contamination? ...
Enclose a copy of any mineral analysis that has been made of water ...

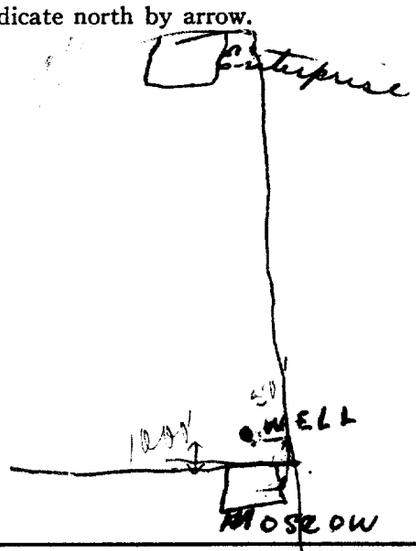
Depth(s) to Water Horizon(s)	Kind of Water	No. of Feet Water Rises
3 8 ft	fresh	62 ft.
67 "		

Well Log

Overburden and Bedrock Record	From	To
	0 ft.	....ft.
C. Clay	0	2 ft.
Limestone	2	71 ft

Location of Well

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



Situation: Is well on upland, in valley, or on hillside? Upland
Drilling Firm. G. Bradberry
Address. Verona
Name of Driller. Burton Rutter Address. Verona
Date. January 28 - Feb. 1 (1957) Licence Number ...

Burton Rutter
Signature of Licensee

FORM 5

55.58

UTM | | Z | | | | | | E
| 5 | R | | | | | | N

Elev. | 16 | R | 504217 |

Basin | 24 |

The Ontario Water Resources Commission Act

GROUND WATER BRANCH
37
APR 15 1964
ONTARIO WATER RESOURCES COMMISSION

461

WATER WELL RECORD

County or District LENOX Addington Township, Village, Town or City CAMDEN EAST

Con. 5 Lot 45 Date completed 24 (day) Feb. (month) 1964 (year)

[redacted] dress MOSCOW

Casing and Screen Record

Inside diameter of casing 6"/4"

Total length of casing 17'

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 6"

Pumping Test

Static level

Test-pumping rate G.P.M.

Pumping level Dry

Duration of test pumping

Water clear or cloudy at end of test

Recommended pumping rate G.P.M.

with pump setting of feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
loam & boulders	0	17		

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

DRY

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

Drilling or Boring Firm L. Campbell

Newburgh

Address

Licence Number 1344

Name of Driller or Borer L. Campbell

Address RR1 Newburgh

Date Apr. 14 1964

L. Campbell

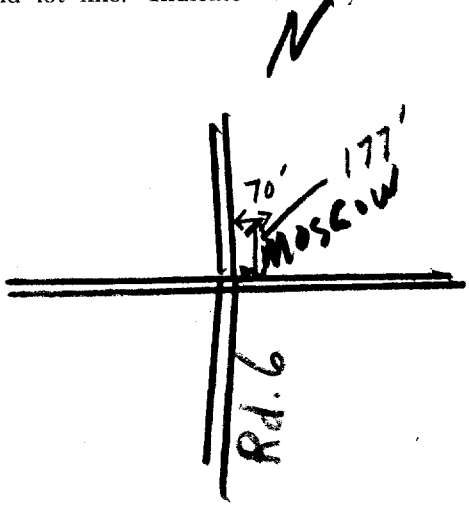
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M Sets 60-5930

OWRC COPY

Location of Well

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



CSS 58

UTM Z E

Lot 5 R N

Elev. 16 [illegible] 0427

Basin 22

County or District LENOX & ADDINGTON

Con. 5 Lot 45

The Ontario Water Resources Commission Act

WATER WELL RECORD

Township, Village, Town or City [illegible] N

Date completed 24 (day) Feb. (month) 1964 (year)

[redacted] dress MOSCOW

Casing and Screen Record

Inside diameter of casing 6 1/4

Total length of casing 20.4

Type of screen

Length of screen

Depth to top of screen

Diameter of finished hole 5 1/2

Pumping Test

Static level 10

Test-pumping rate 12 G.P.M.

Pumping level 22

Duration of test pumping 15 MIN

Water clear or cloudy at end of test Cloudy

Recommended pumping rate 6 G.P.M.

with pump setting of 39 feet below ground surface

Well Log

Overburden and Bedrock Record	From ft.	To ft.	Water Record: Depth(s) at which water(s) found	Water Record: Kind of water (fresh, salty, sulphur)
Loam & Boulders	0	17'	37	Fresh
Hard gray limestone	17	37		
Soft " "	37.	44 1/2		

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

House

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

Drilling or Boring Firm L C Campbell

Newburgh

Address

Licence Number 1344

Name of Driller or Borer L C Campbell

Address Newburgh

Date Apr. 14 1964

L C Campbell

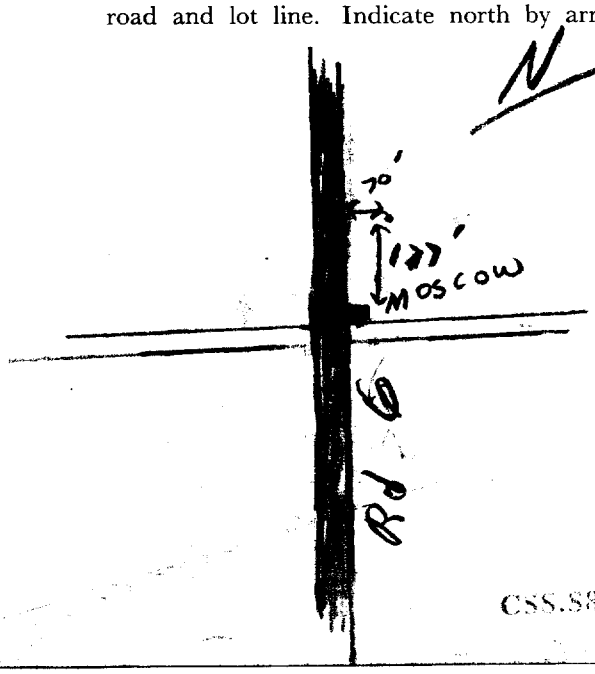
(Signature of Licensed Drilling or Boring Contractor)

Form 7 15M-60-4138

OWRC COPY

Location of Well

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



CSS.58

The Ontario Water Resources Commission Act

WATER WELL RECORD

31C/7W P

Water management in Ontario

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

11 | 3702704 | MUNICIP. 37006 | CON. CON 05

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
LENNOX - ADDINGTON	CAMDEN	5	044

[redacted] R. # 3 YARKER ONT.

DATE COMPLETED: DAY 19 MO. AUG YR. 69

UTM NG 21240 | RC 4 | ELEVATION 0480 | RC 5 | BASIN CODE 24

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
BLUE	CLAY			0	3
BLUE	SHALE			3	10
BLUE	LIMESTONE			10	64

31 | 0003305 | 0010317 | 0064315

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0060	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH – FEET FROM	DEPTH – FEET TO
06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	~~218~~ 0022
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0064
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

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

61 PLUGGING & SEALING RECORD

DEPTH SET AT – FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☒ PUMP 2 ☐ BAILER

PUMPING RATE: 0016 GPM. DURATION OF PUMPING: 01 HOURS 00 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING: 1 ☒ PUMPING 2 ☐ RECOVERY	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
012 FEET	032 FEET		025 FEET	029 FEET	032 FEET	032 FEET

IF FLOWING, GIVE RATE: GPM.

PUMP INTAKE SET AT: 60 FEET

WATER AT END OF TEST: ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☒ DEEP

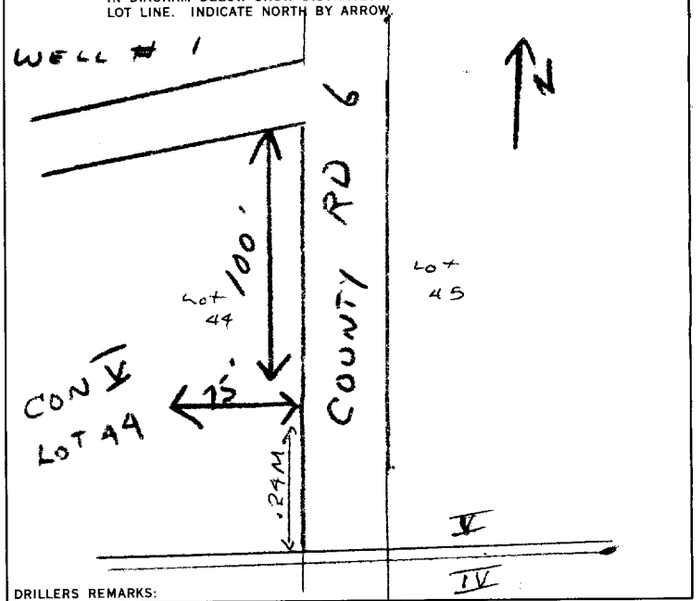
RECOMMENDED PUMP SETTING: 040 FEET

RECOMMENDED PUMPING RATE: 0010 GPM.

50-53 000.8 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

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



DRILLERS REMARKS:

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 01

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

CONTRACTOR

NAME OF WELL CONTRACTOR: CECIL GOODBERRY WELL DRILLING LTD | LICENCE NUMBER: 3334

ADDRESS: 196 INDIAN RD KINGSTON

NAME OF DRILLER OR BORER: DOUG BURNETTE | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Leslie Goodberry | SUBMISSION DATE: DAY 20 MO. AUG YR. 69

OFFICE USE ONLY

DATA SOURCE 58: 1 | CONTRACTOR 59-62: 2402 | DATE RECEIVED 63-68: 08 09 69

DATE OF INSPECTION | INSPECTOR: P/E

REMARKS:

OWRC COPY

The Ontario Water Resources Commission Act

WATER WELL RECORD

31C/4W P

Water management in Ontario

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

11 (1 2) | 3702705 (3 9) | MUNICIP. 37006 (10 14) | CON. C & N (15 22 23 24) 05

COUNTY OR DISTRICT: LENNOX & ADDINGTON

TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: CAMDEN

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

LOT (25-27): 044

OWNER (SURNAME FIRST) (28-47): [redacted]

ADDRESS: R.R. # 3 YARKER ONT

DATE COMPLETED (48-53): DAY 20 MO. 08 YR. 69

21 (1 2)

UTM: ZONE 18 (10) | EASTING 356100 (12 17) | NORTHING 4920820 (18 24) | RC. 4 (25) | ELEVATION 0480 (26) | RC. 5 (30) | BASIN CODE 24 (31 47)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
BLUE	CLAY			0	2
BLUE	SHALE			2	10
BLUE	LIMESTONE			10	44

31: 0002305 | 0010317 | 0044315

32: (1 2) (10) (14 15) (21) (32) (43) (54) (65) (75) (80)

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0041 (10-13)	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (14)
(15-18)	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (19)
(20-23)	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (24)
(25-28)	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (29)
(30-33)	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL (34) (80)

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH – FEET FROM	DEPTH – FEET TO
6 4 06 (10-11)	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE (12)	.188	0	22 0022 (13-16)
(17-18)	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE (19)			0044 (20-23)
(24-25)	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE (26)			(27-30)

SCREEN

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

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD (10)	PUMPING RATE (11-14)	DURATION OF PUMPING (15-16 HOURS, 17-18 MINS.)
1 ☐ PUMP 2 ☒ BAILER	0014 GPM.	01 HOURS 00 MINS.

STATIC LEVEL (19-21)	WATER LEVEL END OF PUMPING (22-24)	WATER LEVELS DURING (25) 1 ☐ PUMPING 2 ☒ RECOVERY: 15 MINUTES (26-28)	30 MINUTES (29-31)	45 MINUTES (32-34)	60 MINUTES (35-37)
012 FEET	035 FEET	012 FEET	FEET	FEET	FEET

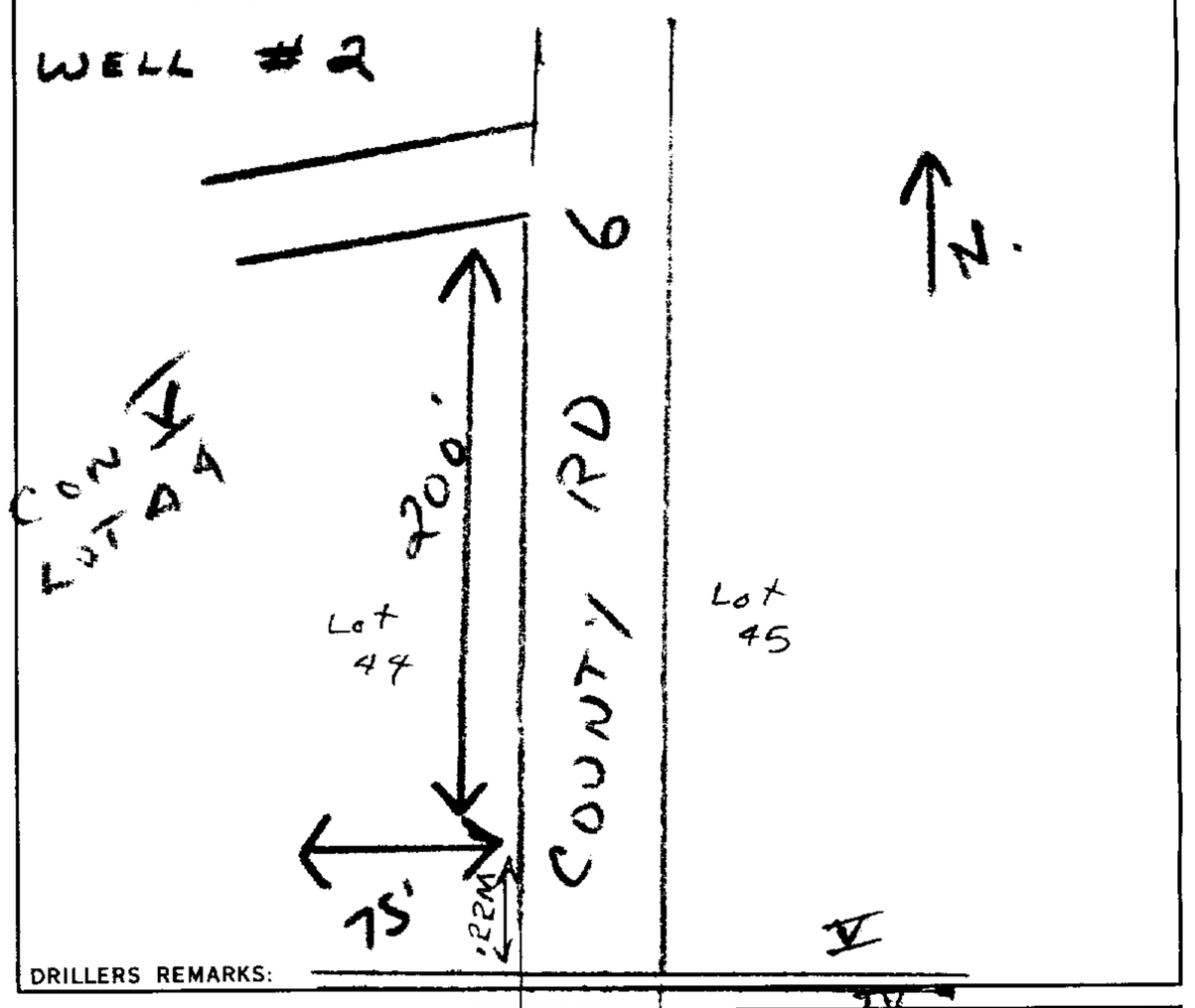
IF FLOWING, GIVE RATE (38-41)	PUMP INTAKE SET AT	WATER AT END OF TEST (42)
GPM.	FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING (43-45)	RECOMMENDED PUMPING RATE (46-49)
☐ SHALLOW ☒ DEEP	040 FEET	0010 GPM.

(50-53) 000.6 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

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



DRILLERS REMARKS:

FINAL STATUS OF WELL (54)

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

WATER USE (55-56) 01

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

METHOD OF DRILLING (57)

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

CONTRACTOR

NAME OF WELL CONTRACTOR: CECIL GOODBERRY WELL DRILLING LTD. — LICENCE NUMBER: 3334

ADDRESS: 196 INDIAN RD KINGSTON

NAME OF DRILLER OR BORER: DOUG BURNETTE — LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Leslie Goodberry — SUBMISSION DATE: DAY 20 MO. AUG YR. 69

OFFICE USE ONLY

DATA SOURCE (58): 1 — CONTRACTOR (59-62): 2402 — DATE RECEIVED (63-68): 03 09 69 (80)

DATE OF INSPECTION — INSPECTOR: P/S P/L

REMARKS:

OWRC COPY

The Ontario Water Resources Commission Act

WATER WELL RECORD

8 31 C 7W

Water management in Ontario

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

11 (1-2) 3703114 MUNICIP. 37006 (10-14) CON. GAN (15-22) 05 (23-24)

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT (25-27)
Lennox & Addington	Camden	5	044

OWNER (SURNAME FIRST) (28-47) [redacted]

ADDRESS: R. R. # 3, YARKER, Ont.

DATE COMPLETED (48-53): DAY 16 MO ~~Mar.~~ 03 YR. 71

21 (1-2)

UTM: ZONE (10) 18 EASTING (12-17) 355810 NORTHING (18-24) 4921290 RC. (25) 4 ELEVATION (26-29) 0475 RC. (30) 5 BASIN CODE (31-47) 24

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
	topsoil			0	1
	clay			1	7
blue	limestone			7	53

31 (1-2) 0001 02 (3-10) 0007 05 (11-21) 0053315 (22-32)

32 (1-2) (10) (14-15) (21) (32) (43) (54) (65) (75) (80)

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0049 (10-13)	☒ 1 FRESH ☐ 3 SULPHUR ☐ 2 SALTY ☐ 4 MINERAL (14)
(15-18)	☐ 1 FRESH ☐ 3 SULPHUR ☐ 2 SALTY ☐ 4 MINERAL (19)
(20-23)	☐ 1 FRESH ☐ 3 SULPHUR ☐ 2 SALTY ☐ 4 MINERAL (24)
(25-28)	☐ 1 FRESH ☐ 3 SULPHUR ☐ 2 SALTY ☐ 4 MINERAL (29)
(30-33)	☐ 1 FRESH ☐ 3 SULPHUR ☐ 2 SALTY ☐ 4 MINERAL (34) (80)

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH – FEET FROM	DEPTH – FEET TO
~~04~~ 06 (10-11)	☒ 1 STEEL ☐ 2 GALVANIZED ☐ 3 CONCRETE ☐ 4 OPEN HOLE (12)	.188	0	~~12~~ 0012 (13-16)
06 (17-18)	☐ 1 STEEL ☐ 2 GALVANIZED ☐ 3 CONCRETE ☒ 4 OPEN HOLE (19)		12	0053 ~~53~~ (20-23)
(24-25)	☐ 1 STEEL ☐ 2 GALVANIZED ☐ 3 CONCRETE ☐ 4 OPEN HOLE (26)			(27-30)

SCREEN

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

61 PLUGGING & SEALING RECORD

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

71 PUMPING TEST

PUMPING TEST METHOD (10): ☐ 1 PUMP ☒ 2 BAILER

PUMPING RATE (11-14): 0030 GPM.

DURATION OF PUMPING (15-16 HOURS) 01 (17-18 MINS.) 00

STATIC LEVEL (19-21)	WATER LEVEL END OF PUMPING (22-24)	WATER LEVELS DURING (25) ☐ 1 PUMPING ☒ 2 RECOVERY: 15 MINUTES (26-28)	30 MINUTES (29-31)	45 MINUTES (32-34)	60 MINUTES (35-37)
012 FEET	030 FEET	012 FEET	FEET	FEET	FEET

IF FLOWING, GIVE RATE (38-41): GPM.

PUMP INTAKE SET AT: FEET

WATER AT END OF TEST (42): ☒ 1 CLEAR ☐ 2 CLOUDY

RECOMMENDED PUMP TYPE: ☒ SHALLOW ☐ DEEP

RECOMMENDED PUMP SETTING (43-45): 025 FEET

RECOMMENDED PUMPING RATE (46-49): 0010 GPM.

(50-53) 001.7 GPM./FT. SPECIFIC CAPACITY

FINAL STATUS OF WELL (54)

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

WATER USE (55-56) 01

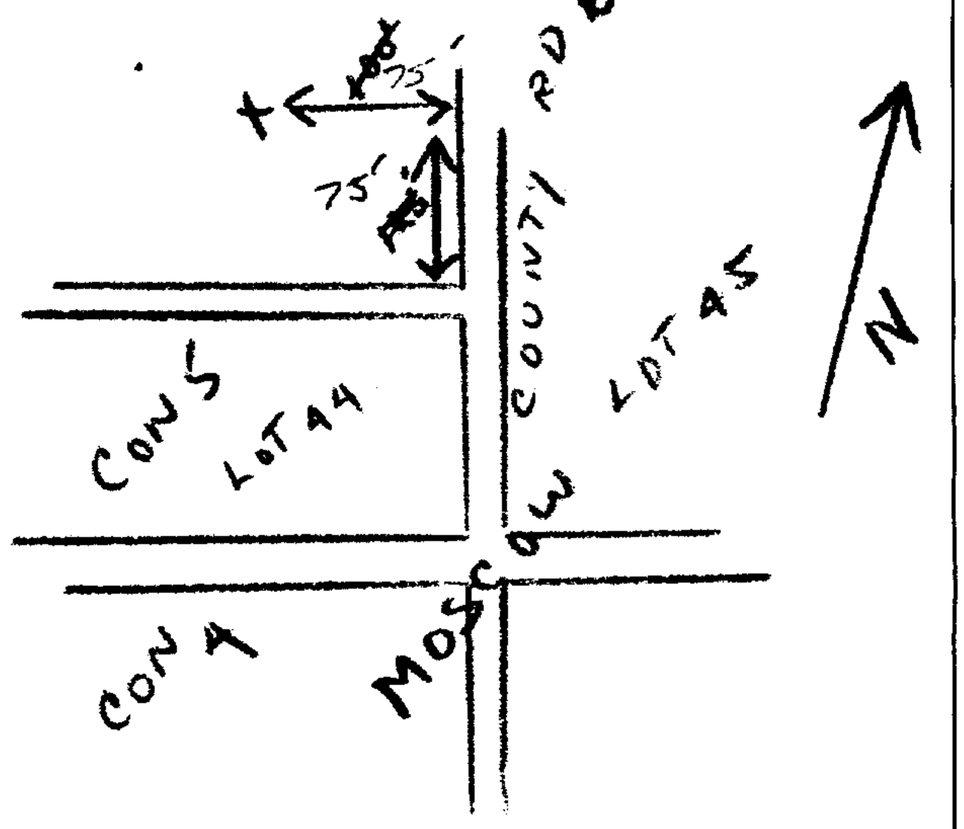
☒ 1 DOMESTIC ☐ 2 STOCK ☐ 3 IRRIGATION ☐ 4 INDUSTRIAL ☐ OTHER ☐ 5 COMMERCIAL ☐ 6 MUNICIPAL ☐ 7 PUBLIC SUPPLY ☐ 8 COOLING OR AIR CONDITIONING ☐ 9 NOT USED

METHOD OF DRILLING (57)

☒ 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:

CONTRACTOR

NAME OF WELL CONTRACTOR: Goodberry Well Drilling Ltd. LICENCE NUMBER: 2402

ADDRESS: Verona, Ont.

NAME OF DRILLER OR BORER: George Babcock LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Leslie Goodberry SUBMISSION DATE: DAY 17 MO. Mar. YR. 71

OWRC COPY

OFFICE USE ONLY

DATA SOURCE (58): 1 CONTRACTOR (59-62): 2402 DATE RECEIVED (63-68): 100571 (80)

DATE OF INSPECTION: INSPECTOR: Km

REMARKS: P K WI

The Ontario Water Resources Commission Act

WATER WELL RECORD

31C7W

Water management in Ontario

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

11 | 3703374 | MUNICIP. 37906 | CON. GON | 05

COUNTY OR DISTRICT: Lenox Addington | TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE: CAMDEN | CON., BLOCK, TRACT, SURVEY, ETC.: 5 | LOT: 044

[redacted] Moscow ONT | DATE COMPLETED: DAY 17 MO ~~Oct~~ YR. 71

UTMING: 920870 | RC: 4 | ELEVATION: 0472 | RC: 5 | BASIN CODE: 24

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH – FEET FROM	DEPTH – FEET TO
			Loam	0	6
			Soft Gray Limestone	6	12
			Hard Gray "	12	40

31 aaaa02 aa402/15

32

41 WATER RECORD

WATER FOUND AT – FEET	KIND OF WATER
0035	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH – FEET FROM	DEPTH – FEET TO
6	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	~~12~~ 0012
~~6~~ 4	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE			0040
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

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

61 PLUGGING & SEALING RECORD

DEPTH SET AT – FEET FROM	DEPTH SET AT – FEET TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD: 1 ☐ PUMP 2 ☒ BAILER | PUMPING RATE: 0005 GPM. | DURATION OF PUMPING: 00 HOURS 30 MINS.

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
010 FEET	032 FEET	1 ☒ PUMPING 2 ☐ RECOVERY	028 FEET	032 FEET	FEET	FEET

IF FLOWING, GIVE RATE: GPM. | PUMP INTAKE SET AT: FEET | WATER AT END OF TEST: 1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE: ☐ SHALLOW ☐ DEEP | RECOMMENDED PUMP SETTING: 038 FEET | RECOMMENDED PUMPING RATE: 0005 GPM.

50-53 0002 GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

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

DRILLERS REMARKS:

FINAL STATUS OF WELL (54)
1 ☒ WATER SUPPLY 2 ☐ OBSERVATION WELL 3 ☐ TEST HOLE 4 ☐ RECHARGE WELL 5 ☐ ABANDONED, INSUFFICIENT SUPPLY 6 ☐ ABANDONED, POOR QUALITY 7 ☐ UNFINISHED

WATER USE (55-56) 01
1 ☒ DOMESTIC 2 ☐ STOCK 3 ☐ IRRIGATION 4 ☐ INDUSTRIAL 5 ☐ COMMERCIAL 6 ☐ MUNICIPAL 7 ☐ PUBLIC SUPPLY 8 ☐ COOLING OR AIR CONDITIONING ☐ OTHER 9 ☐ NOT USED

METHOD OF DRILLING (57)
1 ☒ CABLE TOOL 2 ☐ ROTARY (CONVENTIONAL) 3 ☐ ROTARY (REVERSE) 4 ☐ ROTARY (AIR) 5 ☐ AIR PERCUSSION 6 ☐ BORING 7 ☐ DIAMOND 8 ☐ JETTING 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: [redacted] | LICENCE NUMBER: 1506

ADDRESS: [redacted] Wellington

NAME OF DRILLER OR BORER: [redacted] | LICENCE NUMBER: 1506

SIGNATURE OF CONTRACTOR: [redacted] | SUBMISSION DATE: DAY 14 MO JUNE YR. 72

OWRC COPY

OFFICE USE ONLY

DATA SOURCE (58): 1 | CONTRACTOR (59-62): 1506 | DATE RECEIVED (63-68): 180772

DATE OF INSPECTION | INSPECTOR

REMARKS: P K WI

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

31c/7W8

Ontario

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

11 | 3704676 | MUNICIP 37006 | CON. CON | 05

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Lennox & Addington	Camden	5	044

[redacted] R. # 6, Napanee, Ont.

DATE COMPLETED: DAY 20 MO. Apr YR. 76

UTM NORTHING 4920850 | RC S | ELEVATION 0470 | RC S | BASIN CODE 24

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
	topsoil			0	1
	clay & boulders			1	6
blue	limestone			6	74

31 | 0001 02 | 0006 0513 | 0074315

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0069	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
0073	1 ☒ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL
	1 ☐ FRESH 2 ☐ SALTY 3 ☐ SULPHUR 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM. INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	.188	0	0025
06	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☒ OPEN HOLE		25	0074
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

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

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☒ PUMP 2 ☐ BAILER	0009 GPM	01 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
018 FEET	060 FEET	1 ☐ PUMPING 2 ☒ RECOVERY	020 FEET	018 FEET	FEET	FEET

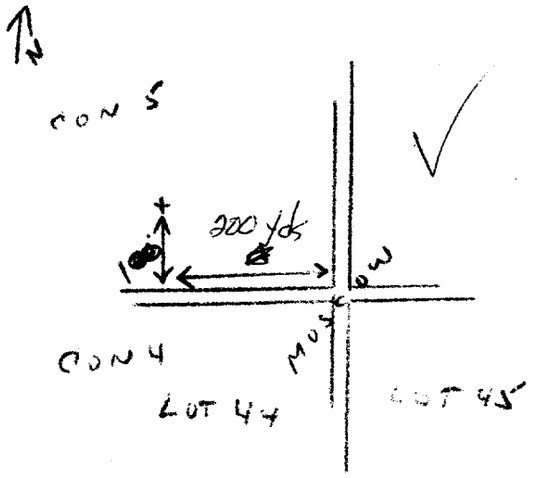
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMPING RATE
☐ SHALLOW ☒ DEEP	070 FEET	0007 GPM

50-53 ___ GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL 5520

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



DRILLERS REMARKS:

FINAL STATUS OF WELL 54: 1 ☒ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED

WATER USE 55-56: 01 — 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 57: 5 — 1 ☐ CABLE TOOL; 2 ☐ ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 4 ☐ ROTARY (AIR); 5 ☒ AIR PERCUSSION; 6 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: Goodberry Well Drilling Ltd. | LICENCE NUMBER: 2402

ADDRESS: Maple Dr., Verona, Ont.

NAME OF DRILLER OR BORER: Arnold Munro | LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Per Leslie Goodberry | SUBMISSION DATE: DAY 21 MO. Apr. YR. 76

OFFICE USE ONLY

DATA SOURCE 58: 1 | CONTRACTOR 59-62: 2402 | DATE RECEIVED 63-68: 090876

DATE OF INSPECTION | INSPECTOR

REMARKS: P 74 WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 MOE 07-091

MINISTRY OF THE ENVIRONMENT

The Ontario Water Resources Act

WATER WELL RECORD

3 1c/7w

Ontario

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

11 | 3704773 | MUNICIP. 37006 | CON. CON | 05

COUNTY OR DISTRICT	TOWNSHIP, BOROUGH, CITY, TOWN, VILLAGE	CON., BLOCK, TRACT, SURVEY, ETC.	LOT
Lennox-Addington	Camden	5	044

[redacted] oscow, Ontario

DATE COMPLETED: DAY 22 MO 11 YR 76

UTM: [illegible] 721250 | RC 5 | ELEVATION 0480 | RC 5 | BASIN CODE 24

LOG OF OVERBURDEN AND BEDROCK MATERIALS (SEE INSTRUCTIONS)

GENERAL COLOUR	MOST COMMON MATERIAL	OTHER MATERIALS	GENERAL DESCRIPTION	DEPTH - FEET FROM	DEPTH - FEET TO
Brown	Sand			0'	2'
Blue	Limestone			2'	78'

31 | 0002628 | 0078315

32

41 WATER RECORD

WATER FOUND AT - FEET	KIND OF WATER
0075	1 ☒ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL
	1 ☐ FRESH 3 ☐ SULPHUR 2 ☐ SALTY 4 ☐ MINERAL

51 CASING & OPEN HOLE RECORD

INSIDE DIAM INCHES	MATERIAL	WALL THICKNESS INCHES	DEPTH - FEET FROM	DEPTH - FEET TO
6 1/4 06	1 ☒ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE	3/16	0'	25 0025
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			
	1 ☐ STEEL 2 ☐ GALVANIZED 3 ☐ CONCRETE 4 ☐ OPEN HOLE			

SCREEN

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

61 PLUGGING & SEALING RECORD

DEPTH SET AT - FEET FROM	TO	MATERIAL AND TYPE (CEMENT GROUT, LEAD PACKER, ETC.)

71 PUMPING TEST

PUMPING TEST METHOD	PUMPING RATE	DURATION OF PUMPING
1 ☐ PUMP 2 ☒ BAILER	0010 GPM	02 HOURS 00 MINS

STATIC LEVEL	WATER LEVEL END OF PUMPING	WATER LEVELS DURING	15 MINUTES	30 MINUTES	45 MINUTES	60 MINUTES
019' FEET	064 FEET	1 ☒ PUMPING 2 ☐ RECOVERY	032 FEET	047 FEET	056 FEET	061 FEET

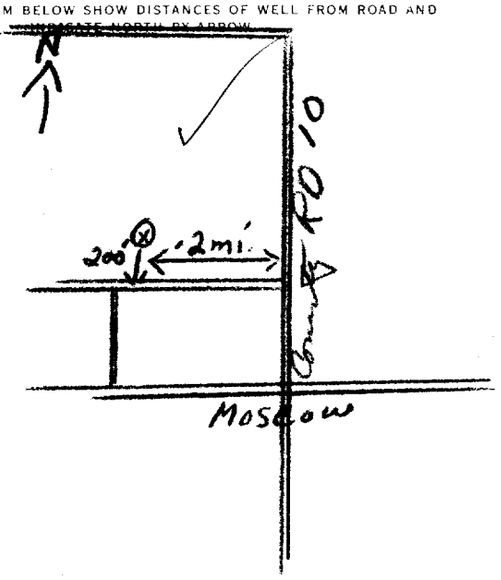
IF FLOWING, GIVE RATE	PUMP INTAKE SET AT	WATER AT END OF TEST
GPM	FEET	1 ☒ CLEAR 2 ☐ CLOUDY

RECOMMENDED PUMP TYPE	RECOMMENDED PUMP SETTING	RECOMMENDED PUMP RATE
☐ SHALLOW ☒ DEEP	076 FEET	0010 GPM

50-53 ___ GPM./FT. SPECIFIC CAPACITY

LOCATION OF WELL

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



DRILLERS REMARKS:

FINAL STATUS OF WELL 54: 1 ☒ WATER SUPPLY; 2 ☐ OBSERVATION WELL; 3 ☐ TEST HOLE; 4 ☐ RECHARGE WELL; 5 ☐ ABANDONED, INSUFFICIENT SUPPLY; 6 ☐ ABANDONED, POOR QUALITY; 7 ☐ UNFINISHED

WATER USE 55-56: 01 — 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 57: 5 — 1 ☐ CABLE TOOL; 2 ☐ ROTARY (CONVENTIONAL); 3 ☐ ROTARY (REVERSE); 4 ☐ ROTARY (AIR); 5 ☒ AIR PERCUSSION; 6 ☐ BORING; 7 ☐ DIAMOND; 8 ☐ JETTING; 9 ☐ DRIVING

CONTRACTOR

NAME OF WELL CONTRACTOR: JACK KNOX — LICENCE NUMBER: 3202

ADDRESS: Glenburnie, Ontario.

NAME OF DRILLER OR BORER: RON KNOX — LICENCE NUMBER:

SIGNATURE OF CONTRACTOR: Jack Knox — SUBMISSION DATE: DAY 13 MO. 1 YR 77

OFFICE USE ONLY

DATA SOURCE 58: 1 — CONTRACTOR 62: 3202 — DATE RECEIVED 63-68: 180177

DATE OF INSPECTION: — INSPECTOR:

REMARKS: P WI

MINISTRY OF THE ENVIRONMENT COPY

FORM 7 MOE 07-091

Ontario — Ministry of the Environment

Well Tag No. *(Place Sticker and/or Print Below)* A121658

Well Record

Regulation 903 Ontario Water Resources Act

[redacted]

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
1565 Moscow Rd	Stone Mills (Camden East)	44	5

County/District/Municipality	City/Town/Village	Province	Postal Code
Lennox & Addington		Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 83	18	358580	4921053		

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

General Colour	Most Common Material	Other Materials	General Description	Depth (m/ft) From	Depth (m/ft) To
BROWN	CLAY			0	3.5
GREY	SHALE			3.5	5
BLUE	LIMESTONE			5	70
RED+BLACK	GRANITE			70	100

Annular Space

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

Method of Construction

- [ ] Cable Tool
- [ ] Diamond
- [ ] Rotary (Conventional)
- [ ] Jetting
- [ ] Rotary (Reverse)
- [ ] Driving
- [ ] Boring
- [ ] Digging
- [x] Air percussion
- [ ] Other, *specify*

Well Use

- [ ] Public
- [ ] Commercial
- [ ] Not used
- [x] 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	Depth (m/ft) To
6¼"	STEEL	188	+2	20
6"	OPEN HOLE		20	100

Construction Record - Screen

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

Status of Well

- [x] 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

Water found at Depth (m/ft)	Kind of Water	Other, specify
70 (m/ft) ☐ Gas	☐ Fresh ☑ Untested	
91 (m/ft) ☐ Gas	☐ Fresh ☑ Untested	
(m/ft) ☐ Gas	☐ Fresh ☐ Untested	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	20	10"
20	100	6"

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Jack Knox Well Drilling Ltd	3202

Business Address (Street Number/Name)	Municipality
2580 Perth Rd	Glenburnie

Province	Postal Code	Business E-mail Address
Ont	K0H 1S0	

Bus. Telephone No. (inc. area code)	Name of Well Technician (Last Name, First Name)
613 546 6164	Knox Ron

Well Technician's Licence No.	Signature of Technician and/or Contractor	Date Submitted (Y Y Y Y M M D D)
0041	Ron Knox	

Results of Well Yield Testing

After test of well yield, water was:
- [x] Clear and sand free
- [ ] Other, *specify*

If pumping discontinued, give reason:

Pump intake set at *(m/ft)*: 98'

Pumping rate *(l/min / GPM)*: 12 G.P.M.

Duration of pumping: 1 hrs + 0 min

Final water level end of pumping *(m/ft)*: 10.55'

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

Recommended pump depth *(m/ft)*: 95

Recommended pump rate *(l/min / GPM)*: 12 G.P.M

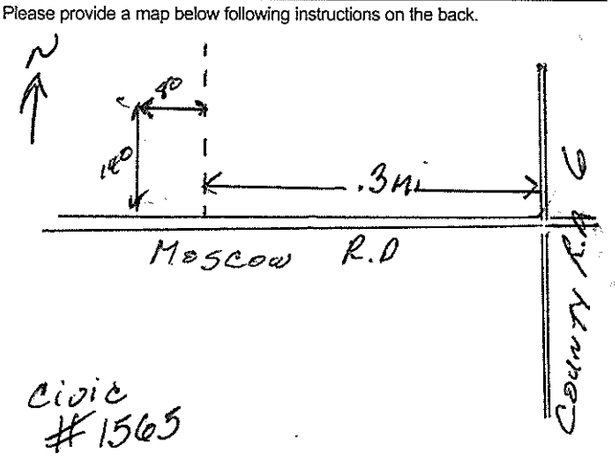
Well production *(l/min / GPM)*: 12+ G.P.M.

Disinfected? [x] Yes [ ] No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	4.6		
1	8.6	1	9.9
2	9.4	2	9
3	9.9	3	8.6
4	10.1	4	8.2
5	10.2	5	7.9
10	10.3	10	6.4
15	10.4	15	5.7
20	10.4	20	5
25	10.4	25	4.8
30	10.45	30	4.6
40	10.5	40	"
50	10.5	50	"
60	10.55	60	"

Map of Well Location

Please provide a map below following instructions on the back.



civic #1565

Comments:

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☐ Yes ☐ No	2012/03/22	2012/03/22

Ministry Use Only

Audit No. Z137858

Received APR 12 2012

APPENDIX D
Test Well Drawdown and Recovery Data

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

Table D1. Water Quality Field Measurements.

ASC ENVIRONMENTAL		**Field Water Quality Analysis**			**Test Well:**	**TW1**	
		Project No.:	ASC-660		Date:	29/6/2021	
		Client:	Denis Lahie		Recorded By: S.M. + S.D		
		Location:	Milsap Road, Moscow, Township of Stone Mills				
		Started pumping 20 L/min at 8:54 am					
Pumping Test Elapsed Time (min)	Odour	Temperature (°C)	pH	Conductivity (µS)	Total Dissolved Solids (ppm)	Turbidity NTU	Chlorine (Total) (mg/L)
0	Chlorine	13.0	7.93	1870	956	20	~200
31	Sl. Chlorine	11.8	7.25	838	421	0	~5-25
58	No Odour	12.4	7.29	844	445	0	0.29
90	No Odour	12.6	7.37	844	433	0	0.15
120	No Odour	12.5	7.23	845	415	0	0.09
149	No Odour	12.4	7.38	845	417	0	-
179	No Odour	12.5	7.26	905	444	0	-
209	No Odour	11.7	7.36	826	413	0	-
239	No Odour	12.0	7.68	852	420	0	-
270	No Odour	11.3	7.65	853	429	0	-
299	No Odour	11.3	7.26	860	423	0	-
325	No Odour	11.1	7.29	840	419	0	-
365	No Odour	11.2	7.3	843	422	0	-
Notes	1	<	indicates values lower than minimum detection limits of analysis equipment				
	2	-	not analyzed				
Field Analysis Equipment							
Chlorine :		Hach DR 900 Colorimeter, DPD Total Chlorine Reagent					
Temp./pH/Cond./TDS :		Hanna HI 98130 Meter					
Turbidity :		Hach DR 900 Colorimeter					

Table D2. Test Well drawdown during pumping test.

ASC ENVIRONMENTAL	**Pumping Test - Drawdown**		**Test Well: TW1**	
	Project No.:	ASC-660	Date:	29/6/2021
	Client:	Denis Lahie	Recorded By: S.M. + S.D	
	Location:	Milsap Road, Moscow, Township of Stone Mills		

Pumping Rate (Q) (L/min)	Elapsed Time (ET) (min)	Well Level (WL) (m)	Drawdown (DD) (m)
20	0	4.18	0.00
20	1	4.39	0.21
20	4	4.46	0.28
20	11	4.50	0.32
20	19	4.53	0.35
20	32	4.56	0.38
20	44	4.58	0.40
20	59	4.59	0.41
20	76	4.59	0.41
20	91	4.57	0.39
20	121	4.58	0.40
20	150	4.59	0.41
20	180	4.59	0.41
20	210	4.57	0.39
30	213	4.79	0.61
30	223	4.84	0.66
30	240	4.85	0.67
30	271	4.86	0.68
30	300	4.90	0.72
30	326	4.88	0.70
30	366	4.87	0.69

TW1	(m)		L/min	m^3/day
$\Delta s_{0\text{-}1min}$	4.390	$Q_{0\text{-}1min}$	20	28.8
$\Delta s_{1\text{-}10min}$	0.11	$Q_{1\text{-}10min}$	20	28.8
$\Delta s_{10\text{-}100min}$	0.07	$Q_{10\text{-}100min}$	26	38.0
$\Delta s_{100\text{-}1000min}$	0.76	$Q_{100\text{-}1000min}$	30	43.2

	m^2/day	m^2/s
$T_{0\text{-}1min}$	1.20	1.39E-05
$T_{1\text{-}10min}$	49.87	5.77E-04
$T_{10\text{-}100min}$	93.99	1.09E-03
$T_{100\text{-}1000min}$	10.34	1.20E-04

Notes			
		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-660, Denis Lahie, Milsap Road, Moscow,
Township of Stone Mills, ON
Figure D1. TW1 Pumping Test Drawdown

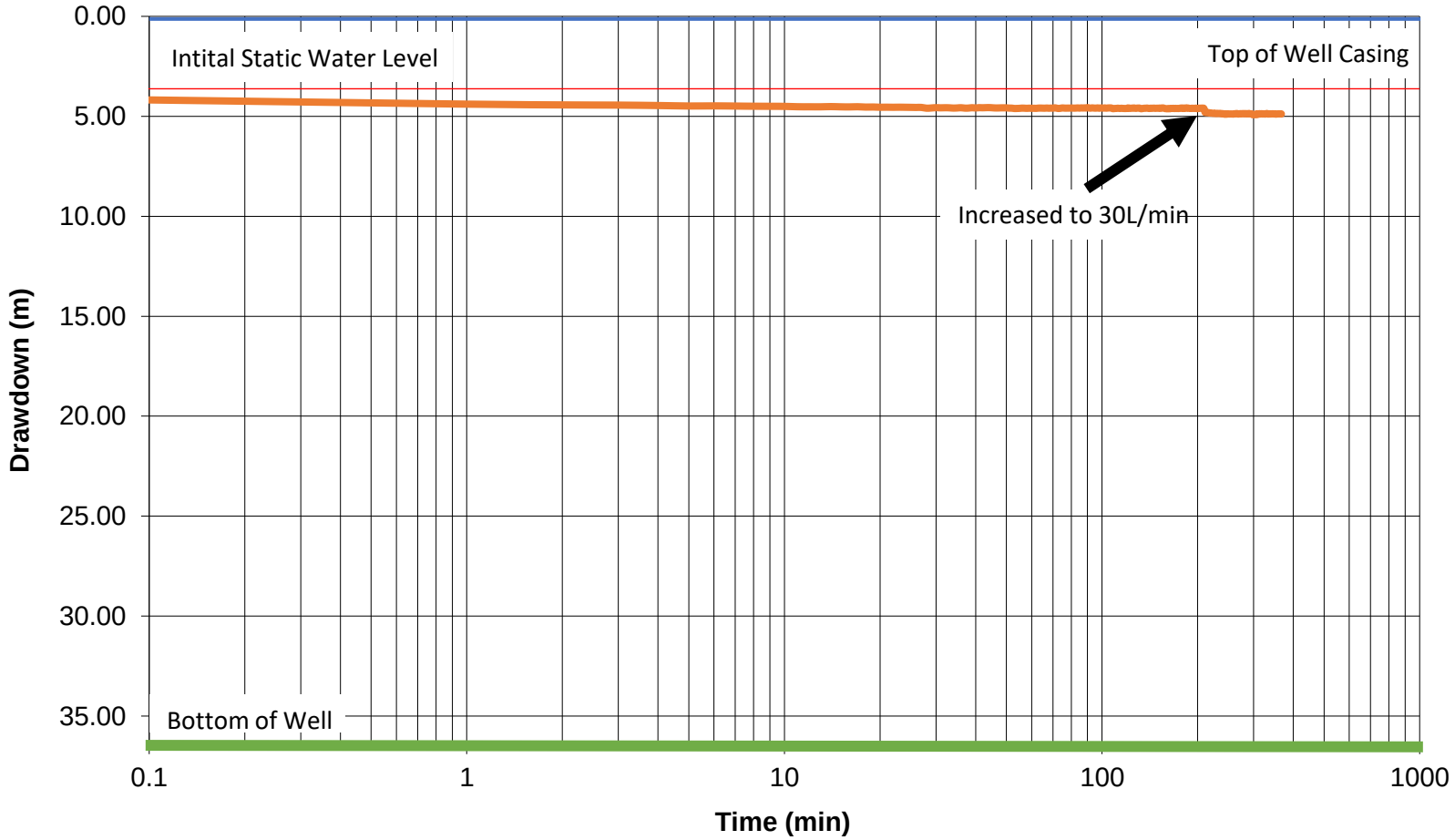


Table D3. Observation well drawdown during pumping test.

	Pumping Test - Drawdown		Test Well:	TW1
	Project No.:	ASC-660	Date:	29/6/2021
	Client:	Denis Lahie	Pumping start time	
	Location:	Milsap Road, Moscow, Township of Stone Mills	8 54	AM

TW2

WL (ft)	WL (m)	DD (m)	Time H:Min		ET (min)
13.878	4.230	0.000	8	5	0
14.501	4.420	0.190	9	58	64
14.501	4.420	0.190	11	21	147
14.518	4.425	0.195	12	17	203
14.797	4.510	0.280	13	17	263
14.780	4.505	0.275	14	58	364
14.042	4.280	0.050	15	46	412

OW1 (203 Milsap Rd.)

WL (ft)	WL (m)	DD (m)	Time H:Min		ET (min)
18.783	5.725	0.000	8	15	0
19.193	5.850	0.125	10	2	68
18.471	5.630	-0.095	11	5	131
18.504	5.640	-0.085	11	59	185
18.504	5.640	-0.085	13	0	246
20.997	6.400	0.675	14	29	335

OW2 (231 Milsap Rd.)

WL (ft)	WL (m)	DD (m)	Time H:Min		ET (min)
20.112	6.130	0.000	8	22	0
20.144	6.140	0.010	10	6	72
20.243	6.170	0.040	11	7	133
20.144	6.140	0.010	12	2	188
20.079	6.120	-0.010	13	2	248
20.341	6.200	0.070	14	34	340

OW3 (4358 County Rd. 6)

WL (ft)	WL (m)	DD (m)	Time H:Min		ET (min)
14.140	4.310	0.000	8	26	0
14.895	4.540	0.230	10	13	79
14.928	4.550	0.240	11	11	137
14.928	4.550	0.240	12	7	193
15.256	4.650	0.340	13	6	252
15.256	4.650	0.340	14	39	345
14.239	4.340	0.030	15	38	404

OW4 (4318 County Rd. 6)

WL (ft)	WL (m)	DD (m)	Time H:Min		ET (min)
12.664	3.860	0.000	8	29	0
13.123	4.000	0.140	10	15	81
13.222	4.030	0.170	11	13	139
13.255	4.040	0.180	12	8	194
13.517	4.120	0.260	13	8	254
13.484	4.110	0.250	14	41	347
12.762	3.890	0.030	15	42	408

OW5 (1587 Moscow Rd.)

WL (ft)	WL (m)	DD (m)	Time H:Min		ET (min)
9.941	3.030	0.000	8	33	0
10.007	3.050	0.020	10	17	83
10.007	3.050	0.020	11	15	141
10.007	3.050	0.020	12	11	197
10.039	3.060	0.030	13	10	256
10.039	3.060	0.030	14	43	349

OW6 (1577 Moscow Rd.)

WL (ft)	WL (m)	DD (m)	Time H:Min		ET (min)
9.744	2.970	0.000	8	37	0
9.744	2.970	0.000	10	20	86
9.744	2.970	0.000	11	17	143
9.810	2.990	0.020	12	12	198
9.810	2.990	0.020	13	13	259
9.875	3.010	0.040	14	47	353

OW7 (1565 Moscow Rd.)

WL (ft)	WL (m)	DD (m)	Time H:Min		ET (min)
6.857	2.090	0.000	8	45	0
6.890	2.100	0.010	10	21	87
6.890	2.100	0.010	11	18	144
6.923	2.110	0.020	12	14	200
6.955	2.120	0.030	13	15	261
6.955	2.120	0.030	14	51	357

Observation Wells	Distance (m)
TW2	100
OW1 (203 Milsap Rd.)	315
OW2 (231 Milsap Rd.)	210
OW3 (4358 County Rd. 6)	75
OW4 (4318 County Rd. 6)	175
OW5 (1587 Moscow Rd.)	315
OW6 (1577 Moscow Rd.)	340
OW7 (1565 Moscow Rd.) *Retained Property	355

Note: Drawdown attributed to property owner water use.

ASC Environmental Inc.
ASC-660, Milsap Road, Moscow
Township of Stone Mills, ON
Figure D2. Pumping Test Influence on Neighbouring Wells
TW1 Pumping Test Zone of Influence

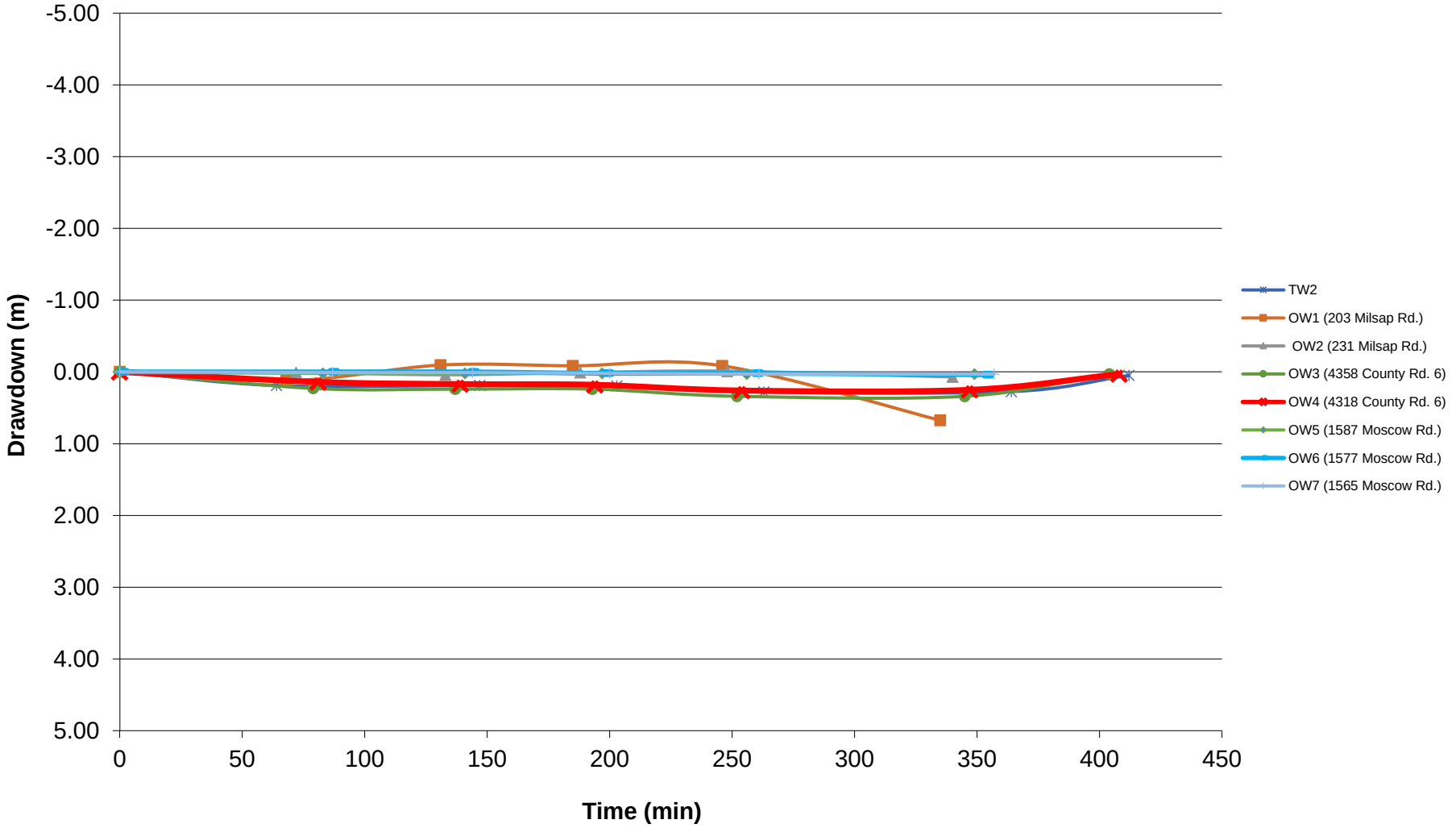
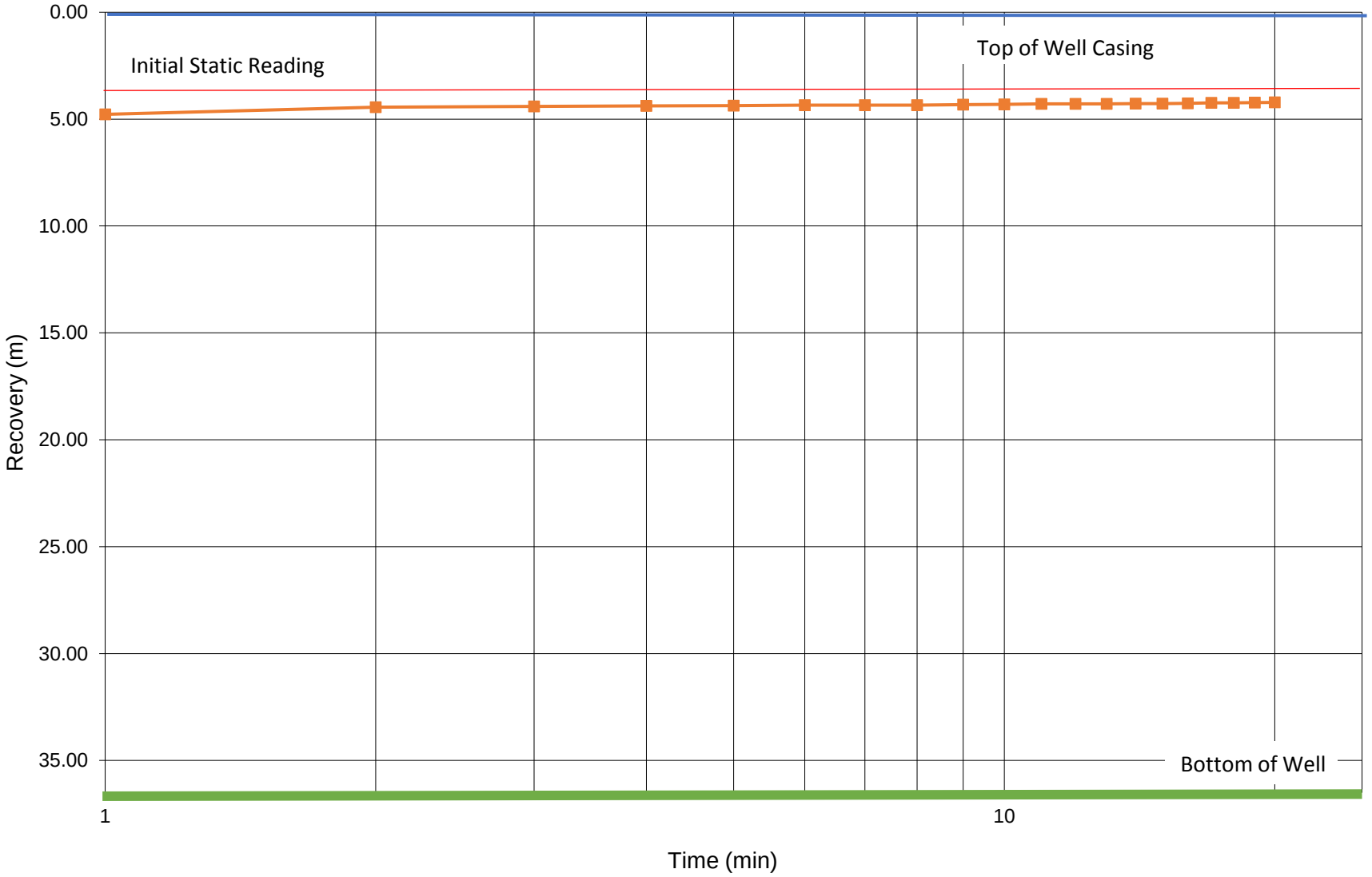


Table D4. Test well recovery after pumping test.

ASC ENVIRONMENTAL	**Pumping Test - Recovery**			**Test Well:**	**TW1**
	Project No.:	ASC-660		Date:	29/6/2021
	Client:	Denis Lahie			Recorded By: S.M. + S.D
	Location:	Milsap Road, Moscow, Township of Stone Mills			
		Test Well			
Pumping	Elapsed Time (min)	Well Level (WL) (m)	Drawdown (m)		
0	0	4.88	0.70		
0	1	4.78	0.60		
0	2	4.45	0.27		
0	3	4.41	0.23		
0	4	4.38	0.20		
0	5	4.37	0.19		
0	6	4.35	0.17		
0	7	4.34	0.16		
0	8	4.34	0.16		
0	9	4.32	0.14		
0	10	4.31	0.13		
0	15	4.27	0.09		
0	20	4.22	0.04		
WL at 95% Recovery =		4.22			

ASC Environmental Inc.
ASC-660, Denis Lahie, Milsap Road, Moscow
Township of Stone Mills, ON
Figure D3. TW1 Recovery



APPENDIX E
Laboratory Analytical Certificates

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

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G100041 **REPORT No. B21-20128**

Report To:

ASC Environmental
1305 Princess St.,
Kingston ON K7M 3E3 Canada
Attention: Sarah McCallum

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 30-Jun-21
DATE REPORTED: 06-Jul-21
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: ASC-660
WATERWORKS NO.

			Client I.D.		TW1a			
			Sample I.D.		B21-20128-1			
			Date Collected		29-Jun-21			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Total Coliform	cfu/100mL	1	MOE E3407	30-Jun-21/K	0			
E coli	cfu/100mL	1	MOE E3407	30-Jun-21/K	0			
Fecal Coliform	cfu/100mL	1	SM9222D	30-Jun-21/K	0			
Heterotrophic Plate Count	cfu/mL	10	SM9215D	30-Jun-21/K	< 10			
Background	cfu/100mL	1	MOE E3407	30-Jun-21/K	0			
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	30-Jun-21/O	365			
pH @25°C	pH Units		SM 4500H	30-Jun-21/O	7.81			
Conductivity @25°C	µmho/cm	1	SM 2510B	30-Jun-21/O	718			
Colour	TCU	2	SM 2120C	02-Jul-21/O	< 2			
Turbidity	NTU	0.1	SM 2130	02-Jul-21/O	0.8			
Fluoride	mg/L	0.1	SM4110C	30-Jun-21/O	0.2			
Chloride	mg/L	0.5	SM4110C	30-Jun-21/O	15.9			
Nitrite (N)	mg/L	0.1	SM4110C	30-Jun-21/O	< 0.1			
Nitrate (N)	mg/L	0.1	SM4110C	30-Jun-21/O	0.2			
Sulphate	mg/L	1	SM4110C	30-Jun-21/O	21			
o-Phosphate (P)	mg/L	0.002	PE4500-S	02-Jul-21/K	0.005			
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	02-Jul-21/K	< 0.1			
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	02-Jul-21/K	0.07			
TDS (Calc. from Cond.)	mg/L	1	Calc.	05-Jul-21	374			
Dissolved Organic Carbon	mg/L	0.2	EPA 415.2	30-Jun-21/O	3.0			
Sulphide	mg/L	0.01	SM4500-S2	05-Jul-21/K	< 0.01			
Phenolics	mg/L	0.002	MOEE 3179	30-Jun-21/K	< 0.002			
Tannins and Lignins	mg/L	0.5	SM5500B	05-Jul-21/K	< 0.5			
Hardness (as CaCO3)	mg/L	1	SM 3120	02-Jul-21/O	385			
Calcium	mg/L	0.02	SM 3120	02-Jul-21/O	96.1			
Iron	mg/L	0.005	SM 3120	02-Jul-21/O	0.045			
Manganese	mg/L	0.001	SM 3120	02-Jul-21/O	0.014			

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
Lab Manager

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G100041 **REPORT No. B21-20128**

Report To:

ASC Environmental
1305 Princess St.,
Kingston ON K7M 3E3 Canada
Attention: Sarah McCallum

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 30-Jun-21
DATE REPORTED: 06-Jul-21
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: ASC-660
WATERWORKS NO.

			Client I.D.		TW1a			
			Sample I.D.		B21-20128-1			
			Date Collected		29-Jun-21			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Potassium	mg/L	0.1	SM 3120	02-Jul-21/O	1.4			
Sodium	mg/L	0.2	SM 3120	02-Jul-21/O	17.8			
Anion Sum	meq/L		Calc.	05-Jul-21/O	8.19			
Cation Sum	meq/L		Calc.	05-Jul-21/O	8.51			
% Difference	%		Calc.	05-Jul-21/O	1.89			
Ion Ratio	AS/CS		Calc.	05-Jul-21/O	0.963			
TDS(ion sum calc.)	mg/L	1	Calc.	05-Jul-21/O	407			
Conductivity (calc.)	µmho/cm		Calc.	05-Jul-21/O	743			
Langelier Index(25°C)	S.I.		Calc.	05-Jul-21/O	0.892			

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G100042 **REPORT No. B21-20110**

Report To:

ASC Environmental
1305 Princess St.,
Kingston ON K7M 3E3 Canada
Attention: Sarah McCallum

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 29-Jun-21
DATE REPORTED: 06-Jul-21
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: ASC-660
WATERWORKS NO.

			Client I.D.		TW1b			
			Sample I.D.		B21-20110-1			
			Date Collected		29-Jun-21			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Total Coliform	cfu/100mL	1	MOE E3407	30-Jun-21/K	0			
E coli	cfu/100mL	1	MOE E3407	30-Jun-21/K	0			
Fecal Coliform	cfu/100mL	1	SM9222D	30-Jun-21/K	0			
Heterotrophic Plate Count	cfu/mL	10	SM9215D	30-Jun-21/K	< 10			
Background	cfu/100mL	1	MOE E3407	30-Jun-21/K	0			
Alkalinity(CaCO3) to pH4.5	mg/L	5	SM 2320B	30-Jun-21/O	366			
pH @25°C	pH Units		SM 4500H	30-Jun-21/O	7.82			
Conductivity @25°C	µmho/cm	1	SM 2510B	30-Jun-21/O	722			
Colour	TCU	2	SM 2120C	02-Jul-21/O	< 2			
Turbidity	NTU	0.1	SM 2130	02-Jul-21/O	0.6			
Fluoride	mg/L	0.1	SM4110C	30-Jun-21/O	0.2			
Chloride	mg/L	0.5	SM4110C	30-Jun-21/O	15.4			
Nitrite (N)	mg/L	0.1	SM4110C	30-Jun-21/O	< 0.1			
Nitrate (N)	mg/L	0.1	SM4110C	30-Jun-21/O	0.1			
Sulphate	mg/L	1	SM4110C	30-Jun-21/O	22			
o-Phosphate (P)	mg/L	0.002	PE4500-S	02-Jul-21/K	< 0.002			
Total Kjeldahl Nitrogen	mg/L	0.1	E3199A.1	02-Jul-21/K	< 0.1			
Ammonia (N)-Total	mg/L	0.01	SM4500-NH3-H	02-Jul-21/K	< 0.01			
TDS (Calc. from Cond.)	mg/L	1	Calc.	05-Jul-21	376			
Sulphide	mg/L	0.01	SM4500-S2	05-Jul-21/K	< 0.01			
Phenolics	mg/L	0.002	MOEE 3179	30-Jun-21/K	< 0.002			
Tannins and Lignins	mg/L	0.5	SM5500B	05-Jul-21/K	< 0.5			
Dissolved Organic Carbon	mg/L	0.2	EPA 415.2	30-Jun-21/O	2.3			
Hardness (as CaCO3)	mg/L	1	SM 3120	02-Jul-21/O	380			
Calcium	mg/L	0.02	SM 3120	02-Jul-21/O	94.8			
Iron	mg/L	0.005	SM 3120	02-Jul-21/O	0.027			
Manganese	mg/L	0.001	SM 3120	02-Jul-21/O	0.013			

Michelle Dubien
Lab Manager

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

CADUCEON ENVIRONMENTAL LABORATORIES
Client committed. Quality assured.

CERTIFICATE OF ANALYSIS

Final Report

C.O.C.: G100042 **REPORT No. B21-20110**

Report To:

ASC Environmental
1305 Princess St.,
Kingston ON K7M 3E3 Canada
Attention: Sarah McCallum

Caduceon Environmental Laboratories
285 Dalton Ave
Kingston Ontario K7K 6Z1
Tel: 613-544-2001
Fax: 613-544-2770

DATE RECEIVED: 29-Jun-21
DATE REPORTED: 06-Jul-21
SAMPLE MATRIX: Groundwater

JOB/PROJECT NO.:
P.O. NUMBER: ASC-660
WATERWORKS NO.

			Client I.D.		TW1b			
			Sample I.D.		B21-20110-1			
			Date Collected		29-Jun-21			
Parameter	**Units**	**R.L.**	**Reference Method**	**Date/Site Analyzed**				
Potassium	mg/L	0.1	SM 3120	02-Jul-21/O	1.4			
Sodium	mg/L	0.2	SM 3120	02-Jul-21/O	17.6			
Anion Sum	meq/L		Calc.	05-Jul-21/O	8.22			
Cation Sum	meq/L		Calc.	05-Jul-21/O	8.40			
% Difference	%		Calc.	05-Jul-21/O	1.09			
Ion Ratio	AS/CS		Calc.	05-Jul-21/O	0.978			
Conductivity (calc.)	µmho/cm		Calc.	05-Jul-21/O	739			
TDS(ion sum calc.)	mg/L	1	Calc.	05-Jul-21/O	406			
Langelier Index(25°C)	S.I.		Calc.	05-Jul-21/O	0.898			

R.L. = Reporting Limit
Test methods may be modified from specified reference method unless indicated by an *
Site Analyzed=K-Kingston,W-Windsor,O-Ottawa,R-Richmond Hill,B-Barrie

Michelle Dubien
Lab Manager

APPENDIX F
Neighbour Participation Letters

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

Via: Hand-delivered

June 24, 2021
ASC-660 100l

Subject: Permission to observe well water level during Pumping Test

Dear Homeowner(s):

We are conducting a pumping test on a well located on 1565 Moscow Rd, Township of Stone Mills, ON. Through this letter, we are requesting signed authorization to observe the water level in your well during the pumping test. The test is being conducted to assess long-term water supply for a proposed land severance and is expected to take approximately six (6) hours. During this time, your well (if authorized) will be routinely monitored for potential drawdown effects.

The procedure for neighbouring wells will include the following:

- Determine the water level of your well. This will require removal of the well cap and insertion of a static probe to record the water level. Water level measurements are recorded prior to starting the pumping test and again at regular intervals during the test (typically at one-hour intervals).
- During the pumping test we request that water usage be reduced to a minimum, so that measurements reflect accurate groundwater conditions during testing.
- Upon completion of the study, your well cap will be reinstated to pre-test conditions and a copy of your well results will be available upon request.

We are tentatively scheduling the pumping test for the week of June 28th, 2021. If you agree to be involved in the study, you will receive a phone call one day prior to scheduled testing.

I, Kevin McTaggart (Print Name), the home owner of 203 Milsap (Address), am aware of the test that will be performed and understand the information given.

☑ Yes, I am willing to participate in the study and have my well water level measured during the pumping test.

☐ No, I am not willing to participate in the study.

(Signature)

Phone Number: 705 917 1373 Email: KevinMcTaggart1968@Gmail.com

If your answer was no, please state the reason for record-keeping purposes:

Please return the signed letter to info@ascenvironmental.ca or call (613) 634-5596 and request that it be picked up by ASC Field Staff.

Thank you for your assistance.

1305 Princess St,
Kingston, ON K7M 3E3
(613) 634-5596
info@ascenvironmental.ca

Via: Hand-delivered

June 24, 2021
ASC-660 100l

Subject: Permission to observe well water level during Pumping Test

Dear Homeowner(s):

We are conducting a pumping test on a well located on 1565 Moscow Rd, Township of Stone Mills, ON. Through this letter, we are requesting signed authorization to observe the water level in your well during the pumping test. The test is being conducted to assess long-term water supply for a proposed land severance and is expected to take approximately six (6) hours. During this time, your well (if authorized) will be routinely monitored for potential drawdown effects.

The procedure for neighbouring wells will include the following:

- Determine the water level of your well. This will require removal of the well cap and insertion of a static probe to record the water level. Water level measurements are recorded prior to starting the pumping test and again at regular intervals during the test (typically at one-hour intervals).
- During the pumping test we request that water usage be reduced to a minimum, so that measurements reflect accurate groundwater conditions during testing.
- Upon completion of the study, your well cap will be reinstated to pre-test conditions and a copy of your well results will be available upon request.

We are tentatively scheduling the pumping test for the week of June 28th, 2021. If you agree to be involved in the study, you will receive a phone call one day prior to scheduled testing.

I, AL LAIRD (Print Name), the home owner of 1587 MOSCOW RD (Address), am aware of the test that will be performed and understand the information given.

☒ Yes, I am willing to participate in the study and have my well water level measured during the pumping test.

☐ No, I am not willing to participate in the study.

AL Laird (Signature)

Phone Number: 613 358-1106 Email: _____

If your answer was no, please state the reason for record-keeping purposes:

_____

_____

Please return the signed letter to info@ascenvironmental.ca or call (613) 634-5596 and request that it be picked up by ASC Field Staff.

Thank you for your assistance.

1305 Princess St,
Kingston, ON K7M 3E3
(613) 634-5596
info@ascenvironmental.ca

Via: Hand-delivered

June 24, 2021
ASC-660 1001

Subject: Permission to observe well water level during Pumping Test

Dear Homeowner(s):

We are conducting a pumping test on a well located on 1565 Moscow Rd, Township of Stone Mills, ON. Through this letter, we are requesting signed authorization to observe the water level in your well during the pumping test. The test is being conducted to assess long-term water supply for a proposed land severance and is expected to take approximately six (6) hours. During this time, your well (if authorized) will be routinely monitored for potential drawdown effects.

The procedure for neighbouring wells will include the following:

- Determine the water level of your well. This will require removal of the well cap and insertion of a static probe to record the water level. Water level measurements are recorded prior to starting the pumping test and again at regular intervals during the test (typically at one-hour intervals).
- During the pumping test we request that water usage be reduced to a minimum, so that measurements reflect accurate groundwater conditions during testing.
- Upon completion of the study, your well cap will be reinstated to pre-test conditions and a copy of your well results will be available upon request.

We are tentatively scheduling the pumping test for the week of June 28th, 2021. If you agree to be involved in the study, you will receive a phone call one day prior to scheduled testing.

I, Shane Selmond (Print Name), the home owner of 1609 Moscow Rd (Address), am aware of the test that will be performed and understand the information given.

☑ Yes, I am willing to participate in the study and have my well water level measured during the pumping test.

☒ No, I am not willing to participate in the study.

(Signature)

Phone Number: 613 929 6869 Email: shane.selmond39@gmail

If your answer was no, please state the reason for record-keeping purposes:

Lots of water, not concerned.

Please return the signed letter to info@ascenvironmental.ca or call (613) 634-5596 and request that it be picked up by ASC Field Staff.

Thank you for your assistance.

1305 Princess St,
Kingston, ON K7M 3E3
(613) 634-5596
info@ascenvironmental.ca

Via: Hand-delivered

June 24, 2021
ASC-660 100l

Subject: Permission to observe well water level during Pumping Test

Dear Homeowner(s):

We are conducting a pumping test on a well located on 1565 Moscow Rd, Township of Stone Mills, ON. Through this letter, we are requesting signed authorization to observe the water level in your well during the pumping test. The test is being conducted to assess long-term water supply for a proposed land severance and is expected to take approximately six (6) hours. During this time, your well (if authorized) will be routinely monitored for potential drawdown effects.

The procedure for neighbouring wells will include the following:

- Determine the water level of your well. This will require removal of the well cap and insertion of a static probe to record the water level. Water level measurements are recorded prior to starting the pumping test and again at regular intervals during the test (typically at one-hour intervals).
- During the pumping test we request that water usage be reduced to a minimum, so that measurements reflect accurate groundwater conditions during testing.
- Upon completion of the study, your well cap will be reinstated to pre-test conditions and a copy of your well results will be available upon request.

We are tentatively scheduling the pumping test for the week of June 28th, 2021. If you agree to be involved in the study, you will receive a phone call one day prior to scheduled testing.

I, Karen Bridgen (Print Name), the home owner of 231 Milsap Rd (Address), am aware of the test that will be performed and understand the information given.

☑ Yes, I am willing to participate in the study and have my well water level measured during the pumping test.

☐ No, I am not willing to participate in the study.

K Bridgen (Signature)

Phone Number: 613-358-9466 Email: karbridgen@outlook.com

If your answer was no, please state the reason for record-keeping purposes:

_____

_____

Please return the signed letter to info@ascenvironmental.ca or call (613) 634-5596 and request that it be picked up by ASC Field Staff.

Thank you for your assistance.

1305 Princess St,
Kingston, ON K7M 3E3
(613) 634-5596
info@ascenvironmental.ca

Via: Hand-delivered

Subject: Permission to observe well water level during Pumping Test

June 24, 2021
ASC-660 100l

Dear Homeowner(s):

We are conducting a pumping test on a well located on 1565 Moscow Rd, Township of Stone Mills, ON. Through this letter, we are requesting signed authorization to observe the water level in your well during the pumping test. The test is being conducted to assess long-term water supply for a proposed land severance and is expected to take approximately six (6) hours. During this time, your well (if authorized) will be routinely monitored for potential drawdown effects.

The procedure for neighbouring wells will include the following:

- Determine the water level of your well. This will require removal of the well cap and insertion of a static probe to record the water level. Water level measurements are recorded prior to starting the pumping test and again at regular intervals during the test (typically at one-hour intervals).
- During the pumping test we request that water usage be reduced to a minimum, so that measurements reflect accurate groundwater conditions during testing.
- Upon completion of the study, your well cap will be reinstated to pre-test conditions and a copy of your well results will be available upon request.

We are tentatively scheduling the pumping test for the week of June 28th, 2021. If you agree to be involved in the study, you will receive a phone call one day prior to scheduled testing.

I, Gerald Clark (Print Name), the home owner of 1577 Moscow Rd (Address), am aware of the test that will be performed and understand the information given.

☒ Yes, I am willing to participate in the study and have my well water level measured during the pumping test.

☐ No, I am not willing to participate in the study.

x _____ (Signature)

Phone Number: 613-358-2295 Email: ganneclark@icloud.com

If your answer was no, please state the reason for record-keeping purposes:

_____

_____

Please return the signed letter to info@ascenvironmental.ca or call (613) 634-5596 and request that it be picked up by ASC Field Staff.

Thank you for your assistance.

1305 Princess St,
Kingston, ON K7M 3E3
(613) 634-5596
info@ascenvironmental.ca

Via: Hand-delivered

June 24, 2021
ASC-660 100l

Subject: Permission to observe well water level during Pumping Test

Dear Homeowner(s):

We are conducting a pumping test on a well located on 1565 Moscow Rd, Township of Stone Mills, ON. Through this letter, we are requesting signed authorization to observe the water level in your well during the pumping test. The test is being conducted to assess long-term water supply for a proposed land severance and is expected to take approximately six (6) hours. During this time, your well (if authorized) will be routinely monitored for potential drawdown effects.

The procedure for neighbouring wells will include the following:

- Determine the water level of your well. This will require removal of the well cap and insertion of a static probe to record the water level. Water level measurements are recorded prior to starting the pumping test and again at regular intervals during the test (typically at one-hour intervals).
- During the pumping test we request that water usage be reduced to a minimum, so that measurements reflect accurate groundwater conditions during testing.
- Upon completion of the study, your well cap will be reinstated to pre-test conditions and a copy of your well results will be available upon request.

We are tentatively scheduling the pumping test for the week of June 28th, 2021. If you agree to be involved in the study, you will receive a phone call one day prior to scheduled testing.

I, Maxime Girroux (Print Name), the home owner of 4318 county Rd 6, Yarker (Address), am aware of the test that will be performed and understand the information given.

☒ Yes, I am willing to participate in the study and have my well water level measured during the pumping test.

☐ No, I am not willing to participate in the study.

(Signature)

Phone Number: 514-241-3807 Email: Maxgirroux1@yahoo.ca

If your answer was no, please state the reason for record-keeping purposes:

Please return the signed letter to info@ascenvironmental.ca or call (613) 634-5596 and request that it be picked up by ASC Field Staff.

Thank you for your assistance.

1305 Princess St,
Kingston, ON K7M 3E3
(613) 634-5596
info@ascenvironmental.ca

Via: Hand-delivered

June 24, 2021
ASC-660 1001

Subject: Permission to observe well water level during Pumping Test

Dear Homeowner(s):

We are conducting a pumping test on a well located on 1565 Moscow Rd, Township of Stone Mills, ON. Through this letter, we are requesting signed authorization to observe the water level in your well during the pumping test. The test is being conducted to assess long-term water supply for a proposed land severance and is expected to take approximately six (6) hours. During this time, your well (if authorized) will be routinely monitored for potential drawdown effects.

The procedure for neighbouring wells will include the following:

- Determine the water level of your well. This will require removal of the well cap and insertion of a static probe to record the water level. Water level measurements are recorded prior to starting the pumping test and again at regular intervals during the test (typically at one-hour intervals).
- During the pumping test we request that water usage be reduced to a minimum, so that measurements reflect accurate groundwater conditions during testing.
- Upon completion of the study, your well cap will be reinstated to pre-test conditions and a copy of your well results will be available upon request.

We are tentatively scheduling the pumping test for the week of June 28th, 2021. If you agree to be involved in the study, you will receive a phone call one day prior to scheduled testing.

I, Charles Holmes (Print Name), the home owner of 4358 County Rd 6 (Address), am aware of the test that will be performed and understand the information given.

☑ Yes, I am willing to participate in the study and have my well water level measured during the pumping test.

☐ No, I am not willing to participate in the study.

Charles Holmes (Signature)

Phone Number: 613-358-2970 Email: PPCHARLIEH@YAHOO.CA

If your answer was no, please state the reason for record-keeping purposes:

Please return the signed letter to info@ascenvironmental.ca or call (613) 634-5596 and request that it be picked up by ASC Field Staff.

Thank you for your assistance.

1305 Princess St,
Kingston, ON K7M 3E3
(613) 634-5596
info@ascenvironmental.ca

APPENDIX G
Precipitation Data

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

Government of Canada / Gouvernement du Canada

▶ Notices

Daily Data Report for May 2021

KINGSTON CLIMATE
ONTARIO
Current Station Operator: ECCC - MSC

Latitude:	44°13'24.000" N	**Longitude:**	76°35'58.000" W	**Elevation:**	93.00 m
Climate ID:	6104142	**WMO ID:**	71820	**TC ID:**	TKG

DAY	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days	Cool Deg Days	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's deg	Spd of Max Gust km/h
01	6.8	-0.9	2.9	15.1	0.0			0.9		19	38
02	12.3	4.5	8.4	9.6	0.0			1.4			
03	11.8	7.6	9.7	8.3	0.0			1.5		5	44
04	13.7	6.4	10.0	8.0	0.0			4.7		5	31
05	12.2	6.1	9.1	8.9	0.0			0.1		33	35
06	11.2	3.0	7.1	10.9	0.0			0.0		22	42
07	10.9	2.5	6.7	11.3	0.0			3.3			
08	10.9	2.9	6.9	11.1	0.0			9.3			
09	10.8	0.7	5.7	12.3	0.0			0.0			
10	14.2	6.3	10.3	7.7	0.0			0.8		24	40
11	11.8	4.1	8.0	10.0	0.0			0.6		31	49
12	18.0	5.1	11.6	6.4	0.0			0.0		30	34
13	18.1	4.7	11.4	6.6	0.0			0.0			
14	19.5	5.9	12.7	5.3	0.0			0.0		22	33
15	17.5	6.4	12.0	6.0	0.0			0.0		20	36

DAY	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days	Cool Deg Days	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's deg	Spd of Max Gust km/h
16	19.8	4.5	12.1	5.9	0.0			0.0			
17	19.6	5.7	12.6	5.4	0.0			0.0			
18	21.9	9.0	15.5	2.5	0.0			0.0			
19	22.2	9.0	15.6	2.4	0.0			0.0			
20	23.9	11.4	17.6	0.4	0.0			0.0			
21	25.9	13.7	19.8	0.0	1.8			0.0			
22	27.2	14.1	20.6	0.0	2.6			0.0		23	39
23	23.4	6.1	14.8	3.2	0.0			0.0		34	50
24	18.6	6.1	12.3	5.7	0.0			0.0			
25	23.1	11.5	17.3	0.7	0.0			0.0			
26	25.1	14.6	19.9	0.0	1.9			0.0		23	53
27	16.2	8.1	12.2	5.8	0.0			0.0		5	38
28	10.4	4.1	7.3	10.7	0.0			0.3		3	40
29	18.5	4.2	11.4	6.6	0.0			0.0		5	54
30	19.9	1.6	10.8	7.2	0.0			0.0		11	36
31	20.4	4.3	12.3	5.7	0.0			0.0		23	36
Sum				199.7	6.3			22.9			
Avg	17.3	6.2	11.8								
Xtrm	27.2	-0.9								5^	54^

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

Date modified:

2021-06-01

Government of Canada / Gouvernement du Canada

▶ Notices

Daily Data Report for June 2021

KINGSTON CLIMATE
ONTARIO
Current Station Operator: ECCC - MSC

Latitude:	44°13'24.000" N	**Longitude:**	76°35'58.000" W	**Elevation:**	93.00 m
Climate ID:	6104142	**WMO ID:**	71820	**TC ID:**	TKG

DAY	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days	Cool Deg Days	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's deg	Spd of Max Gust km/h
01	22.1	10.6	16.4	1.6	0.0			0.0		18	34
02	24.0	8.6	16.3	1.7	0.0			0.0			
03	19.3	12.5	15.9	2.1	0.0			11.6			
04	20.1	11.8	16.0	2.0	0.0			0.0		18	32
05	26.6	13.8	20.2	0.0	2.2			0.0		24	38
06	27.7	14.6	21.1	0.0	3.1			0.3			
07	29.1	14.5	21.8	0.0	3.8			0.0			
08	23.0	17.1	20.1	0.0	2.1			0.0		25	33
09	29.8	16.6	23.2	0.0	5.2			0.0		5	34
10	24.9	13.3	19.1	0.0	1.1			0.0		6	34
11	21.8	14.6	18.2	0.0	0.2			0.8		6	33
12	25.6	13.2	19.4	0.0	1.4			0.0			
13	22.9	10.8	16.9	1.1	0.0			4.3			
14	21.9	16.0	19.0	0.0	1.0			0.0		22	46
15	21.3	10.9	16.1	1.9	0.0			0.6		33	34

DAY	Max Temp °C	Min Temp °C	Mean Temp °C	Heat Deg Days	Cool Deg Days	Total Rain mm	Total Snow cm	Total Precip mm	Snow on Grnd cm	Dir of Max Gust 10's deg	Spd of Max Gust km/h
16	22.5	8.0	15.2	2.8	0.0			0.0		29	33
17	23.2	9.3	16.3	1.7	0.0			0.0		21	38
18	19.7	14.5	17.1	0.9	0.0			17.0		23	32
19	28.5	15.2	21.9	0.0	3.9			0.0		25	40
20	21.9	13.5	17.7	0.3	0.0			0.0			
21	27.8	16.2	22.0	0.0	4.0			0.8		26	52
22	16.3	8.1	12.2	5.8	0.0			0.0			
23	18.3	7.5	12.9	5.1	0.0			0.0		18	39
24	23.4	14.9	19.1	0.0	1.1			0.0		16	38
25	22.6	17.6	20.1	0.0	2.1			0.3		16	35
26	22.4	17.5	19.9	0.0	1.9			9.0		20	42
27	29.7	19.6	24.6	0.0	6.6			0.0		20	44
28	30.1	20.1	25.1	0.0	7.1			0.0		23	41
29	26.9	18.7	22.8	0.0	4.8			0.4			
Sum				27.0^	51.6^	0.0^	0.0^	45.1^			
Avg	23.9^	13.8^	18.9^								
Xtrm	30.1^	7.5^								26^	52^

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

Date modified:

2021-06-01