HYDROGEOLOGICAL ASSESSMENT
2835 OLD MONTREAL ROAD, CUMBERLAND, ONTARIO



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Prepared for:

CSV Architects
190 O'Connor Street, Suite 100
Ottawa, ON
K2P 2R3

Prepared by:

Egis Canada Ltd
750 Palladium Drive, Suite 310
Ottawa, ON
K2V 1C7

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EXECUTIVE SUMMARY

Egis Canada Ltd ('Egis') was retained by the CSV Architects ('the Client') to conduct a Hydrogeological Assessment in support of a Zoning By-law Amendment and Site Plan Control application at 2835 Old Montreal Road, located in Cumberland, Ontario ('the Site'). It is our understanding that the Zoning By-law Amendment and Site Plan Control application is for the proposed development of the St. Faustina church ('proposed development'). As part of this process, a Hydrogeological Assessment is required from the City of Ottawa to establish that there is adequate quantity and quality of groundwater to support the proposed development.

This report has been prepared using data collected by Egis staff on September 17, and October 7, 2025, from a newly installed on-Site well ('TW1'). Hydrogeological data from this well is considered representative of the Site.

Egis conducted an eight-hour and five-minute pumping test at TW1 on September 17, 2025. Groundwater was pumped directly from the well using a driller-supplied well pump. The pumping test was extended for five (5) minutes beyond the recommended eight (8) hours as the pump briefly shut off for a period of five minute during the pumping test. Additional well development followed by a groundwater sample was completed on October 7, 2025.

All analytical results were compared to the Ontario Drinking Water Standards, Objectives, and Guidelines (ODWSOG) and MECP Procedure D-5-5 Maximum Concentration Considered Reasonably Treatable (MCCRT). Based on the analytical results from the pumping test (TW1-1 and TW1-2) and follow up sample (TW1-3) the following exceedances of ODWSOG were noted:

- **Colour** (aesthetic objective (AO) of 5 TCU): TW1-1 (34 TCU), TW1-2 (35 TCU), and TW1-3 (31 TCU). Additionally, colour is above the MCCRT of 7 TCU;
- **Hardness** (operational guideline (OG) range of 80-100 mg/L): TW1-1 (165 mg/L), TW1-2 (183 mg/L), and TW1-3 (157 mg/L).
- **Total dissolved solids** (AO of 500 mg/L): TW1-2 (520 mg/L);
- **Sulphide** (AO of 0.05 mg/L): TW1-1 (0.21 mg/L) and TW1-2 (0.17 mg/L);
- **Organic Nitrogen** (OG of 0.15 mg/L): TW1-2 (0.23 mg/L) and TW1-3 (0.27 mg/L);
- **Sodium** (medical alert limit of 20 mg/L and AO of 200 mg/L): TW1-1 (110 mg/L), TW1-2 (110 mg/L), and TW1-3 (108 mg/L).
- **Strontium** (maximum allowable concentration (MAC) of 7 mg/L under the Guidelines for Canadian Drinking Water Quality): TW1-1 (10 mg/L), TW1-2 (11.3 mg/L), and TW3-1 (8.33 mg/L).

Based on the analyses performed for this hydrogeological assessment, Egis is of the opinion that the aquifer which the test well intersects can adequately supply the proposed development in terms of quantity and quality and should be suitable for potable purposes. It is noted that the exceedance of

strontium must be indicated on title to inform all future potential owners, and the colour exceedances of the MCCRT are not expected to impact long-term human health, based on the data collected during this assessment.

1.0 INTRODUCTION

Egis Canada Ltd ('Egis') was retained by CSV Architects ('the Client') to conduct a Hydrogeological Assessment a Zoning By-law Amendment and Site Plan Control application at 2835 Old Montreal Road, located in Cumberland, Ontario ('the Site'). It is our understanding that the Zoning By-law Amendment and Site Plan Control application is for the proposed development of the St. Faustina church and parish hall ('proposed development'). As part of this process, a Hydrogeological Assessment is required from the City of Ottawa to establish that there is an adequate quantity and quality of groundwater to support the proposed development.

The Site location is shown on Figure 1 (Site Location) and an outline of the Site showing the neighbouring properties and an aerial photograph with the proposed severances is presented on Figure 2 (Site Layout).

This report has been prepared using data collected by Egis staff on September 17, and October 7, 2025, from a recently installed well (drilled on August 13, 2025) at 2835 Old Montreal Road. Hydrogeological data from this well is considered representative of the proposed development.

This Hydrogeological Evaluation addresses the following:

- Well Record search and evaluation;
- Background hydrogeological evaluation;
- Installation of a data logger 1-week advance of the pumping test, and 1-week following the pumping test;
- Oversight of an eight-hour pumping test (TW1);
- Water level and flow monitoring, field water quality analyses;
- Sampling and analysis – includes two (2) samples analyzed for the 'Subdivision Supply Suite' of parameters (including trace metals and volatile organic compounds (VOCs), one (1) follow-up sample; and
- Data Evaluation and Report.

1.1 Consultation

On September 12, 2024, Egis completed a pre-consultation with the City of Ottawa Peer Reviewer to outline the subject investigation's methodology, and to discuss any known hydrogeological issues for the investigation area. Groundwater quality within the area was discussed, as it is our understanding that the groundwater may have elevated sodium, chloride, and sulphide exceedances, based on the City's knowledge of impacts from wells in the area. These impacts are either salt (sodium and chloride) related or naturally occurring (sulphide).

Following the receipt of the analytical results from the pumping test completed on September 17, 2025, as well as the receipt of analytical results from the follow-up sample collected on October 7, 2025, a

follow up meeting was completed with the City of Ottawa Peer Reviewer on October 21, 2025 to discuss the elevated colour and strontium results noted during Egis' testing. The City of Ottawa Peer Reviewer indicated that rationale regarding observations during fieldwork can be provided in reference to the colour exceedance to support the opinion that no long-term health impacts are anticipated from the groundwater. In summary, the Peer Reviewer was open to rationale provided for the colour exceedance based on fieldwork activities and recommended that we provide treatment options for the strontium exceedance.

2.0 BACKGROUND

2.1 Site Setting

The Site is located within the City of Ottawa (Figure 1). The Site is current vacant and unoccupied, consisting of a grassy field.

Based on a review of aerial photos, it appears that the existing Site has existed as undeveloped agricultural land since at least 1929 The Site and surrounding area was likely previously utilized for agricultural use. It is Egis' understanding that groundwater is not currently used for potable purposes at the Site.

2.2 Neighbouring Properties and Land Uses

Land uses within 500 m of the proposed severances consists primarily of rural residential and commercial properties. Agricultural lands are observed to the south of the Site, rural residential is present to the east, rural residential and commercial (Cumberland Power Equipment Inc.) is located to the west, and the Ottawa River is located to the north. The Site has frontage on Old Montreal Road, located to the south.

While MECP Water Well Information System (WWIS) records for the area do not provide the detailed locations of most wells, it appears that the majority of properties surrounding the Site are privately serviced.

Figure 3 (MECP Wells Record Summary) presents the MECP Well Tag numbers and approximate well locations, where available, for wells within approximately 500 m of the Site.

2.3 Hydrology

Topography was reviewed on the Ministry of Natural Resources topographic website. The Site elevation is approximately 60 metres above sea level (m asl). Ground surface at the Site is generally flat and slopes to the north at the northern property boundary.

Surface drainage is interpreted to reflect surface topography and is likely controlled via areas of permeable ground surface. Shallow groundwater and surface water will likely drain to the north of the Site, towards the Ottawa River.

On a regional scale, groundwater is inferred to flow north towards the Ottawa River. It is noted that the Site is located within the Lower Ottawa River watershed.

2.4 Geology and Hydrogeology

Geological maps of the area classify the overburden at the Site as fine-textured glaciomarine deposits consisting of silt and clay, and minor sand and gravel. Based on the Geotechnical Investigation (completed by Egis (formerly McIntosh Perry) in 2017), the overburden consists of sand followed by clay. Refusal on suspected bedrock was encountered around 15-16 m below ground surface (m bgs). Therefore, the Site is not considered to be hydrogeologically sensitive.

On-Site bedrock is generally characterized as limestone, dolostone, shale, arkose and sandstone, of the Ottawa Group, Simcoe Group and Shadow Lake Formation. Based on well records within 500 m of the Site, the depth to bedrock is approximately 14.4 m on average. Bedrock was encountered around 11 m as per the Well Record (A431406) for TW1.

Review of a map on karst topography indicates that the Site is located within an area identified as potential karst formation. No karst topography was observed on-site at the time of the pumping test.

Based on surrounding topography, regional bedrock groundwater flow is interpreted to have a northern component, towards the Ottawa River.

2.4.1 Recharge and Discharge Areas

Based on a review of topographic data, geological maps, and Site visits, the property is generally flat and slopes to the north at the northern property boundary. No wetland areas are located on or in close proximity to the Site.

Based on a review of available nearby well records, the majority of the subsurface is predominantly sand and clay. Limestone bedrock was encountered 0.3 – 80.5 m bgs. Additionally, based on the well record at the Site, the driller reported that 0 – 9.7 m bgs consisted of clay, underlain by gravel with sand/stone to 11.1 m, which is then underlain by limestone bedrock. A review of the Geotechnical Investigation (Egis, 2017) indicated that the subsurface material (based on the advancement of five (5) boreholes on the Site) consisted of topsoil, underlain by a sand layer (varying thickness between 1-6 m bgs), followed by a clay layer (varying in thickness between 1.3-15 bgs), followed by refusal on suspected till or bedrock. Given the low permeability of the clay layer, the underlying aquifer is considered to be reasonably protected.

The closest water body to the Site is located 170 m north of the Site, at the Ottawa River.

2.4.2 Potential Sources of Contamination and Potential Impacts to Hydrogeological Conditions at the Site

A windshield survey of the surrounding area was conducted in combination with a site walkthrough and review of maps and zoning information. The Site is located in a predominantly rural residential and commercial area. The current vacant use of the property usage does not appear to pose any significant environmental risk to the proposed development.

Cumberland Power Equipment Inc. is located west of the Site. Outdoor power equipment is stored and repaired at this property. Given the use of the Site, it may represent a potential source of contamination due to the storage of various potential contaminant liquids (i.e. engine oil, hydraulic fluids, transmission fluids, diesel or gasoline) that may leak directly into the ground or via stormwater runoff carrying any spilled fluids. However, given the distance from TW1 (approximately 150 m northwest), and the impermeable clay layer above the bedrock aquifer, it is unlikely to pose a significant environmental risk to the proposed development and underlying aquifer. Further, based on the water quality results from the pumping test, no particular contaminants that would be derived from these activities (e.g. Volatile Organic Carbons) were detected within the sampled water.

2.4.3 Water Well Record Review

The MECP's WWIS database indicated 40 water wells that are located within 500 m of the Site. All forty (40) of these wells are listed for domestic purposes. MECP WWIS records are shown on Figure 3, and data are summarized in Appendix A.

All water supply wells were completed in bedrock at final depths ranging from 18.9 – 91.4 m below ground surface (bgs). The average depth to bedrock was reported to be 14.3 m bgs. Driller-reported static groundwater levels ranged from 1.2 – 29 m bgs. Well yields reported on Well Records ranged from 15 – 90 L/min.

TW1, located at 2835 Old Montreal Road, was used as part of the water supply assessment. Based on the Well Record, TW1 was constructed with 13.1 m of casing, with a total well depth of 60.96 m. The depth to bedrock was reported as 10.9 m. The well yield was reported as 284 L/min.

2.4.4 Aquifer Vulnerability

Based on a review of Source Protection Information Atlas (MECP), a large portion of groundwater within Cumberland is considered to be highly vulnerable to contamination based on the presence of fractured bedrock and little soil cover. The specific Site area (2835 Old Montreal Road) was not located in a mapped area representing a highly vulnerable aquifer.

Aquifers that are highly vulnerable are those in which water is able to infiltrate quickly from the ground surface. This typically includes areas with thin soils (i.e. "shallow overburden") which consist of coarse or sandy material, whereby water is able to flow through these materials more quickly than less permeable (i.e. clays and silts). Based on overburden conditions identified on Well Records within 500 m of the Site, plus overburden detailed on the well record for TW1 overlying the aquifer consist of both a clay layer (0 – 9.7 m bgs), and gravel with sand/stones (9.7 to 11.1 m bgs). Therefore, the aquifer underlying the Site has the potential to be low to moderately vulnerable.

3.0 METHODOLOGY – HYDROGEOLOGICAL ASSESSMENT

Egis conducted a hydrogeological investigation at the Site to assess the feasibility of servicing the proposed development. The work generally followed the guidance of MECP Procedure D-5-5: Technical Guideline for Private Wells: Water Supply Assessment; and the City of Ottawa "Hydrogeological and Terrain Analysis Guidelines" dated March 2021 (HTAG), as well as guidance provided by the City of Ottawa's reviewer in the pre-consultation.

Egis tested a recently installed test well (Test Well 1 (TW1 – A431406)). The Well Record is presented in Appendix B. At the time of the installation, Egis completed a well inspection and can confirm the test well been constructed (cased and grouted) in accordance with Ontario Regulation 903.

An eight-hour pumping test was conducted by Egis staff on September 17, 2025. The groundwater was pumped directly from the test well using a pump and hose supplied by a licensed drilling company (Air Rock).

During the testing period, water levels in the test well were measured using an electronic water level tape and a data logger. Water quality (pH, temperature, conductivity, turbidity, dissolved oxygen, total dissolved solids, residual chlorine) was also monitored and recorded in the field during the test using calibrated instruments (general parameters – Horiba U-52 Multimeter, residual chlorine - Hach DR900). Additional visual and olfactory water quality observations of colour and odour were made and are presented in Table 1 appended to this report. Field groundwater chemistry parameters had stabilized prior to collecting samples of the groundwater.

Two (2) samples were collected for laboratory analysis; one (1) at the fourth hour of the pumping test (TW1-1) and the second one (1) at the eighth hour (TW1-2). These samples were analyzed for the full suite of parameters list in the HTAG (City of Ottawa, 2021), including VOCs.

The chlorine residual for the well water was measured using a Hach DR900 colorimeter; the Hach DR900 was zero standardized prior to collecting samples. Based on instrument calibration and specifications, the value of "0.02 mg/L" is the minimum detection limit for this instrumentation.

All groundwater samples were collected unfiltered and unchlorinated, directly into clean bottles supplied by the analytical laboratories (Eurofins, Ottawa, ON). The samples were kept on ice and dropped off to Eurofins under strict chain-of-custody procedures. All samples were received by the laboratory within 24 hours of collection. Eurofins is fully accredited by the Standards Council of Canada/Canadian Association for Laboratory Accreditation (SCC/CALA).

During the pumping test, water level monitoring consisted of manual readings with an electronic water level tape and a data logger. Drawdown was measured in the pumped well and measurements were

made until at least 95% recovery were achieved, or 24 hours had passed (whichever came first). An observation well was not available at the time of the pumping test.

Drawdown and recovery data from the pumping tests were plotted and analyzed using the Cooper-Jacob solution. The hydraulic conductivity (*K*, m/s) and transmissivity (*T*, m^2/d) and long-term yield (Farvolden and Moell Method) of the aquifer were estimated.

3.1 Additional Well Development Sampling

Additional well development was completed on October 7, 2025. The driller (Air Rock) re-inserted the pump and the well was purged for a period of six (6) hours at a flow rate of 38 L/min (13,680 L purged).

Field chemistry parameters were collected and stabilized prior to collecting the sample. Additionally, prior to sampling, the tap was disinfected with bleach. Similar to Section 3.0 above, the chlorine residual for the well water was measured using a Hach DR900 colorimeter. Residual chlorine was measured to be 0.02 mg/L.

As noted above, all groundwater samples were collected unfiltered and unchlorinated, directly into clean bottles supplied by the analytical laboratories (Eurofins, Ottawa, ON). The samples were kept on ice and dropped off to Eurofins under strict chain-of-custody procedures. All samples were received by the laboratory within 24 hours of collection. Eurofins is fully accredited by the Standards Council of Canada/Canadian Association for Laboratory Accreditation (SCC/CALA).

Additional details regarding TW1-3 are included in Section 4.5.2.

4.0 RESULTS

The drawdown curves and tabular data from the pumping tests conducted at the Site are presented in Appendix C. A summary of groundwater quality data and the official Laboratory Certificates of Analysis are presented in Tables 1 and 2 and Appendix D, respectively.

4.1 Static Conditions

Prior to the initiation of pumping, water levels were measured in the well. The static groundwater level was recorded at the test well in metres below top of casing (m btoc) at the time of the pumping test commencement (t=0). Assigning an arbitrary site benchmark of 100.00 m (local) to the top of the casing, the static water elevation in the well was 81.825 m above datum (ad).

According to the MECP Well Record for TW1, the recommended pump depth was reported as 54.86 m btoc.

Standing water or evidence of groundwater discharge was not observed anywhere near TW1 at the time of the pumping test.

4.2 Data Logger Information

As per the HTAG (City of Ottawa, 2021), data loggers are to be used for all pumping tests. The data logger was installed one (1) week in advance of the pumping test (September 10, 2025) and was utilized during the pumping test (September 17, 2025) and one (1) week following the pumping test (retrieved on September 24, 2025). Additionally, a barometric pressure logger was installed to collect atmospheric pressure variations. These data are included within the pumping test analysis (Appendix C) and Appendix E and were used to confirm and interpolate between manual measurements collected during the pumping test.

4.3 Pumping Test

The 8-hour pumping test was conducted at TW1 under the supervision of Egis staff on September 17, 2025.

4.3.1 Test Well 1 (TW1) Pumping Test Specifics

At 8:15 AM, the pump at TW1 was turned on and the flow rate was recorded using a bucket and stopwatch to be approximately 80 L/min. The pumping rate stabilized at this rate for the remainder of the test. The groundwater level ranged between 18.262 – 18.996 m btoc, with a maximum drawdown of 0.83 m observed. At the end of the test, approximately 41.965 m of the available water column remained. The pumping test was conducted for a period of 8 hours and 5 minutes (485 minutes).

It is important to note that there was a mechanical error with the generator at 240 minutes and it shut off. The pump was turned back on at 245 minutes. Therefore, the 8-hour test was extended by 5 minutes (485 minutes total) to make up for this 5 minutes and to ensure that the well was pumped for a full eight-hour period.

Following the pump shut off, the level logger was left in the well to record the recovery data. Based on the manual water level recorded at 7:08 pm (170 minutes following pump shut off), 100% recovery was achieved. However, level logger data indicate that at 170 minutes following pump shut off, only 62% recovery has been achieved, thus indicating a potential manual measurement error. The level logger was left within the well for a period of seven (7) days following the test to review water level fluctuations. Based on the logger data from the seven (7) days following the test, the static water level did not reach the 95% value that was calculated during the pumping test (18.21 m btoc). A maximum of 62% recovery was achieved. In addition, small fluctuations of water levels were observed (maximum of 20 cm of water level fluctuation), indicating that the water levels could be impacted by rainfall, nearby pumping or water use, or barometric pressure changes. Regardless of these observations, a large quantity of water remained in the water column throughout the pumping test and seven (7) days following the test (approx. 42 metres). Further discussion on this water level fluctuations and recovery data is provided in Section 4.3.2 below.

All water level measurement data are presented in Appendix C, appended to this report.

4.3.2 Well Yield and Water Demand

Based on the 8-hour and 5-minute pumping test completed on September 17, 2025, 38,800 L of groundwater was pumped from the well at a rate of 80 L/min.

Egis prepared an estimate of sanitary flows and peak daily demands for the proposed development (church and parish hall) as per the Septic Impact Assessment dated October 16, 2026. The estimated daily sewage flow on a weekly basis was calculated to be 2,466 L/day, with a peak flow estimate of 9,940 L/day (on Sundays). Assuming the peak flow on Sundays occurs over an 8-hour period, it is Egis' professional opinion that the quantity of the pumping test is sufficient to supply the proposed development. It is important to note that a maximum drawdown of only 0.833 m was measured during the 8-hour and 5-minute pumping test, demonstrating a highly productive well. A total of 38,800 L was pumped from the well (during test, the pumping rate was such that 4,800 L of water over a one-hour period was discharged) exceeding the maximum daily demand by 3.9 times.

Based on a review of the logger data collected from the well within seven (7) days after the pumping test occurred, a maximum of 62% recovery was achieved. This value is 33% lower than the desired 95% recovery value. However, fluctuations in the water level were additionally observed during this seven (7) day period, indicating potential impacts from weather (i.e. rainfall), nearby pumping or water use, or barometric pressure changes. As the well was pumped at a high rate (80 L/min) for a period of 8 hours

and only achieved 0.8 m of drawdown, it can be surmised that this well is highly productive. In reality, the peak flow estimate of 19,925 L/day is less than the quantity pumped during this pumping test, which further demonstrates that this aquifer is capable of supporting this proposed development.

4.4 Calculations

A summary of the well and hydrogeological properties determined during the testing work at the Site are presented in Appendix C. The calculations for Transmissivity are presented in Appendix F.

4.4.1 Storativity

Storativity (S) could not be calculated as no observation wells were available for water level measurement at the time of the pumping test. Egis attempted to contact adjacent homeowners and received no interest in participation or no response in advance of the pumping test.

4.4.2 Transmissivity

The transmissivity was calculated following the Cooper-Jacob method. The calculations for Transmissivity are presented in Appendix F. Transmissivity was calculated using the following equation:

$$T = \frac{2.3\ Q}{4\ \pi \Delta s}$$

Where:

- T is the transmissivity (m^2/day);
- Q is the pumping rate during the pumping test (L/min); and,
- Δs is the differential for residual drawdown for one log cycle (m).

Using drawdown data, the transmissivity value was calculated to be approximately 49 m^2/day. Using recovery data, the transmissivity value was calculated to be 35 m^2/day. This indicates that the aquifer is of suitable yield.

4.4.3 Hydraulic Conductivity

Assuming an aquifer thickness corresponding to the interval between the bottom of the casing and the bottom of the well, the screened formation of each test well was calculated was calculated using the following equation:

$$K = \frac{T}{b}$$

Where:

- T is the transmissivity (m^2/day);

- B is the aquifer thickness (m); and,
- K is the hydraulic conductivity (m/s).

Using the aquifer thickness and both the drawdown and recovery data, the test well was calculated to have a hydraulic conductivity of 1.25 x 10^{-5} m/s (drawdown), and a hydraulic conductivity of 8.5 x 10^{-6} m/s (recovery).

The hydraulic conductivity values are generally consistent with the standard values for limestone published by Freeze and Cherry (10^{-9} to 10^{-5} m/s).

4.4.4 Long Term Yield

The theoretical long-term safe yield was calculated using both the Farvolden and Moell methods. Recovery data was used for TW1 as they are likely more representative of aquifer conditions.

Farvolden Equation

The long-term yield (Q_{20}) was calculated using the following Farvolden equation:

$$Q_{20} = 0.68\ T\ Ha\ S_f$$

Where:

- Q_{20} is the 20-year safe yield;
- T is the transmissivity (using recovery data);
- Ha is the available water column height (above the pump); and
- S_f is a safety factor (0.7).

Based on the Farvolden Method, calculations indicate that a twenty-year safe yield is in the order of 462 L/min. This means that the test wells could theoretically sustain continuous pumping for 20 years at this rate.

Moell Method

The Moell Method was also used to calculate the theoretical long-term safe yield for the pumping well. The long-term yield (Q_{20}) was calculated using the following Moell equation:

$$(Q_{20}) = (Q\ Ha\ Sf) / (s100 + 5\ \Delta s)$$

Where:

- Q_{20} is the twenty-year safe yield (m^3/day);
- Ha is the available water column height (m);
- S_f is a safety factor (0.7);
- s100 is the drawdown at 100 minutes (semi-log long-term graph);

- Δs is the change in hydraulic head over one log cycle (drawdown vs. log time, see Appendix C); and
- Q is the pumping rate during the pumping test (L/min).

Using the Moell Method, calculations indicate that a twenty-year safe yield for the well is in the order of 819 L/min.

Accordingly, Egis is of the opinion that the aquifer of TW1 is readily capable of supplying water in support of the proposed development at the Site.

The calculations for the Farvolden and Moell method are presented in Appendix F.

4.5 Water Quality

Laboratory Certificates of Analysis for on-site groundwater testing are presented in Appendix D. A summary of field and laboratory results from TW1 are presented in Table 1 and Table 2. Samples were taken twice during the eight-hour pumping test at TW1. The samples were tested for residual chlorine with a Hach DR900 colorimeter calibrated to detect chlorine residual (free chlorine). Prior to usage, the Hach DR900 was zero calibrated according to the manufacturer's printed instructions.

Samples from TW1 were taken directly from the hose attached to the pump into laboratory-supplied containers. The first and second samples from TW1 were labelled 'TW1-1' and 'TW1-2', respectively. Prior to collection of the first sample, residual chlorine was measured to be <0.02 mg/L (non-detectable).

4.5.1 Groundwater Quality Results

All analytical results were compared to the Ontario Drinking Water Standards, Objectives, and Guidelines (ODWSOG) and MECP Procedure D-5-5 Maximum Concentration Considered Reasonably Treatable (MCCRT). Based on the analytical results from samples collected during the test at TW1 (September 17, 2025) the following exceedances of ODWSOG were noted:

- **Colour** (aesthetic objective (AO) of 5 TCU): TW1-1 (34 TCU) and TW1-2 (35 TCU). Additionally, colour is above the MCCRT of 7 TCU;
- **Hardness** (operational guideline (OG) range of 80-100 mg/L): TW1-1 (165 mg/L),and TW1-2 (183 mg/L).
- **Total dissolved solids** (AO of 500 mg/L): TW1-2 (520 mg/L);
- **Sulphide** (AO of 0.05 mg/L): TW1-1 (0.21 mg/L) and TW1-2 (0.17 mg/L);
- **Organic Nitrogen** (OG of 0.15 mg/L): TW1-2 (0.23 mg/L);
- **Sodium** (medical alert limit of 20 mg/L and AO of 200 mg/L): TW1-1 (110 mg/L), and TW1-2 (110 mg/L) are above the medical alert limit.
- **Strontium** (maximum allowable concentration (MAC) of 7 mg/L under the Guidelines for Canadian Drinking Water Quality): TW1-1 (10 mg/L), and TW1-2 (11.3 mg/L).

The Langelier Saturation Index (LSI) and Ryznar Stability Index (RSI) were calculated for TW1 (Appendix G). These results indicate that there is limited potential for scale to form on pipes, but that changes in water temperature may result in some scaling. There are no data to suggest that steel corrosion will be an issue. (LSI=0.78, RSI=6.64).

4.5.2 Additional Groundwater Sampling

An additional groundwater sample (TW1-3) was collected on October 7, 2025, due to the elevated colour and strontium concentrations within samples TW1-1 and TW1-2. Prior to the sample collection, approximately 13,680 L of groundwater was purged from the well to allow for the influx of fresh formation water.

All analytical results were compared to the Ontario Drinking Water Standards, Objectives, and Guidelines (ODWSOG) and MECP Procedure D-5-5 Maximum Concentration Considered Reasonably Treatable (MCCRT). The following exceedances of ODWSOG were noted:

- **Colour** (AO of 5 TCU): TW1-3 (31 TCU). Additionally, colour is above the MCCRT of 7 TCU;
- **Hardness** (OG range of 80-100 mg/L): TW1-3 (157 mg/L).
- **Organic Nitrogen** (OG of 0.15 mg/L): TW1-3 (0.27 mg/L);
- **Sodium** (medical alert limit of 20 mg/L and AO of 200 mg/L): TW1-3 (108 mg/L) is above the medical alert limit.
- **Strontium** (MAC of 7 mg/L under the Guidelines for Canadian Drinking Water Quality): TW1-3 (8.33 mg/L).

4.5.3 Groundwater quality and potential impacts

The water quality data from the samples collected during the pumping test (TW1-1, TW1-2) and follow-up sample (TW1-3) were reviewed to investigate if any potential impacts are present within the groundwater.

Laboratory results for colour indicated exceedances above the MCCRT in all samples (TW1-1, TW1-2, and TW1-3). The colour exceedances noted in all samples collected are considered aesthetic in nature and are likely related to flocculation of dissolved solids in the samples (hardness was also noted to be elevated in these samples). Furthermore, there is evidence to suggest that the colour exceedance is potentially affected by dissolved organic matter, as the DOC is moderately elevated (2.8-3.2 mg/L) and the organic nitrogen is also in exceedance above the ODSWOG (0.23-0.27 mg/L). Ammonia is also present and is moderately elevated (0.63-0.667 mg/L),

Colour is an aesthetic parameter and not a health-based contaminant. During the follow-up sample collected on October 7, 2025, the well was pumped at a rate of 37.8 L/min. Field observations collected on October 7, 2025, indicated the presence of clear water – suggesting no sustained presence of parameters that would cause colour exceedances.

Given the data collected to-date, colour in groundwater does not pose significant impacts to long-term health issues, particularly as no microbial exceedances were found which would impact the potable use of groundwater at the Site. Photographs of the field activities on October 7, 2025 are included in Appendix H.

Strontium all samples (TW1-1, TW1-2, and TW1-3) exceed the Guideline for Canadian Drinking Water Quality. Following additional well development, strontium concentrations decreased. It is important to note that strontium is a naturally occurring element and the 7 mg/L is the "protective limit", meant to protect more vulnerable members of society such as infants and children. Strontium cannot be absorbed through skin or by breathing in vapors. There are methods to remove strontium in water,, and are discussed in Section 4.5.4 below. The Strontium in Drinking Water Fact Sheet from the City of Ottawa Public Health unit has been included in Appendix I.

Organic nitrogen exceeds the ODWSOG in samples TW1-2 and TW1-3. Organic nitrogen is a major component of fertilizer, which may be attributed to previous agricultural use of the Site. However, concentrations of nitrate are low or non-detect in all three (3) samples, suggesting that the previous agricultural use of the Site did not have a significant impact on the groundwater quality at the Site.

Volatile organic compounds (VOCs) were tested for within samples collected during the pumping test, as per the HTAG, and no detections were observed.

4.5.4 Water Treatment

As outlined in Sections 4.5.1, and 4.5.3 above, there are ODWSOG and CDWS exceedances within the groundwater at the Site. Parameters including sodium and colour are additionally above the MCCRT.

Colour exceedances are not expected to generate significant impacts to the groundwater and are considered treatable with water softening, physical filtration and sorption methods (i.e. carbon filter treatment system).

Hardness is elevated in all samples, compared to the ODWSOG. Hard water can impact the efficiency and lifespan of appliances. Treatment options to address hardness may include a conventional water softener which uses sodium chloride ion exchange process. As sodium concentrations within the groundwater are elevated, an ion exchange utilizing potassium salts (i.e., KCl) is recommended. Utilizing a water softener will reduce scale as it may impact build up inside pipes.

Additionally, reverse osmosis or ion exchange water softeners would also be suitable for treating strontium in the groundwater. Strontium in all samples (TW1-1, TW1-2, and TW1-3) exceed the Guideline for Canadian Drinking Water Quality. Although there is currently no provincial drinking water standard for strontium, a notice on title of the strontium exceedances will be placed to inform all future potential owners. For further information regarding strontium in drinking water, please refer to the City and Ottawa

Public Health report titled "*Strontium in Drinking Water Fact Sheet', dated September 12, 2024* included in Appendix I.

Total Dissolved Solids exceeded the ODWSOG in sample TW1-2, however improved following additional well development (TW1-3). Reverse osmosis would likely be the best process for removing total dissolved solids.

The medical alert for sodium (20 mg/L) exceeded in all samples collected at TW1. It is recommended that the local Medical Officer of Health be notified of the sodium concentration exceeding this medical alert limit.

5.0 CONCLUSIONS

Based on the analyses performed for this hydrogeological assessment, Egis is of the opinion that the aquifer which the test well intersects can adequately supply the Site and proposed development in terms of quantity and quality (with a notice of file for strontium).

5.1 Groundwater Evaluation

5.1.1 Well Yield

Egis conducted an eight-hour, five-minute pumping test at TW1 on September 17, 2025. The test well was pumped using a pump and hose supplied by a drilling company (Air Rock). The groundwater discharge was pumped directly away from the well and was allowed to flow overland across the Site.

The pumping rate of 80 L/min was maintained for a total of 8 hours and 5 minutes. During the pumping test, approximately 38,800 L litres of groundwater was pumped from the well. The maximum drawdown during the eight-hour, five-minute pumping test was 0.83 m.

Following pump shut off, based on a manual measurement, drawdown was recorded at 0.00 m (18.165 m btoc, 81.835 m ad), representing greater than 95% recovery at 655 minutes (170 minutes of recovery).However, based on level logger data collected, 62% recovery was achieved at 655 minutes (170 minutes following pump shut off), indicating that this manual measurement was most likely an error. The level logger was left within the well for a period of seven (7) days following the test to review water level fluctuations. Due to error, recovery was limited to <70% however this is mitigated by the small overall drawdown (approx. 41-42 m of available water column). Fluctuations were observed (+/- 0.2m) indicating that the groundwater levels may be impacted by precipitation or nearby water use.

As the well was pumped at a high rate (80 L/min) for a period of 8 hours and only achieved 0.8 m of drawdown, it can be surmised that this well is highly productive. In reality, if the the peak flow estimate is 19,925 L/day, this is less than the quantity pumped during this pumping test, which can further demonstrate that this aquifer is capable of supporting this proposed development.

Calculations for long term yield indicated values of 462 L/min (Farvolden method) and 819 L/min (Moell method).

Based on the pumping test and the yield of the groundwater, it is the opinion of Egis that the well has sufficient yield to supply the Site and the proposed development.

5.1.2 Water Quality and Treatment

All analytical results were compared to the Ontario Drinking Water Standards, Objectives, and Guidelines (ODWSOG) and MECP Procedure D-5-5 Maximum Concentration Considered Reasonably Treatable

(MCCRT). Based on the analytical results from samples collected during the tests at TW1, the following exceedances of ODWSOG were noted:

- **Colour** (AO of 5 TCU): TW1-1 (34 TCU), TW1-2 (35 TCU), and TW1-3 (31 TCU). Additionally, colour is above the MCCRT of 7 TCU;
- **Hardness** (operational guideline (OG) range of 80-100 mg/L): TW1-1 (165 mg/L), TW1-2 (183 mg/L), and TW1-3 (157 mg/L). As per the ODWSOG, hardness above 300 mg/L is considered very hard. Hardness in excess of 500 mg/L is considered unacceptable for most domestic supply purposes but there is no MCCRT value;
- **Total dissolved solids** (AO of 500 mg/L): TW1-2 (520 mg/L);
- **Sulphide** (AO of 0.05 mg/L): TW1-1 (0.21 mg/L) and TW1-2 (0.17 mg/L);
- **Organic Nitrogen** (OG of 0.15 mg/L): TW1-2 (0.23 mg/L) and TW1-3 (0.27 mg/L);
- **Sodium** (medical alert limit of 20 mg/L and AO of 200 mg/L): TW1-1 (110 mg/L), TW1-2 (110 mg/L), and TW1-3 (108 mg/L). The MCCRT for sodium of 200 mg/L is not exceeded in samples TW1-1 and TW1-2;
- **Strontium** (MAC of 7 mg/L under the Guidelines for Canadian Drinking Water Quality): TW1-1 (10 mg/L), TW1-2 (11.3 mg/L), and TW3-1 (8.33 mg/L).

Colour, although an aesthetic exceedance, may be treatable via water softening, physical filtration and sorption methods (i.e. carbon filter treatment system). At this time, colour is not seen as a significant impediment to water use, as field observations of colour improved with continued well development and due to the absence of bacteriological parameters. Treatment options to address hardness may include a conventional water softener which uses sodium chloride ion exchange process. As sodium concentrations within the groundwater are elevated, an ion exchange utilizing potassium salts (i.e., KCl) is recommended. Utilizing a water softener will reduce scale as it may impact build up inside pipes.

The medical alert limit for sodium of 20 mg/L (only for persons on sodium-restricted diets). It is recommended that the local Medical Officer of Health be notified of the sodium concentration exceeding this medical alert limit.

Strontium in all samples (TW1-1, TW1-2, and TW1-3) exceed the Guideline for Canadian Drinking Water Quality. Although there is currently no provincial drinking water standard for strontium, a notice on title of the strontium exceedances will be placed to inform all future potential owners. Strontium can be treated through reverse osmosis or ion exchange water softeners.

The Langelier Saturation Index (LSI) and Ryznar Stability Index (RSI) were calculated for TW1 (Appendix G). These results indicate that there is limited potential for scale to form on pipes, but that changes in water temperature may result in some scaling. There are no data to suggest that steel corrosion will be an issue. (LSI=0.78, RSI=6.64).

It is Egis' opinion that the groundwater quality is sufficient to support the proposed building.

5.2 Recommendations

Overall, this assessment indicates that the local aquifer is able to support the proposed development in terms of water quantity and quality, in that the well has sufficient yield and can be used for potable purposes. The proposed development is not expected to have an adverse impact on the reasonable use of groundwater on existing and future adjacent properties.

The following recommendations should be followed to ensure effective development of the Site with the existing well (TW1 – A431406).

5.2.1 Well Construction

- Best Management Practices (BMP) for wells should be followed, per O.Reg. 903: Wells and the MECP document entitled "*Water Supply Wells: Requirements and Best Practices*."
- The conceptual septic, proposed development and well location is outlined in Figure 4, appended to this report.

5.2.2 Water Quality and Treatment

- The City of Ottawa should include a note on-file regarding the groundwater quality at the Site (notably, strontium exceedances), to inform any future prospective buyers of the Site of the known ODWSOG exceedances and associated Site use constraints. The notice of groundwater quality will be required to be registered on title (Provincial – Land Registry Office) as a condition of the site plan agreement.
- For further information regarding strontium in drinking water, please refer to the City and Ottawa Public Health report titled *'Strontium in Drinking Water Fact Sheet'* dated September 12, 2024, included in Appendix I.
- Should treatment be installed at the Site, Egis recommends the following:
  - Hardness can be treated using a conventional water softener. As sodium concentrations are elevated, it is recommended to utilize an ion exchange utilizing potassium salts (i.e., KCl).
  - Colour may also be treatable through water softening, or physical filtration (ie. carbon filter treatment system). Exceedances of colour are not expected to generate any significant impacts to the water quality.
  - Strontium can be treated through reverse osmosis and ion exchange water softeners.
- The medical alert limit for sodium was exceeded in all three (3) samples collected at TW1. It is recommended that the Client notify the local Medical Officer of Health of the sodium concentration exceeding the medical alert limit.

6.0 LIMITATIONS

This report has been prepared, and the work referred to in this report has been undertaken by Egis for the Client. It is intended for the sole, and exclusive use of the Client with respect to the stated purpose of the work carried out by Egis.

The report may not be relied upon by any other person or entity without the express written consent of Egis. Any use which a third party makes of this report, or any reliance on decisions made based on it, without a Reliance Letter, are the responsibility of such third parties. Egis accepts no responsibility for damages, if any, suffered by any third party as a result of decisions made or actions based on this report or the information contained within it.

The investigation undertaken by Egis with respect to this report and any conclusions or recommendations made in this report reflect Egis's judgment based on the Site conditions observed at the time of the Site investigations, inspections, and/or sampling on the date(s) set out in this report, and on information available at the time of the preparation of this report. Conditions such as ground cover, weather, physical obstructions, etc. may influence conclusions or recommendations made in this report. Egis does not certify or warrant the environmental status of the property.

This report has been prepared for specific application to this Site and it may be based, in part, upon visual observation of the Site, subsurface investigation at discrete locations and depths, and/or specific analysis of specific chemical parameters and materials during a specific time interval, all as described in this report. Unless otherwise stated, the findings cannot be extended to previous or future Site conditions, portions of the Site which were unavailable for direct investigation, Site locations, subsurface or otherwise, which were not investigated directly, or chemical parameters, materials, or analysis which were not addressed or performed. Substances other than those addressed by the investigation described in this report may exist at the Site, substances addressed by the investigation may exist in areas of the Site not investigated, and concentrations of substances addressed which are different than those reported may exist in areas other than the locations from which samples were taken.

If Site conditions or applicable standards change, or if any additional information becomes available at a future date, modifications to the findings, conclusions and recommendations in this report may be necessary.

7.0 CLOSURE

We trust that this information is satisfactory for your present requirements. Should you have any questions or require additional information, please do not hesitate to contact the undersigned.

Respectfully submitted for informational review purposes only,
Egis

Rebecca Leduc, M.Sc.
Environmental Scientist
rebecca.leduc@egis-group.com

Monica Black, B.Sc.
Practice Area Lead, Groundwater
monica.black@egis-group.com

Jordan Bowman, P.Geo.
Manager, Geo-Environmental
jordan.bowman@egis-group.com

PROFESSIONAL GEOSCIENTIST
JORDAN D. BOWMAN
PRACTISING MEMBER
3315
ONTARIO
15Oct2026

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8.0 REFERENCES

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HYDROGEOLOGICAL ASSESSMENT
2835 OLD MONTREAL ROAD, CUMBERLAND, ONTARIO



TABLES

Table 1
Summary of Field Water Quality Parameters

Pumping Test at:	TW1 (2835 Old Montreal Road)			Date:	17-Sep-25					
Time Elapsed (min)	Temperature (^{o}C)	pH	ORP (ORPmv)	Conductivity (mS/cm)	Turbdity (NTU)	TDS (g/L)	Colour	Odour	Residual Chlorine (mg/L)	Flow Rate (L/min)
20	12.70	8.70	19	0.687	20.6	0.441	Yellow tint	Sulfur	-	80
40	11.80	8.40	78	0.656	13.2	0.42	Yellow tint	Sulfur	-	80
60	11.50	8.40	78	0.654	11.2	0.418	Yellow tint	Sulfur	-	80
85	11.50	8.36	75	0.664	11.7	0.424	Yellow tint	Sulfur	0.006	80
105	11.50	8.38	72	0.676	9.1	0.432	Yellow tint	Sulfur	-	80
150	11.24	8.41	91.00	0.73	6.50	0.46	Yellow tint	Sulfur	-	80
210	11.40	8.50	76	0.778	6.2	0.496	Yellow tint	Sulfur	-	80
225	11.25	8.25	70	0.773	5.2	0.494	Yellow tint	Sulfur	0.04	80
300	12.70	8.50	65	0.785	6.3	0.499	Yellow tint	Sulfur	-	80
360	13.60	8.84	95	0.774	5.1	0.489	Yellow tint	Sulfur	-	80
420	13.60	8.60	95	0.774	0.1	0.492	Slight yellow tint	Sulfur	-	80
480	13.90	8.58	55	0.785	0.12	0.498	Slight yellow tint	Sulfur	0.00	80
Notes:	*Flow rate measured bucket and stop watch*									

Follow up Sample	TW1 (2835 Old Montreal Road)			Date:	07-Oct-25					
Volume Purged (L)	Temperature (^{o}C)	pH	ORP (ORPmv)	Conductivity (mS/cm)	Turbdity (NTU)	TDS (g/L)	Colour	Odour	Residual Chlorine (mg/L)	Flow Rate (L/min)
492.05	10.0	8.34	-74.4	-	11.63	0.419	Clear	Sulfur	-	37.85
794.85	10.0	8.31	-116	-	8.2	0.431	Clear	Sulfur	-	37.85
1097.65	10.0	8.30	-121.3	-	8.89	0.436	Clear	Sulfur	-	37.85
11392.85	10.1	8.13	229	-	-	0.51	Clear	Sulfur	-	37.85
11809.2	10.4	8.11	-66.6	-	0.56	0.509	Clear	Sulfur	0.02	37.85
13133.95	10.3	8.06	-62.8	0.575	0.24	0.52	Clear	Sulfur	-	37.85
13588.15	10.3	8.08	-85.5	0.576	0.81	0.521	Clear	Sulfur	-	37.85

NOTES:

min	Minutes
NTU	Nephelometric Turbidity Units
mS/cm	Millisiemens per centimetre
uS/cm	Microsiemens per centimetre
(^{o}C)	Degrees celsius
g/L	Grams per litre
ppm	Parts per million
L/min	Litres per minute
ORPmV	ORP millivolts
-	Not analyzed

Table 2
Summary of Laboratory Water Quality Results

Sample ID	Units	MDL	ODWSOG	Health Canada Drinking Water Guideline	Limit Type	TW1-1	TW1-2	TW1-2
Sample Date						17-Sep-25		07-Oct-25
Location						2835 Old Montreal Road		
Parameter:								
Microbiological Parameters								
E. Coli	ct/100mL	0	0	-	MAC	0	0	0
Fecal Coliforms	ct/100mL	0	-	-	-	0	0	0
Total Coliforms	ct/100mL	0	0	-	MAC	0	0	0
General Inorganics								
Alkalinity, total	mg/L	5	30-500	-	OG	304	308	300
Ammonia as N	mg/L	0.02	-	-	-	0.651	0.63	0.667
Dissolved Organic Carbon	mg/L	0.5	5	-	AO	3.2	2.8	3.1
Colour	TCU	2	5	-	AO	34	35	31
Conductivity	uS/cm	5	-	-	-	754	800	718
Hardness	mg/L	1	80-100	-	OG	165	183	157
pH	pH Units	1	6.5-8.5	-	-	8.23	8.16	8.21
Phenolics	mg/L	0.001	-	-	-	<0.001	<0.001	<0.001
Total Dissolved Solids	mg/L	1	500	-	AO	490	520	467
Sulphide	mg/L	0.01	0.05	-	AO	0.21	0.17	-
Tannin & Lignin	mg/L	0.1	-	-	-	0.6	0.6	0.5
Total Kjeldahl Nitrogen	mg/L	0.1	-	-	-	0.79	0.857	0.939
Organic Nitrogen	mg/L	0.08	0.15	-	OG	0.14	0.23	0.27
Turbidity	NTU	0.1	5	-	AO	0.3	0.4	0.4
Anions								
Chloride	mg/L	1	250	-	AO	49	56	44
Fluoride	mg/L	0.10	1.5	-	MAC	0.66	0.66	0.66
Nitrate as N	mg/L	0.10	10	-	MAC	0.22	0.2	<0.10
Nitrite as N	mg/L	0.10	1	-	MAC	<0.10	<0.10	<0.10
Sulphate	mg/L	1	500	-	AO 500	34	44	29
Metals								
Mercury (Hg)	mg/L	0.0001	0.001	-	MAC	<0.0001	<0.0001	<0.0002
Aluminum (Al)	mg/L	0.01	0.10	-	OG	<0.01	<0.01	<0.02
Antimony (Sb)	mg/L	0.0005	0.006	-	IMAC	<0.005	<0.005	<0.001
Arsenic (As)	mg/L	0.001	0.01	-	IMAC	<0.001	<0.001	<0.002
Barium (Ba)	mg/L	0.01	1.00	-	MAC	0.27	0.29	0.25
Beryllium (Be)	mg/L	0.0005	-	-	-	<0.0005	<0.0005	<0.001
Boron (B)	mg/L	0.01	5.00	-	IMAC	0.44	0.45	0.35
Cadmium (Cd)	mg/L	0.0001	0.005	-	MAC	<0.0001	<0.0001	<0.0002
Calcium (Ca)	mg/L	1	-	-	-	38	42	35
Chromium (Cr)	mg/L	0.001	0.05	-	MAC	<0.001	<0.001	<0.002
Cobalt (Co)	mg/L	0.0002	-	-		<0.0002	<0.0002	<0.0004
Copper (Cu)	mg/L	0.001	1.00	-	AO	<0.001	<0.001	<0.002
Iron (Fe)	mg/L	0.03	0.30	-	AO	0.04	<0.03	<0.06
Lead (Pb)	mg/L	0.001	0.10	-	MAC	<0.001	<0.001	<0.002
Magnesium (Mg)	mg/L	1	-	-	-	17	19	17
Manganese (Mn)	mg/L	0.01	0.05	0.02	AO	<0.01	<0.01	<0.02
			-	0.12	MAC			
Molybdenum (Mo)	mg/L	0.005	-	-	-	<0.005	<0.005	<0.01
Nickel (Ni)	mg/L	0.005	-	-	-	<0.005	<0.005	<0.01
Potassium (K)	mg/L	1	-	-	-	7	7	7
Selenium (Se)	mg/L	0.001	0.05	-	MAC	<0.001	<0.001	<0.002
Silver (Ag)	mg/L	0.0001	-	-	-	<0.0001	<0.0001	<0.0002
Sodium (Na)	mg/L		20	-	AO	110	110	108
			200	-	MAC			
Strontium (Sr)	mg/L	0.002	-	7	MAC	10	11.3	8.33
Thallium (Tl)	mg/L	0.0001	-	-	-	<0.0001	<0.0001	<0.0002
Tin (Sn)	mg/L	0.01	-	-	-	<0.01	<0.01	<0.02
Titanium (Ti)	mg/L	0.01	-	-	-	<0.01	<0.01	<0.02
Tungsten (W)	mg/L	0.002	-	-	-	<0.002	<0.002	<0.004
Uranium (U)	mg/L	0.001	0.02	-	MAC	<0.001	<0.001	<0.002
Vanadium (V)	mg/L	0.001	-	-	-	0.001	<0.001	<0.002
Zinc (Zn)	mg/L	0.01	5	-	AO	<0.01	<0.01	<0.02
Volatile Organic Compounds								
1,1,1,2-tetrachloroethane	ug/L	0.5	-	-	-	<0.5	<0.5	-
1,1,1-trichloroethane	ug/L	0.4	-	-	-	<0.4	<0.4	-
1,1,2,2-tetrachloroethane	ug/L	0.5	-	-	-	<0.5	<0.5	-
1,1,2-trichloroethane	ug/L	0.4	-	-	-	<0.4	<0.4	-
1,1-dichloroethane	ug/L	0.4	-	-	-	<0.4	<0.4	-
1,1-dichloroethylene	ug/L	0.5	14 (0.014 mg/L)	-	MAC	<0.5	<0.5	-
1,2-dichlorobenzene	ug/L	0.4	200 (0.2 mg/L)	-	MAC	<0.4	<0.4	-
1,2-dichloroethane	ug/L	0.5	5	-	IMAC	<0.5	<0.5	-
1,2-dichloropropane	ug/L	0.5	-	-	-	<0.5	<0.5	-
1,3,5-trimethylbenzene	ug/L	0.3	-	-	-	<0.3	<0.3	-
1,3-dichlorobenzene	ug/L	0.4	-	-	-	<0.4	<0.4	-
1,3-Dichloropropylene (cis+trans)	ug/L	0.5	-	-	-	<0.5	<0.5	-
1,4-dichlorobenzene	ug/L	0.4	5 (0.005 mg/L)	-	MAC	<0.4	<0.4	-
Acetone	ug/L	5	-	-	-	<5	<5	-
Benzene	ug/L	0.5	1 (0.001 mg/L)	-	MAC	<0.5	<0.5	-
Bromodichloromethane	ug/L	0.3	-	-	-	<0.3	<0.3	-
Bromoform	ug/L	0.4	-	-	-	<0.4	<0.4	-
Bromomethane	ug/L	0.5	-	-	-	<0.5	<0.5	-
c-1,2-Dichloroethylene	ug/L	0.4	-	-	-	<0.4	<0.4	-
c-1,3-Dichloropropylene	ug/L	0.5	-	-	-	<0.5	<0.5	-
Carbon Tetrachloride	ug/L	0.2	2 (0.002 mg/L)	-	MAC	<0.2	<0.2	-
Chloroethane	ug/L	0.5	-	-	-	<0.5	<0.5	-
Chloroform	ug/L	0.5	-	-	-	<0.5	<0.5	-
Dibromochloromethane	ug/L	0.3	-	-	-	<0.3	<0.3	-
Dichlorodifluoromethane	ug/L	0.5	-	-	-	<0.5	<0.5	-
Dichloromethane	ug/L	4	50 (0.05 mg/L)	-	MAC	<4.0	<4.0	-
Ethylbenzene	ug/L	0.5	150 (0.15 mg/L)	-	MAC	<0.5	<0.5	-
Ethylene Dibromide	ug/L	0.2	-	-	-	<0.2	<0.2	-
Hexane	ug/L	5	-	-	-	<5	<5	-
m/p-xylene	ug/L	0.4	-	-	-	<0.4	<0.4	-
Methyl Ethyl Ketone (MEK)	ug/L	2	-	-	-	<2	<2	-
Methyl Isobutyl Ketone (MIBK)	ug/L	5	-	-	-	<5	<5	-
Methyl Tert Butyl Ether (MTBE)	ug/L	2	15 (0.015 mg/L)	-	AO	<2	<2	-
Monochlorobenzene	ug/L	0.5	80 (0.080 mg/L)	-	MAC	<0.5	<0.5	-
o-xylene	ug/L	0.4	-	-	-	<0.4	<0.4	-
Styrene	ug/L	0.5	-	-	-	<0.5	<0.5	-
t-1,2-Dichloroethylene	ug/L	0.4	-	-	-	<0.4	<0.4	-
t-1,3-Dichloropropylene	ug/L	0.5	-	-	-	<0.5	<0.5	-
Tetrachloroethylene	ug/L	0.3	10 (0.01 mg/L)	-	MAC	<0.3	<0.3	-
Toluene	ug/L	0.4	60 (0.06 mg/L)	-	MAC	<0.4	<0.4	-
Trichloroethylene	ug/L	0.3	5 (0.005 mg/L)	-	MAC	<0.3	<0.3	-
Trichlorofluoromethane	ug/L	0.5		-	-	<0.5	<0.5	-
Vinyl Chloride	ug/L	0.2	1 (0.001 mg/L)	-	MAC	<0.2	<0.2	-
Xylene, total	ug/L	0.5	90 (0.090 mg/L)	-	MAC	<0.5	<0.5	-

Notes:

	Exceeds Ontario Drinking Water Standards, Objectives, and Guidelines
	Exceeds health warning limit for sodium (20, 000 ug/L;20 mg/L)
	Exceeds IMAC or MAC
MDL	Method Detection Limit
ODWSOG	Ontario Drinking Water Standards, Objectives, and Guidelines (MOECC, 2003 rev. 2006; PIBs 4449e01)
AO	Aesthetic Objective
MAC	Maximum Allowable Concentration (Health-Related Parameter)
OG	Operational Guideline
IMAC	Interim Maximum Acceptable Concentration
ND	Non detectable (below MDL)
ug/L	Micrograms per litre
mg/L	Milligrams per litre
TCU	True Colour Units
uS/cm	Microsemens per centimeter
NTU	Nephelometric Turbidity Units
Ct/100 mL	count per 100 mL

HYDROGEOLOGICAL ASSESSMENT
2835 OLD MONTREAL ROAD, CUMBERLAND, ONTARIO



FIGURES



LEGEND

- Site Location
- Local Road
- Major Road
- Watercourse
- Waterbody
- Wooded Area

400 200 0 400

Scale 1:15,000 Metres

CLIENT: CITY OF OTTAWA

PROJECT: HYDROGEOLOGICAL ASSESSMENT

TITLE: SITE LOCATION

egis
750 Palladium Dr, Suite 310, Kanata, ON K2V 1C7
Tel: 613-836-2184 Fax: 613-836-3742

PROJECT NO: CCO-25-1892		FIGURE:
Date	Oct., 28, 2025	1
GIS	AH	
Checked By	RL	

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2025.

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LEGEND

- Site Layout
- Watercourse
- Waterbody
- Lot & Concession
- TW1 Location

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2025.

50 25 0 50

Scale 1:2,000 Metres

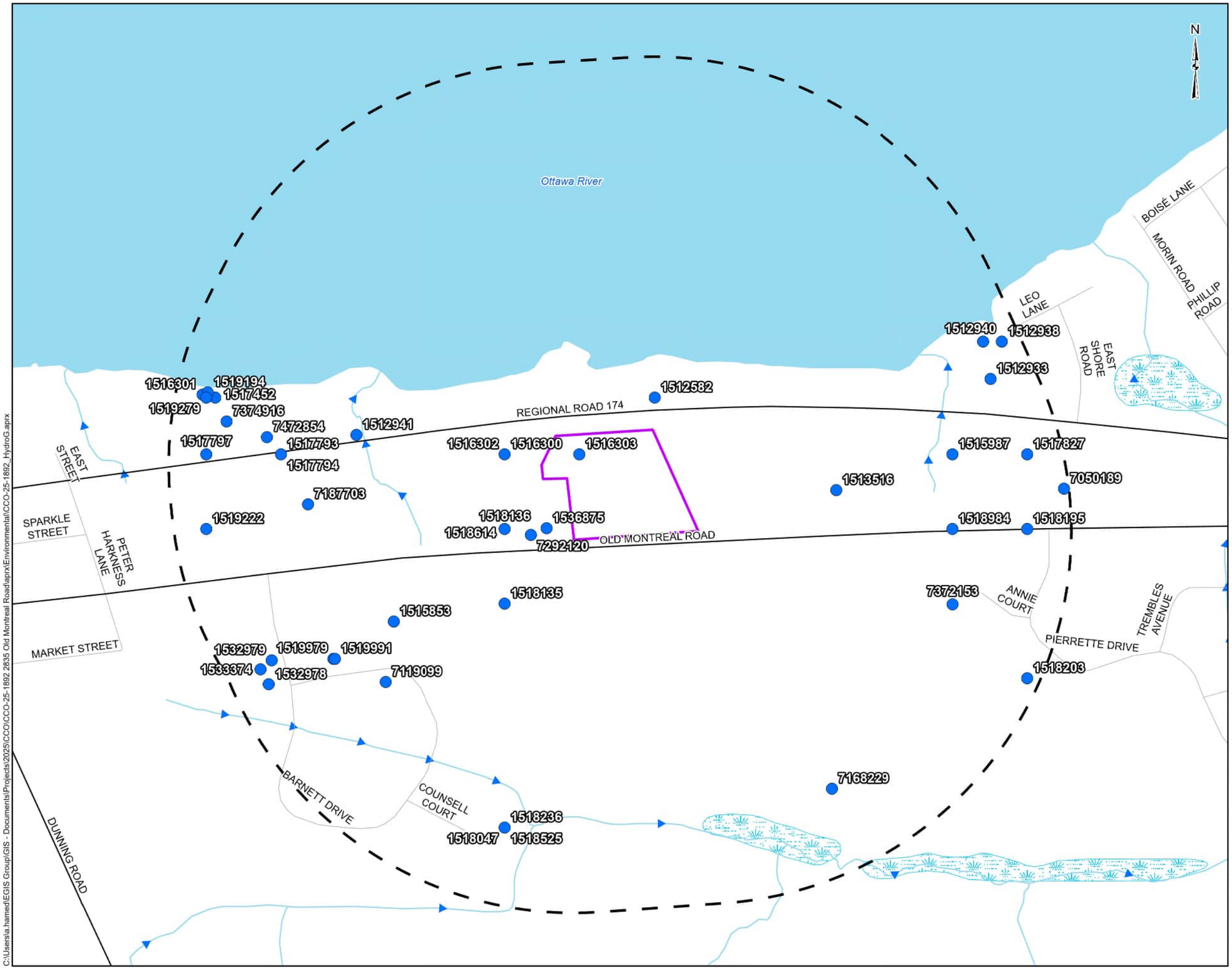
CLIENT: CITY OF OTTAWA

PROJECT: HYDROGEOLOGICAL ASSESSMENT

TITLE: SITE LAYOUT

egis
750 Palladium Dr, Suite 310, Kanata, ON K2V 1C7
Tel: 613-836-2184 Fax: 613-836-3742

PROJECT NO: CCO-25-1892	FIGURE:
Date: Oct., 28, 2025	2
GIS: AH	
Checked By: RL	



LEGEND

- MECP Well Location
- Site Layout
- 500m Buffer
- Local Road
- Major Road
- Watercourse
- Waterbody
- Unevaluated Wetland

REFERENCE

GIS data provided by the Ontario Ministry of Natural Resources and Forestry, 2025.

150 75 0 150

Scale 1:5,000 Metres

CLIENT: CITY OF OTTAWA

PROJECT: HYDROGEOLOGICAL ASSESSMENT

TITLE: MECP WATER WELL INFORMATION SYSTEM SUMMARY

egis
750 Palladium Dr, Suite 310, Kanata, ON K2V 1C7
Tel: 613-836-2184 Fax: 613-836-3742

PROJECT NO: CCO-25-1892	FIGURE:
Date: Oct., 28, 2025	3
GIS: AH	
Checked By: RL	

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HYDROGEOLOGICAL ASSESSMENT
2835 OLD MONTREAL ROAD, CUMBERLAND, ONTARIO



APPENDIX A

MECP WELL RECORDS

WELL_ID	COMPLETED	WELL DEPTH (m)	STATIC WATER LEVEL	PATH TO BEDROCK	BORE_HOLE_ID	FINAL STATUS	USE1	USE2	COUNTY	MUNICIPALITY	CONN	LOT	STREET	CITY	ZONE	EASTB3	NORTHB3	GEOLOGY	COLOR	FORMATION_TOP	FORMATION_END_D	UNITS OF MEASUREMENT
1512582	09-Jun-58	18.9	6.1	0	10034571	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469230.8	5040798	TOPSOIL,,		0	2	ft
1512582	09-Jun-58	18.9	6.1	0	10034571	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469230.8	5040798	CLAY,,	BLUE	2	58	ft
1512582	09-Jun-58	18.9	6.1	0	10034571	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469230.8	5040798	GRAVEL,,		58	62	ft
1512933	03-Dec-65	81.1	3	74.7	10034921	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	010			18	469680.8	5040823	CLAY,,	BLUE	0	242	ft
1512933	03-Dec-65	81.1	3	74.7	10034921	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	010			18	469680.8	5040823	FINE SAND,GRAVEL,		242	245	ft
1512933	03-Dec-65	81.1	3	74.7	10034921	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	010			18	469680.8	5040823	LIMESTONE,,	GREY	245	266	ft
1512938	07-Jul-71	61.6	1.8	54.3	10034926	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	010			18	469695.8	5040873	CLAY,,		0	100	ft
1512938	07-Jul-71	61.6	1.8	54.3	10034926	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	010			18	469695.8	5040873	SAND,,		100	178	ft
1512938	07-Jul-71	61.6	1.8	54.3	10034926	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	010			18	469695.8	5040873	LIMESTONE,,		178	202	ft
1512940	02-Nov-66	86.6	1.2	78.6	10034928	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469670.8	5040873	CLAY,,	BLUE	0	258	ft
1512940	02-Nov-66	86.6	1.2	78.6	10034928	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469670.8	5040873	LIMESTONE,,	GREY	258	280	ft
1512940	02-Nov-66	86.6	1.2	78.6	10034928	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469670.8	5040873	SANDSTONE,,	WHITE	280	284	ft
1512941	23-Oct-50	53.9	12.8	28.7	10034929	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468830.8	5040748	PREV. DRILLED,,		0	94	ft
1512941	23-Oct-50	53.9	12.8	28.7	10034929	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468830.8	5040748	LIMESTONE,,		94	177	ft
1513516	11-Oct-73	45.1	15.2	37.5	10035502	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469473.8	5040674	SAND,,		0	50	ft
1513516	11-Oct-73	45.1	15.2	37.5	10035502	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469473.8	5040674	CLAY,,		50	123	ft
1513516	11-Oct-73	45.1	15.2	37.5	10035502	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469473.8	5040674	LIMESTONE,,	BLUE	123	148	ft
1518236	24-May-83	24.4	19.8	0	10040106	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	SAND,,	YELLOW	0	14	ft
1518236	24-May-83	24.4	19.8	0	10040106	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	CLAY,,	BLUE	14	63	ft
1518236	24-May-83	24.4	19.8	0	10040106	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	GRAVEL,SAND,BOULDERS	BLACK	63	76	ft
1518236	24-May-83	24.4	19.8	0	10040106	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	COARSE GRAVEL,,	BLACK	76	80	ft
1515853	16-Jul-76	33.5	16.8	32.3	10037792	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468880.8	5040498	SAND,,	YELLOW	0	6	ft
1515853	16-Jul-76	33.5	16.8	32.3	10037792	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468880.8	5040498	CLAY,,	YELLOW	6	15	ft
1515853	16-Jul-76	33.5	16.8	32.3	10037792	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468880.8	5040498	CLAY,,	BLUE	15	90	ft
1515853	16-Jul-76	33.5	16.8	32.3	10037792	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468880.8	5040498	GRAVEL,,	GREY	90	106	ft
1515853	16-Jul-76	33.5	16.8	32.3	10037792	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468880.8	5040498	LIMESTONE,,	GREY	106	110	ft
1515987	15-Sep-76	80.8	7.9	0	10037926	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469629.8	5040722	CLAY,,	BLUE	0	260	ft
1515987	15-Sep-76	80.8	7.9	0	10037926	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469629.8	5040722	GRAVEL,,	BLACK	260	265	ft
1516300	18-Oct-77	45.7	2.7	1.5	10038228	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040722	SAND,FILL,LOOSE	BROWN	0	5	ft
1516300	18-Oct-77	45.7	2.7	1.5	10038228	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040722	LIMESTONE,,	GREY	5	150	ft
1516301	19-Oct-77	91.4	2.7	1.8	10038229	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468624.8	5040802	FILL,PACKED,	BROWN	0	6	ft
1516301	19-Oct-77	91.4	2.7	1.8	10038229	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468624.8	5040802	LIMESTONE,MEDIUM-GRAINED,	GREY	6	300	ft
1516302	22-Oct-77	53.3	3.4	0.3	10038230	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040722	FILL,,	BROWN	0	1	ft
1516302	22-Oct-77	53.3	3.4	0.3	10038230	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040722	LIMESTONE,,	GREY	1	175	ft
1516303	23-Oct-77	68.6	1.2	0	10038231	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469129.8	5040722	TOPSOIL,CLAY,	BROWN	0	11	ft
1516303	23-Oct-77	68.6	1.2	0	10038231	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469129.8	5040722	FILL,,	BROWN	11	225	ft
1518047	02-Dec-82	36.6	21.3	0	10039918	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	CLAY,,	RED	0	9	ft
1518047	02-Dec-82	36.6	21.3	0	10039918	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	CLAY,,	BLUE	9	118	ft
1518047	02-Dec-82	36.6	21.3	0	10039918	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	GRAVEL,,	BLACK	118	120	ft
1517452	04-Nov-80	61	7.6	1.5	10039327	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468641.8	5040798	CLAY,STONES,FRACTURED	BROWN	0	5	ft
1517452	04-Nov-80	61	7.6	1.5	10039327	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468641.8	5040798	LIMESTONE,SOFT,	GREY	5	170	ft
1517452	04-Nov-80	61	7.6	1.5	10039327	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468641.8	5040798	LIMESTONE,SOFT,	BLACK	170	200	ft
1517793	25-Nov-77	39.3	2.4	0	10039665	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468729.8	5040722	LIMESTONE,TILL,LOOSE	BROWN	0	2	ft
1517793	25-Nov-77	39.3	2.4	0	10039665	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468729.8	5040722	LIMESTONE,FRACTURED,SOFT	GREY	2	7	ft
1517793	25-Nov-77	39.3	2.4	0	10039665	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468729.8	5040722	LIMESTONE,POROUS,LAYERED	GREY	7	129	ft
1517794	30-Jul-79	62.5	16.8	1.2	10039666	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468729.8	5040722	SAND,FILL,	BROWN	0	4	ft
1517794	30-Jul-79	62.5	16.8	1.2	10039666	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468729.8	5040722	LIMESTONE,HARD,FRACTURED	GREY	4	16	ft
1517794	30-Jul-79	62.5	16.8	1.2	10039666	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468729.8	5040722	LIMESTONE,,	GREY	16	205	ft
1517797	01-Mar-80	53.3	16.8	1.5	10039669	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468629.8	5040722	SAND,FILL,	BROWN	0	3	ft
1517797	01-Mar-80	53.3	16.8	1.5	10039669	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468629.8	5040722	HARDPAN,LIMESTONE,FRACTURED	BROWN	3	5	ft
1517797	01-Mar-80	53.3	16.8	1.5	10039669	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468629.8	5040722	RED STONES,LIMESTONE,FRACTURED	GREY	5	15	ft
1517797	01-Mar-80	53.3	16.8	1.5	10039669	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468629.8	5040722	LIMESTONE,,	GREY	15	175	ft
1517827	16-Jun-82	24.1	18.3	22.3	10039699	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040722	SAND,,	YELLOW	0	11	ft
1517827	16-Jun-82	24.1	18.3	22.3	10039699	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040722	CLAY,,	BLUE	11	62	ft
1517827	16-Jun-82	24.1	18.3	22.3	10039699	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040722	SAND,BOULDERS,GRAVEL	GREY	62	73	ft
1517827	16-Jun-82	24.1	18.3	22.3	10039699	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040722	SHALE,,	BLACK	73	79	ft
1518135	06-Feb-83	28.3	18	0	10040006	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040522	SAND,,	YELLOW	0	9	ft
1518135	06-Feb-83	28.3	18	0	10040006	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040522	CLAY,,	BLUE	9	77	ft
1518135	06-Feb-83	28.3	18	0	10040006	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040522	GRAVEL,SAND,BOULDERS	BLACK	77	93	ft
1518136	08-Feb-83	24.4	17.7	0	10040007	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040622	SAND,,	YELLOW	0	8	ft
1518136	08-Feb-83	24.4	17.7	0	10040007	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040622	CLAY,,	BLUE	8	69	ft
1518136	08-Feb-83	24.4	17.7	0	10040007	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040622	GRAVEL,SAND,BOULDERS	BLACK	69	80	ft
1518195	09-Apr-83	53.6	25.9	0	10040065	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040622	SAND,,	YELLOW	0	11	ft
1518195	09-Apr-83	53.6	25.9	0	10040065	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040622	CLAY,,	BLUE	11	154	ft
1518195	09-Apr-83	53.6	25.9	0	10040065	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040622	FINE SAND,,	GREY	154	174	ft
1518195	09-Apr-83	53.6	25.9	0	10040065	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040622	COARSE GRAVEL,,	BLACK	174	176	ft
1518203	24-Feb-83	74.7	0	0.9	10040073	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040422	HARDPAN,,	BROWN	0	3	ft
1518203	24-Feb-83	74.7	0	0.9	10040073	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040422	LIMESTONE,,	GREY	3	160	ft
1518203	24-Feb-83	74.7	0	0.9	10040073	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040422	SLATE,SANDSTONE,	BLUE	160	185	ft
1518203	24-Feb-83	74.7	0	0.9	10040073	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040422	SANDSTONE,,	GREY	185	225	ft
1518203	24-Feb-83	74.7	0	0.9	10040073	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040422	SLATE,,	BROWN	225	241	ft
1518203	24-Feb-83	74.7	0	0.9	10040073	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469729.8	5040422	LIMESTONE,,	GREY	241	245	ft
1518525	29-Aug-83	23.5	18.3	0	10040395	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	SAND,,	YELLOW	0	14	ft
1518525	29-Aug-83	23.5	18.3	0	10040395	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	CLAY,,	BLUE	14	64	ft
1518525	29-Aug-83	23.5	18.3	0	10040395	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	469029.8	5040222	GRAVEL,,	BLACK	64	77	ft
1518614	15-Sep-83	36.6	29	0	10040484	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040622	CLAY,,	RED	0	17	ft
1518614	15-Sep-83	36.6	29	0	10040484	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040622	CLAY,,	BLUE	17	111	ft
1518614	15-Sep-83	36.6	29	0	10040484	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012			18	469029.8	5040622	GRAVEL,SAND,	BLACK	111	120	ft
1518984	16-Jun-84	56.4	11.3	34.7	10040854	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469629.8	5040622	CLAY,,	YELLOW	0	10	ft
1518984	16-Jun-84	56.4	11.3	34.7	10040854	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469629.8	5040622	CLAY,,	BLUE	10	112	ft
1518984	16-Jun-84	56.4	11.3	34.7	10040854	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469629.8	5040622	GRAVEL,,	GREY	112	114	ft
1518984	16-Jun-84	56.4	11.3	34.7	10040854	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469629.8	5040622	LIMESTONE,FINE GRAVEL,	GREY	114	130	ft
1518984	16-Jun-84	56.4	11.3	34.7	10040854	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011			18	469629.8	5040622	SLATE,LIMESTONE,LAYERED	BROWN	130	185	ft
1519194	27-Jul-84	29	11	15.2	10041064	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468631.8	5040805	SAND,,	YELLOW	0	10	ft
1519194	27-Jul-84	29	11	15.2	10041064	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468631.8	5040805	CLAY,,	BLUE	10	50	ft
1519194	27-Jul-84	29	11	15.2	10041064	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468631.8	5040805	LIMESTONE,SHALE,	GREY	50	95	ft
1519222	08-Aug-84	86.9	3.4	80.5	10041092	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468629.8	5040622	SAND,LOOSE,	BROWN	0	4	ft
1519222	08-Aug-84	86.9	3.4	80.5	10041092	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468629.8	5040622	CLAY,PACKED,	GREY	4	220	ft
1519222	08-Aug-84	86.9	3.4	80.5	10041092	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468629.8	5040622	CLAY,SAND,LOOSE	GREY	220	264	ft
1519222	08-Aug-84	86.9	3.4	80.5	10041092	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468629.8	5040622	LIMESTONE,,	GREY	264	285	ft
1519279	03-Oct-84	33.5	13.7	0	10041149	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468629.8	5040798	LIMESTONE,STONES,	GREY	0	10	ft
1519279	03-Oct-84	33.5	13.7	0	10041149	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468629.8	5040798	LIMESTONE,HARD,	GREY	10	110	ft
1519979	29-Sep-84	25.9	10.7	19.5	10041829	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468800	5040448	SAND,PACKED,	BROWN	0	10	ft
1519979	29-Sep-84	25.9	10.7	19.5	10041829	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468800	5040448	CLAY,SOFT,	GREY	10	56	ft

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1519979	29-Sep-84	25.9	10.7	19.5	10041829	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468800	5040448	GRAVEL,SAND,LOOSE	GREY	56	64	ft
1519979	29-Sep-84	25.9	10.7	19.5	10041829	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468800	5040448	LIMESTONE,ROCK,LAYERED	GREY	64	85	ft
1519991	26-Oct-84	25.9	12.2	19.5	10041841	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468802	5040448	SAND,LOOSE,	BROWN	0	10	ft
1519991	26-Oct-84	25.9	12.2	19.5	10041841	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468802	5040448	CLAY,SOFT,	GREY	10	56	ft
1519991	26-Oct-84	25.9	12.2	19.5	10041841	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468802	5040448	GRAVEL,SAND,	GREY	56	64	ft
1519991	26-Oct-84	25.9	12.2	19.5	10041841	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468802	5040448	LIMESTONE,ROCK,LAYERED	GREY	64	85	ft
1532978	21-Jul-02	34.1	18.3	28	10529725	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		002			18	468713.4	5040414	TOPSOIL,SOFT,	YELLOW	0	5	ft
1532978	21-Jul-02	34.1	18.3	28	10529725	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		002			18	468713.4	5040414	CLAY,SAND,SOFT	GREY	5	75	ft
1532978	21-Jul-02	34.1	18.3	28	10529725	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		002			18	468713.4	5040414	SAND,GRAVEL,SOFT	GREY	75	92	ft
1532978	21-Jul-02	34.1	18.3	28	10529725	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		002			18	468713.4	5040414	LIMESTONE,HARD,	GREY	92	112	ft
1532979	18-Jul-02	33.5	18.3	26.2	10529726	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		004			18	468717.4	5040446	TOPSOIL,SOFT,	YELLOW	0	5	ft
1532979	18-Jul-02	33.5	18.3	26.2	10529726	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		004			18	468717.4	5040446	CLAY,SOFT,	GREY	5	72	ft
1532979	18-Jul-02	33.5	18.3	26.2	10529726	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		004			18	468717.4	5040446	GRAVEL,SAND,SOFT	GREY	72	86	ft
1532979	18-Jul-02	33.5	18.3	26.2	10529726	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		004			18	468717.4	5040446	LIMESTONE,HARD,	GREY	86	110	ft
1533374	24-Oct-02	30.5	16.8	24.4	10530121	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468702.4	5040434	CLAY,GRAVEL,		0	80	ft
1533374	24-Oct-02	30.5	16.8	24.4	10530121	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	013			18	468702.4	5040434	LIMESTONE,SHALE,	GREY	80	100	ft
1536875	15-Nov-06	31.2	14.1	19.5	11691969	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012	2805 OLD MONTREAL ROAD	CUMBERLAND	18	469086	5040623	TOPSOIL,SOFT,	BLACK	0	0.9	m
1536875	15-Nov-06	31.2	14.1	19.5	11691969	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012	2805 OLD MONTREAL ROAD	CUMBERLAND	18	469086	5040623	CLAY,SOFT,	RED	0.9	2.42	m
1536875	15-Nov-06	31.2	14.1	19.5	11691969	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012	2805 OLD MONTREAL ROAD	CUMBERLAND	18	469086	5040623	CLAY,SOFT,	GREY	2.42	17.57	m
1536875	15-Nov-06	31.2	14.1	19.5	11691969	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012	2805 OLD MONTREAL ROAD	CUMBERLAND	18	469086	5040623	GRAVEL,SOFT,	GREY	17.57	19.39	m
1536875	15-Nov-06	31.2	14.1	19.5	11691969	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	012	2805 OLD MONTREAL ROAD	CUMBERLAND	18	469086	5040623	LIMESTONE,SHALE,SOFT	GREY	19.39	31.21	m
7050189	07-Sep-07	87.9	16.1	0	23050189	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011	2961 OLD MONTREAH RD	CUMBERLAND	18	469779	5040676	SAND,,SOFT	YELLOW	0	6.66	m
7050189	07-Sep-07	87.9	16.1	0	23050189	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011	2961 OLD MONTREAH RD	CUMBERLAND	18	469779	5040676	CLAY,,SOFT	GREY	6.66	37.87	m
7050189	07-Sep-07	87.9	16.1	0	23050189	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011	2961 OLD MONTREAH RD	CUMBERLAND	18	469779	5040676	CLAY,,SOFT	BLUE	37.87	57.52	m
7050189	07-Sep-07	87.9	16.1	0	23050189	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011	2961 OLD MONTREAH RD	CUMBERLAND	18	469779	5040676	CLAY,,DENSE	BLUE	57.52	79.69	m
7050189	07-Sep-07	87.9	16.1	0	23050189	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011	2961 OLD MONTREAH RD	CUMBERLAND	18	469779	5040676	SAND,GRAVEL,SOFT	GREY	79.69	87.27	m
7050189	07-Sep-07	87.9	16.1	0	23050189	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP	01	011	2961 OLD MONTREAH RD	CUMBERLAND	18	469779	5040676	LIMESTONE,,HARD	GREY	87.27	87.87	m
7119099	23-Sep-08	24.4	20.4	0	1002010256	Alteration			OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013			18	468870	5040417	,,		0	80	ft
7168229	27-Jul-11	15.2	0	0	1003559041	Test Hole	Monitoring		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			2830 OLD MONTREAL RD	CUMBERLAND	18	469468	5040274	SAND,TOPSOIL,SILTY	BROWN	0	0.13	m
7168229	27-Jul-11	15.2	0	0	1003559041	Test Hole	Monitoring		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			2830 OLD MONTREAL RD	CUMBERLAND	18	469468	5040274	SAND,SILT,	BROWN	0.13	3.05	m
7168229	27-Jul-11	15.2	0	0	1003559041	Test Hole	Monitoring		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			2830 OLD MONTREAL RD	CUMBERLAND	18	469468	5040274	CLAY,,SILTY	GREY	3.05	15.24	m
7187703	01-Aug-12	79.2	15.6	0	1004160671	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			REGIONAL RD 174	CUMBERLAND	18	468766	5040655	SAND,,		0	5	ft
7187703	01-Aug-12	79.2	15.6	0	1004160671	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			REGIONAL RD 174	CUMBERLAND	18	468766	5040655	CLAY,SANDY,	GREY	5	28	ft
7187703	01-Aug-12	79.2	15.6	0	1004160671	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			REGIONAL RD 174	CUMBERLAND	18	468766	5040655	SAND,GRAVEL,BOULDERS		28	40	ft
7187703	01-Aug-12	79.2	15.6	0	1004160671	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			REGIONAL RD 174	CUMBERLAND	18	468766	5040655	LIMESTONE,,	BROWN	40	188	ft
7187703	01-Aug-12	79.2	15.6	0	1004160671	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			REGIONAL RD 174	CUMBERLAND	18	468766	5040655	LIMESTONE,,	GREY	188	260	ft
7292120	02-Jun-17	36.6	13.8	0	1006707506	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		012	2811 OLD MONTREAL ROAD	CUMBERLAND	18	469065	5040614	CLAY,,		0	46	ft
7292120	02-Jun-17	36.6	13.8	0	1006707506	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		012	2811 OLD MONTREAL ROAD	CUMBERLAND	18	469065	5040614	GRAVEL,,		46	48	ft
7292120	02-Jun-17	36.6	13.8	0	1006707506	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		012	2811 OLD MONTREAL ROAD	CUMBERLAND	18	469065	5040614	LIMESTONE,,	GREY	48	113	ft
7292120	02-Jun-17	36.6	13.8	0	1006707506	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		012	2811 OLD MONTREAL ROAD	CUMBERLAND	18	469065	5040614	LIMESTONE,,	GREY	113	120	ft
7372153	10-Sep-20	54.9	11.7	0	1008499972	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			1190 Annie Court	CUMBERLAND	18	469630	5040521	CLAY,,	BROWN	0	9	ft
7372153	10-Sep-20	54.9	11.7	0	1008499972	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			1190 Annie Court	CUMBERLAND	18	469630	5040521	CLAY,BOULDERS,	BLUE	9	158	ft
7372153	10-Sep-20	54.9	11.7	0	1008499972	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			1190 Annie Court	CUMBERLAND	18	469630	5040521	LIMESTONE,,	GREY	158	171	ft
7372153	10-Sep-20	54.9	11.7	0	1008499972	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			1190 Annie Court	CUMBERLAND	18	469630	5040521	LIMESTONE,,	GREY	171	173	ft
7372153	10-Sep-20	54.9	11.7	0	1008499972	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP			1190 Annie Court	CUMBERLAND	18	469630	5040521	LIMESTONE,,	GREY	173	180	ft
7374916	24-Nov-20	21.3	12	0	1008531597	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013	2669 REGIONAL RD, STATION MAIN	CUMBERLAND	18	468657	5040766	CLAY,SILT,HARD	BROWN	0	6.7	m
7374916	24-Nov-20	21.3	12	0	1008531597	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013	2669 REGIONAL RD, STATION MAIN	CUMBERLAND	18	468657	5040766	CLAY,SILT,HARD	GREY	6.7	16.76	m
7374916	24-Nov-20	21.3	12	0	1008531597	Water Supply	Domestic		OTTAWA-CARLETON	CUMBERLAND TOWNSHIP		013	2669 REGIONAL RD, STATION MAIN	CUMBERLAND	18	468657	5040766	SHALE,,LAYERED	GREY	16.76	21.33	m
7472854	21-Jan-24	0	0	0	1010270835				OTTAWA-CARLETON	CUMBERLAND TOWNSHIP					18	468711	5040745	,,				

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WELL_ID	COMPLETED	WELL DEPTH (m)	STATIC WATER LEVEL	DEPTH TO BEDROCK	BORE_HOLE_ID	FINAL STATUS	USE1	USE2	EASTING	NORTHING	PIPE_ID	PUMP TEST	PUMPING RATE	FLOWING RATE	RECOM RATE	WATER STATE AFTER TEST	PUMP METHOD	PPING DURATION (h)
1512582	09-Jun-58	18.9	6.1	0	10034571	Water Supply	Domestic		469230.8	5040798	10583141	20,40, ft	8 GPM		GPM	CLEAR	PUMP	3 h
1512933	03-Dec-65	81.1	3	74.7	10034921	Water Supply	Domestic		469680.8	5040823	10583491	10,20,20 ft	20 GPM		6GPM	CLEAR	PUMP	6 h
1512938	07-Jul-71	61.6	1.8	54.3	10034926	Water Supply	Domestic		469695.8	5040873	10583496	6,20,35 ft	20 GPM		5GPM	CLEAR	PUMP	1 h
1512940	02-Nov-66	86.6	1.2	78.6	10034928	Water Supply	Domestic		469670.8	5040873	10583498	4,20,20 ft	10 GPM		6GPM	CLEAR	PUMP	2 h
1512941	23-Oct-50	53.9	12.8	28.7	10034929	Water Supply	Domestic		468830.8	5040748	10583499	42,48, ft	8 GPM		GPM	CLEAR	PUMP	1 h
1513516	11-Oct-73	45.1	15.2	37.5	10035502	Water Supply	Domestic		469473.8	5040674	10584072	50,148,148 ft	7 GPM		7GPM	CLEAR	PUMP	1 h
1518236	24-May-83	24.4	19.8	0	10040106	Water Supply	Domestic		469029.8	5040222	10588676	65,71,75 ft	17 GPM		10GPM	CLOUDY	BAILER	1 h
1515853	16-Jul-76	33.5	16.8	32.3	10037792	Water Supply	Domestic		468880.8	5040498	10586362	55,80,80 ft	8 GPM		5GPM	CLEAR	PUMP	1 h
1515987	15-Sep-76	80.8	7.9	0	10037926	Water Supply	Domestic		469629.8	5040722	10586496	26,50,50 ft	100 GPM		10GPM	CLEAR	PUMP	2 h
1516300	18-Oct-77	45.7	2.7	1.5	10038228	Water Supply	Domestic		469029.8	5040722	10586798	9,120,120 ft	7 GPM		6GPM	CLEAR	PUMP	2 h
1516301	19-Oct-77	91.4	2.7	1.8	10038229	Water Supply	Domestic		468624.8	5040802	10586799	9,140,140 ft	8 GPM		6GPM	CLEAR	PUMP	2 h
1516302	22-Oct-77	53.3	3.4	0.3	10038230	Water Supply	Domestic		469029.8	5040722	10586800	11,150,150 ft	6 GPM		5GPM	CLEAR	PUMP	2 h
1516303	23-Oct-77	68.6	1.2	0	10038231	Water Supply	Domestic		469129.8	5040722	10586801	4,150,150 ft	5 GPM		4GPM	CLEAR	PUMP	2 h
1518047	02-Dec-82	36.6	21.3	0	10039918	Water Supply	Domestic		469029.8	5040222	10589488	70,80,105 ft	15 GPM		10GPM	CLOUDY	BAILER	1 h
1517452	04-Nov-80	61	7.6	1.5	10039327	Water Supply	Domestic		468641.8	5040798	10587897	25,150,170 ft	4 GPM		5GPM	CLEAR	PUMP	1 h
1517793	25-Nov-77	39.3	2.4	0	10039665	Water Supply	Domestic		468729.8	5040722	10588235	8,45,100 ft	12 GPM		7GPM	CLEAR	BAILER	2 h
1517794	30-Jul-79	62.5	16.8	1.2	10039666	Water Supply	Domestic		468729.8	5040722	10588236	55,130,200 ft	8 GPM		5GPM	CLEAR	BAILER	2 h
1517797	01-Mar-80	53.3	16.8	1.5	10039669	Water Supply	Domestic		468629.8	5040722	10588239	55,100,160 ft	7 GPM		6GPM	CLEAR	BAILER	3 h
1517827	16-Jun-82	24.1	18.3	22.3	10039699	Water Supply	Domestic		469729.8	5040722	10588269	60,68,73 ft	12 GPM		10GPM	CLOUDY	BAILER	1 h
1518135	06-Feb-83	28.3	18	0	10040006	Water Supply	Domestic		469029.8	5040522	10588576	59,77,85 ft	25 GPM		10GPM	CLOUDY	BAILER	1 h
1518136	08-Feb-83	24.4	17.7	0	10040007	Water Supply	Domestic		469029.8	5040622	10588577	58,67,74 ft	17 GPM		10GPM	CLOUDY	BAILER	1 h
1518195	09-Apr-83	53.6	25.9	0	10040065	Water Supply	Domestic		469729.8	5040622	10588635	85,100,150 ft	11 GPM		8GPM	CLOUDY	BAILER	1 h
1518203	24-Feb-83	74.7	0	0.9	10040073	Water Supply	Domestic		469729.8	5040422	10588643	240,230 ft	24 GPM		24GPM	CLEAR	PUMP	1 h
1518525	29-Aug-83	23.5	18.3	0	10040395	Water Supply	Domestic		469029.8	5040222	10588965	60,60,73 ft	12 GPM		10GPM	CLOUDY	BAILER	1 h
1518614	15-Sep-83	36.6	29	0	10040484	Water Supply	Domestic		469029.8	5040622	10589054	95,105,115 ft	15 GPM		10GPM	CLOUDY	BAILER	1 h
1518984	16-Jun-84	56.4	11.3	34.7	10040854	Water Supply	Domestic		469629.8	5040622	10589424	37,180,160 ft	9 GPM		9GPM	CLEAR	PUMP	1 h
1519194	27-Jul-84	29	11	15.2	10041064	Water Supply	Domestic		468631.8	5040805	10589634	36,90,80 ft	16 GPM		16GPM	CLEAR	PUMP	1 h
1519222	08-Aug-84	86.9	3.4	80.5	10041092	Water Supply	Domestic		468629.8	5040622	10589662	11,14,75 ft	7 GPM		5GPM	CLEAR	PUMP	48 h
1519279	03-Oct-84	33.5	13.7	0	10041149	Water Supply	Domestic		468629.8	5040798	10589719	45,52,80 ft	20 GPM		7GPM	CLOUDY	BAILER	1 h
1519979	29-Sep-84	25.9	10.7	19.5	10041829	Water Supply	Domestic		468800	5040448	10590399	35,50,75 ft	20 GPM		10GPM	CLEAR	BAILER	1 h
1519991	26-Oct-84	25.9	12.2	19.5	10041841	Water Supply	Domestic		468802	5040448	10590411	40,60,80 ft	20 GPM		10GPM	CLEAR	BAILER	1 h
1532978	21-Jul-02	34.1	18.3	28	10529725	Water Supply	Domestic		468713.4	5040414	11078295	60,112,100 ft	20 GPM		10GPM	CLEAR	BAILER	1 h
1532979	18-Jul-02	33.5	18.3	26.2	10529726	Water Supply	Domestic		468717.4	5040446	11078296	60,110,100 ft	20 GPM		10GPM	CLEAR	BAILER	1 h
1533374	24-Oct-02	30.5	16.8	24.4	10530121	Water Supply	Domestic		468702.4	5040434	11078691	55,90,90 ft	12 GPM		12GPM	CLOUDY	PUMP	1 h
1536875	15-Nov-06	31.2	14.1	19.5	11691969	Water Supply	Domestic		469086	5040623	11696835	14.09,21.86,28. 78 m	54 LPM		45.5LPM	CLEAR	PUMP	1 h
7050189	07-Sep-07	87.9	16.1	0	23050189	Water Supply	Domestic		469779	5040676	1000012970	16.05,53.03,75. 75 m	22.5 LPM		22.5LPM	OTHER	PUMP	0 h
7119099	23-Sep-08	24.4	20.4	0	10020102556	Alteration			468870	5040417	1002472628	67., ft	GPM		GPM			h
7168229	27-Jul-11	15.2	0	0	1003559041	Test Hole	Monitoring		469468	5040274	1003923775	.,						h
7187703	01-Aug-12	79.2	15.6	0	1004160671	Water Supply	Domestic		468766	5040655	1004431466	51.333,53.667,2 50 ft	8 GPM		8GPM	OTHER		1 h
7292120	02-Jun-17	36.6	13.8	0	1005707506	Water Supply	Domestic		469065	5040614	1006830274	45.167,88.583,1 10 ft	12 GPM		12GPM	OTHER		1 h
7372153	10-Sep-20	54.9	11.7	0	1008499972	Water Supply	Domestic		469630	5040521	1009655698	38.5,42.100 ft	20 GPM		20GPM	OTHER		1 h
7374916	24-Nov-20	21.3	12	0	1008531597	Water Supply	Domestic		468657	5040766	1009690280	12.02,12.4,16 m	72 LPM		72LPM	CLEAR		1 h

Data sensitivity - Internal

HYDROGEOLOGICAL ASSESSMENT
2835 OLD MONTREAL ROAD, CUMBERLAND, ONTARIO



APPENDIX B

WELL RECORD (TW1)

Ontario — Ministry of the Environment, Conservation and Parks

Well Tag No. (I Tag#:A431406 — A431406

Well Record

Regulation 903 Ontario Water Resources Act

Measurements recorded in: ☐ Metric ☒ Imperial

Page ____ of ____

Well Owner's Information

First Name	Last Name/Organization	E-mail Address	☐ Well Constructed by Well Owner
	St. Faustina Parrish		

Mailing Address (Street Number/Name)	Municipality	Province	Postal Code	Telephone No. (inc. area code)

Well Location

Address of Well Location (Street Number/Name)	Township	Lot	Concession
2235 Old Montreal Rd.			

County/District/Municipality	City/Town/Village	Province	Postal Code
	Cumberland	Ontario	

UTM Coordinates	Zone	Easting	Northing	Municipal Plan and Sublot Number	Other
NAD 8 3	18	469063	5040629		

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	Silt, Stone	Hard	0	5.26
Grey	clay		Soft	5.26	32.00
Grey	gravel	Sand, Stone	Hard, Packed	32.00	36.04
Grey	limestone		layered	36.04	200.00

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)
0	43.0	Bentonyte grout	15 FT

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
6.25	Steel	.188	+2	43.0
6.13	open Hole		43.0	200.0

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
192	☐	☐ Fresh ☒ Untested	
	☐	☐ Fresh ☐ Untested	
	☐	☐ Fresh ☐ Untested	

Hole Diameter

Depth (m/ft) From	Depth (m/ft) To	Diameter (cm/in)
0	43.0	10.25
0	200.00	6.13

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): 190

Pumping rate (l/min / GPM): 15

Duration of pumping: 1 hrs + ____ min

Final water level end of pumping (m/ft): 60.80

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

Recommended pump depth (m/ft): 180

Recommended pump rate (l/min/GPM): 20

Well production (l/min/GPM): 75

Disinfected? ☒ Yes ☐ No

Draw Down Time (min)	Draw Down Water Level (m/ft)	Recovery Time (min)	Recovery Water Level (m/ft)
Static Level	60.15		60.80
1	60.35	1	60.63
2	60.30	2	60.61
3	60.31	3	60.58
4	60.33	4	60.56
5	60.35	5	60.53
10	60.50	10	60.37
15	60.55	15	60.30
20	60.60	20	60.23
25	60.63	25	60.20
30	60.65	30	60.19
40	60.70	40	60.17
50	60.74	50	60.16
60	60.80	60	60.16

Map of Well Location

Please provide a map below following instructions on the back.

Comments: ____

Well Contractor and Well Technician Information

Business Name of Well Contractor	Well Contractor's Licence No.
Bourgeois Well Drilling Ltd.	7417

Business Address (Street Number/Name)	Municipality	Province	Postal Code	Business E-mail Address
13865 Carruthers Rd.	Crysler	ON	K0A1R0	N/A

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
6139857529	GENIER, MICHAEL	3493		2025 09 03

Well owner's information package delivered	Date Package Delivered	Date Work Completed
☒ Yes ☐ No	20250827	20250827

Ministry Use Only

Audit No. Z451924

Received

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HYDROGEOLOGICAL ASSESSMENT
2835 OLD MONTREAL ROAD, CUMBERLAND, ONTARIO



APPENDIX C

WATER LEVEL DATA AND PUMPING TEST ANALYSES

Summary of Water Level Data
Pumping Test - TW1 April 16, 2025

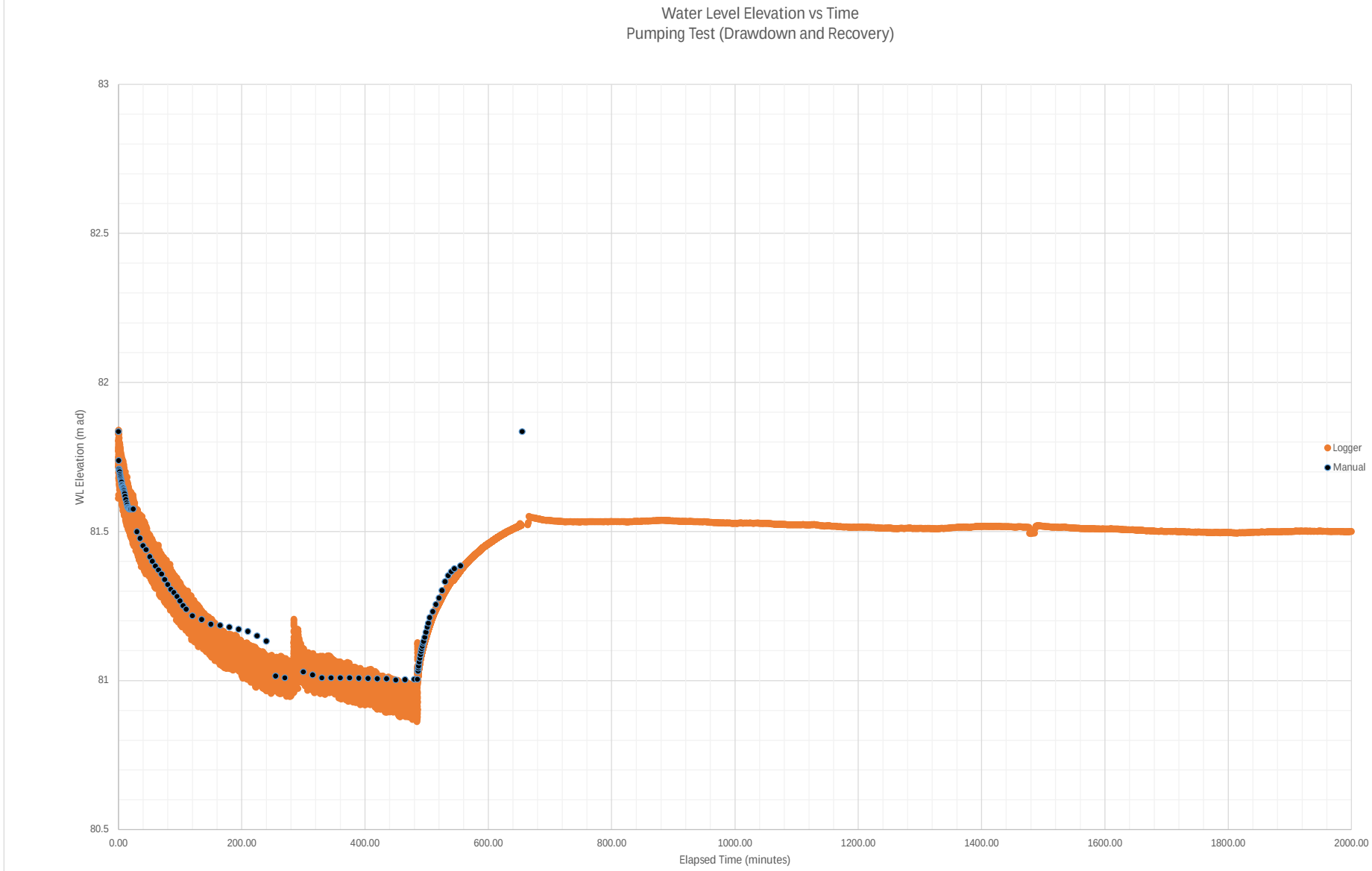
TOC Elevation (assumed)	100	m AD (Above Datum)	
Static Water Level	18.165	m BTOC	
Static Water Elevation	81.835	m AD (Above Datum)	
95% Recovery	18.21	m BTOC	
	81.79345	m AD (Above Datum)	
Well depth	60.96	m BTOC	18.2066
Pump Depth	57.91	m BTOC	

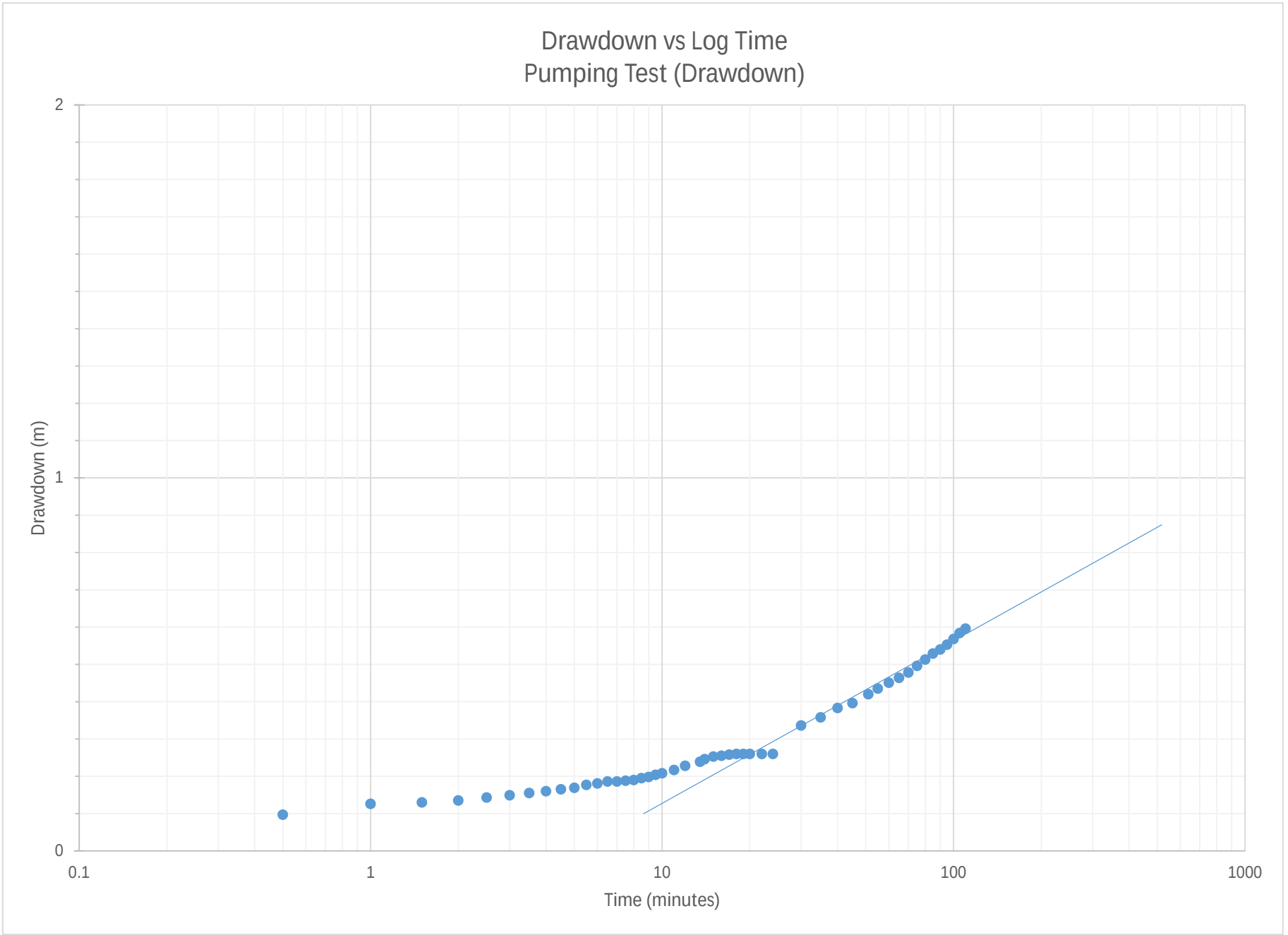
Elapsed Time (minutes)	Water Level (m BTOC)	Elapsed time after pump shut off (min)	T/t'	Water Level (m Datum)	Drawdown (m)	Water Column Remaining (m)	% Utilization	Notes
0	18.165			81.835	0	42.795	0.0%	Pump on at 8:15 am
0.5	18.262			81.738	0.097	42.698	0.2%	Flow rate is with pump wide open, 78-80 L/
1	18.291			81.709	0.126	42.669	0.2%	
1.5	18.295			81.705	0.13	42.665	0.2%	
2	18.3			81.7	0.135	42.66	0.2%	
2.5	18.308			81.692	0.143	42.652	0.2%	
3	18.314			81.686	0.149	42.646	0.2%	
3.5	18.32			81.68	0.155	42.64	0.3%	
4	18.325			81.675	0.16	42.635	0.3%	
4.5	18.33			81.67	0.165	42.63	0.3%	
5	18.334			81.666	0.169	42.626	0.3%	
5.5	18.342			81.658	0.177	42.618	0.3%	
6	18.346			81.654	0.181	42.614	0.3%	
6.5	18.351			81.649	0.186	42.609	0.3%	
7	18.351			81.649	0.186	42.609	0.3%	
7.5	18.353			81.647	0.188	42.607	0.3%	
8	18.355			81.645	0.19	42.605	0.3%	
8.5	18.36			81.64	0.195	42.6	0.3%	
9	18.363			81.637	0.198	42.597	0.3%	
9.5	18.369			81.631	0.204	42.591	0.3%	
10	18.373			81.627	0.208	42.587	0.3%	
11	18.382			81.618	0.217	42.578	0.4%	
12	18.393			81.607	0.228	42.567	0.4%	
13.5	18.404			81.596	0.239	42.556	0.4%	
14	18.411			81.589	0.246	42.549	0.4%	
15	18.418			81.582	0.253	42.542	0.4%	
16	18.42			81.58	0.255	42.54	0.4%	
17	18.423			81.577	0.258	42.537	0.4%	
18	18.425			81.575	0.26	42.535	0.4%	
19	18.425			81.575	0.26	42.535	0.4%	
20	18.425			81.575	0.26	42.535	0.4%	
22	18.425			81.575	0.26	42.535	0.4%	
24	18.425			81.575	0.26	42.535	0.4%	
30	18.501			81.499	0.336	42.459	0.6%	
35	18.523			81.477	0.358	42.437	0.6%	
40	18.548			81.452	0.383	42.412	0.6%	
45	18.561			81.439	0.396	42.399	0.6%	
51	18.585			81.415	0.42	42.375	0.7%	
55	18.600			81.4	0.435	42.36	0.7%	
60	18.616			81.384	0.451	42.344	0.7%	
65	18.629			81.371	0.464	42.331	0.8%	
70	18.643			81.357	0.478	42.317	0.8%	
75	18.661			81.339	0.496	42.299	0.8%	
80	18.678			81.322	0.513	42.282	0.8%	
85	18.694			81.306	0.529	42.266	0.9%	
90	18.705			81.295	0.54	42.255	0.9%	
95	18.718			81.282	0.553	42.242	0.9%	
100	18.733			81.267	0.568	42.227	0.9%	
105	18.749			81.251	0.584	42.211	1.0%	
110	18.761			81.239	0.596	42.199	1.0%	
120	18.783			81.217	0.618	42.177	1.0%	
135	18.795			81.205	0.63	42.165	1.0%	
150	18.811			81.189	0.646	42.149	1.1%	
165	18.815			81.185	0.65	42.145	1.1%	
180	18.821			81.179	0.656	42.139	1.1%	
195	18.828			81.172	0.663	42.132	1.1%	
210	18.835			81.165	0.67	42.125	1.1%	
225	18.85			81.15	0.685	42.11	1.1%	
240	18.868			81.132	0.703	42.092	1.2%	
255	18.985			81.015	0.82	41.975	1.3%	
270	18.991			81.009	0.826	41.969	1.4%	
300	18.971			81.029	0.806	41.989	1.3%	
315	18.981			81.019	0.816	41.979	1.3%	
330	18.991			81.009	0.826	41.969	1.4%	
345	18.991			81.009	0.826	41.969	1.4%	
360	18.991			81.009	0.826	41.969	1.4%	
375	18.991			81.009	0.826	41.969	1.4%	
390	18.992			81.008	0.827	41.968	1.4%	
405	18.993			81.007	0.828	41.967	1.4%	
420	18.994			81.006	0.829	41.966	1.4%	
435	18.994			81.006	0.829	41.966	1.4%	

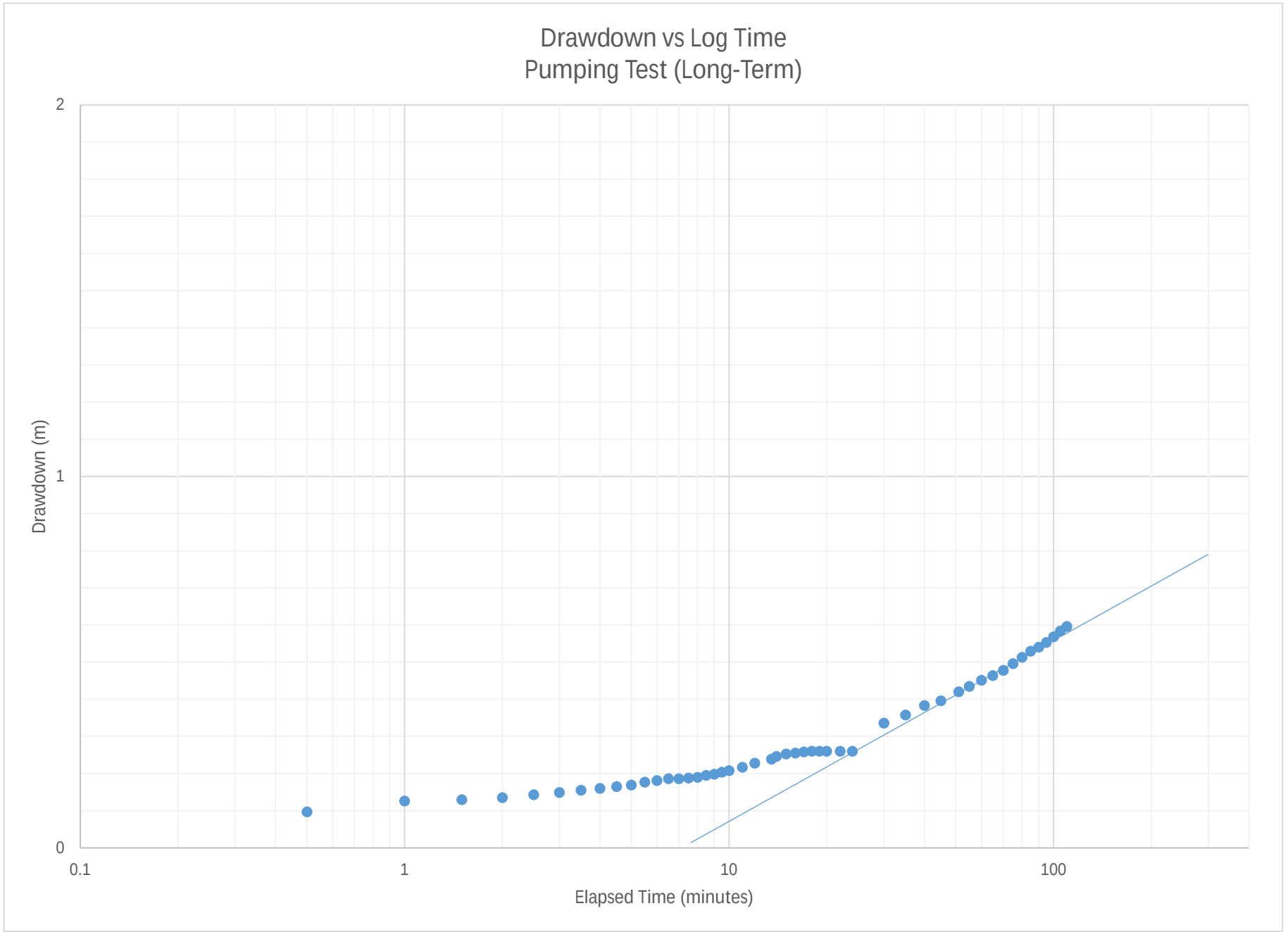
Data sensitivity - Internal

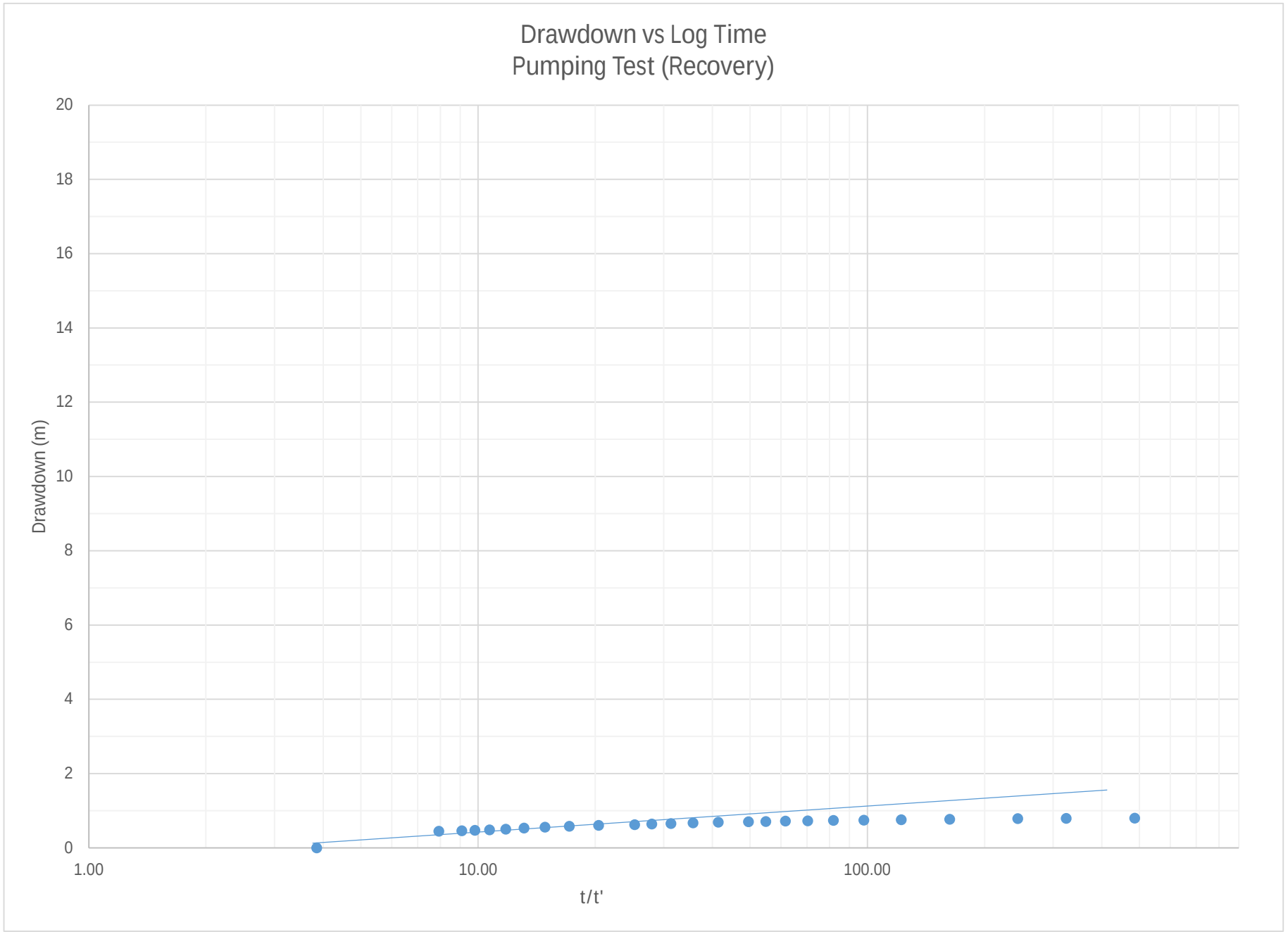
450	18.998			81.002	0.833	41.962	1.4%	
465	18.997			81.003	0.832	41.963	1.4%	
480	18.996			81.004	0.831	41.964	1.4%	
485	18.996			81.004	0.831	41.964	1.4%	
485.5	18.968	0.5	971.00	81.032	0.803	41.992	1.3%	
486	18.968	1	486.00	81.032	0.803	41.992	1.3%	
486.5	18.958	1.5	324.33	81.042	0.793	42.002	1.3%	
487	18.951	2	243.50	81.049	0.786	42.009	1.3%	
488	18.938	3	162.67	81.062	0.773	42.022	1.3%	
489	18.925	4	122.25	81.075	0.76	42.035	1.2%	
490	18.913	5	98.00	81.087	0.748	42.047	1.2%	
491	18.902	6	81.83	81.098	0.737	42.058	1.2%	
492	18.893	7	70.29	81.107	0.728	42.067	1.2%	
493	18.885	8	61.63	81.115	0.72	42.075	1.2%	
494	18.875	9	54.89	81.125	0.71	42.085	1.2%	
495	18.869	10	49.50	81.131	0.704	42.091	1.2%	
497	18.855	12	41.42	81.145	0.69	42.105	1.1%	
499	18.838	14	35.64	81.162	0.673	42.122	1.1%	
501	18.821	16	31.31	81.179	0.656	42.139	1.1%	
503	18.808	18	27.94	81.192	0.643	42.152	1.1%	
505	18.789	20	25.25	81.211	0.624	42.171	1.0%	
510	18.769	25	20.40	81.231	0.604	42.191	1.0%	
515	18.745	30	17.17	81.255	0.58	42.215	1.0%	
520	18.723	35	14.86	81.277	0.558	42.237	0.9%	
525	18.698	40	13.13	81.302	0.533	42.262	0.9%	
530	18.668	45	11.78	81.332	0.503	42.292	0.8%	
535	18.648	50	10.70	81.352	0.483	42.312	0.8%	
540	18.635	55	9.82	81.365	0.47	42.325	0.8%	
545	18.625	60	9.08	81.375	0.46	42.335	0.8%	
555	18.615	70	7.93	81.385	0.45	42.345	0.7%	
655	18.165	170	3.85	81.835	0.0	42.795	0.0%	

Data sensitivity - Internal


Water Level Elevation vs Time
Pumping Test (Drawdown and Recovery)
WL Elevation (m ad)
83
82.5
82
81.5
81
80.5
0.00
200.00
400.00
600.00
800.00
1000.00
1200.00
1400.00
1600.00
1800.00
2000.00
Elapsed Time (minutes)
Logger
Manual


Drawdown vs Log Time
Pumping Test (Drawdown)
Drawdown (m)
2
1
0
0.1
1
10
100
1000
Time (minutes)


Drawdown vs Log Time
Pumping Test (Long-Term)
Drawdown (m)
2
1
0
0.1
1
10
100
Elapsed Time (minutes)


Drawdown vs Log Time
Pumping Test (Recovery)
Drawdown (m)
20
18
16
14
12
10
8
6
4
2
0
1.00
10.00
100.00
t/t'

HYDROGEOLOGICAL ASSESSMENT
2835 OLD MONTREAL ROAD, CUMBERLAND, ONTARIO



APPENDIX D

LABORATORY CERTIFICATES OF ANALYSIS

Certificate of Analysis

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Rebecca Leduc
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3019735
Date Submitted: 2025-09-18
Date Reported: 2025-09-25
Project: 25-1892
COC #: 236497

Dear Rebecca Leduc:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____
Patrick Jacques, Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: https://directory.cala.ca/.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is licensed by the Ontario Ministry of the Environment, Conservation, and Parks (MECP) for specific tests in drinking water (license #2318). A copy of the license is available upon request.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by the Ontario Ministry of Agriculture, Food, and Rural Affairs for specific tests in agricultural soils.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline values listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official provincial or federal guideline as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

eurofins | Environment Testing

Certificate of Analysis

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Rebecca Leduc
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3019735
Date Submitted: 2025-09-18
Date Reported: 2025-09-25
Project: 25-1892
COC #: 236497

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1781980 GW 2025-09-17 TW1-1	1781981 GW 2025-09-17 TW1-2
Anions	Cl	1	mg/L	AO 250		49	56
	F	0.10	mg/L	MAC 1.5		0.66	0.66
	N-NO2	0.10	mg/L	MAC 1.0		<0.10	<0.10
	N-NO3	0.10	mg/L	MAC 10.0		0.22	0.20
	SO4	1	mg/L	AO 500		34	44
General Chemistry	Alkalinity as CaCO3	5	mg/L	OG 30-500		304	308
	BOD5	1	mg/L			<1	<1
	COD	5	mg/L			<5	<5
	Colour (Apparent)	2	TCU	AO 5		34*	35*
	Conductivity	5	uS/cm			754	800
	DOC	0.5	mg/L	AO 5		3.2	2.8
	pH	1.00		6.5-8.5		8.23	8.16
	Phenols	0.001	mg/L			<0.001	<0.001
	S2-	0.01	mg/L	AO 0.05		0.21*	0.17*
	Tannin & Lignin	0.1	mg/L			0.6	0.6
	TDS (COND - CALC)	1	mg/L	AO 500		490	520*
	Turbidity	0.1	NTU	AO 5		0.3	0.4
Hardness	Hardness as CaCO3	1	mg/L	OG 80-100		165*	183*
Indices/Calc	Ion Balance	0.01				1.01	1.00
Metals	Ag	0.0001	mg/L			<0.0001	<0.0001
	Al	0.01	mg/L	OG 0.1		<0.01	<0.01
	As	0.001	mg/L	IMAC 0.01		<0.001	<0.001
	B	0.01	mg/L	IMAC 5.0		0.44	0.45
	Ba	0.01	mg/L	MAC 1.0		0.27	0.29
	Be	0.0005	mg/L			<0.0005	<0.0005

Guideline = ODWSOG *** = Guideline Exceedence**

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Certificate of Analysis

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Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Rebecca Leduc
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3019735
Date Submitted: 2025-09-18
Date Reported: 2025-09-25
Project: 25-1892
COC #: 236497

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1781980 GW 2025-09-17 TW1-1	1781981 GW 2025-09-17 TW1-2
Metals	Ca	1	mg/L			38	42
	Cd	0.0001	mg/L	MAC 0.005		<0.0001	<0.0001
	Co	0.0002	mg/L			<0.0002	<0.0002
	Cr	0.001	mg/L	MAC 0.05		<0.001	<0.001
	Cu	0.001	mg/L	AO 1		<0.001	<0.001
	Fe	0.03	mg/L	AO 0.3		0.04	<0.03
	Hg	0.0001	mg/L	MAC 0.001		<0.0001	<0.0001
	K	1	mg/L			7	7
	Mg	1	mg/L			17	19
	Mn	0.01	mg/L	AO 0.05		<0.01	<0.01
	Mo	0.005	mg/L			<0.005	<0.005
	Na	1	mg/L	AO 200		110	110
	Ni	0.005	mg/L			<0.005	<0.005
	P	0.002	mg/L				0.972
		0.004	mg/L			0.897	
	Pb	0.001	mg/L	MAC 0.010		<0.001	<0.001
	Sb	0.0005	mg/L	IMAC 0.006		<0.0005	<0.0005
	Se	0.001	mg/L	MAC 0.05		<0.001	<0.001
	Sn	0.01	mg/L			<0.01	<0.01
	Sr	0.001	mg/L			10.0	11.3
	Ti	0.01	mg/L			<0.01	<0.01
	Tl	0.0001	mg/L			<0.0001	<0.0001
	U	0.001	mg/L	MAC 0.02		<0.001	<0.001
	V	0.001	mg/L			0.001	<0.001
	W	0.002	mg/L			<0.002	<0.002

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Group	Analyte	MRL	Units	Guideline	1781980 GW 2025-09-17 TW1-1	1781981 GW 2025-09-17 TW1-2
				Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.		
Metals	Zn	0.01	mg/L	AO 5	<0.01	<0.01
Microbiology	Escherichia Coli	0	ct/100mL	MAC 0	0	0
	Faecal Coliforms	0	ct/100mL		0	0
	Heterotrophic Plate Count	0	ct/1mL		93	107
	Total Coliforms	0	ct/100mL	MAC 0	0	0
Nutrients	N-NH3	0.020	mg/L		0.651	0.630
	Organic Nitrogen	0.08	mg/L	OG 0.15	0.14	0.23*
	Total Kjeldahl Nitrogen	0.100	mg/L		0.790	0.857
VOCs Surrogates	1,2-dichloroethane-d4	0	%		118	116
	4-bromofluorobenzene	0	%		91	90
	Toluene-d8	0	%		74	73
Volatiles	1,1,1,2-tetrachloroethane	0.5	ug/L		<0.5	<0.5
	1,1,1-trichloroethane	0.4	ug/L		<0.4	<0.4
	1,1,2,2-tetrachloroethane	0.5	ug/L		<0.5	<0.5
	1,1,2-trichloroethane	0.4	ug/L		<0.4	<0.4
	1,1-dichloroethane	0.4	ug/L		<0.4	<0.4
	1,1-dichloroethylene	0.5	ug/L	MAC 14	<0.5	<0.5
	1,2-dichlorobenzene	0.4	ug/L	MAC 200	<0.4	<0.4
	1,2-dichloroethane	0.5	ug/L	IMAC 5	<0.5	<0.5
	1,2-dichloropropane	0.5	ug/L		<0.5	<0.5
	1,3,5-trimethylbenzene	0.3	ug/L		<0.3	<0.3
	1,3-dichlorobenzene	0.4	ug/L		<0.4	<0.4
	1,3-Dichloropropylene (cis+trans)	0.5	ug/L		<0.5	<0.5
	1,4-dichlorobenzene	0.4	ug/L	MAC 5	<0.4	<0.4
	Acetone	5	ug/L		<5	<5

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Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1781980 GW 2025-09-17 TW1-1	1781981 GW 2025-09-17 TW1-2
Volatiles	Benzene	0.5	ug/L	MAC 1		<0.5	<0.5
	Bromodichloromethane	0.3	ug/L			<0.3	<0.3
	Bromoform	0.4	ug/L			<0.4	<0.4
	Bromomethane	0.5	ug/L			<0.5	<0.5
	c-1,2-Dichloroethylene	0.4	ug/L			<0.4	<0.4
	c-1,3-Dichloropropylene	0.5	ug/L			<0.5	<0.5
	Carbon Tetrachloride	0.2	ug/L	MAC 2		<0.2	<0.2
	Chloroethane	0.5	ug/L			<0.5	<0.5
	Chloroform	0.5	ug/L			<0.5	<0.5
	Dibromochloromethane	0.3	ug/L			<0.3	<0.3
	Dichlorodifluoromethane	0.5	ug/L			<0.5	<0.5
	Dichloromethane	4.0	ug/L	MAC 50		<4.0	<4.0
	Ethylbenzene	0.5	ug/L	MAC 140		<0.5	<0.5
	Ethylene Dibromide	0.2	ug/L			<0.2	<0.2
	Hexane	5	ug/L			<5	<5
	m/p-xylene	0.4	ug/L			<0.4	<0.4
	Methyl Ethyl Ketone (MEK)	2	ug/L			<2	<2
	Methyl Isobutyl Ketone (MIBK)	5	ug/L			<5	<5
	Methyl Tert Butyl Ether (MTBE)	2	ug/L	AO 15		<2	<2
	Monochlorobenzene	0.5	ug/L	MAC 80		<0.5	<0.5
	o-xylene	0.4	ug/L			<0.4	<0.4
	Styrene	0.5	ug/L			<0.5	<0.5
	t-1,2-Dichloroethylene	0.4	ug/L			<0.4	<0.4
	t-1,3-Dichloropropylene	0.5	ug/L			<0.5	<0.5
	Tetrachloroethylene	0.3	ug/L	MAC 10		<0.3	<0.3

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Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.	1781980 GW 2025-09-17 TW1-1	1781981 GW 2025-09-17 TW1-2
Volatiles	Toluene	0.4	ug/L	MAC 60		<0.4	<0.4
	Trichloroethylene	0.3	ug/L	MAC 5		<0.3	<0.3
	Trichlorofluoromethane	0.5	ug/L			<0.5	<0.5
	Vinyl Chloride	0.2	ug/L	MAC 1		<0.2	<0.2
	Xylene; total	0.5	ug/L	MAC 90		<0.5	<0.5

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 481517 **Analysis/Extraction Date** 2025-09-18 **Analyst** SAH **Method** C SM2130B			
Turbidity	<0.1 NTU	111	70-130
Run No 481521 **Analysis/Extraction Date** 2025-09-19 **Analyst** L V **Method** AMBCOLM1			
Escherichia Coli			
Faecal Coliforms			
Heterotrophic Plate Count			
Total Coliforms			
Run No 481547 **Analysis/Extraction Date** 2025-09-19 **Analyst** SKH **Method** EPA 350.1			
N-NH3	<0.020 mg/L	105	80-120
Run No 481567 **Analysis/Extraction Date** 2025-09-19 **Analyst** SKH **Method** EPA 351.2			
Total Kjeldahl Nitrogen	<0.100 mg/L	101	70-130
Run No 481575 **Analysis/Extraction Date** 2025-09-19 **Analyst** Z S **Method** M SM3120B-3500C			
Calcium	<1 mg/L	101	90-110
Potassium	<1 mg/L	105	87-113

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Magnesium	<1 mg/L	98	76-124
Sodium	<1 mg/L	105	82-118
Run No 481580 **Analysis/Extraction Date** 2025-09-19 **Analyst** AaN **Method** EPA 200.8			
Silver	<0.0001 mg/L	87	80-120
Aluminum	<0.01 mg/L	114	80-120
Arsenic	<0.001 mg/L	101	80-120
Boron (total)	<0.01 mg/L	102	80-120
Barium	<0.01 mg/L	100	80-120
Beryllium	<0.0005 mg/L	106	80-120
Cadmium	<0.0001 mg/L	106	80-120
Cobalt	<0.0002 mg/L	108	80-120
Chromium Total	<0.001 mg/L	119	80-120
Copper	<0.001 mg/L	110	80-120
Iron	<0.03 mg/L	104	80-120
Mercury	<0.0001 mg/L	96	80-120
Manganese	<0.01 mg/L	108	80-120
Molybdenum	<0.005 mg/L	97	80-120

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Nickel	<0.005 mg/L	115	80-120
P	<0.002 mg/L	101	80-120
Lead	<0.001 mg/L	108	80-120
Antimony	<0.0005 mg/L	81	80-120
Selenium	<0.001 mg/L	101	80-120
Sn	<0.01 mg/L	93	80-120
Strontium	<0.001 mg/L	102	80-120
Titanium	<0.01 mg/L	102	80-120
Thallium	<0.0001 mg/L	107	80-120
Uranium	<0.001 mg/L	98	80-120
Vanadium	<0.001 mg/L	103	80-120
W	<0.002 mg/L	95	80-120
Zinc	<0.01 mg/L	112	80-120
Run No 481606 **Analysis/Extraction Date** 2025-09-24 **Analyst** SAH **Method** SM 5210B			
BOD5	<1 mg/L	96	75-125
Run No 481607 **Analysis/Extraction Date** 2025-09-23 **Analyst** SAH **Method** C SM5220D			

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
COD	<5 mg/L	101	80-120
Run No 481629 **Analysis/Extraction Date** 2025-09-21 **Analyst** AaN **Method** EPA 200.8			
P	<0.004 mg/L	103	80-120
Run No 481697 **Analysis/Extraction Date** 2025-09-23 **Analyst** MiV **Method** C SM2120C			
Colour (Apparent)	<2 TCU	97	75-115
Run No 481703 **Analysis/Extraction Date** 2025-09-23 **Analyst** MiV **Method** C SM4500-S2-D			
S2-	<0.01 mg/L	89	80-120
Run No 481705 **Analysis/Extraction Date** 2025-09-23 **Analyst** AsA **Method** SM2320,2510,4500H/F			
Alkalinity (CaCO3)	<5 mg/L	95	90-110
Conductivity	<5 uS/cm	99	90-110
F	<0.10 mg/L	91	90-110
pH		92	90-110
Run No 481710 **Analysis/Extraction Date** 2025-09-23 **Analyst** IP **Method** SM5530D/EPA420.2			
Phenols	<0.001 mg/L	106	50-120

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 481748 **Analysis/Extraction Date** 2025-09-23 **Analyst** AsA **Method** SM 5310B			
DOC	<0.5 mg/L	96	80-120
Run No 481751 **Analysis/Extraction Date** 2025-09-24 **Analyst** IP **Method** SM 4110			
Chloride	<1 mg/L	100	90-110
N-NO2	<0.10 mg/L	105	90-110
N-NO3	<0.10 mg/L	107	90-110
SO4	<1 mg/L	105	90-110
Run No 481764 **Analysis/Extraction Date** 2025-09-24 **Analyst** AET **Method** C SM2340B			
Hardness as CaCO3			
Ion Balance			
Organic Nitrogen			
TDS (COND - CALC)			
Run No 481768 **Analysis/Extraction Date** 2025-09-23 **Analyst** AtJ **Method** EPA 8260			
Tetrachloroethane, 1,1,1,2-	<0.5 ug/L	101	60-130
Trichloroethane, 1,1,1-	<0.4 ug/L	124	60-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Tetrachloroethane, 1,1,2,2-	<0.5 ug/L	109	60-130
Trichloroethane, 1,1,2-	<0.4 ug/L	117	60-130
Dichloroethane, 1,1-	<0.4 ug/L	115	60-130
Dichloroethylene, 1,1-	<0.5 ug/L	97	60-130
Dichlorobenzene, 1,2-	<0.4 ug/L	110	60-130
Dichloroethane, 1,2-	<0.5 ug/L	108	60-130
Dichloropropane, 1,2-	<0.5 ug/L	112	60-130
1,3,5-trimethylbenzene	<0.3 ug/L	113	60-130
Dichlorobenzene, 1,3-	<0.4 ug/L	118	60-130
Dichlorobenzene, 1,4-	<0.4 ug/L	106	60-130
Acetone	<5 ug/L	117	50-140
Benzene	<0.5 ug/L	102	60-130
Bromodichloromethane	<0.3 ug/L	111	60-130
Bromoform	<0.4 ug/L	102	60-130
Bromomethane	<0.5 ug/L	122	60-130
Dichloroethylene, 1,2-cis-	<0.4 ug/L	122	60-130
Dichloropropene,1,3-cis-	<0.5 ug/L	103	60-130
Carbon Tetrachloride	<0.2 ug/L	106	60-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Chloroethane	<0.5 ug/L	90	60-130
Chloroform	<0.5 ug/L	102	60-130
Dibromochloromethane	<0.3 ug/L	109	60-130
Dichlorodifluoromethane	<0.5 ug/L	85	60-130
Methylene Chloride	<4.0 ug/L	104	60-130
Ethylbenzene	<0.5 ug/L	89	60-130
Ethylene dibromide	<0.2 ug/L	103	60-130
Hexane (n)	<5 ug/L	84	60-130
m/p-xylene	<0.4 ug/L	103	60-130
Methyl Ethyl Ketone	<2 ug/L	101	50-140
Methyl Isobutyl Ketone	<5 ug/L	117	50-140
Methyl tert-Butyl Ether (MTBE)	<2 ug/L	111	50-140
Chlorobenzene	<0.5 ug/L	113	60-130
o-xylene	<0.4 ug/L	112	60-130
Styrene	<0.5 ug/L	103	60-130
Dichloroethylene, 1,2-trans-	<0.4 ug/L	123	60-130
Dichloropropene,1,3-trans-	<0.5 ug/L	112	60-130
Tetrachloroethylene	<0.3 ug/L	126	60-130

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Toluene	<0.4 ug/L	126	60-130
Trichloroethylene	<0.3 ug/L	108	60-130
Trichlorofluoromethane	<0.5 ug/L	116	60-130
Vinyl Chloride	<0.2 ug/L	83	60-130
Run No 481833 **Analysis/Extraction Date** 2025-09-25 **Analyst** AsA **Method** C SM5550B			
Tannin & Lignin	<0.1 mg/L	90	80-120
Run No 481847 **Analysis/Extraction Date** 2025-09-25 **Analyst** AtJ **Method** EPA 8260			
Xylene Mixture			
Run No 481849 **Analysis/Extraction Date** 2025-09-25 **Analyst** AtJ **Method** EPA 8260			
Dichloropropene,1,3-			

Guideline = ODWSOG *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

eurofins 236497

STANDARD CHAIN-OF-CUSTODY

146 Colonnade Road, Unit #8, Ottawa, ON, K2E 7Y1 - Phone: 613-727-5692, Fax: 613-727-5222

CLIENT INFORMATION

Company: Egis Canada Ltd
Contact: Rebecca Leduc
Address: 750 Palladium Dr, Suite 310, Kanata, ON
Telephone: Cell: 613-229-8936
Email: #1: Rebecca.LEDUC@egis-group.com
Email: #2: Monica.BLACK@egis-group.com
Project: 25-1892 Quote #: 192442

INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES ☐ NO ☐)

Company:
Contact: Email: #1: AP.Canada@egis-group.com
Address: Email: #2:
Telephone: PO #:

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☒ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability. *For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%. **For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

TCLP, SPLP, PFAS, and NP/NPE the rush surcharges are 100% (3 day) and 50% (4 day). For farm soils the rush surcharge is 100% (3-5 days). Regular TAT is 10 days.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City:
☐ Storm Sewer, City:
☒ ODWSOG (Use DW COC if samples are for human consumption)
☒ PWQO
☐ O.Reg. 347 (TCLP)
☐ Other:

☐ O. Reg. 153/04
The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only Yes ☐ No ☐
Table # ____, Coarse / Fine, Surface / subsurface
Type: Com-Ind / Res-Park / Agri / GW / All Other / Sediment

☐ O. Reg 406 Excess Soils
Table # _____ Full depth/Strat/Ceiling/mSPLP Leachate
Type: Com-Ind /Res-Park /Agri/All Other
Category: Surface /Subsurface

The optimal temperature conditions during transport is 4 - 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. This COC must not be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a $25 surcharge if required information is missing (required fields are shaded in grey).

Occasionally, situations arise in which Eurofins Environment Testing Canada (Ottawa) is unable to process a sample after receipt. By signing this chain-of-custody form, the client agrees that Eurofins Environment Testing Canada (Ottawa) may subcontract samples to a laboratory that is similarly accredited. This subcontracted laboratory will perform the same analysis using the same or similar methodology. Agreements made in advance to subcontract to a specific laboratory will be honored.

Sample Details

Sample ID	Date/Time Collected	Sample Matrix	# of Containers	O.Reg.153/04 parameters: PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganics	Metals only	Subdivision Package per guide	RN# (Lab Use Only)
TW1-1	17-Sep-25 12:15PM	GW	9			X					X	1781980
TW1-2	17-Sep-25 4:15PM	GW	9			X					X	87

	PRINT NAME	LOCATION	SIGN	DATE/TIME	TEMP (°C)
Sampled By:	Rebecca Leduc	OTTAWA		17-Sep-25	
Relinquished By:	Rebecca Leduc	OTTAWA		17-Sep-25	
Received By:					
Received By:		OTT		9/18/25 8:00	16

COMMENTS: Not drinking water samples.

3019735

CUSTODY SEAL: ☐ YES ☐ NO Ice packs submit ☐ Yes ☐ No

Certificate of Analysis

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

Dear Monica Black:

Please find attached the analytical results for your samples. If you have any questions regarding this report, please do not hesitate to call (613-727-5692).

Report Comments:

APPROVAL: _____
Patrick Jacques, Chemist

All analysis is completed at Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) unless otherwise indicated.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by CALA, Canadian Association for Laboratory Accreditation to ISO/IEC 17025 for tests which appear on the scope of accreditation. The scope is available at: https://directory.cala.ca/.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is licensed by the Ontario Ministry of the Environment, Conservation, and Parks (MECP) for specific tests in drinking water (license #2318). A copy of the license is available upon request.

Eurofins Environment Testing Canada Inc. (Ottawa, Ontario) is accredited by the Ontario Ministry of Agriculture, Food, and Rural Affairs for specific tests in agricultural soils.

Please note: Field data, where presented on the report, has been provided by the client and is presented for informational purposes only. Guideline values listed on this report are provided for ease of use (informational purposes) only. Eurofins recommends consulting the official provincial or federal guideline as required. Unless otherwise stated, measurement uncertainty is not taken into account when determining guideline or regulatory exceedances.

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Certificate of Analysis

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

				Lab I.D.	1784145
				Sample Matrix	GW
				Sample Type	
				Sampling Date	2025-10-07
				Sample I.D.	TW1-3
Group	**Analyte**	**MRL**	**Units**	**Guideline**	
Anions	Cl	1	mg/L	AO 250	44
	F	0.10	mg/L	MAC 1.5	0.66
	N-NO2	0.10	mg/L	MAC 1.0	<0.10
	N-NO3	0.10	mg/L	MAC 10.0	<0.10
	SO4	1	mg/L	AO 500	29
General Chemistry	Alkalinity as CaCO3	5	mg/L	OG 30-500	300
	Colour (Apparent)	2	TCU	AO 5	31*
	Conductivity	5	uS/cm		718
	DOC	0.5	mg/L	AO 5	3.1
	pH	1.00		6.5-8.5	8.21
	Phenols	0.001	mg/L		<0.001
	Tannin & Lignin	0.1	mg/L		0.5
	TDS (COND - CALC)	1	mg/L	AO 500	467
	Turbidity	0.1	NTU	AO 5	0.4
Hardness	Hardness as CaCO3	1	mg/L	OG 80-100	157*
Indices/Calc	Ion Balance	0.01			1.02
Metals	Ag	0.0002	mg/L		<0.0002
	Al	0.02	mg/L	OG 0.1	<0.02
	As	0.002	mg/L	IMAC 0.01	<0.002
	B	0.02	mg/L	IMAC 5.0	0.35
	Ba	0.02	mg/L	MAC 1.0	0.25
	Be	0.001	mg/L		<0.001
	Ca	1	mg/L		35
	Cd	0.0002	mg/L	MAC 0.005	<0.0002
	Co	0.0004	mg/L		<0.0004

Guideline = ODWSOG *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

eurofins | Environment Testing

Certificate of Analysis

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115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
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Invoice to: EGIS Canada Ltd.

Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

Group	Analyte	MRL	Units	Guideline	1784145 GW 2025-10-07 TW1-3
				Lab I.D.	
				Sample Matrix	
				Sample Type	
				Sampling Date	
				Sample I.D.	
Metals	Cr	0.002	mg/L	MAC 0.05	<0.002
	Cu	0.002	mg/L	AO 1	<0.002
	Fe	0.06	mg/L	AO 0.3	<0.06
	Hg	0.0002	mg/L	MAC 0.001	<0.0002
	K	1	mg/L		7
	Mg	1	mg/L		17
	Mn	0.02	mg/L	AO 0.05	<0.02
	Mo	0.01	mg/L		<0.01
	Na	1	mg/L	AO 200	108
	Ni	0.01	mg/L		<0.01
	Pb	0.002	mg/L	MAC 0.010	<0.002
	Sb	0.001	mg/L	IMAC 0.006	<0.001
	Se	0.002	mg/L	MAC 0.05	<0.002
	Sn	0.02	mg/L		<0.02
	Sr	0.002	mg/L		8.33
	Ti	0.02	mg/L		<0.02
	Tl	0.0002	mg/L		<0.0002
	U	0.002	mg/L	MAC 0.02	<0.002
	V	0.002	mg/L		<0.002
	W	0.004	mg/L		<0.004
	Zn	0.02	mg/L	AO 5	<0.02
Microbiology	Escherichia Coli	0	ct/100mL	MAC 0	0
	Faecal Coliforms	0	ct/100mL		0
	Heterotrophic Plate Count	0	ct/1mL		67
	Total Coliforms	0	ct/100mL	MAC 0	0

Guideline = ODWSOG *** = Guideline Exceedence**

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Certificate of Analysis

eurofins | Environment Testing

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
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Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D. 1784145 GW 2025-10-07 TW1-3
Nutrients	N-NH3	0.020	mg/L		0.667
	Total Kjeldahl Nitrogen	0.100	mg/L		0.939

Guideline = ODWSOG *** = Guideline Exceedence**

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Certificate of Analysis

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 482468 **Analysis/Extraction Date** 2025-10-08 **Analyst** DRA **Method** AMBCOLM1			
Escherichia Coli			
Faecal Coliforms			
Heterotrophic Plate Count			
Total Coliforms			
Run No 482479 **Analysis/Extraction Date** 2025-10-08 **Analyst** SKH **Method** EPA 350.1			
N-NH3	<0.020 mg/L	102	80-120
Run No 482490 **Analysis/Extraction Date** 2025-10-08 **Analyst** SAH **Method** C SM2130B			
Turbidity	<0.1 NTU	102	70-130
Run No 482545 **Analysis/Extraction Date** 2025-10-08 **Analyst** AaN **Method** EPA 200.8			
Silver	<0.0002 mg/L	107	80-120
Aluminum	<0.02 mg/L	106	80-120
Arsenic	<0.002 mg/L	99	80-120
Boron (total)	<0.02 mg/L	105	80-120
Barium	<0.02 mg/L	103	80-120

Guideline = ODWSOG *** = Guideline Exceedence**

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MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Beryllium	<0.001 mg/L	105	80-120
Cadmium	<0.0002 mg/L	105	80-120
Cobalt	<0.0004 mg/L	103	80-120
Chromium Total	<0.002 mg/L	106	80-120
Copper	<0.002 mg/L	104	80-120
Iron	<0.06 mg/L	98	80-120
Mercury	<0.0002 mg/L	117	80-120
Manganese	<0.02 mg/L	103	80-120
Molybdenum	<0.01 mg/L	90	80-120
Nickel	<0.01 mg/L	105	80-120
Lead	<0.002 mg/L	110	80-120
Antimony	<0.001 mg/L	84	80-120
Selenium	<0.002 mg/L	102	80-120
Sn	<0.02 mg/L	83	80-120
Strontium	<0.002 mg/L	100	80-120
Titanium	<0.02 mg/L	101	80-120
Thallium	<0.0002 mg/L	109	80-120
Uranium	<0.002 mg/L	104	80-120

Guideline = ODWSOG *** = Guideline Exceedence**

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Certificate of Analysis

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Vanadium	<0.002 mg/L	99	80-120
W	<0.004 mg/L	101	80-120
Zinc	<0.02 mg/L	106	80-120
Run No 482547 **Analysis/Extraction Date** 2025-10-09 **Analyst** AsA **Method** SM2320,2510,4500H/F			
Alkalinity (CaCO3)	<5 mg/L	96	90-110
Conductivity	<5 uS/cm	100	90-110
F	<0.10 mg/L	97	90-110
pH		92	90-110
Run No 482638 **Analysis/Extraction Date** 2025-10-09 **Analyst** SKH **Method** EPA 351.2			
Total Kjeldahl Nitrogen	<0.100 mg/L	107	70-130
Run No 482645 **Analysis/Extraction Date** 2025-10-09 **Analyst** MiV **Method** SM 5310B			
DOC	<0.5 mg/L	98	80-120
Run No 482666 **Analysis/Extraction Date** 2025-10-10 **Analyst** Z S **Method** M SM3120B-3500C			
Calcium	<1 mg/L	102	90-110
Potassium	<1 mg/L	105	87-113

Guideline = ODWSOG *** = Guideline Exceedence**

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Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Magnesium	<1 mg/L	101	76-124
Sodium	<1 mg/L	104	82-118
Run No 482757 **Analysis/Extraction Date** 2025-10-14 **Analyst** MiV **Method** C SM2120C			
Colour (Apparent)	<2 TCU	95	75-115
Run No 482762 **Analysis/Extraction Date** 2025-10-14 **Analyst** IP **Method** SM 4110			
Chloride	<1 mg/L	100	90-110
N-NO2	<0.10 mg/L	107	90-110
N-NO3	<0.10 mg/L	109	90-110
SO4	<1 mg/L	105	90-110
Run No 482809 **Analysis/Extraction Date** 2025-10-15 **Analyst** AsA **Method** C SM5550B			
Tannin & Lignin	<0.1 mg/L	80	80-120
Run No 482817 **Analysis/Extraction Date** 2025-10-15 **Analyst** SKH **Method** C SM2340B			
Hardness as CaCO3			
Ion Balance			
TDS (COND - CALC)			

Guideline = ODWSOG *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
PO#:
Invoice to: EGIS Canada Ltd.

Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 482837 **Analysis/Extraction Date** 2025-10-15 **Analyst** IP **Method** SM5530D/EPA420.2			
Phenols	<0.001 mg/L	110	50-120

Guideline = ODWSOG *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
Methods references and/or additional QA/QC information available on request.

MRL = Method Reporting Limit, AO = Aesthetic Objective, OG = Operational Guideline, MAC = Maximum Acceptable Concentration, IMAC = Interim Maximum Acceptable Concentration, STD = Standard, PWQO = Provincial Water Quality Guideline, IPWQO = Interim Provincial Water Quality Objective, TDR = Typical Desired Range

Certificate of Analysis

Client: Egis Canada Ltd.
115 Walgreen Rd., R.R. #3
Carp, ON
K0A 1L0
Attention: Ms. Monica Black
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Report Number: 3020206
Date Submitted: 2025-10-07
Date Reported: 2025-10-15
Project: 25-2892-01
COC #: 236431

Sample Comment Summary

Sample ID: 1784145 TW1-3 Metals MRL was raised due to matrix interference.

Guideline = ODWSOG *** = Guideline Exceedence**

Results relate only to the parameters tested on the samples submitted.
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eurofins 236431

STANDARD CHAIN-OF-CUSTODY

146 Colonnade Road, Unit #8, Ottawa, ON, K2E 7Y1 - Phone: 613-727-5692, Fax: 613-727-5222

CLIENT INFORMATION

Company: Egis

Contact: Monica Black

Address: 750 Palladium Drive, Kanata ON

Telephone: 613-227-6953 Cell:

Email: #1: monica.black@egis-group.com

Email: #2: rebecca.leduc@egis-group.com

Project: 25-2892-01 Quote #: 193033

INVOICE INFORMATION (SAME AS CLIENT INFORMATION: YES ☒ NO ☐)

Company:

Contact: Email: #1: AP.canada@egis-group.com

Address: Email: #2:

Telephone: PO #:

TURN-AROUND TIME (Business Days)

☐ 1 Day* (100%) ☐ 2 Day** (50%) ☐ 3-5 Days (25%) ☒ 5-7 Days (Standard)

Please contact Lab in advance to determine rush availability. *For results reported after rush due date, surcharges will apply: before 12:00 - 100%, after 12:00 - 50%. **For results reported after rush due date, surcharges will apply: before 12:00 - 50%, after 12:00 - 25%.

TCLP, SPLP, PFAS, and NP/NPE the rush surcharges are 100% (3 day) and 50% (4 day). For farm soils the rush surcharge is 100% (3-5 days). Regular TAT is 10 days.

REGULATION/GUIDELINE REQUIRED

☐ Sanitary Sewer, City:_____

☐ Storm Sewer, City:_____

☒ ODWSOG (Use DW COC if samples are for human consumption)

☐ PWQO

☐ O.Reg. 347 (TCLP)

☐ Other:_____

☐ O. Reg. 153/04

The sample results from this submission will form part of a formal Record of Site Condition (RSC) under O.Reg. 153/04. Analysis of full parameter list only Yes ☐ No ☐

Table #____, Coarse / Fine, Surface / subsurface

Type: Com-Ind / Res-Park / Agri / GW / All Other / Sediment

☐ O. Reg 406 Excess Soils

Table #_____Full depth/Strat/Ceiling/mSPLP Leachate

Type: Com-Ind /Res-Park /Agri/All Other

Category: Surface /Subsurface

The optimal temperature conditions during transport is 4 - 10°C. Sample(s) cannot be frozen, unless otherwise indicated or agreed upon with the Laboratory. This COC must not be used for drinking water samples. The COC must be complete upon submission of the samples, there will be a $25 surcharge if required information is missing (required fields are shaded in grey).

Occasionally, situations arise in which Eurofins Environment Testing Canada (Ottawa) is unable to process a sample after receipt. By signing this chain-of-custody form, the client agrees that Eurofins Environment Testing Canada (Ottawa) may subcontract samples to a laboratory that is similarly accredited. This subcontracted laboratory will perform the same analysis using the same or similar methodology. Agreements made in advance to subcontract to a specific laboratory will be honored.

Sample Details

Sample ID	Date/Time Collected	Sample Matrix	# of Containers	O.Reg.153/04 parameters: PHC F1 - F4	BTEX	VOCs	PAHs	PCBs	Metals + Inorganics	Metals only	Sub-div supply microbiol E.C.,T.C.,HPC	Sub-div. metals Sn, Ti, W	RN# (Lab Use Only)
TW1-3	07-10-25 2:14 pm	GW	7								X	X	X	X	1784145

	PRINT NAME	LOCATION	SIGN	DATE/TIME	TEMP (°C)
Sampled By:	Monica Black			07-10-25 3:24pm	
Relinquished By:	Monica Black	Ottawa			
Received By:					
Received By:	Deepy	OTT	DJ	07/10/25 3:30	11

COMMENTS:

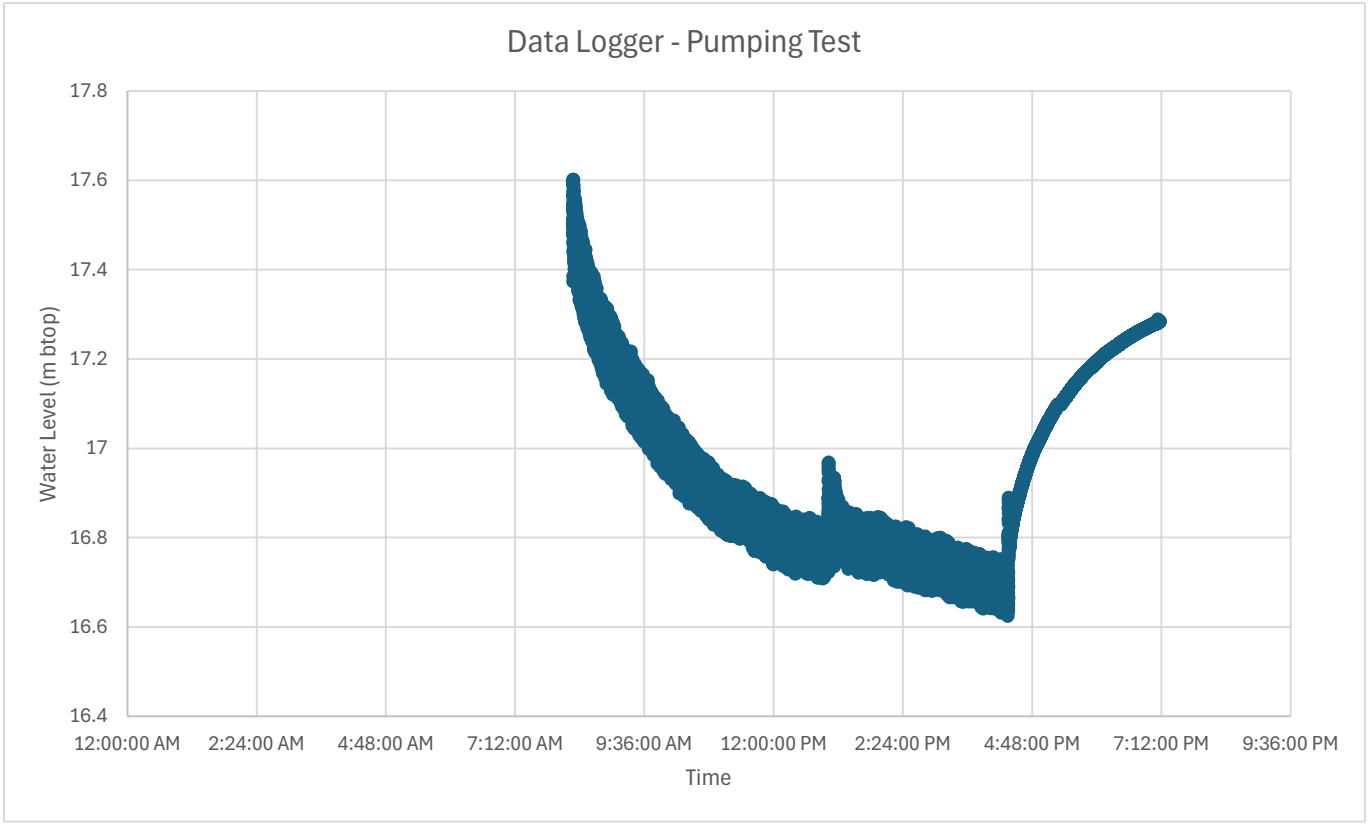
3020206

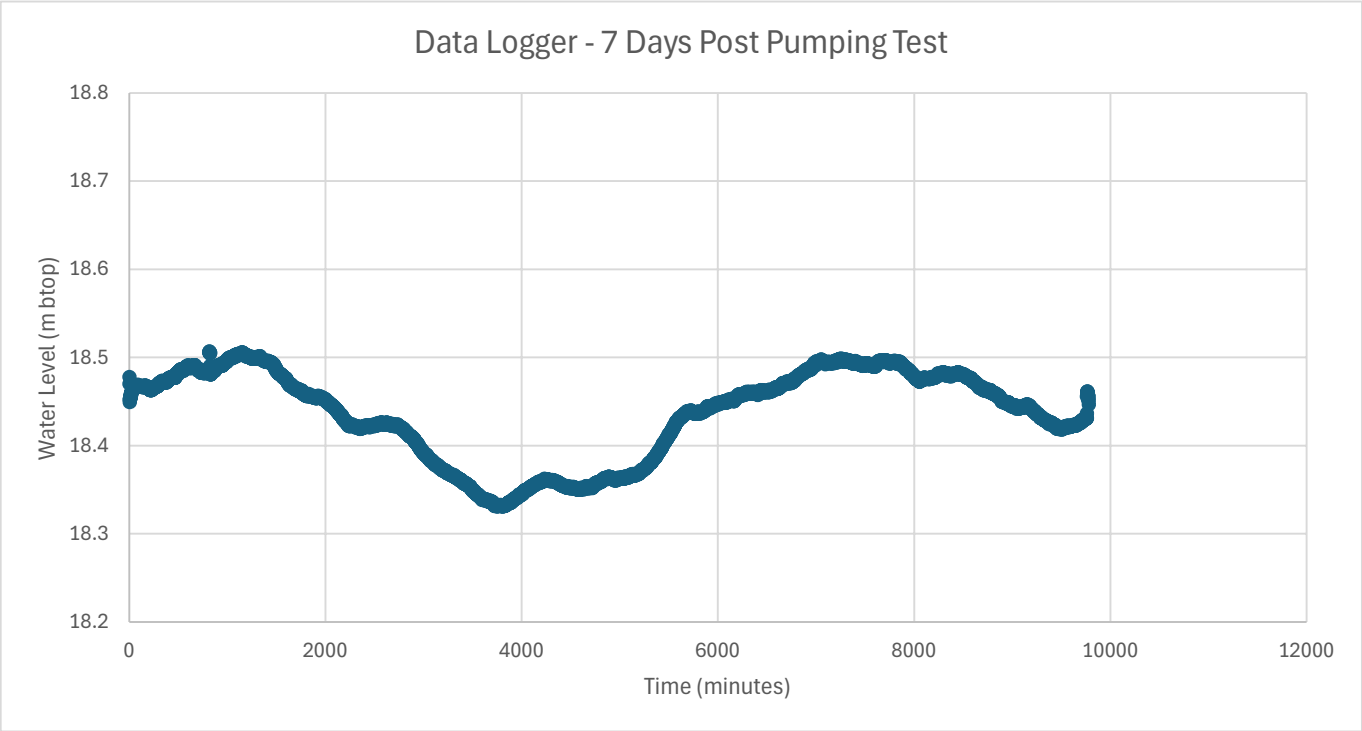
CUSTODY SEAL: ☐ YES ☐ NO Ice packs submit ☐ Yes ☐ No

HYDROGEOLOGICAL ASSESSMENT
2835 OLD MONTREAL ROAD, CUMBERLAND, ONTARIO



APPENDIX E
DATA LOGGER DATA


Data Logger - Pumping Test
17.8
17.6
17.4
17.2
17
16.8
16.6
16.4
Water Level (m btop)
12:00:00 AM
2:24:00 AM
4:48:00 AM
7:12:00 AM
9:36:00 AM
12:00:00 PM
2:24:00 PM
4:48:00 PM
7:12:00 PM
9:36:00 PM
Time


Data Logger - 7 Days Post Pumping Test
Water Level (m btop)
18.8
18.7
18.6
18.5
18.4
18.3
18.2
0
2000
4000
6000
8000
10000
12000
Time (minutes)

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APPENDIX F

TRANSMISSIVITY, FARVOLDEN, AND MOELL METHOD CALCULATIONS

Cooper-Jacob Analysis: Calculations

Pumping Rate

80 L/min

Specific Capacity

96.27 L/min/m

Drawdown 0.831 m

Transmissivity

TW1 (Drawdown)

T= 2.3 Q / 4π ΔS

T= 2.3 (115.2 m3/day)/4π (0.43 m)

T= 49 m2/day

5.7E-04 m2/s

Q = 80 L/min

Q=((80 L/min)/(1000L))*(60 min)(24 hour))

115.2 m3/day

Δs = 0.43 m

TW1 (Recovery)

T= 2.3 Q / 4π ΔS

T= 2.3 (115.2 m3/day)/4π (0.6 m)

T= 35 m2/day

4.1E-04 m2/s

Q = 80 L/min

Q=((80 L/min)/(1000L))*(60 min)(24 hour))

115.2 m3/day

Δs = 0.6 m

Farvolden

Q20= 0.68 T Ha Sf

Ha= the available water column height (m)
Sf= safety factor
T= Transmissivity (m2/day)

TW1 (drawdown)

Q20= 0.68 (35 m2/day)(39.75 m)(0.7)

Q20= 665 m3/day
Q20= 665,164 L/day
Q20= 462 L/min

Safety Factor 0.7

Rec'd Pump Settin 57.91 m
static WL 18.165 m
Ha (avail. head)= 39.75 m

Moell

Q20 = (Q Ha Sf) / (s100 + 5 **Δ**s)

Q= the pumping rate (m3/day)
Ha= the available water column height (m)
Sf= safety factor
s100= the drawdown at 100 minutes (semi-log long-term graph)
Δs= the change in hydraulic head over one log cycle (drawdown vs. long time)

TW1 (drawdown)

Q20= ((115.2 m3/day)(39.75 m)(0.7))/(0.568 m + 5(0.43 m)

Q20= 1179 m3/day
Q20= 1179189 L/day
Q20= 819 L/min

Q= 115.2 m3/day
Ha= 39.75 m
Safety Factor 0.7
s100 0.568
Δs 0.43

Hydraulic Conductivity

b = aquifer thickness
T = transmissivity
K = hydraulic conductivity

b= 47.9 m

end of casing = 13.1 m
end of hole = 61.0 m

K=T/b

K= 1.2E-05 m/s Drawdown
8.5E-06 m/s Recovery

Comments: Aquifer thickness of 47.9 m corresponds to the interval between the bottom of the casing and the bottom of the well (casing to 13.1 m BGS, WL at 18.165 mBTOC and end of hole at 61)

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APPENDIX G

LANGELIER SATURATION INDEX (LSI) AND RYZNAR STABILITY INDEX (RSI) CALCULATIONS

Langelier Saturation Index (LSI)

If LSI is negative: No potential to scale, the water will dissolve $CaCO_3$

If LSI is positive: Scale can form and $CaCO_3$ precipitation may occur

If LSI is close to zero: Borderline scale potential. Water quality or changes in temperature, or evaporation could change the index.

The LSI is probably the most widely used indicator of cooling water scale potential. It is purely an equilibrium index and deals only with the thermodynamic driving force for calcium carbonate scale formation and growth.

$LSI = pH - pH_s$

Where:

pH is the measured water pH

pH_s is the pH at saturation in calcite or calcium carbonate and is defined as:

$pH_s = (9.3 + A + B) - (C + D)$

Where:

$A = (Log_{10}[TDS] - 1) / 10$

$B = -13.12 \times Log_{10}(^{o}C + 273) + 34.55$

$C = Log_{10}[Ca^{2+}$ as $CaCO_3] - 0.4$

$D = Log_{10}$ [alkalinity as $CaCO_3$]

TW1 (Sample TW1-02)					
pH	8.21			A	0.1716
TDS (mg/L)	520			B	2.304575
Hardness	183			C	1.862451
Alkalinity	308			D	2.488551
Temp.	13.9				
pHs =					7.425174
LSI =					0.78
RSI=					6.64

Ryznar Stability Index (RSI)

RSI = 2(pHs) - pH

Where:

pH is the measured water pH

pHs is the pH at saturation in calcite or calcium carbonate

The empirical correlation of the Ryznar stability index can be summarized as follows:

RSI << 6 the scale tendency increases as the index decreases
RSI >> 7 the calcium carbonate formation probably does not lead to a protective corrosion inhibitor film

RSI >> 8 mild steel corrosion becomes an increasing problem.

Project No.: CCO-25-1892

TW1 (2835 Old Montreal Road)

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APPENDIX H

FIELD OBSERVATIONS - PHOTOGRAPHS



Photo 1: Water colour during secondary pumping event (21 minutes into pumping), October 7, 2025.



Photo 2: Water colour during secondary pumping event (5 hours into pumping), October 7, 2025.

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APPENDIX I

STRONTIUM IN DRINKING WATER FACT SHEET

Strontium in Drinking Water Fact Sheet

WHAT IS STRONTIUM?

Strontium is a naturally occurring element that can be found throughout the environment in small amounts. Air, dust, soil, foods, and drinking water can all contain traces of strontium. We are all exposed to strontium; however, eating or drinking small amounts of strontium is not harmful.[1,2]

Radioactive strontium does not occur in nature and is usually associated with nuclear power plants or nuclear weapons testing, which is not discussed by this fact sheet.[1,2] This fact sheet deals with nonradioactive strontium (stable strontium) in drinking water.

HOW DOES STRONTIUM GET INTO DRINKING WATER?

Some types of rock are rich in strontium. The amount of strontium within bedrock can vary so that some areas may be rich in strontium while others are not. Water drawn from wells in these types of rock formations will likely contain higher than average levels of strontium. [1,2]

CAN STRONTIUM AFFECT MY HEALTH?

For most Canadians, food and drinking water represent the main sources of exposure to strontium; however, the contribution from these sources can be highly variable.[2] No health related effects from exposure to strontium have been observed at levels typically found in an average diet or the surrounding environment.[1,2] Health Canada notes that exposure to strontium while showering (either through breathing in water vapour or absorption through skin) is likely to be negligible.[2]

Strontium is very similar to calcium and can, under certain conditions, replace calcium in the bone. Infants and young children who do not get enough calcium and/or vitamin D in their diets and who ingest too much strontium can develop a strontium-related bone condition, called strontium rickets. Strontium rickets is a bone disorder that may weaken or soften bones, stunt growth or cause bone deformities. Individuals who do not get enough calcium and/or vitamin D are more susceptible to the effects of strontium.[1,2]

ARE THERE STANDARDS FOR STRONTIUM IN DRINKING WATER?

There are currently no Ontario standards for strontium in drinking water.

In 2019, Health Canada developed a drinking water guideline for strontium. The maximum acceptable concentration (MAC) for strontium in drinking water was set at 7,000 µg/L (or 7 mg/L) to protect infants (identified as the most sensitive age group) from strontium-related adverse effects on bone formation.[2]

HOW CAN I TELL IF MY DRINKING WATER HAS HIGH STRONTIUM LEVELS?

Water containing strontium will not taste, smell, or look different.[3] If your water comes from a well, especially where the water has been running through strontium rich rock, it may contain a high level of strontium.[1,2] In this case, testing the water for strontium will tell you how much is present.

WHAT SHOULD I DO IF A HIGH LEVEL OF STRONTIUM IS FOUND IN MY WELL WATER?

If you live in a region with high strontium, you can obtain professional advice about ways to reduce strontium in your drinking water.

There are forms of water treatment that are effective in reducing strontium levels in water such as ion exchange (including water softeners) and reverse osmosis systems.[2] A water treatment professional should be consulted before you decide on what type of treatment may be suitable. As with any water treatment system, it is important to follow the manufacturer's recommendations for operation and maintenance (e.g., replacement of filter media) .[2,3] You can also use an alternative source of drinking water including bottled water or water from a public system.

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3. Health Canada 2019b. Water Talk – Strontium in drinking water. Available from: https://www.canada.ca/en/health-canada/services/publications/healthy-living/water-talk-strontium.html

Please note: This fact sheet was created by Ottawa Public Health in consultation with Public Health Ontario.