REPORT

ST. PHILIP CATHOLIC SCHOOL DRINKING WATER SYSTEM, DESKTOP HYDROGEOLOGICAL STUDY

Submitted to:

Ottawa Catholic School Board

570 W Hunt Club Road
Nepean, ON K2G 3R4

Submitted by:

WSP Canada Inc.

1931 Robertson Road, Ottawa, Ontario, K2H 5B7, Canada
+ 1 613 592 9600

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1 INTRODUCTION

1.1 Scope

WSP Canada Inc. was retained to prepare this desktop hydrogeological report for St. Philip Catholic School (Richmond) located at 79 Maitland Street, Ottawa (Richmond Village), ON, K0A 2Z0 (the site). The site is owned by the Ottawa Catholic School Board. The site is a small public school (Figure 1) and the drinking water system at the site is designated as a Small Non-Municipal, Non-Residential System under O. Reg. 170/03.

We understand that this work is required to complete the new elementary school expansion to be added to the existing St Philip Catholic Elementary School, to serve the growing community of Richmond, Ontario. The addition, located at the site, with a total area of approximately 2,178 m^2 spread over two storeys, will contain 12 classrooms from kindergarten to grade 6, as well as a new office, resource room, 4 full size bathrooms, and a multipurpose room. The current courtyard will be closed off due to the construction of the addition.

Based on pre-consultation meeting feedback received from the City of Ottawa (City) on December 19, 2024, it is understood that the proposed Site Plan Control revision application should be accompanied by a Hydrogeological and Terrain Analysis Report to establish that the site is able to provide a sufficient quantity of groundwater to service the proposed uses and that it is of adequate quality. However, as indicated by the City, terrain analysis is not required to be addressed at this point. This desktop hydrogeological report for the site has been prepared to address the feedback documents requested by the City.

2 HYDROGEOLOGICAL SETTING

2.1 Regional Setting

Published information (Geological Survey of Canada, 2010) indicates the surficial geology within the area consists primarily of massive to well laminated offshore marine deposits including massive blue-grey clay, silty clay and silt (refer to Figure 2). To the northeast of the site, there are local deposits of silty sand, silt, sand and clay encountered within the flood plain of the Jock River. The surficial geology changes to fine to medium grained sand at approximately 1.4 km to the west of the site, and at approximately 280 metres to the south of the site the upper overburden consists primarily of glacial till deposits or organic deposits, which generally forms a thin and discontinuous layer on the bedrock surface, consisting of a heterogeneous mixture of material ranging from clay to large boulders, and the organic deposits are primarily composed of muck and peat. In general, the depth to bedrock in this area varies from two metres to six metres, generally thinning to the south towards the Ottawa Street (Golder, 2008).

No provincially significant wetlands (PSW) or unevaluated wetlands were identified within the nearest vicinity of the site. The nearest PSW are located 2,300 m west and 2,200 m south of the site. The nearest unevaluated wetland is located 310 metres southwest of the site (Figure 4).

Surface water features in the vicinity of the site include the Van Gaal Drain to the north and the Jock River to the east. Bedrock elevation information collected on a near site (Golder, 2016) indicates that Van Gaal drain lies within the overburden near the Site. In the vicinity of the site the Jock River is presumed to flow over areas with thin deposits of overburden, or to flow directly over outcrops of the Oxford Formation and will eventually discharge to the Rideau River system.

2.2 Site Geology

Published geological mapping indicates that the subsurface conditions within the site boundary consist primarily of glaciomarine deposits of silt and clay with minor sand and gravel (Figure 2). The surficial clay deposits are typically underlain by glacial till which overlies bedrock. The overburden thickness varies in the area and within the Site and it can range from approximately 2 metres to 5 metres.

The bedrock surface was confirmed/proven to exist within the site boundary at depth of approximately 4.5 metres below the existing ground surface (mbgs) with the completion of well number 1531857 at the site. Based on the MECP water well record (WWR), the bedrock encountered in the borehole was reported to consist of grey limestone with a hard consistence.

Geological mapping indicates that the Paleozoic sedimentary rock sequence underlying the Site consists, from youngest to oldest, of the uppermost Oxford Formation (limestone/dolostone), followed by the March Formation (sandstone/dolostone) which is underlined by the Nepean Formation (sandstone), and Precambrian bedrock (see Figure 3).

The Nepean Formation is described as a quartz sandstone with some conglomerate, white to cream coloured, weathering to grey (Williams, 1991). The thickness of the Nepean Formation at the site and locally is uncertain since there are very few boreholes that were reported to fully penetrate the formation (Golder, 2008). However, the Nepean Formation was encountered at two boreholes drilled at the Canadian Golf and Country Club located approximately 15 km northwest of the site, indicating a total thickness varying from 31.7 metres to 35.6 metres (Golder, 2008). This Formation overlies the unevenly eroded Precambrian granitic basement within the area (Golder, 2008).

The March Formation is characterized by interbedded quartz sandstone and dolostone. The lithology of the quartz sandstone beds of the March Formation are similar to those of the underlying Nepean Formation, while the lithology of the dolostone beds of the March Formation are similar to those of the overlying Oxford Formation (Golder, 2008). Therefore, the March Formation is referred to as a transitional unit between the Nepean and Oxford Formations. The contact between the March and Oxford Formations is marked by the upper limit of the common occurrence of quartz sand (Golder, 2008).

The Oxford Formation is considered a bedrock aquifer and its upper and middle parts are primary sources of water for private water supply wells. The Oxford Formation consists of sublithographic to fine crystalline dolostone with subordinate shaley and sandy interbeds (Williams, 1991). During a hydrogeological investigation conducted by Golder in 2005 at the King's Park Subdivision (Golder, 2008), the Oxford Formation was fully penetrated, and its thickness at that location varied from approximately 57.4 metres to 62.5 metres.

Findings of a hydrogeological investigation conducted by Golder in 2016 (Golder, 2016) indicated that there are two primary bedrock aquifer systems which can be used for water supply at the site and in the local area. The upper aquifer is typically contained within the upper 35 metres of the Oxford Formation (a dolostone shallow aquifer). The majority of the private residential wells within the area are completed within this upper aquifer. The lower aquifer is contained within the upper portion of the Nepean Formation (sandstone deep aquifer) and lower portion of the March Formation (interbedded limestone and sandstone deep aquifer). This lower aquifer tends to be substantially more productive in comparison to the upper aquifer, but some communal wells in the area (i.e., King's Park and Hyde Park in Richmond, and wells in Almonte, Munster, Kemptville and Merrickville) draw water from the deeper sandstone aquifer (Golder, 2016).

2.3 Groundwater Flow Direction

The groundwater flow direction in both the Oxford Formation aquifer and the deeper March and Nepean Formations aquifer is generally interpreted towards the east (Golder, 2008). The Oxford Formation aquifer behaves as a confined or an unconfined aquifer depending on the type and thickness of the overlying overburden, and the lower March/Nepean Formation aquifer is confined (Golder, 2008). The groundwater levels in wells completed in either aquifer is in general within a few metres of ground surface. At some locations, the groundwater levels in wells completed at the lower March/Nepean Formations aquifer are above ground surface, resulting in artesian flow conditions. Artesian conditions are observed at some locations because in most areas the two aquifers are separated by a bedrock aquitard consisting of limestone of the lower Oxford Formation and interbedded limestone and sandstone of the upper March Formations. The presence of this aquitard is often indicated by strong upward vertical gradients between the aquifers. Therefore, the potentiometric surface of the lower aquifer is typically above ground surface, and wells completed within this aquifer therefore often flow.

Shallow groundwater is interpreted to flow across eastward across the area toward local surface water features (i.e., towards Jock River).

As mentioned above, upward gradients from the Nepean to the Oxford formation have been observed in wells completed at the area. Also, shallow groundwater flow in the overburden units is expected to vary as a function of bedrock topography (Golder, 2013).

2.4 Previous Studies

Several previous hydrogeological investigations were carried out in the vicinity of the site by Golder Associates Ltd. (Golder; now a part of WSP Canada Inc.) in the past 20 years for development lands.

A hydrogeological investigation completed in September 2016 (Golder, 2016) consisted of an aquifer testing program for a groundwater supply for a development land located approximately 360 metres (m) northwest of the site. As part of this previous program, two pumping wells (PW08-1 and PW09-1) were installed at depths of approximately 138 m below ground surface (mbgs) and 70 mbgs, respectively, and the groundwater flow to the wells is expected to occur primarily from the lower portion of the Oxford Formation and upper portion of the Nepean Formation. Based on the aquifer test analysis and the maximum pumping rate observed at these wells, the requested water taking for each pumping well was approximately 418,000 L/day or 290 L/min. A significant water bearing zone was found between 70 mbgs and 90 mbgs at the location of pumping well PW08-1 (Golder, 2016). The locations of these existing pumping wells are shown on Figure 4.

At the subject site, a pumping test was completed by Golder in March 2013 (Golder, 2013). The tested well (well record no. 1531857) was constructed to a total depth of 22.56 m below ground surface. A total of 27,000 litres of groundwater was pumped during an 8 hour pumping test. A large remaining drawdown was available after testing at over 3 times the maximum water daily flow rate, indicating that there was predicted to be sufficient capacity in this well to support the new estimated school daily use at that time. The transmissivity of the aquifer screened by the well was estimated to range from $1.0x10^{-3}$ m^2/s to $3.5x10^{-3}$ m^2/s during the pumping portion of the test, and $1.3x10^{-3}$ m^2/s during the recovery portion of the test. A specific capacity of 47 L/min/m of drawdown was calculated for the well. A copy of the 2013 report is provided in Appendix F.

The City of Ottawa's Hydrogeological and Terrain Analysis Guidelines (City of Ottawa, 2021), Section 5.2.4 specifies that water quantity for a site plan application should be assessed with a pumping test duration of at least 12 hours when the daily demand exceeds 10,000 L/day. However, due to the shorter length of a typical school day, a 12-hour test duration does not reflect the actual use of the water supply well at the site and does not

represent the water demand cycles of the site. As such, a testing duration of 8 hours (as was conducted in 2013) is considered more representative of the demand that this well is likely to experience, and this test duration is considered to be appropriate for this site.

2.5 Potential for Water Quality Issues

A review of available aerial imagery indicates that most of the properties located within 500 m of the site are zoned for residential use. There is a low potential for residential land uses to affect the future use of groundwater at the severed lands. A review of Google Maps data found one business within this radius:

- Sun-Dex Equipment Rentals at 97 Burke Street

Based on a search of telephone directories and of Ontario and Canada business registries, Sun-Dex Equipment Rentals is an inactive corporation, and has not been inactive since January 2020. Shallow groundwater is interpreted to flow towards a local water feature, the Jock River, and 97 Burke Street is located across Jock River; also, since 97 Burke Street is downgradient in terms of deep groundwater flow direction, there is low potential for current and historical land uses at 97 Burke Street to affect the future use of groundwater at the site.

2.6 Water Supply Wells

Existing homes within the area are primarily serviced by private wells and municipal sanitary sewers. The MECP water well records (WWR) database was reviewed to determine the number and locations of water wells present within a 500-m radius of the site boundary (the study area).

The MECP WWR database indicated that there are three hundred and one (301) well records within the study area. Locations of identified well records are shown on Figure 4. A summary of the WWRs is included in Appendix A. A review of the records indicate that the wells were reported to be water supply wells, monitoring and test holes, observation wells, unfinished wells, abandoned wells, unknown status, and alteration of use. Based on the record details, there were eleven (11) abandoned wells, nine (9) alterations of use, nine (9) monitoring wells and test holes, one (1) observation well, one (1) unfinished well, thirteen (13) unknown use, and two hundred and fifty-eight (258) water supply wells.

Based on the record details, there were two hundred and fifty-two (252) water supply wells for domestic use, one (1) for commercial use, one (1) for livestock use, three (3) for public use and one (1) of unknown use found within the search radius.

The water supply well depths ranged from 7.9 to 79.2 metres, averaging 24.6 metres. The driller's records generally indicate that bedrock was encountered at depths ranging from 0.3 to 35.1 metres at these water wells. With the exception of three wells (7120380, 7263021 and 7363357) with no available records of depth, all water supply wells were constructed entirely within the bedrock and obtain their water mainly from the bedrock limestone present at the bottom of the well casing, at depths ranging from 7.9 to 79.2 metres.

The reported static groundwater levels ranged from 0.0 to 7.6 metres (average depth of 2.2 metres), and the available drawdown in these wells is variable (defined as the difference between the static water level and the uppermost water bearing zone), ranging from 4.2 to 75.3 metres.

Besides the current water supply well located within the site (no. 1531857), the closest water supply well is located at 78 Maitland Street (no. 1511144), immediately east of the site. This well was drilled in 1971 to a depth of 24.4 metres. Clay overburden material was identified by the well driller, and bedrock was encountered at a depth of 4.6 metres. The static water level was 1.8 metres depth, and the driller recommended a pump setting of

18.9 L/min. This is similar to the water supply well at the site (no. 1531857), where the static water level was 3.0 metres depth, and a pump setting of 18.9 L/min was recommended by the driller.

A review of the available water supply well records within 500 metres of the site indicates that fresh water has been encountered by well drillers in the area, with several wells showing not tested water or water type not available. Based on the presence of numerous water supply wells near the site, it is also concluded that water quantity and quality are sufficient to meet their requirements.

3 WATER QUANTITY

The active well used for the raw water supply at the Facility has a well record with ID number 1531857, situated in the central courtyard of the facility (copy included in Appendix B). This well was completed on April 3, 2001. The well extends to a depth of 22.9 m and is cased to a depth of 6.4 m. The well record indicates that brown clay was encountered to a depth of 4.6 m, followed by limestone bedrock to the bottom of the well. The driller identified a water bearing zone found at a depth of 20.4 m. Based on the well record, the pump installation depth is at 15.2 m.

While the courtyard will be closed off by the new addition, future maintenance of the existing well has been considered. The courtyard would remain accessible to personnel via double doors, but a drilling rig would not be able to approach the well. Based on the relatively shallow pump installation depth, local well drillers and technicians have indicated that the existing pump could be manually removed from the well without the use of a drilling rig, if required for maintenance. The well has not required significant maintenance in its lifetime. Should significant maintenance be required in the future, access for larger equipment could possibly be arranged using a crane. If replacement of the well becomes necessary at a future date, this could be accomplished by locating a new well outside the courtyard.

The well condition was reviewed on December 11, 2024. The casing height was measured to be 0.4 m above ground surface and with no signs of corrosion. Snow was on the ground at the time of the site visit, and the ground surface was noted to slope away from the well casing. The well cap was secure. Figure 3.1 shows the condition of the well at the time of the site visit.

Figure 3.1: Existing well, December 11, 2024. Well shown in orange.

WSP estimated the future water needs based on occupancy and determined an appropriate design flow for the Facility. The proposed addition would result in a school capacity of approx. 950 students as provided by OCSB. For estimation purposes, an additional 65 employees were assumed. Assuming a daily water usage of 30 L/day per student and 50 L/day per employee, the estimated combined average daily demand was determined to be 31,750 L/d. The consumption rates and peaking factors used were as per the MECP *Design Guidelines for Drinking-Water Systems.*

This estimate was compared to meter flow records available for the existing building. Unfortunately, recorded daily volumes were not recorded and the following calculations are based on monthly records. The monthly water meter records for the site from 2022-2024 (Table 1) indicate that the average volume of water pumped at the school in this period (when spread over the number of work days in a month) ranged from 931 L/day to 12,441 L/day. If this amount of water is averaged over a 6.5 hour school day, then the average hourly usage was estimated to range from 143 to 1,914 L/hour. Assuming a maximum hour demand factor of 1.8 for institutions (Table 4.2, Ottawa Design Guidelines – Water Distribution), then the maximum hour demand can be estimated to have ranged from 258 to 3,445 L/hour.

Assuming a pre-renovation population of 600 students and 50 staff (total 650 people), the average daily demand per person ranged from 1.4 L to 19.1 L between 2022 and 2024. Assuming that the capacity of the renovated building would be 950 students and 65 staff (total 1,015 people), this would be a proportional increase of 1.6 times more people. The average daily demand would then be anticipated to increase to 2.2 to 29.9 L/person/day (approximately 30,340 L/day for the entire population of the renovated building). Both calculation methods result in similar anticipated water demands for the renovated building, ranging from 30,340 L/day to 31,750 L/day. For the purposes of this hydrogeological assessment, the higher value of 31,750 L/day has been carried as a conservative assumption.

The pumping test completed at the site on March 13, 2013, at this well (Golder, 2013) achieved a total drawdown of 1.2 metres after pumping at a rate of 45 L/min for the first 7 minutes and at an increased rate of 57 L/min for the remaining the 8 hours of the pumping. The average pumping rate over the entire test was 56.8 L/min. The total well depth was 22.56 metres measured from the top of the well casing, and the static groundwater level before the pumping test was 2.76 mbgs, resulting in an available drawdown of 19.8 metres. Approximately 27,000 litres of groundwater was pumped during the 8 hours of the pumping test, representing 6% of the total available drawdown. Based on the small amount of drawdown measured, this is highly indicative that the proposed future target daily demand of 31,750 L/day can be achieved at this well during a 6.5-hour school day using a higher pumping rate of 81.4 L/min.

To evaluate the potential drawdown at the well using a pumping rate of 81.4 L/min during a 6.5-hour school day, a simple calculation using the well's previously calculated specific capacity 47 L/min/m of drawdown was used. Assuming a pumping rate of 81.4 L/min, the estimated drawdown would be approximately 1.7 m.

Additionally, a Cooper-Jacob analysis was used to estimate the potential drawdown under a pumping rate of 81.4 L/min. Assuming a transmissivity of 1.0×10^{-3} m^2/s and a storativity of 7×10^{-5}, the drawdown at the well after 6.5 hours of pumping at 81.4 L/min was estimated to be 1.7 m (see calculations in Appendix C), resulting in a remaining drawdown of over 18.1 meters.

Following the 2013 pumping test, a well recovery of 95 percent was achieved in 50 minutes after the pump shut down; a proportionally rapid recovery can be expected if the well were pumped at the higher rate of 81.4 L/min.

Based on the available aquifer characteristics, the long-term safe yield of the intercepted aquifer is estimated to be greater than 31,750 L/day.

The closest wells to the existing well are located on Maitland Street, about 65 m east of the existing well. Approximately seven WWIS records are located on the east side of Maitland Street (nos. 1511100, 1511110, 1511111, 1511144, 1511146, 1511398 and 1511399). The depths of these wells are reported to range from 19.8 to 28.3 m, and the static depth to groundwater ranged from 1.2 to 4.6 m. The available drawdown in these wells was calculated to range from 19.8 to 28.3 m. The Cooper-Jacob analysis (which is conservative since it does not consider recharge to the aquifer) estimated a drawdown of about 0.5 m at a distance of 60 m from the pumping well. Assuming a drawdown of 0.6 m at each of these seven nearby wells due to the pumping of the school well, the available drawdown at the residential wells would be reduced by 2-3%. This small amount of drawdown is not anticipated to adversely affect the use of the wells.

The closest surface water feature is the Jock River, located about 250 m east of the existing well. The Cooper-Jacob analysis estimated a drawdown of about 0.2 m at a distance of 260 m from the pumping well. It is not anticipated that this small amount of drawdown over a small part of the river (particularly given the conservative nature of the Cooper-Jacob solution) would adversely affect the baseflow of the river.

4 WATER QUALITY

Raw water samples were collected at the Facility on December 11, 2024, and shipped via courier the same day to a CALA-accredited laboratory for chemical analysis. Analytical parameters were selected to provide a detailed raw water characterization, and included microbiological parameters, general characteristics, metals, volatile organic compounds (VOC), semi-volatiles, petroleum hydrocarbons (PHC), pesticides and polychlorinated biphenyls (PCB). Refer to Appendix D for a copy of the analytical results.

All parameters tested in the sample collected on December 11, 2024, met the Ontario Drinking Water Quality Standards, Objectives and Guidelines (ODWQS), with the exception of hardness which was measured at 310 mg/L, above the operational guideline of 80-100 mg/L. This level of hardness is typical of bedrock water supplies in Eastern Ontario. All VOC, semi-volatile, PHC, pesticides, PCB and microbiological results were below their respective laboratory detection limits for this sample. Although the sodium concentration was below the aesthetic objective (AO) of 200 mg/L, the local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium-restricted diets.

In historical samples analysed at the facility under O.Reg. 170/03, there have been instances of higher sodium levels. Samples taken on July 25, 2017, and July 26, 2022, both exceeded the sodium aesthetic objective (205 mg/L and 214 mg/L, respectively). The Historical Analytical Results can be found in Appendix E. As listed in Appendix E, a resampling event occurred on August 29, 2017; signs were posted indicating the elevated sodium. It is noted that the sample collected on December 11, 2024, had a sodium concentration of 54 mg/L. Given that water softening occurs at the site, it is possible that a treated water sample may have been accidentally collected on July 25, 2017, August 29, 2017, and July 26, 2022.

Should water treatment for sodium be required at the site, sodium could be removed using reverse osmosis technologies.

Overall, the water quality measured at the current water supply well is excellent. It is likely that a similar well constructed elsewhere on the site to a similar depth will encounter groundwater of a similar quality that should be sufficient for school use.

5 CONCLUSIONS AND RECOMMENDATIONS

We understand that this work is required to complete the new elementary school expansion to be added to the existing St Philip Catholic Elementary School, to serve the growing community of Richmond, Ontario.

The major geological units dominant within the area are: overburden, which thickness can range from approximately 2 metres to 5 metres, consists primarily of glaciomarine deposits of silt and clay with minor sand and gravel, underlined by glacial till which overlies bedrock; and the bedrock, which surface was confirmed/proven to exist within the site boundary at depth of approximately 4.5 mbgs and was reported to consist of grey limestone with a hard consistence.

The Paleozoic sedimentary rock sequence underlying the Site consists, from youngest to oldest, of the uppermost Oxford Formation (limestone/dolostone), followed by the March Formation (sandstone/dolostone) which is underlined by the Nepean Formation (sandstone), and Precambrian bedrock.

Previous findings (Golder, 2016) indicated that there are two primary bedrock aquifer systems which can be used for water supply at the site, consisting of: the upper aquifer, typically contained within the upper 35 metres of the

Oxford Formation, and the majority of the private residential wells within the area rely on for water supply; and the lower aquifer, which is contained within the upper portion of the Nepean Formation and lower portion of the March Formation, and it tends to be substantially more productive in comparison to the upper aquifer.

The findings of the pumping test completed at the site by Golder in 2013 (Golder, 2013) have been analysed to indicate that the proposed future target daily demand of 31,750 L/day can be sustainably achieved at the tested well during a 6.5-hour school day using a higher pumping rate of 81.4 L/min.

Overall, the water quality measured at the water supply well in use at the Site is excellent. Based on these findings, it is concluded that the current well is capable of meeting the needs of the renovated building, and no further testing is recommended.

Based on our comprehensive review of the geological setting, existing well construction details, historical pumping test data, water quality results from the past 5 years, and recent water quality results, it is our professional opinion that the raw water supply for the St. Philip Catholic School well is groundwater and not groundwater under the direct influence of surface water.

6 LIMITATIONS AND USE OF REPORT

WSP Canada Inc. (“WSP”) prepared this report solely for the use of the intended recipient, the City of Ottawa, in accordance with the professional services agreement between the parties. In the event a contract has not been executed, the parties agree that the WSP General Terms for Consultant shall govern their business relationship which was provided to you prior to the preparation of this report.

The report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment.

The conclusions presented in this report are based on work performed by trained, professional and technical staff, in accordance with their reasonable interpretation of current and accepted engineering and scientific practices at the time the work was performed.

The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by WSP and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

WSP disclaims any obligation to update this report if, after the date of this report, any conditions appear to differ significantly from those presented in this report; however, WSP reserves the right to amend or supplement this report based on additional information, documentation or evidence.

WSP makes no other representations whatsoever concerning the legal significance of its findings.

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nature in similar circumstances. It is understood and agreed by WSP and the recipient of this report that WSP provides no warranty, express or implied, of any kind. Without limiting the generality of the foregoing, it is agreed and understood by WSP and the recipient of this report that WSP makes no representation or warranty whatsoever as to the sufficiency of its scope of work for the purpose sought by the recipient of this report.

In preparing this report, WSP has relied in good faith on information provided by others, as noted in the report. WSP has reasonably assumed that the information provided is correct and WSP is not responsible for the accuracy or completeness of such information.

Benchmark and elevations used in this report are primarily to establish relative elevation differences between the specific testing and/or sampling locations and should not be used for other purposes, such as grading, excavating, construction, planning, development, etc.

Design recommendations given in this report are applicable only to the project and areas as described in the text and then only if constructed in accordance with the details stated in this report. The comments made in this report on potential construction issues and possible methods are intended only for the guidance of the designer. The number of testing and/or sampling locations may not be sufficient to determine all the factors that may affect construction methods and costs. We accept no responsibility for any decisions made or actions taken as a result of this report unless we are specifically advised of and participate in such action, in which case our responsibility will be as agreed to at that time.

Overall conditions can only be extrapolated to an undefined limited area around these testing and sampling locations. The conditions that WSP interprets to exist between testing and sampling points may differ from those that actually exist. The accuracy of any extrapolation and interpretation beyond the sampling locations will depend on natural conditions, the history of Site development and changes through construction and other activities. In addition, analysis has been carried out for the identified chemical and physical parameters only, and it should not be inferred that other chemical species or physical conditions are not present. WSP cannot warrant against undiscovered environmental liabilities or adverse impacts off-Site.

The original of this digital file will be kept by WSP for a period of not less than 10 years. As the digital file transmitted to the intended recipient is no longer under the control of WSP, its integrity cannot be assured. As such, WSP does not guarantee any modifications made to this digital file subsequent to its transmission to the intended recipient.

This limitations statement is considered an integral part of this report.

7 REFERENCES

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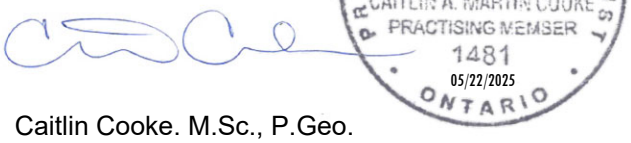

Nickie Unonius, M.Sc., P.Geo.
Hydrogeologist

Caitlin Cooke. M.Sc., P.Geo.
Team Lead, Senior Hydrogeologist

NU/CAMC/rk

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Monthly Water Meter Records, St. Philips School, 2022-2024

Date	School Days (Mon–Fri)	Monthly Usage (L)	Average Usage (L/day)	Average Usage (L/h)	Average Usage (L/min)	Maximum Hour Demand (L/h)*
19-Jan-22	23	37,854	1,646	253	27	456
22-Feb-22	15	177,157	11,810	1,817	197	3,271
22-Mar-22	24	97,285	4,054	624	68	1,123
26-Apr-22	24	186,999	7,792	1,199	130	2,158
31-May-22	15	186,621	12,441	1,914	207	3,445
21-Jun-22	24	74,573	3,107	478	52	860
26-Jul-22	15	54,131	3,609	555	60	999
16-Aug-22	24	22,334	931	143	16	258
20-Sep-22	19	137,032	7,212	1,110	120	1,997
18-Oct-22	25	182,457	7,298	1,123	122	2,021
22-Nov-22	19	220,311	11,595	1,784	193	3,211
19-Dec-22	14	142,331	10,167	1,564	169	2,815
23-Jan-23	16	112,427	7,027	1,081	117	1,946
14-Feb-23	19	112,048	5,897	907	98	1,633
21-Mar-23	19	190,028	10,001	1,539	167	2,770
18-Apr-23	23	144,981	6,304	970	105	1,746
20-May-23	21	196,841	9,373	1,442	156	2,596
20-Jun-23	25	228,639	9,146	1,407	152	2,533
25-Jul-23	25	84,036	3,361	517	56	931
29-Aug-23	14	56,403	4,029	620	67	1,116
19-Sep-23	19	106,370	5,598	861	93	1,550
17-Oct-23	25	139,682	5,587	860	93	1,547
21-Nov-23	21	216,147	10,293	1,583	172	2,850
20-Dec-23	13	115,455	8,881	1,366	148	2,459
23-Jan-24	24	105,992	4,416	679	74	1,223
27-Feb-24	15	130,218	8,681	1,336	145	2,404
26-Mar-24	19	134,761	7,093	1,091	118	1,964
23-Apr-24	24	127,568	5,315	818	89	1,472
28-May-24	20	168,072	8,404	1,293	140	2,327
25-Jun-24	19	124,540	6,555	1,008	109	1,815
23-Jul-24	25	58,295	2,332	359	39	646
27-Aug-24	19	83,658	4,403	677	73	1,219
24-Sep-24	18	122,647	6,814	1,048	114	1,887
21-Oct-24	21	143,846	6,850	1,054	114	1,897
19-Nov-24	21	204,034	9,716	1,495	162	2,691

minimum	22,334	931	143	16	258
average	130,051	6,707	1,032	112	1,857
maximum	228,639	12,441	1,914	207	3,445

* assuming a maximum hour demand factor of 1.8 for institutions (Table 4.2, Ottawa Design Guidelines – Water Distribution)

KEY MAP

SCALE: 1:2,000,000

LEGEND

- WATER WELL LOCATION
- OUTLINE OF THE SCHOOL ADDITION
- SITE BOUNDARY
- WATERCOURSE
- WATERBODY

0 12.5 25 50

1:1,500 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO; CITY OF OTTAWA
2. BASE MAP: BASEMAP_IMAGERY_2022: COMMUNITY: PROVINCE OF ONTARIO, ESRI CANADA, ESRI, TOMTOM, GARMIN, FAO, NOAA, USGS, EPA, NPS, NRCAN, PARKS CANADA
3. COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 18N

CLIENT

OTTAWA CATHOLIC SCHOOL BOARD

PROJECT

DESKTOP HYDROGEOLOGICAL STUDY
79 MAITLAND STREET, OTTAWA (RICHMOND VILLAGE), ONTARIO

TITLE

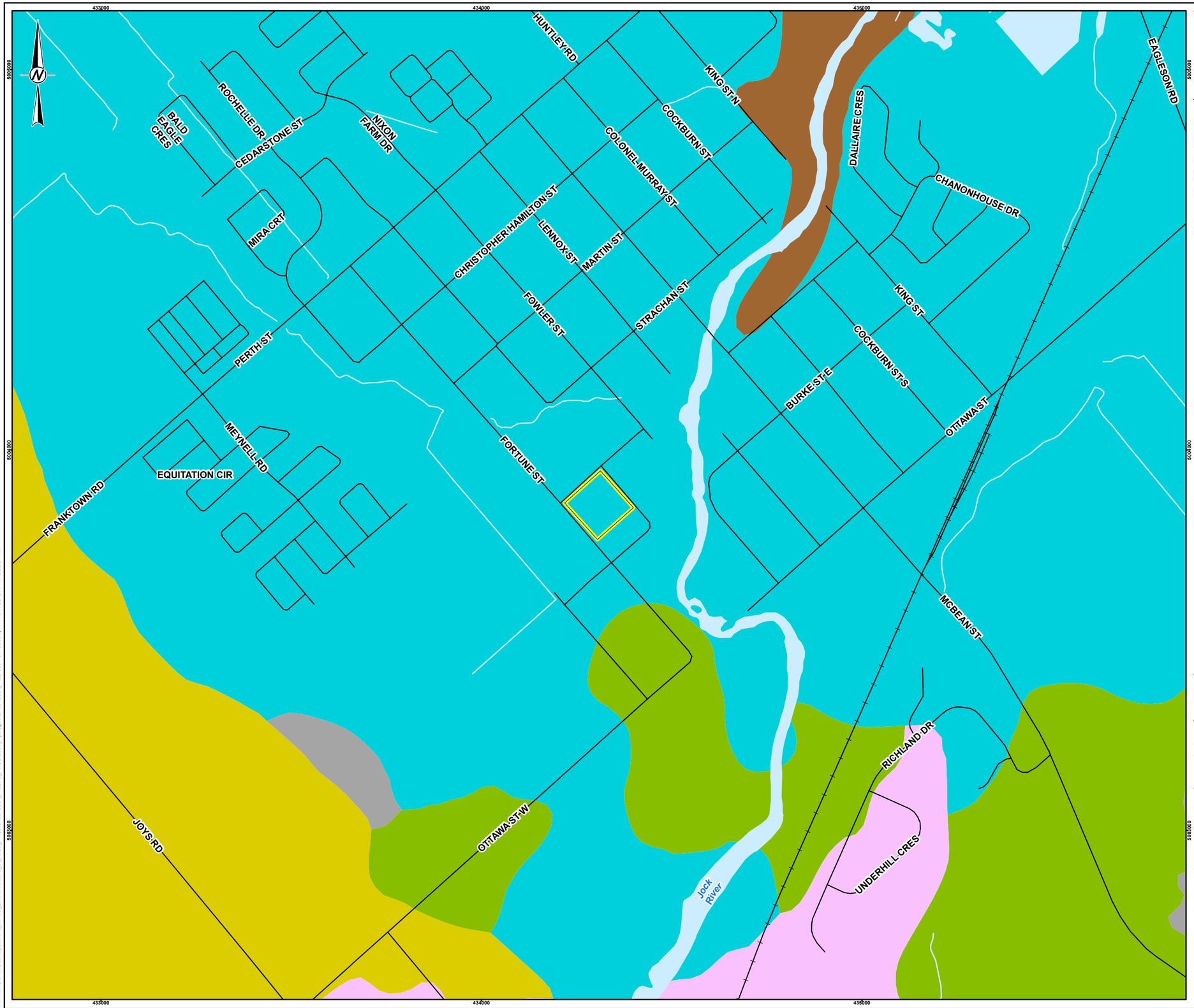
SITE PLAN

CONSULTANT

wsp

YYYY-MM-DD	2025-05-01
DESIGNED	----
PREPARED	DB
REVIEWED	NU
APPROVED	CAMC

PROJECT NO.	CONTROL	REV.	FIGURE
CA0045364.1132	0001	1	1



LEGEND

- RAILWAY
- WATERCOURSE
- WATERBODY
- SITE BOUNDARY

SURFICIAL GEOLOGY

- 3: PALEOZOIC BEDROCK
- 5B: STONE-POOR, CARBONATE-DERIVED SILTY TO SANDY TILL
- 10A: MASSIVE-WELL LAMINATED
- 11C: FORESHORE-BASINAL DEPOSITS
- 19: MODERN ALLUVIAL DEPOSITS
- 20: ORGANIC DEPOSITS

0 125 250 500

1:10,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO; CITY OF OTTAWA
2. ONTARIO GEOLOGICAL SURVEY 2010. SURFICIAL GEOLOGY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE--DATA 128-REV
3. COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 18N

CLIENT
OTTAWA CATHOLIC SCHOOL BOARD

PROJECT
DESKTOP HYDROGEOLOGICAL STUDY
79 MAITLAND STREET, OTTAWA (RICHMOND VILLAGE), ONTARIO

TITLE
SURFICIAL GEOLOGY

CONSULTANT

wsp

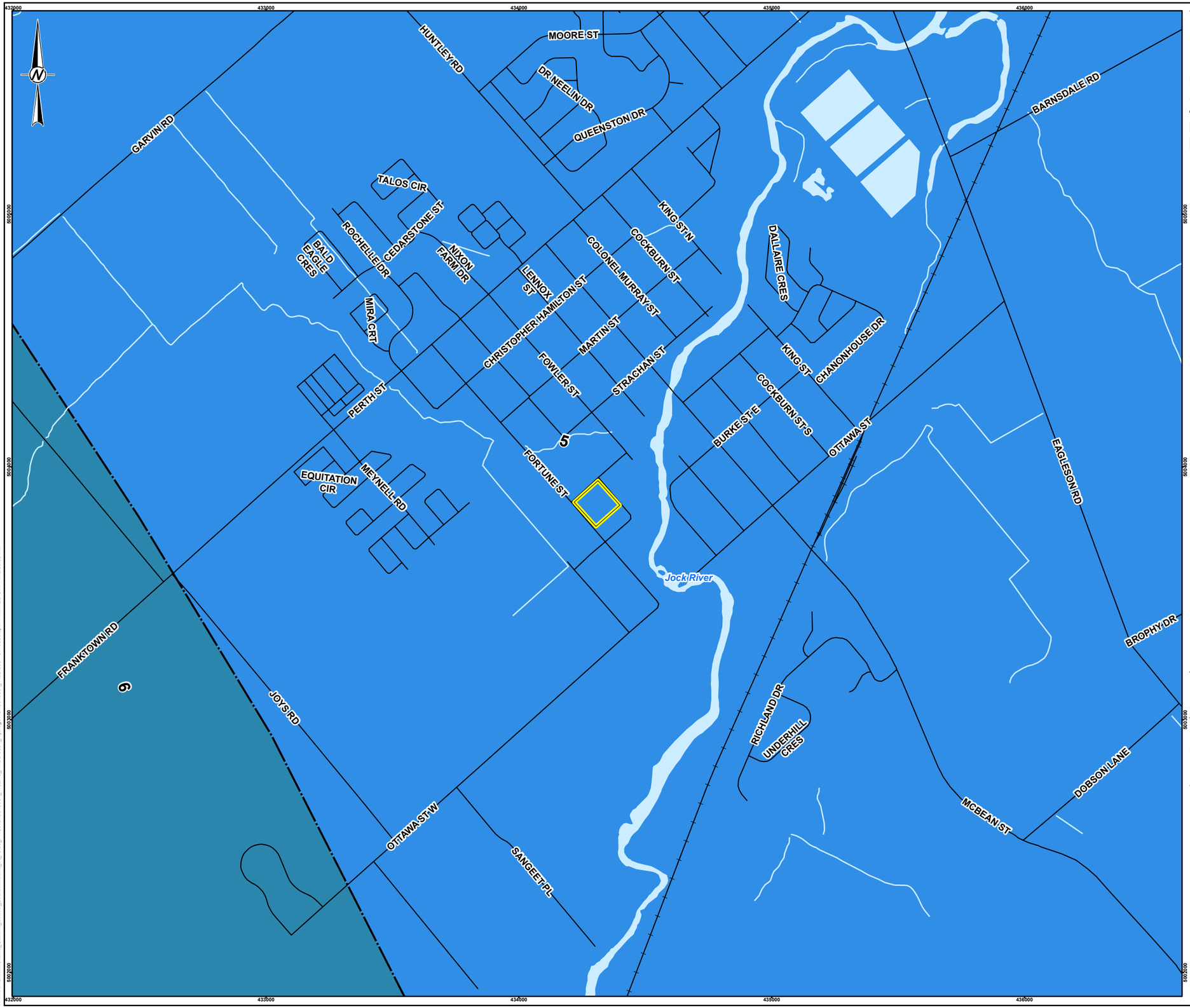
YYYY-MM-DD	2025-05-01
DESIGNED	----
PREPARED	DB
REVIEWED	NU
APPROVED	CAMC

PROJECT NO.	CONTROL	REV.	FIGURE
CA0045364.1132	0001	1	2

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 25mm

PATH: S:\Clients\Ottawa_Catholic_School_Board\Maitland_St_79\99_PROJ\CA0045364_1132\40_PRO\0001_Hydrogeo\CA0045364_1132-0001-CH-0000.aprx PRINTED ON: AT: 2:58:51 PM



LEGEND

- RAILWAY
- WATERCOURSE
- WATERBODY
- SITE BOUNDARY

OGS PALEOZOIC BEDROCK GEOLOGY

- FAULT
- 6: ROCKCLIFFE FORMATION
- 5: OXFORD FORMATION

0 125 250 500

1:15,000 METRES

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO; CITY OF OTTAWA
2. ARMSTRONG, D.K. AND DODGE, J.E.P. 2007. PALEOZOIC GEOLOGY OF SOUTHERN ONTARIO; ONTARIO GEOLOGICAL SURVEY, MISCELLANEOUS RELEASE--DATA 219
3. COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 18N

CLIENT
OTTAWA CATHOLIC SCHOOL BOARD

PROJECT
DESKTOP HYDROGEOLOGICAL STUDY
79 MAITLAND STREET, OTTAWA (RICHMOND VILLAGE), ONTARIO

TITLE
BEDROCK GEOLOGY

CONSULTANT

wsp

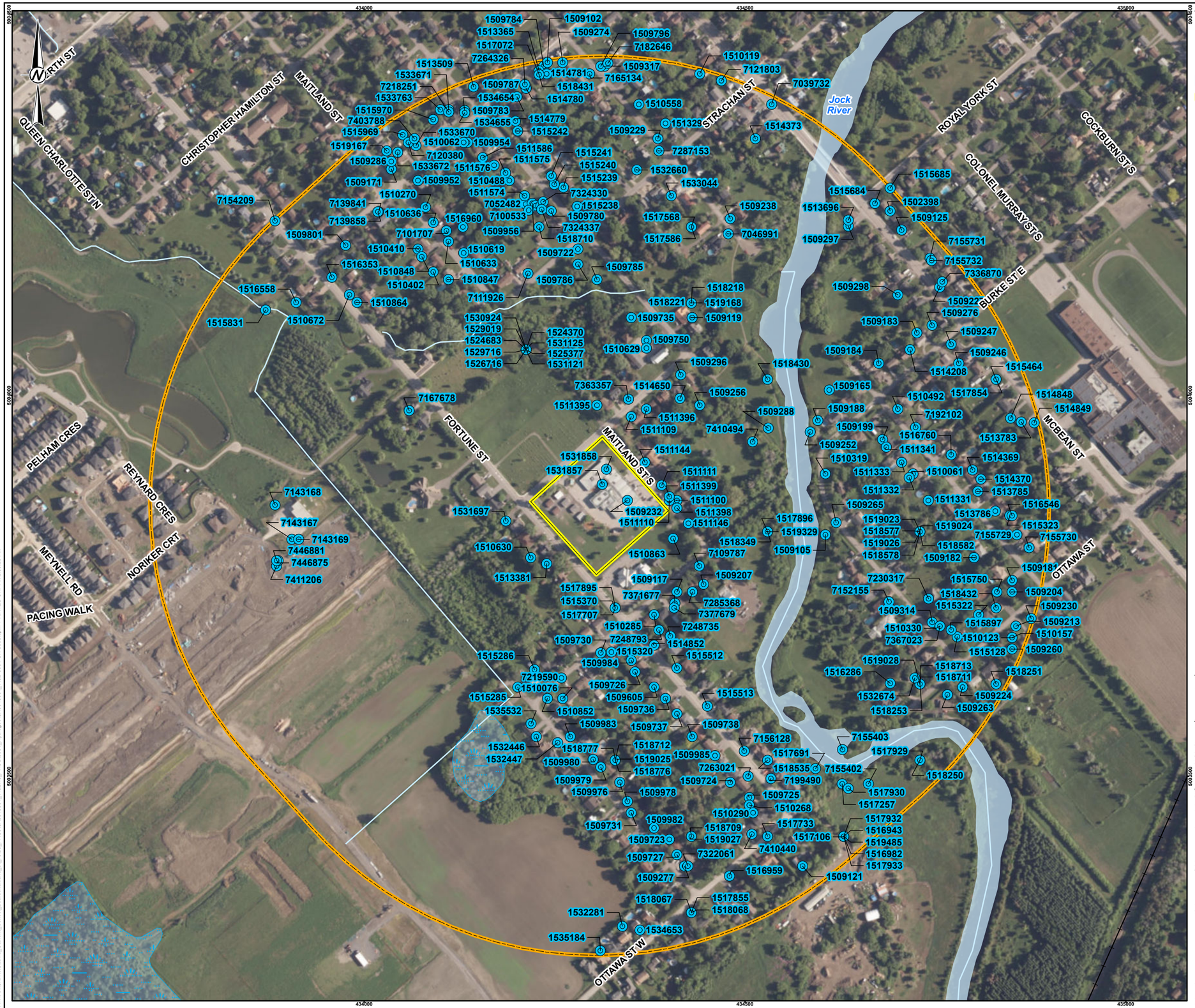
YYYY-MM-DD	2025-05-01
DESIGNED	----
PREPARED	DB
REVIEWED	NU
APPROVED	CAMC

PROJECT NO.	CONTROL	REV.	FIGURE
CA0045364.1132	0001	1	3

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

0 25mm

PATH: S:\Clients\Ottawa_Catholic_School_Board\Maitland_St_79\99_PROJ\CA0045364_1132\40_PROD\0001_Hydrogeo\CA0045364_1132-0001-CH-0000.aprx PRINTED ON: AT: 2:59:09 PM



LEGEND

- WATER WELL LOCATION
- RAILWAY
- WATERCOURSE
- WATERBODY
- SITE BOUNDARY

NOTE(S)

1. ALL LOCATIONS ARE APPROXIMATE

REFERENCE(S)

1. CONTAINS INFORMATION LICENSED UNDER THE OPEN GOVERNMENT LICENCE - ONTARIO; CITY OF OTTAWA
2. BASE MAP: BASEMAP_IMAGERY_2022:
3. COORDINATE SYSTEM: NAD 1983 CSRS UTM ZONE 18N

CLIENT

OTTAWA CATHOLIC SCHOOL BOARD

PROJECT

DESKTOP HYDROGEOLOGICAL STUDY
79 MAITLAND STREET, OTTAWA (RICHMOND VILLAGE), ONTARIO

TITLE

MECP WATER WELL RECORDS (500 m)

CONSULTANT

wsp

YYYY-MM-DD	2025-05-01
DESIGNED	----
PREPARED	DB
REVIEWED	NU
APPROVED	CAMC

PROJECT NO.	CONTROL	REV.	FIGURE
CA0045364.1132	0001	1	4

APPENDIX A

Water Well Records

Well ID	Completed	Well Depth (m)	Depth to Bedrock (m)	Static Groundwater Level (mbgs)	Casing Diameter (inch)	Casing Material	Water kind	Final Status	Water Use	Driller's Recommended Pumping Rate (gpm)
1509117	11-Jan-1953	14.6	3.70	1.80	4.0	STEEL	FRESH	Water Supply	Domestic	-
1509119	25-Jan-1953	12.2	4.60	1.80	4.0	STEEL	FRESH	Water Supply	Domestic	-
1509125	19-Dec-1953	12.2	4.60	2.40	4.0	STEEL	FRESH	Water Supply	Domestic	-
1509171	15-May-1958	8.8	5.50	0.60	4.0	STEEL	FRESH	Water Supply	Domestic	-
1509181	8-Dec-1958	17.1	8.50	0.60	5.0	STEEL	FRESH	Water Supply	Domestic	-
1509199	5-Sep-1959	22.3	9.10	3.70	4.0	STEEL	FRESH	Water Supply	Domestic	3.0
1509207	21-Oct-1959	13.4	10.40	0.00	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509238	24-Aug-1960	13.7	5.80	2.40	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509246	3-Mar-1961	13.7	6.70	1.80	4.0	STEEL	FRESH	Water Supply	Domestic	4.0
1509256	10-Mar-1962	18.3	6.10	3.70	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509298	18-May-1966	15.2	4.60	0.60	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509317	5-Oct-1967	22.9	7.60	0.90	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1509726	18-Nov-1968	18.6	4.60	5.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509736	10-Dec-1968	20.7	6.10	0.60	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509783	24-Sep-1968	12.2	5.80	1.20	6.0	STEEL	FRESH	Water Supply	Domestic	4.0
1509786	2-Nov-1968	42.7	5.20	0.00	6.0	STEEL	FRESH	Water Supply	Domestic	1.0
1509801	14-Oct-1968	18.3	4.90	0.00	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509956	20-Jan-1969	42.7	5.20	0.90	6.0	STEEL	FRESH	Water Supply	Domestic	1.0
1509979	7-Jan-1969	18.3	3.00	3.70	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509980	8-Jan-1969	18.3	2.70	3.00	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509982	11-Jan-1969	17.7	2.70	2.40	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510402	9-Oct-1969	12.2	4.30	0.90	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510410	13-Oct-1969	13.7	4.90	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510633	29-Apr-1970	16.5	4.30	0.00	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510863	13-Aug-1970	10.4	4.00	0.60	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511144	30-Apr-1971	24.4	4.60	1.80	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511146	6-May-1971	23.2	2.70	1.20	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511396	10-Aug-1971	24.7	4.90	2.40	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511575	1-Oct-1971	17.1	2.70	1.80	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1513295	13-Apr-1973	13.1	7.30	0.90	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1514779	6-May-1975	50.3	7.00	2.10	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1514781	8-May-1975	25.9	6.10	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	8.0
1515242	18-Aug-1975	39.0	6.70	2.70	6.0	STEEL	FRESH	Water Supply	Domestic	4.0
1515320	27-Apr-1976	38.1	3.00	4.60	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515370	12-May-1976	44.8	35.10	0.60	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515685	9-Sep-1976	32.0	5.80	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1516558	25-May-1978	25.6	5.20	0.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1516959	3-May-1979	38.1	7.00	0.60	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1516982	9-May-1979	10.7	4.00	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1517929	17-May-1982	14.0	1.20	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1518251	13-Apr-1983	12.2	3.70	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1518430	14-Jun-1983	18.3	4.60	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1518712	13-Oct-1983	13.1	1.50	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1518777	7-Nov-1983	19.2	0.60	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1519023	7-May-1984	25.6	4.90	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	7.0
1519025	18-May-1984	19.2	3.00	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1519028	15-Jun-1984	19.2	4.30	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	8.0
1519485	17-Dec-1984	13.1	5.50	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1525377	23-Jan-1991	38.1	6.70	1.80	6.0	GALVANIZED	Not stated	Water Supply	Domestic	5.0
1526716	16-Nov-1992	15.2	8.80	1.80	6.0	GALVANIZED	Not stated	Water Supply	Domestic	5.0
1529716	6-Oct-1997	45.1	4.90	4.90	6.0	STEEL	Not stated	Water Supply	Domestic	-
1532447	18-Sep-2001	19.8	3.70	4.00	8.0	OPEN HOLE	FRESH	Water Supply	Domestic	25.0
1533671	25-Nov-2002	0.0	0.00	0.00	-	-	-	Abandoned-Other	-	-
1534655	28-Apr-2004	0.0	0.00	0.00	-	-	-	Abandoned-Supply	Not Used	-
7109787	22-Jul-2008	12.8	0.00	0.00	-	-	-	Abandoned-Other	-	-
7111926	9-Aug-2008	14.0	0.00	2.40	-	-	-	-	-	-
7155731	29-Nov-2010	1.5	0.00	0.00	15.9	STEEL	-	Alteration	Domestic	-
7155732	29-Nov-2010	1.3	0.00	0.00	15.9	STEEL	-	Alteration	Domestic	-
7165134	24-Jun-2011	0.0	0.00	0.00	15.9	STEEL	-	Alteration	Domestic	-
7192102	16-Nov-2012	0.0	0.00	0.00	15.9	STEEL	-	Alteration	Domestic	-
7219590	5-Mar-2014	79.2	0.00	3.90	6.3	STEEL	Untested	Water Supply	Domestic	20.0
7263021	28-Apr-2016	-	-	-	-	-	Untested	Water Supply	Domestic	-
7322061	2-Oct-2018	30.8	0.00	3.50	6.3	STEEL	Untested	Water Supply	Domestic	10.0
7363357	20-May-2020	-	-	-	-	-	Untested	Water Supply	-	-
7446875	8-Nov-2022	0.0	0.00	0.00	-	-	-	-	-	-
1509105	11-Jul-1951	17.7	6.70	1.80	5.0	STEEL	FRESH	Water Supply	Domestic	-
1509182	30-Mar-1959	20.1	7.60	0.60	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509227	6-Jun-1960	15.5	7.00	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509276	21-Oct-1963	15.2	4.00	0.90	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509277	23-Oct-1963	17.7	5.80	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1509297	15-Oct-1965	15.2	5.50	2.40	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509722	2-Nov-1968	12.2	5.20	1.50	6.0	STEEL	FRESH	Water Supply	Domestic	1.0
1509727	14-Nov-1968	19.2	1.80	1.20	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509735	5-Nov-1968	14.9	4.60	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509737	4-Dec-1968	18.3	5.20	0.30	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509780	7-Sep-1968	15.2	7.00	5.50	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509952	15-Jan-1969	12.2	5.50	1.20	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509978	7-Jan-1969	18.3	3.00	3.00	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509983	16-Jan-1969	18.6	3.00	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510285	21-Jul-1969	18.6	5.20	3.00	5.0	STEEL	FRESH	Water Supply	Domestic	-
1510319	11-Aug-1969	11.0	3.70	3.00	5.0	STEEL	FRESH	Water Supply	Domestic	-
1510330	14-Aug-1969	13.1	5.20	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510492	1-Nov-1969	14.3	4.90	1.80	5.0	STEEL	Not stated	Water Supply	Domestic	5.0
1510558	4-Mar-1970	25.6	7.60	0.00	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510619	1-May-1970	18.3	4.60	0.00	5.0	STEEL	FRESH	Water Supply	Domestic	4.0
1510630	24-Mar-1970	21.6	5.20	1.20	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510848	29-Jul-1970	16.2	4.00	0.60	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510864	14-Aug-1970	17.4	4.90	0.90	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511100	31-Mar-1971	22.9	3.00	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1502398	12-Aug-1950	25.0	0.60	3.00	5.0	STEEL	MINERIAL	Water Supply	Domestic	5.0
1509102	8-May-1951	15.8	9.10	1.50	4.0	STEEL	FRESH	Water Supply	Domestic	-
1509165	2-Oct-1957	7.9	3.70	3.70	4.0	STEEL	FRESH	Water Supply	Domestic	-
1509184	1-May-1959	15.2	7.30	2.10	4.0	STEEL	FRESH	Water Supply	Domestic	3.0
1509224	2-May-1960	42.7	4.90	1.20	2.0	STEEL	FRESH	Unfinished	Domestic	2.0
1509230	13-Jun-1960	18.6	7.60	1.50	4.0	STEEL	FRESH	Water Supply	Domestic	10.0
1509247	10-Mar-1961	14.0	7.30	1.50	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509252	5-Aug-1961	20.4	3.70	0.90	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509263	25-Jul-1962	16.2	3.00	3.70	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509265	5-Oct-1962	16.8	3.70	3.70	4.0	STEEL	FRESH	Water Supply	Domestic	4.0
1509274	10-Jul-1963	18.9	7.30	1.20	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509286	6-Jul-1964	20.7	7.00	4.30	4.0	STEEL	FRESH	Water Supply	Domestic	3.0
1511332	7-Jul-1971	21.9	3.40	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511399	6-Aug-1971	20.1	2.70	1.20	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1513381	25-May-1973	14.6	3.70	4.60	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1513509	17-Aug-1973	42.7	7.60	0.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1513785	8-Aug-1973	19.8	4.60	2.40	6.0	STEEL	Not stated	Water Supply	Domestic	-
1514208	25-Jun-1974	15.2	3.70	1.20	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1514373	25-Sep-1974	13.1	5.20	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1514650	7-May-1974	26.2	4.60	1.20	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1514849	2-Jul-1975	16.8	4.60	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515238	22-Sep-1975	16.2	6.10	2.10	6.0	STEEL	FRESH	Water Supply	Domestic	5.0

Well ID	Completed	Well Depth (m)	Depth to Bedrock (m)	Static Groundwater Level (mbgs)	Casing Diameter (inch)	Casing Material	Water kind	Final Status	Water Use	Driller's Recommended Pumping Rate (gpm)
1515241	18-Aug-1975	31.4	6.40	-0.60	6.0	STEEL	FRESH	Observation Wells	Domestic	5.0
1515464	5-Jul-1976	19.5	3.70	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1516353	7-Dec-1977	19.5	5.80	0.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1516546	20-Apr-1978	19.5	8.50	1.50	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1516760	27-Jul-1978	25.6	3.70	3.70	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1516960	3-May-1979	25.6	5.50	0.90	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1517072	13-Jun-1979	33.5	32.00	2.10	5.0	OPEN HOLE	FRESH	Water Supply	Domestic	5.0
1517691	23-Nov-1981	38.1	8.20	0.90	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1517733	30-Sep-1981	12.2	6.10	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1517854	30-Jun-1982	19.2	7.30	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1517896	12-Mar-1982	15.8	2.40	2.70	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1517930	17-Jul-1982	12.2	2.10	4.60	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1517932	29-Jul-1982	29.9	2.10	1.20	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1518068	9-Nov-1982	38.1	7.30	0.90	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509296	25-Sep-1965	24.4	4.00	3.00	7.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509314	26-Jul-1967	17.7	5.50	1.20	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509725	26-Nov-1968	16.8	7.00	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509731	24-Dec-1968	18.3	2.70	2.40	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509738	29-Nov-1968	18.3	5.50	1.20	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509750	27-Sep-1968	14.3	5.50	3.00	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509785	23-Sep-1968	18.3	4.30	4.60	6.0	STEEL	FRESH	Water Supply	Domestic	1.0
1509787	2-Oct-1968	30.5	7.60	0.60	6.0	STEEL	FRESH	Water Supply	Domestic	-
1509954	17-Jan-1969	30.5	5.80	0.60	6.0	STEEL	FRESH	Water Supply	Domestic	1.0
1509976	6-Jan-1969	18.3	3.40	4.60	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509985	14-Jan-1969	18.9	7.00	4.60	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1518221	28-Apr-1983	19.2	5.50	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	6.0
1518349	28-Jul-1983	25.6	2.40	6.70	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1518535	3-Aug-1983	25.9	4.30	5.50	6.0	-	FRESH	Water Supply	Domestic	5.0
1518577	22-Sep-1983	50.3	4.90	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	8.0
1518713	13-Oct-1983	13.1	0.00	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1518776	15-Dec-1983	19.2	1.80	1.50	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1519168	2-Aug-1984	25.6	5.80	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1530924	13-Sep-1999	38.1	8.20	5.20	6.0	STEEL	Not stated	Water Supply	Domestic	5.0
1531125	29-May-2000	30.5	1.80	7.00	6.0	STEEL	Not stated	Water Supply	Domestic	5.0
1532281	1-Aug-2001	19.2	8.50	4.00	8.0	OPEN HOLE	FRESH	Water Supply	Domestic	25.0
1532446	18-Sep-2001	25.0	2.40	4.30	8.0	OPEN HOLE	FRESH	Water Supply	Domestic	8.0
1533044	2-Aug-2002	54.3	7.30	2.40	8.0	OPEN HOLE	Not stated	Water Supply	Domestic	8.0
1510061	27-Mar-1969	10.7	3.00	0.60	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510076	16-May-1969	16.5	5.50	6.10	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510157	28-Jul-1969	36.9	6.40	0.00	-	-	FRESH	Water Supply	Domestic	7.0
1510268	14-Jul-1969	18.3	6.70	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510270	11-Jul-1969	11.3	5.50	0.90	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510672	11-May-1970	11.3	3.40	0.00	5.0	STEEL	FRESH	Water Supply	Domestic	-
1511110	29-Mar-1971	21.3	3.70	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511111	29-Mar-1971	28.3	4.00	3.70	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511333	7-Jul-1971	22.3	3.00	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511395	11-Aug-1971	19.5	4.90	2.40	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511574	27-Sep-1971	16.8	3.40	1.80	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1511576	5-Oct-1971	15.5	3.70	1.80	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1533670	1-Nov-2002	0.0	0.00	0.00	-	-	-	Abandoned-Other	-	-
1534654	28-Apr-2004	67.0	7.00	0.00	15.9	STEEL	Not stated	Water Supply	Domestic	68.3
1535532	18-May-2005	24.4	4.90	2.50	15.9	STEEL	-	Water Supply	Domestic	68.3
7039732	4-Dec-2006	66.8	6.10	0.10	15.9	STEEL	-	Water Supply	Domestic	45.0
7052482	26-Oct-2007	5.8	0.00	0.00	3.8	PLASTIC	-	Test Hole	Test Hole	-
7101707	9-Oct-2007	0.0	0.00	0.00	-	-	-	-	-	-
7100533	26-Oct-2007	0.0	0.00	0.00	-	PLASTIC	-	Monitoring and Test Hole	Monitoring and Test	-
7100533	26-Oct-2007	0.0	0.00	0.00	-	PLASTIC	-	Monitoring and Test Hole	Monitoring and Test	-
7100533	26-Oct-2007	0.0	0.00	0.00	-	PLASTIC	-	Monitoring and Test Hole	Monitoring and Test	-
7120380	18-Feb-2009	-	-	-	-	-	Untested	Water Supply	Domestic	-
7139841	2-Nov-2009	0.0	0.00	0.00	-	-	-	Abandoned-Other	-	-
7143167	3-Jan-2009	77.7	0.00	0.00	10.1	STEEL	Untested	Test Hole	Test Hole	-
7143168	19-Nov-2009	123.4	0.00	0.00	10.1	STEEL	Untested	Test Hole	Test Hole	-
7155729	29-Nov-2010	1.6	0.00	0.00	15.9	STEEL	-	Alteration	Domestic	-
7156128	2-Sep-2010	52.7	0.00	2.60	15.9	STEEL	Untested	Water Supply	Domestic	45.5
7167678	4-Aug-2011	3.1	0.00	0.00	3.5	PLASTIC	-	Test Hole	Monitoring and Test	-
7182646	-	24.1	0.00	0.00	-	-	-	Alteration	-	-
7199490	28-Aug-2012	42.7	0.00	3.80	15.9	STEEL	Untested	Water Supply	Domestic	45.5
7218251	3-Jun-2013	73.8	0.00	0.10	15.9	STEEL	Untested	Water Supply	Domestic	45.5
7248735	8-Jul-2015	0.0	0.00	0.00	-	-	-	Abandoned-Other	-	-
7248793	30-Jun-2015	54.6	0.00	1.70	6.3	STEEL	Untested	Water Supply	Domestic	12.0
7264326	5-May-2016	0.0	0.00	0.00	15.9	STEEL	-	Alteration	-	-
7287153	6-Sep-2016	71.6	0.00	0.90	27.1	OPEN HOLE	Untested	Water Supply	Domestic	45.5
7324330	24-Sep-2018	0.0	0.00	0.00	-	-	-	Abandoned-Supply	-	-
7377679	12-Dec-2020	10.1	0.00	0.00	-	-	-	Abandoned-Other	-	-
7410440	1-Dec-2021	0.0	0.00	0.00	-	-	-	-	-	-
7410494	19-Nov-2021	0.0	0.00	0.00	-	-	-	-	-	-
1511586	7-Oct-1971	15.8	5.20	1.80	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1513365	14-Jun-1973	14.6	7.60	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1513786	25-Aug-1973	19.8	2.70	3.70	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1514370	7-Aug-1974	16.8	3.40	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1514848	2-Jul-1975	16.8	4.30	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515128	29-Sep-1975	22.9	8.50	2.40	6.0	STEEL	SALTY	Water Supply	Domestic	5.0
1515239	18-Aug-1975	16.2	6.70	2.10	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515285	23-Mar-1976	35.1	4.60	4.60	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515322	30-Apr-1976	13.4	5.50	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515323	30-Apr-1976	25.6	4.60	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515512	12-Jul-1976	22.3	4.60	1.20	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515684	9-Sep-1976	32.0	5.50	2.10	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515897	22-Apr-1977	68.6	4.90	2.10	6.0	STEEL	FRESH	Water Supply	Commerical	5.0
1515969	20-Apr-1977	25.6	7.60	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	4.0
1516286	4-Nov-1977	12.2	0.00	2.10	6.0	STEEL	FRESH	Water Supply	Livestock	5.0
1516943	11-Apr-1979	15.2	5.50	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1517106	19-Jun-1979	13.4	4.90	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	6.0
1517568	22-May-1981	32.0	4.90	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1517586	7-Aug-1981	41.1	9.10	0.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1517707	24-Apr-1981	10.7	3.40	2.70	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1518253	17-May-1983	13.7	4.30	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1518431	27-May-1983	25.6	5.50	0.00	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1518432	6-May-1983	18.3	7.60	1.50	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1518582	22-Sep-1983	19.2	4.90	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1518709	28-Oct-1983	25.6	4.60	2.10	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1518710	7-Oct-1983	45.7	4.30	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1519026	7-May-1984	25.6	4.90	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1529019	17-Jul-1996	76.2	2.70	2.40	6.0	STEEL	Not stated	Water Supply	Domestic	5.0
1531121	27-May-2000	53.3	3.70	1.50	6.0	STEEL	Not stated	Water Supply	Domestic	5.0
1532674	7-Feb-2002	22.3	3.70	1.80	6.0	STEEL	Not stated	Water Supply	Domestic	5.0
1533672	4-Nov-2002	0.0	0.00	0.00	-	-	-	Abandoned-Other	-	-
1534653	11-May-2004	30.5	5.20	2.70	15.9	STEEL	Not stated	Water Supply	Domestic	68.3
7121803	29-Jan-2009	67.1	0.00	0.60	6.0	STEEL	Untested	Water Supply	Domestic	40.0
7139858	30-Oct-2009	52.7	0.00	1.10	15.9	STEEL	Untested	Water Supply	Domestic	36.4
7143169	20-Dec-2009	70.1	0.00	0.00	6.1	STEEL	Untested	Test Hole	Test Hole	-

Well ID	Completed	Well Depth (m)	Depth to Bedrock (m)	Static Groundwater Level (mbgs)	Casing Diameter (inch)	Casing Material	Water kind	Final Status	Water Use	Driller's Recommended Pumping Rate (gpm)
7154209	4-Oct-2010	0.0	0.00	0.00	-	-	-	-	-	-
7155402	18-Nov-2010	31.8	0.00	1.60	15.9	STEEL	FRESH	Water Supply	Domestic	45.0
7155403	17-Nov-2010	38.5	0.00	1.20	15.9	STEEL	FRESH	Water Supply	Domestic	45.0
7155730	29-Nov-2010	1.4	0.00	0.00	15.9	STEEL	-	Alteration	-	-
7285368	26-Jan-2017	30.5	0.00	2.60	6.3	STEEL	Untested	Water Supply	Domestic	20.0
7324337	24-Sep-2018	60.3	0.00	2.30	27.1	OPEN HOLE	Untested	Water Supply	Domestic	45.5
7371677	8-Sep-2020	61.0	0.00	4.30	6.3	STEEL	Untested	Water Supply	Domestic	-
7371677	8-Sep-2020	61.0	0.00	4.30	6.3	STEEL	Untested	Water Supply	Domestic	-
7403788	10-Nov-2021	0.0	0.00	0.00	-	-	-	-	-	-
7411206	13-Dec-2021	0.0	0.00	0.00	-	-	-	-	-	-
1509121	18-Feb-1953	27.4	5.50	7.60	4.0	STEEL	FRESH	Water Supply	Domestic	-
1509183	27-Apr-1959	14.9	6.10	2.40	4.0	STEEL	FRESH	Water Supply	Domestic	3.0
1509188	1-Jul-1959	25.6	7.30	4.30	4.0	STEEL	FRESH	Water Supply	Domestic	4.0
1509204	7-Oct-1959	16.5	1.20	2.40	4.0	STEEL	FRESH	Water Supply	Domestic	4.0
1509213	3-Nov-1959	12.2	5.20	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1509229	10-Jun-1960	20.1	5.50	1.20	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509232	23-Jun-1960	24.4	7.30	2.40	8.0	STEEL	FRESH	Water Supply	Public	20.0
1509260	29-May-1962	19.8	5.50	2.40	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509288	14-Jul-1964	15.2	4.60	3.00	4.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509605	21-Nov-1968	18.9	4.60	0.00	5.0	STEEL	FRESH	Water Supply	Domestic	-
1509723	4-Dec-1968	18.9	3.00	1.80	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509724	29-Nov-1968	17.1	5.80	3.00	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509730	1-Nov-1968	16.2	3.00	3.70	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509784	23-Sep-1968	12.2	5.50	0.90	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509796	2-May-1968	23.5	7.00	1.50	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1509984	14-Jan-1969	18.3	4.90	2.40	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510062	28-Mar-1969	13.7	6.40	0.60	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510119	11-Jun-1969	16.2	7.00	0.90	5.0	STEEL	FRESH	Water Supply	Public	15.0
1510123	3-Jul-1969	21.6	6.70	0.30	5.0	STEEL	FRESH	Abandoned-Supply	Not Used	-
1510290	17-Jul-1969	24.7	5.50	0.90	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510488	6-Nov-1969	15.8	5.20	1.20	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1510629	9-Apr-1970	15.2	4.90	1.20	5.0	STEEL	FRESH	Water Supply	Public	10.0
1510636	28-Apr-1970	23.8	4.30	0.00	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510847	27-Jul-1970	9.1	4.30	0.60	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1510852	3-Aug-1970	21.0	4.60	3.40	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511109	29-Mar-1971	25.6	4.90	1.50	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511331	7-Jul-1971	19.8	3.70	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511341	6-Jul-1971	22.6	3.00	2.70	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1511398	6-Aug-1971	19.8	3.70	2.10	5.0	STEEL	FRESH	Water Supply	Domestic	5.0
1513696	3-Dec-1973	12.2	5.50	1.20	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1513783	13-Dec-1973	18.9	3.70	1.80	5.0	STEEL	FRESH	Water Supply	Domestic	10.0
1514369	7-Aug-1974	16.8	3.70	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1514780	7-May-1975	38.1	6.70	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1514852	13-Jun-1975	22.9	4.60	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	3.0
1515240	18-Aug-1975	39.0	6.40	2.10	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515286	24-Mar-1976	38.1	2.40	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515513	12-Jul-1976	29.9	4.00	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515750	29-Nov-1976	15.2	6.10	0.60	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515831	16-Nov-1976	25.6	5.50	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1515970	20-Apr-1977	25.6	7.30	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	4.0
1517257	14-Aug-1979	11.6	1.50	4.60	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1517855	4-Jun-1982	38.1	7.60	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1517895	12-Mar-1982	16.2	4.90	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	4.0
1517933	13-Jul-1982	12.2	1.50	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1518067	9-Sep-1982	38.1	8.20	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	7.0
1518218	21-Feb-1983	19.2	4.90	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1518250	28-Apr-1983	35.1	2.70	1.20	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1518578	22-Sep-1983	13.1	5.50	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1518711	7-Oct-1983	16.8	0.30	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	15.0
1519024	7-May-1984	19.2	3.70	1.80	6.0	STEEL	FRESH	Water Supply	Domestic	6.0
1519027	2-May-1984	25.6	5.80	2.40	6.0	STEEL	FRESH	Water Supply	Domestic	6.0
1519167	24-Jul-1984	57.9	6.40	0.90	6.0	STEEL	FRESH	Water Supply	Domestic	10.0
1519329	25-Aug-1984	16.2	2.10	3.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1524370	9-Jan-1990	70.1	7.60	0.00	6.0	STEEL	FRESH	Water Supply	Domestic	5.0
1524683	22-Jun-1990	18.3	4.60	3.70	6.0	STEEL	FRESH	Water Supply	Domestic	8.0
1531697	29-Nov-2000	67.1	0.00	3.00	-	-	FRESH	Water Supply	Domestic	20.0
1531857	3-Apr-2001	22.9	4.60	2.70	6.0	STEEL	Not stated	Water Supply	Domestic	5.0
1531858	5-Apr-2001	0.0	0.00	0.00	-	-	-	-	-	-
1532660	28-Feb-2002	30.8	7.00	2.40	8.0	OPEN HOLE	Not stated	Water Supply	Domestic	6.0
1533763	16-May-2003	0.0	0.00	0.00	-	-	-	Abandoned-Other	-	-
1535184	27-Oct-2004	25.0	5.50	2.90	15.9	STEEL	-	Water Supply	Domestic	34.1
7046991	26-Jun-2007	67.0	0.00	0.80	15.9	STEEL	-	Water Supply	Domestic	45.5
7100533	26-Oct-2007	5.8	0.00	0.00	-	PLASTIC	-	Monitoring and Test Hole	Monitoring and Test	-
7152155	16-Sep-2010	0.0	0.00	0.00	15.9	STEEL	-	Alteration	Domestic	-
7230317	9-Sep-2014	29.9	0.00	1.80	6.3	STEEL	Untested	Water Supply	Domestic	20.0
7336870	16-May-2019	21.3	0.00	1.80	6.3	STEEL	Untested	Water Supply	Domestic	-
7367023	14-Jul-2020	24.7	0.00	2.60	25.0	STEEL	Untested	-	Domestic	20.0
7446881	8-Nov-2022	0.0	0.00	0.00	-	-	-	-	-	-

APPENDIX B

Water Well Record No. 1531857

Ontario Ministry of the Environment

The Ontario Water Resources Act
WATER WELL RECORD

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

11 — 1531857 — Municipality 15003 — Con. CON 03

County or District	Township/Borough/City/Town/Village	Con block tract survey, etc.	Lot
Ottawa Carleton	Goulbourn	3	

Owner's surname	First Name	Address	Date completed
O.C.C. School Board	St.Philips School	1695 Road, Nepean ON. K2G 3R4 Richmond Ontario.	03 day 04 month 01 year

21 — Zone — Easting — Northing — Elevation — Basin Code (i ii iii iv)

LOG OF OVERBURDEN AND BEDROCK MATERIALS (see instructions)

General colour	Most common material	Other materials	General description	Depth - feet From	Depth - feet To
brown	clay	stone		0	15
grey	limestone		hard	15	75

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41 WATER RECORD

Water found at - feet	Kind of water
67	NOT TESTED 1 Fresh 2 Salty 3 Sulphur 4 Minerals 5 Gas 6
	1 Fresh 2 Salty 3 Sulphur 4 Minerals 5 Gas 6
	1 Fresh 2 Salty 3 Sulphur 4 Minerals 5 Gas 6
	1 Fresh 2 Salty 3 Sulphur 4 Minerals 5 Gas 6
	1 Fresh 2 Salty 3 Sulphur 4 Minerals 5 Gas 6

51 CASING & OPEN HOLE RECORD

Inside diam inches	Material	Wall thickness inches	Depth - feet From	Depth - feet To
6 1/4	1 [X] Steel 2 Galvanized 3 Concrete 4 Open hole 5 Plastic	.188	0	21
6	1 Steel 2 Galvanized 3 Concrete 4 [X] Open hole 5 Plastic		21	75
	1 Steel 2 Galvanized 3 Concrete 4 Open hole 5 Plastic			

SCREEN

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

Material and type	Depth at top of screen feet

61 PLUGGING & SEALING RECORD

[X] Annular space [ ] Abandonment

Depth set at - feet From	Depth set at - feet To	Material and type (Cement grout, bentonite, etc.)
21	0	Grouted-Cement (3)

71 PUMPING TEST

Pumping test method: 1 [X] Pump 2 [ ] Bailer
Pumping rate: 30 GPM
Duration of pumping: 1 Hours ... Mins

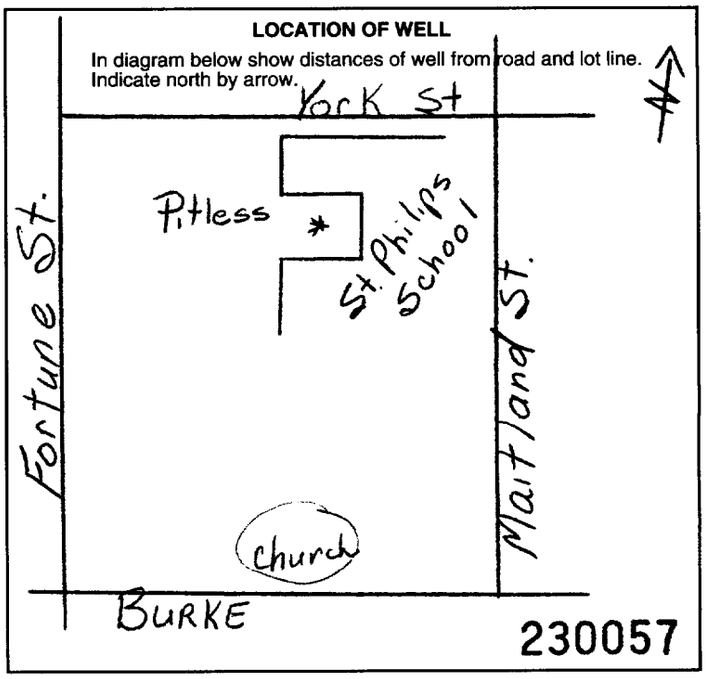
Static level	Water level end of pumping	Water levels during: 1 [X] Pumping 2 [ ] Recovery 15 minutes	30 minutes	45 minutes	60 minutes
9'9" feet	30 feet	73 feet	73 feet	50 feet	30 feet

If flowing give rate	Pump intake set at	Water at end of test
GPM	feet	[ ] Clear [X] Cloudy

Recommended pump type	Recommended pump setting	Recommended pump rate
[ ] Shallow [X] Deep	50 feet	5 GPM

LOCATION OF WELL

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



230057

FINAL STATUS OF WELL

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

WATER USE

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

METHOD OF CONSTRUCTION

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

Name of Well Contractor	Well Contractor's Licence No.
Capital Water Supply Ltd.	1558

Address	
Box 490, Stittsville, ON. K2S 1A6	

Name of Well Technician	Well Technician's Licence No.
S. Miller	T0097

Signature of Technician/Contractor: A Lee

Submission date: day 09 mo 04 yr 01

MINISTRY USE ONLY

Data source	Contractor	Date received
	1558	MAY 25 2001

Date of inspection	Inspector

Remarks: CSS.ES1

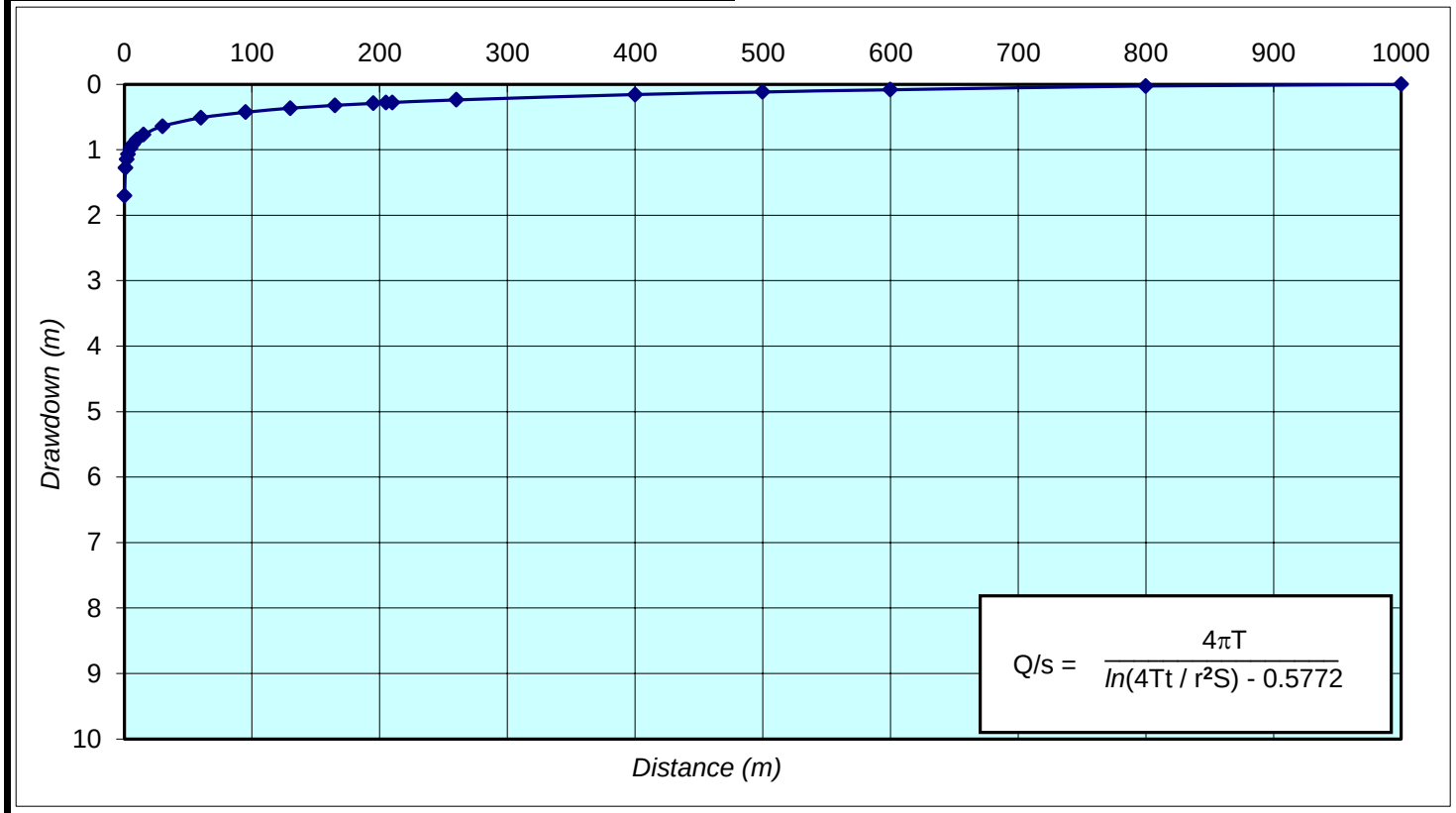
2 - MINISTRY OF THE ENVIRONMENT COPY

APPENDIX C

Cooper-Jacob Analysis

Cooper-Jacob Analysis

Pumping Rate **Q** (m^3/day)	*Transmissivity* **T** (m^2/day)	*Storage Coefficient* **S**	*time* **t** (days)	*distance* **r** (m)	*drawdown* **s** (m)
117.23	**100**	**7.00E-05**	**0.270833333**	0.1	1.71
(22 USgpm)	(8049 USgal/ft/day)	**DRAWDOWN-vs-DISTANCE GRAPH**		1	1.28
				2	1.15
				3	1.07
				5	0.98
				7	0.91
				10	0.85
				15	0.77
				30	0.64
				60	0.51
				95	0.43
				130	0.37
				165	0.32
				195	0.29
				205	0.28
				210	0.28
				260	0.24
				400	0.16
				500	0.12
				600	0.08
				800	0.03
				1000	0.00



APPENDIX D

2024 Analytical Results

Your Project #: CA0045364.1132
Site Location: ST PHILLIP
Your C.O.C. #: C#1027490-01-01

Attention: Wilson Reusing

WSP Canada Inc.
1931 Robertson Rd
Ottawa, ON
CANADA K2H 5B7

Report Date: 2024/12/23
Report #: R8457684
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4BE177
Received: 2024/12/11, 14:55

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Alkalinity (1)	1	N/A	2024/12/17	CAM SOP-00448	SM 24 2320 B m
Anions (1)	1	N/A	2024/12/17	CAM SOP-00435	SM 23 4110 B m
Chloride by Automated Colourimetry (1)	1	N/A	2024/12/17	CAM SOP-00463	SM 24 4500-Cl E m
Chemical Oxygen Demand (1)	1	N/A	2024/12/17	CAM SOP-00416	SM 24 5220 D m
Colour (1)	1	N/A	2024/12/16	CAM SOP-00412	SM 24 2120C m
Conductivity (1)	1	N/A	2024/12/17	CAM SOP-00414	SM 24 2510 m
Diuron, Guthion, Temephos (1)	1	2024/12/17	2024/12/18	CAM SOP-00306	In-House method
Dissolved Organic Carbon (DOC) (1, 2)	1	N/A	2024/12/16	CAM SOP-00446	SM 24 5310 B m
Diquat / Paraquat (1)	1	2024/12/16	2024/12/18	CAM SOP-00327	EPA 549.2 m
Petroleum Hydro. CCME F1 & BTEX in Water (1)	1	N/A	2024/12/17	CAM SOP-00315	CCME PHC-CWS m
Petroleum Hydrocarbons F2-F4 in Water (1, 3)	1	2024/12/16	2024/12/17	CAM SOP-00316	CCME PHC-CWS m
Fluoride (1)	1	2024/12/17	2024/12/17	CAM SOP-00449	SM 24 4500-F C m
Dissolved Gases in Water (1)	1	N/A	2024/12/20	CAM SOP-00219	RSKSOP-175 m
Dissolved Gases in Water in mg/L units (1)	1	N/A	2024/12/16		
Glyphosate (1)	1	2024/12/18	2024/12/18	CAM SOP-00305	HPLC in-house method
Sulphide as H2S (1)	1	N/A	2024/12/16		
Hardness (calculated as CaCO3) (1)	1	N/A	2024/12/17	CAM SOP 00102/00408/00447	SM 2340 B
Mercury in Water by CVAA (1)	1	2024/12/16	2024/12/17	CAM SOP-00453	EPA 7470A m
Metals Analysis by ICPMS (as received) (1, 4)	1	N/A	2024/12/17	CAM SOP-00447	EPA 6020B m
Ion Balance (% Difference) (1)	1	N/A	2024/12/17		
Anion and Cation Sum (1)	1	N/A	2024/12/17		
Total Ammonia-N (1)	1	N/A	2024/12/17	CAM SOP-00441	USGS I-2522-90 m
Nitrate & Nitrite as Nitrogen in Water (1, 5)	1	N/A	2024/12/16	CAM SOP-00440	SM 24 4500-NO3I/NO2B
ODWS - Semi-Volatiles (1)	1	2024/12/18	2024/12/19	CAM SOP-00301	EPA 8270 m
Organic Nitrogen (1)	1	N/A	2024/12/17	Auto Calc.	
Polychlorinated Biphenyl in Water (1)	1	2024/12/17	2024/12/18	CAM SOP-00309	EPA 8082A m
pH (1)	1	2024/12/17	2024/12/17	CAM SOP-00413	SM 24th - 4500H+ B
Phenols (4AAP) (1)	1	N/A	2024/12/17	CAM SOP-00444	OMOE E3179 m
Orthophosphate (1)	1	N/A	2024/12/17	CAM SOP-00461	SM 24 4500-P E
Redox Potential (1, 6)	1	2024/12/17	2024/12/17	CAM SOP-00421	SM 24 2580 B
Sodium Adsorption Ratio (SAR) (1)	1	N/A	2024/12/17	CAM SOP-00102	EPA 6010C

Your Project #: CA0045364.1132
Site Location: ST PHILLIP
Your C.O.C. #: C#1027490-01-01

Attention: Wilson Reusing

WSP Canada Inc.
1931 Robertson Rd
Ottawa, ON
CANADA K2H 5B7

Report Date: 2024/12/23
Report #: R8457684
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4BE177
Received: 2024/12/11, 14:55

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Sat. pH and Langelier Index (@ 20C) (1)	1	N/A	2024/12/17		Auto Calc
Sat. pH and Langelier Index (@ 4C) (1)	1	N/A	2024/12/17		Auto Calc
Silica by ICP-MS/Calculation (1)	1	N/A	2024/12/17		
Sulphate by Automated Turbidimetry (1)	1	N/A	2024/12/17	CAM SOP-00464	SM 24 4500-SO42- E m
Sulphide (1)	1	N/A	2024/12/16	CAM SOP-00455	SM 24 4500-S G m
Tannins & Lignins (1)	1	N/A	2024/12/16	CAM SOP-00410	SM 24 5550 B m
Total Dissolved Solids (1)	1	2024/12/16	2024/12/17	CAM SOP-00428	SM 24 2540C m
Total Kjeldahl Nitrogen in Water (1)	1	2024/12/16	2024/12/17	CAM SOP-00938	SM 4500-N B m
Total Nitrogen (calculated) (1)	1	N/A	2024/12/17	Auto Calc.	
Total Phosphorus (Colourimetric) (1)	1	2024/12/16	2024/12/17	CAM SOP-00407	SM 24 4500-P I
Total Suspended Solids (1)	1	2024/12/16	2024/12/17	CAM SOP-00428	SM 24 2540D m
Turbidity (1)	1	N/A	2024/12/16	CAM SOP-00417	SM 24 2130 B
UV Transmittance (1)	1	2024/12/16	2024/12/16	CAM SOP-00459	SM 24 5910 m
VOCs (Drinking Water) (1)	1	N/A	2024/12/17	CAM SOP-00226	EPA 8260D m

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Your Project #: CA0045364.1132
Site Location: ST PHILLIP
Your C.O.C. #: C#1027490-01-01

Attention: Wilson Reusing

WSP Canada Inc.
1931 Robertson Rd
Ottawa, ON
CANADA K2H 5B7

Report Date: 2024/12/23
Report #: R8457684
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4BE177

Received: 2024/12/11, 14:55

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

* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.

(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8

(2) Dissolved Organic Carbon (DOC) present in the sample should be considered as non-purgeable DOC.

(3) All CCME PHC results met required criteria unless otherwise stated in the report. The CWS PHC methods employed by Bureau Veritas conform to all prescribed elements of the reference method and performance based elements have been validated. All modifications have been validated and proven equivalent following "Alberta Environment's Interpretation of the Reference Method for the Canada-Wide Standard for Petroleum Hydrocarbons in Soil Validation of Performance-Based Alternative Methods September 2003". Documentation is available upon request. Modifications from Reference Method for the Canada-wide Standard for Petroleum Hydrocarbons in Soil-Tier 1 Method: F2/F3/F4 data reported using validated cold solvent extraction instead of Soxhlet extraction.

(4) Metals analysis was performed on the sample 'as received'.

(5) Values for calculated parameters may not appear to add up due to rounding of raw data and significant figures.

(6) Oxidation-Reduction Potential (ORP) values are determined using a Ag/AgCl reference electrode. The test is therefore, not SCC accredited for this matrix.

Encryption Key

Katherine Szozda
Project Manager
23 Dec 2024 14:33:36

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

REG 170, SCHEDULE 24 (NEW 2016)

Bureau Veritas ID				ALMA16			ALMA16		
Sampling Date				2024/12/11 13:00			2024/12/11 13:00		
COC Number				C#1027490-01-01			C#1027490-01-01		
	UNITS	MAC	A/O	SA-1	RDL	QC Batch	SA-1 Lab-Dup	RDL	QC Batch
Semivolatile Organics									
2,3,4,6-Tetrachlorophenol	ug/L	100	1	<0.50	0.50	9833873			
2,4,6-Trichlorophenol	ug/L	5	2	<0.50	0.50	9833873			
2,4-D	ug/L	100	-	<1.0	1.0	9833873			
2,4-Dichlorophenol	ug/L	900	0.3	<0.25	0.25	9833873			
Alachlor	ug/L	5	-	<0.50	0.50	9833873			
Atrazine	ug/L	-	-	<0.50	0.50	9833873			
Des-ethyl atrazine	ug/L	-	-	<0.50	0.50	9833873			
Atrazine + Desethyl-atrazine	ug/L	5	-	<1.0	1.0	9833873			
Bromoxynil	ug/L	5	-	<0.50	0.50	9833873			
Carbaryl	ug/L	90	-	<5.0	5.0	9833873			
Carbofuran	ug/L	90	-	<5.0	5.0	9833873			
Chlorpyrifos (Dursban)	ug/L	90	-	<1.0	1.0	9833873			
Diazinon	ug/L	20	-	<1.0	1.0	9833873			
Dicamba	ug/L	120	-	<1.0	1.0	9833873			
Diclofop-methyl	ug/L	9	-	<0.90	0.90	9833873			
Dimethoate	ug/L	20	-	<2.5	2.5	9833873			
Malathion	ug/L	190	-	<5.0	5.0	9833873			
MCPA	ug/L	100	-	<10	10	9833873			
Metolachlor	ug/L	50	-	<0.50	0.50	9833873			
Metribuzin (Sencor)	ug/L	80	-	<5.0	5.0	9833873			
Pentachlorophenol	ug/L	60	30	<0.50	0.50	9833873			
Phorate	ug/L	2	-	<0.50	0.50	9833873			
Picloram	ug/L	190	-	<5.0	5.0	9833873			
Prometryne	ug/L	1	-	<0.25	0.25	9833873			
Simazine	ug/L	10	-	<1.0	1.0	9833873			
Terbufos	ug/L	1	-	<0.50	0.50	9833873			
Triallate	ug/L	230	-	<1.0	1.0	9833873			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

REG 170, SCHEDULE 24 (NEW 2016)

Bureau Veritas ID				ALMA16			ALMA16		
Sampling Date				2024/12/11 13:00			2024/12/11 13:00		
COC Number				C#1027490-01-01			C#1027490-01-01		
	UNITS	MAC	A/O	SA-1	RDL	QC Batch	SA-1 Lab-Dup	RDL	QC Batch
Trifluralin	ug/L	45	-	<1.0	1.0	9833873			
Benzo(a)pyrene	ug/L	0.01	-	<0.0050	0.0050	9833873			
Volatile Organics									
1,1-Dichloroethylene	ug/L	14	-	<0.10	0.10	9829822			
1,2-Dichlorobenzene	ug/L	200	3	<0.20	0.20	9829822			
1,2-Dichloroethane	ug/L	5	-	<0.20	0.20	9829822			
1,4-Dichlorobenzene	ug/L	5	1	<0.20	0.20	9829822			
Benzene	ug/L	1	-	<0.10	0.10	9829822			
Carbon Tetrachloride	ug/L	2	-	<0.10	0.10	9829822			
Chlorobenzene	ug/L	80	30	<0.10	0.10	9829822			
Methylene Chloride(Dichloromethane)	ug/L	50	-	<0.50	0.50	9829822			
Ethylbenzene	ug/L	140	1.6	<0.10	0.10	9829822			
Tetrachloroethylene	ug/L	10	-	<0.10	0.10	9829822			
Toluene	ug/L	60	24	<0.20	0.20	9829822			
Trichloroethylene	ug/L	5	-	<0.10	0.10	9829822			
Vinyl Chloride	ug/L	1	-	<0.20	0.20	9829822			
o-Xylene	ug/L	-	-	<0.10	0.10	9829822			
p+m-Xylene	ug/L	-	-	<0.10	0.10	9829822			
PCBs									
Aroclor 1016	ug/L	-	-	<0.05	0.05	9831396			
Aroclor 1221	ug/L	-	-	<0.05	0.05	9831396			
Aroclor 1232	ug/L	-	-	<0.05	0.05	9831396			
Aroclor 1242	ug/L	-	-	<0.05	0.05	9831396			
Aroclor 1248	ug/L	-	-	<0.05	0.05	9831396			
Aroclor 1254	ug/L	-	-	<0.05	0.05	9831396			
Aroclor 1260	ug/L	-	-	<0.05	0.05	9831396			
Total PCB	ug/L	3	-	<0.05	0.05	9831396			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

Bureau Veritas Job #: C4BE177
Report Date: 2024/12/23

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST PHILLIP
Sampler Initials: MA

REG 170, SCHEDULE 24 (NEW 2016)

Bureau Veritas ID				ALMA16			ALMA16		
Sampling Date				2024/12/11 13:00			2024/12/11 13:00		
COC Number				C#1027490-01-01			C#1027490-01-01		
	UNITS	MAC	A/O	SA-1	RDL	QC Batch	SA-1 Lab-Dup	RDL	QC Batch
Pesticides & Herbicides									
Glyphosate	ug/L	280	-	<10	10	9833772	<10	10	9833772
Diquat	ug/L	70	-	<7.0	7.0	9830070			
Diuron	ug/L	150	-	<10	10	9832463	<10	10	9832463
Guthion (Azinphos-methyl)	ug/L	20	-	<2.0	2.0	9832463	<2.0	2.0	9832463
Paraquat	ug/L	10	-	<1.0	1.0	9830070			
Surrogate Recovery (%)									
2,4,6-Tribromophenol	%	-	-	88		9833873			
2,4-Dichlorophenyl Acetic Acid	%	-	-	97		9833873			
2-Fluorobiphenyl	%	-	-	86		9833873			
D14-Terphenyl (FS)	%	-	-	107		9833873			
D5-Nitrobenzene	%	-	-	100		9833873			
Decachlorobiphenyl	%	-	-	89		9831396			
4-Bromofluorobenzene	%	-	-	97		9829822			
D4-1,2-Dichloroethane	%	-	-	97		9829822			
D8-Toluene	%	-	-	101		9829822			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

REG 170, SCHEDULE 23 (WATER)

Bureau Veritas ID				ALMA16	ALMA16		
Sampling Date				2024/12/11 13:00	2024/12/11 13:00		
COC Number				C#1027490-01-01	C#1027490-01-01		
	UNITS	MAC	A/O	SA-1	SA-1 Lab-Dup	RDL	QC Batch
Metals							
Mercury (Hg)	mg/L	0.001	-	<0.00010	<0.00010	0.00010	9830252
Aluminum (Al)	ug/L	-	100	<4.9	<4.9	4.9	9831699
Antimony (Sb)	ug/L	6	-	<0.50	<0.50	0.50	9831699
Arsenic (As)	ug/L	10	-	<1.0	<1.0	1.0	9831699
Barium (Ba)	ug/L	1000	-	130	130	2.0	9831699
Beryllium (Be)	ug/L	-	-	<0.40	<0.40	0.40	9831699
Bismuth (Bi)	ug/L	-	-	<1.0	<1.0	1.0	9831699
Boron (B)	ug/L	5000	-	160	160	10	9831699
Cadmium (Cd)	ug/L	5	-	<0.090	<0.090	0.090	9831699
Calcium (Ca)	ug/L	-	-	78000	78000	200	9831699
Chromium (Cr)	ug/L	50	-	<5.0	<5.0	5.0	9831699
Cobalt (Co)	ug/L	-	-	<0.50	<0.50	0.50	9831699
Copper (Cu)	ug/L	-	1000	<0.90	<0.90	0.90	9831699
Iron (Fe)	ug/L	-	300	190	190	100	9831699
Lead (Pb)	ug/L	10	-	<0.50	<0.50	0.50	9831699
Lithium (Li)	ug/L	-	-	21	22	5.0	9831699
Magnesium (Mg)	ug/L	-	-	29000	29000	50	9831699
Manganese (Mn)	ug/L	-	50	8.1	7.6	2.0	9831699
Molybdenum (Mo)	ug/L	-	-	1.4	1.4	0.50	9831699
Nickel (Ni)	ug/L	-	-	<1.0	<1.0	1.0	9831699
Potassium (K)	ug/L	-	-	4200	4100	200	9831699
Selenium (Se)	ug/L	50	-	<2.0	<2.0	2.0	9831699
Silicon (Si)	ug/L	-	-	3600	3600	50	9831699
Silver (Ag)	ug/L	-	-	<0.090	<0.090	0.090	9831699
Sodium (Na)	ug/L	-	200000	54000	54000	100	9831699
Strontium (Sr)	ug/L	-	-	2300	2300	1.0	9831699
Thallium (Tl)	ug/L	-	-	<0.050	<0.050	0.050	9831699

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

Bureau Veritas Job #: C4BE177
Report Date: 2024/12/23

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST PHILLIP
Sampler Initials: MA

REG 170, SCHEDULE 23 (WATER)

Bureau Veritas ID				ALMA16	ALMA16		
Sampling Date				2024/12/11 13:00	2024/12/11 13:00		
COC Number				C#1027490-01-01	C#1027490-01-01		
	UNITS	MAC	A/O	SA-1	SA-1 Lab-Dup	RDL	QC Batch
Tin (Sn)	ug/L	-	-	<1.0	<1.0	1.0	9831699
Titanium (Ti)	ug/L	-	-	<5.0	<5.0	5.0	9831699
Tungsten (W)	ug/L	-	-	<1.0	<1.0	1.0	9831699
Uranium (U)	ug/L	20	-	0.57	0.60	0.10	9831699
Vanadium (V)	ug/L	-	-	<0.50	<0.50	0.50	9831699
Zinc (Zn)	ug/L	-	5000	8.9	8.9	5.0	9831699
Zirconium (Zr)	ug/L	-	-	<1.0	<1.0	1.0	9831699

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

Bureau Veritas Job #: C4BE177
Report Date: 2024/12/23

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST PHILLIP
Sampler Initials: MA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				ALMA16			ALMA16		
Sampling Date				2024/12/11 13:00			2024/12/11 13:00		
COC Number				C#1027490-01-01			C#1027490-01-01		
	UNITS	MAC	A/O	SA-1	RDL	QC Batch	SA-1 Lab-Dup	RDL	QC Batch
Calculated Parameters									
Anion Sum	me/L	-	-	8.80	N/A	9829090			
Cation Sum	me/L	-	-	8.73	N/A	9829090			
Hardness (CaCO3)	mg/L	-	80:100	**310**	1.0	9829088			
Ion Balance (% Difference)	%	-	-	0.390	N/A	9829089			
Langelier Index (@ 20C)	N/A	-	-	0.615		9829073			
Langelier Index (@ 4C)	N/A	-	-	0.367		9829074			
Total Nitrogen (N)	mg/L	-	-	<0.10	0.10	9829076			
Total Organic Nitrogen	mg/L	-	0.15	<0.10	0.10	9829071			
Saturation pH (@ 20C)	N/A	-	-	7.19		9829073			
Saturation pH (@ 4C)	N/A	-	-	7.44		9829074			
Sodium Adsorption Ratio	N/A	-	-	1.3		9829072			
Sulphide (as H2S)	mg/L	-	-	<0.021	0.021	9829087			
CONVENTIONALS									
Redox Potential	mV	-	-	240	N/A	9831436	240	N/A	9831436
Inorganics									
Total Ammonia-N	mg/L	-	-	0.078	0.050	9829208			
Total Chemical Oxygen Demand (COD)	mg/L	-	-	13	4.0	9829651			
Colour	TCU	-	5	<2	2	9828295			
Conductivity	umho/cm	-	-	910	1.0	9831467	900	1.0	9831467
Total Dissolved Solids	mg/L	-	500	500	10	9829040			
Fluoride (F-)	mg/L	1.5	-	0.33	0.10	9831468	0.30	0.10	9831468
Total Kjeldahl Nitrogen (TKN)	mg/L	-	-	<0.10	0.10	9829633	<0.10	0.10	9829633
Dissolved Organic Carbon	mg/L	-	5	0.89	0.40	9828111			
Orthophosphate (P)	mg/L	-	-	<0.010	0.010	9827424			
pH	pH	-	6.5:8.5	7.81		9831457	7.86		9831457
Phenols-4AAP	mg/L	-	-	<0.0010	0.0010	9831265	<0.0010	0.0010	9831265

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)
N/A = Not Applicable

Bureau Veritas Job #: C4BE177
Report Date: 2024/12/23

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST PHILLIP
Sampler Initials: MA

RESULTS OF ANALYSES OF WATER

Bureau Veritas ID				ALMA16			ALMA16		
Sampling Date				2024/12/11 13:00			2024/12/11 13:00		
COC Number				C#1027490-01-01			C#1027490-01-01		
	UNITS	MAC	A/O	SA-1	RDL	QC Batch	SA-1 Lab-Dup	RDL	QC Batch
Total Phosphorus	mg/L	-	-	<0.020	0.020	9830596			
Dissolved Silica (SiO2)	mg/L	-	-	7.7	0.10	9829075			
Total Suspended Solids	mg/L	-	-	<10	10	9829277			
Dissolved Sulphate (SO4)	mg/L	-	500	49	1.0	9827423			
Sulphide	mg/L	-	0.05	<0.020	0.020	9829232			
Tannins & Lignins	mg/L	-	-	<0.2	0.2	9828691			
Turbidity	NTU	-	5	2.3	0.1	9830308	2.4	0.1	9830308
Total UV Transmittance	%T	-	-	96		9830768	96		9830768
Alkalinity (Total as CaCO3)	mg/L	-	30:500	240	1.0	9831454	240	1.0	9831454
Dissolved Chloride (Cl-)	mg/L	-	250	100	1.0	9827419			
Nitrite (N)	mg/L	1	-	<0.010	0.010	9829032			
Nitrate (N)	mg/L	10	-	<0.10	0.10	9829032			
Nitrate + Nitrite (N)	mg/L	10	-	<0.10	0.10	9829032			
Bromide (Br-)	mg/L	-	-	<1.0	1.0	9831608			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

PERMANENT GASES (WATER)

Bureau Veritas ID			ALMA16		
Sampling Date			2024/12/11 13:00		
COC Number			C#1027490-01-01		
	UNITS	A/O	SA-1	RDL	QC Batch
Fixed Gases					
Acetylene	L/m3	-	<0.002	0.002	9840853
Calculated Acetylene	mg/L	-	<0.002	0.002	9829086
Ethane	L/m3	-	<0.002	0.002	9840853
Calculated Ethane	mg/L	-	<0.002	0.002	9829086
Ethylene	L/m3	-	<0.002	0.002	9840853
Calculated Ethylene	mg/L	-	<0.002	0.002	9829086
Methane	L/m3	3	0.017	0.005	9840853
Calculated Methane	mg/L	-	0.011	0.003	9829086
Propane	L/m3	-	<0.002	0.002	9840853
Calculated Propane	mg/L	-	<0.004	0.004	9829086
Propylene	L/m3	-	<0.002	0.002	9840853
Calculated Propylene	mg/L	-	<0.003	0.003	9829086

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit

QC Batch = Quality Control Batch

A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

O.REG 153 PHCS, BTEX/F1-F4 (WATER)

Bureau Veritas ID				ALMA16			ALMA16		
Sampling Date				2024/12/11 13:00			2024/12/11 13:00		
COC Number				C#1027490-01-01			C#1027490-01-01		
	UNITS	MAC	A/O	SA-1	RDL	QC Batch	SA-1 Lab-Dup	RDL	QC Batch
BTEX & F1 Hydrocarbons									
Benzene	ug/L	1	-	<0.20	0.20	9830392	<0.20	0.20	9830392
Toluene	ug/L	60	24	<0.20	0.20	9830392	<0.20	0.20	9830392
Ethylbenzene	ug/L	140	1.6	<0.20	0.20	9830392	<0.20	0.20	9830392
o-Xylene	ug/L	-	-	<0.20	0.20	9830392	<0.20	0.20	9830392
p+m-Xylene	ug/L	-	-	<0.40	0.40	9830392	<0.40	0.40	9830392
Total Xylenes	ug/L	90	20	<0.40	0.40	9830392	<0.40	0.40	9830392
F1 (C6-C10)	ug/L	-	-	<25	25	9830392	<25	25	9830392
F1 (C6-C10) - BTEX	ug/L	-	-	<25	25	9830392	<25	25	9830392
F2-F4 Hydrocarbons									
F2 (C10-C16 Hydrocarbons)	ug/L	-	-	<90	90	9831004			
F3 (C16-C34 Hydrocarbons)	ug/L	-	-	<200	200	9831004			
F4 (C34-C50 Hydrocarbons)	ug/L	-	-	<200	200	9831004			
Reached Baseline at C50	ug/L	-	-	Yes		9831004			
Surrogate Recovery (%)									
1,4-Difluorobenzene	%	-	-	100		9830392	101		9830392
4-Bromofluorobenzene	%	-	-	98		9830392	99		9830392
D10-o-Xylene	%	-	-	82		9830392	84		9830392
D4-1,2-Dichloroethane	%	-	-	109		9830392	104		9830392
o-Terphenyl	%	-	-	101		9831004			

No Fill	No Exceedance
Grey	Exceeds 1 criteria policy/level
Black	Exceeds both criteria/levels

RDL = Reportable Detection Limit
QC Batch = Quality Control Batch
Lab-Dup = Laboratory Initiated Duplicate
MAC,A/O: Ontario Drinking Water Standards - Maximum Acceptable Concentration [MAC] & Table 4-Chemical/Physical Objectives [A/O] - Not Health Related, respectively
(Made under the Ontario Safe Drinking Water Act, 2002)

Bureau Veritas Job #: C4BE177
Report Date: 2024/12/23

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST PHILLIP
Sampler Initials: MA

TEST SUMMARY

Bureau Veritas ID: ALMA16
Sample ID: SA-1
Matrix: Water

Collected: 2024/12/11
Shipped:
Received: 2024/12/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9831454	N/A	2024/12/17	Gurparteek KAUR
Anions	IC	9831608	N/A	2024/12/17	Surleen Kaur Romana
Chloride by Automated Colourimetry	SKAL	9827419	N/A	2024/12/17	Alina Dobreanu
Chemical Oxygen Demand	SPEC	9829651	N/A	2024/12/17	Shivani Shivani
Colour	SPEC	9828295	N/A	2024/12/16	Gyulshen Idriz
Conductivity	AT	9831467	N/A	2024/12/17	Gurparteek KAUR
Diuron, Guthion, Temephos	LC/UV	9832463	2024/12/17	2024/12/18	Ziyi Ding
Dissolved Organic Carbon (DOC)	TOCV/NDIR	9828111	N/A	2024/12/16	Gyulshen Idriz
Diquat / Paraquat	LC/UV	9830070	2024/12/16	2024/12/18	Furneesh Kumar
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	9830392	N/A	2024/12/17	Abdikarim Ali
Petroleum Hydrocarbons F2-F4 in Water	GC/FID	9831004	2024/12/16	2024/12/17	Mohammed Abdul Nafay Shoeb
Fluoride	ISE	9831468	2024/12/17	2024/12/17	Gurparteek KAUR
Dissolved Gases in Water	GC/FID	9840853	N/A	2024/12/20	Satvinder Bhathal
Dissolved Gases in Water in mg/L units		9829086	N/A	2024/12/16	Automated Statchk
Glyphosate	LC/FLU	9833772	2024/12/18	2024/12/18	Furneesh Kumar
Sulphide as H2S	CALC	9829087	N/A	2024/12/16	Automated Statchk
Hardness (calculated as CaCO3)		9829088	N/A	2024/12/17	Automated Statchk
Mercury in Water by CVAA	CV/AA	9830252	2024/12/16	2024/12/17	Maitri PATIL
Metals Analysis by ICPMS (as received)	ICP/MS	9831699	N/A	2024/12/17	Nan Raykha
Ion Balance (% Difference)	CALC	9829089	N/A	2024/12/17	Automated Statchk
Anion and Cation Sum	CALC	9829090	N/A	2024/12/17	Automated Statchk
Total Ammonia-N	SKAL/NH4	9829208	N/A	2024/12/17	Jinal Chavda
Nitrate & Nitrite as Nitrogen in Water	LACH	9829032	N/A	2024/12/16	Chandra Nandlal
ODWS - Semi-Volatiles	GC/MS	9833873	2024/12/18	2024/12/19	Wendy Zhao
Organic Nitrogen	CALC	9829071	N/A	2024/12/17	Automated Statchk
Polychlorinated Biphenyl in Water	GC/ECD	9831396	2024/12/17	2024/12/18	Svitlana Shaula
pH	AT	9831457	2024/12/17	2024/12/17	Gurparteek KAUR
Phenols (4AAP)	TECH/PHEN	9831265	N/A	2024/12/17	Sachi Patel
Orthophosphate	SKAL	9827424	N/A	2024/12/17	Alina Dobreanu
Redox Potential	COND	9831436	2024/12/17	2024/12/17	Kien Tran
Sodium Adsorption Ratio (SAR)	CALC/MET	9829072	N/A	2024/12/17	Automated Statchk
Sat. pH and Langelier Index (@ 20C)	CALC	9829073	N/A	2024/12/17	Automated Statchk
Sat. pH and Langelier Index (@ 4C)	CALC	9829074	N/A	2024/12/17	Automated Statchk
Silica by ICP-MS/Calculation	ICP/MS	9829075	N/A	2024/12/17	Automated Statchk
Sulphate by Automated Turbidimetry	SKAL	9827423	N/A	2024/12/17	Alina Dobreanu
Sulphide	ISE/S	9829232	N/A	2024/12/16	Sreena Thekkoot
Tannins & Lignins	SPEC	9828691	N/A	2024/12/16	Viorica Rotaru
Total Dissolved Solids	BAL	9829040	2024/12/16	2024/12/17	Razieh Tabesh
Total Kjeldahl Nitrogen in Water	SKAL	9829633	2024/12/16	2024/12/17	Rajni Tyagi
Total Nitrogen (calculated)	CALC	9829076	N/A	2024/12/17	Automated Statchk
Total Phosphorus (Colourimetric)	SKAL/P	9830596	2024/12/16	2024/12/17	Vidhi Khatri
Total Suspended Solids	BAL	9829277	2024/12/16	2024/12/17	Razieh Tabesh
Turbidity	AT	9830308	N/A	2024/12/16	Kien Tran
UV Transmittance	SPEC	9830768	2024/12/16	2024/12/16	Gyulshen Idriz
VOCs (Drinking Water)	P&T/MS	9829822	N/A	2024/12/17	Zi Wang

Bureau Veritas Job #: C4BE177
Report Date: 2024/12/23

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST PHILLIP
Sampler Initials: MA

TEST SUMMARY

Bureau Veritas ID: ALMA16 Dup
Sample ID: SA-1
Matrix: Water

Collected: 2024/12/11
Shipped:
Received: 2024/12/11

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Alkalinity	AT	9831454	N/A	2024/12/17	Gurparteek KAUR
Conductivity	AT	9831467	N/A	2024/12/17	Gurparteek KAUR
Diuron, Guthion, Temephos	LC/UV	9832463	2024/12/17	2024/12/18	Ziyi Ding
Petroleum Hydro. CCME F1 & BTEX in Water	HSGC/MSFD	9830392	N/A	2024/12/17	Abdikarim Ali
Fluoride	ISE	9831468	2024/12/17	2024/12/17	Gurparteek KAUR
Glyphosate	LC/FLU	9833772	2024/12/18	2024/12/18	Furneesh Kumar
Mercury in Water by CVAA	CV/AA	9830252	2024/12/16	2024/12/17	Maitri PATIL
Metals Analysis by ICPMS (as received)	ICP/MS	9831699	N/A	2024/12/17	Nan Raykha
pH	AT	9831457	2024/12/17	2024/12/17	Gurparteek KAUR
Phenols (4AAP)	TECH/PHEN	9831265	N/A	2024/12/17	Sachi Patel
Redox Potential	COND	9831436	2024/12/17	2024/12/17	Kien Tran
Total Kjeldahl Nitrogen in Water	SKAL	9829633	2024/12/16	2024/12/17	Rajni Tyagi
Turbidity	AT	9830308	N/A	2024/12/16	Kien Tran
UV Transmittance	SPEC	9830768	2024/12/16	2024/12/16	Gyulshen Idriz

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	10.3°C
Package 2	9.7°C

Results relate only to the items tested.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

QUALITY ASSURANCE REPORT

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9829822	4-Bromofluorobenzene	2024/12/17			101	70 - 130	94	%				
9829822	D4-1,2-Dichloroethane	2024/12/17			98	70 - 130	94	%				
9829822	D8-Toluene	2024/12/17			99	70 - 130	103	%				
9830392	1,4-Difluorobenzene	2024/12/17	99	70 - 130	97	70 - 130	98	%				
9830392	4-Bromofluorobenzene	2024/12/17	101	70 - 130	103	70 - 130	102	%				
9830392	D10-o-Xylene	2024/12/17	82	70 - 130	85	70 - 130	88	%				
9830392	D4-1,2-Dichloroethane	2024/12/17	113	70 - 130	109	70 - 130	109	%				
9831004	o-Terphenyl	2024/12/17	105	60 - 140	104	60 - 140	99	%				
9831396	Decachlorobiphenyl	2024/12/18	91	60 - 130	91	60 - 130	87	%				
9833873	2,4,6-Tribromophenol	2024/12/19	79	30 - 130	82	30 - 130	82	%				
9833873	2,4-Dichlorophenyl Acetic Acid	2024/12/19	88	30 - 130	94	30 - 130	87	%				
9833873	2-Fluorobiphenyl	2024/12/19	71	30 - 130	72	30 - 130	81	%				
9833873	D14-Terphenyl (FS)	2024/12/19	94	30 - 130	98	30 - 130	99	%				
9833873	D5-Nitrobenzene	2024/12/19	81	30 - 130	83	30 - 130	94	%				
9827419	Dissolved Chloride (Cl-)	2024/12/17	NC	80 - 120	101	80 - 120	<1.0	mg/L	0.38	20		
9827423	Dissolved Sulphate (SO4)	2024/12/17	NC	75 - 125	97	80 - 120	<1.0	mg/L	0.0082	20		
9827424	Orthophosphate (P)	2024/12/17	91	75 - 125	91	80 - 120	<0.010	mg/L	NC	20		
9828111	Dissolved Organic Carbon	2024/12/16	92	80 - 120	93	80 - 120	<0.40	mg/L	0.99	20		
9828295	Colour	2024/12/16			102	80 - 120	<2	TCU	NC	25		
9828691	Tannins & Lignins	2024/12/16	99	80 - 120	100	80 - 120	<0.2	mg/L	0	20		
9829032	Nitrate (N)	2024/12/16	98	80 - 120	101	80 - 120	<0.10	mg/L	NC	20		
9829032	Nitrite (N)	2024/12/16	102	80 - 120	103	80 - 120	<0.010	mg/L	NC	20		
9829040	Total Dissolved Solids	2024/12/17			98	80 - 120	<10	mg/L	0.29	20		
9829208	Total Ammonia-N	2024/12/17	99	75 - 125	100	80 - 120	<0.050	mg/L	NC	20		
9829232	Sulphide	2024/12/16	104	80 - 120	89	80 - 120	<0.020	mg/L	NC	20		
9829277	Total Suspended Solids	2024/12/17			95	80 - 120	<10	mg/L	NC	20		
9829633	Total Kjeldahl Nitrogen (TKN)	2024/12/17	102	80 - 120	100	80 - 120	<0.10	mg/L	NC	20	99	80 - 120
9829651	Total Chemical Oxygen Demand (COD)	2024/12/17	NC	80 - 120	102	80 - 120	<4.0	mg/L	0	20		
9829822	1,1-Dichloroethylene	2024/12/17			101	70 - 130	<0.10	ug/L	5.6	30		
9829822	1,2-Dichlorobenzene	2024/12/17			101	70 - 130	<0.20	ug/L	4.5	30		
9829822	1,2-Dichloroethane	2024/12/17			100	70 - 130	<0.20	ug/L	3.9	30		
9829822	1,4-Dichlorobenzene	2024/12/17			104	70 - 130	<0.20	ug/L	6.3	30		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9829822	Benzene	2024/12/17			99	70 - 130	<0.10	ug/L	6.1	30		
9829822	Carbon Tetrachloride	2024/12/17			111	70 - 130	<0.10	ug/L	7.2	30		
9829822	Chlorobenzene	2024/12/17			94	70 - 130	<0.10	ug/L	4.8	30		
9829822	Ethylbenzene	2024/12/17			99	70 - 130	<0.10	ug/L	5.0	30		
9829822	Methylene Chloride(Dichloromethane)	2024/12/17			94	70 - 130	<0.50	ug/L	5.1	30		
9829822	o-Xylene	2024/12/17			108	70 - 130	<0.10	ug/L	4.7	30		
9829822	p+m-Xylene	2024/12/17			102	70 - 130	<0.10	ug/L	5.2	30		
9829822	Tetrachloroethylene	2024/12/17			98	70 - 130	<0.10	ug/L	6.7	30		
9829822	Toluene	2024/12/17			99	70 - 130	<0.20	ug/L	5.7	30		
9829822	Trichloroethylene	2024/12/17			102	70 - 130	<0.10	ug/L	6.3	30		
9829822	Vinyl Chloride	2024/12/17			86	70 - 130	<0.20	ug/L	5.2	30		
9830070	Diquat	2024/12/18	99	50 - 130	99	50 - 130	<7.0	ug/L	NC	40		
9830070	Paraquat	2024/12/18	100	50 - 130	104	50 - 130	<1.0	ug/L	NC	40		
9830252	Mercury (Hg)	2024/12/17	104	75 - 125	107	80 - 120	<0.00010	mg/L	NC	20		
9830308	Turbidity	2024/12/16			101	80 - 120	<0.1	NTU	1.3	20		
9830392	Benzene	2024/12/17	87	50 - 140	86	50 - 140	<0.20	ug/L	NC	30		
9830392	Ethylbenzene	2024/12/17	90	50 - 140	88	50 - 140	<0.20	ug/L	NC	30		
9830392	F1 (C6-C10) - BTEX	2024/12/17					<25	ug/L	NC	30		
9830392	F1 (C6-C10)	2024/12/17	93	60 - 140	93	60 - 140	<25	ug/L	NC	30		
9830392	o-Xylene	2024/12/17	88	50 - 140	87	50 - 140	<0.20	ug/L	NC	30		
9830392	p+m-Xylene	2024/12/17	84	50 - 140	82	50 - 140	<0.40	ug/L	NC	30		
9830392	Toluene	2024/12/17	81	50 - 140	80	50 - 140	<0.20	ug/L	NC	30		
9830392	Total Xylenes	2024/12/17					<0.40	ug/L	NC	30		
9830596	Total Phosphorus	2024/12/17	94	80 - 120	96	80 - 120	<0.020	mg/L	0.14	20	91	80 - 120
9830768	Total UV Transmittance	2024/12/16			100	97 - 103			0.082	25		
9831004	F2 (C10-C16 Hydrocarbons)	2024/12/17	102	60 - 140	98	60 - 140	<90	ug/L	NC	30		
9831004	F3 (C16-C34 Hydrocarbons)	2024/12/17	102	60 - 140	99	60 - 140	<200	ug/L	NC	30		
9831004	F4 (C34-C50 Hydrocarbons)	2024/12/17	102	60 - 140	90	60 - 140	<200	ug/L	NC	30		
9831265	Phenols-4AAP	2024/12/17	102	80 - 120	103	80 - 120	<0.0010	mg/L	NC	20		
9831396	Aroclor 1016	2024/12/18					<0.05	ug/L				
9831396	Aroclor 1221	2024/12/18					<0.05	ug/L				
9831396	Aroclor 1232	2024/12/18					<0.05	ug/L				

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9831396	Aroclor 1242	2024/12/18					<0.05	ug/L				
9831396	Aroclor 1248	2024/12/18					<0.05	ug/L				
9831396	Aroclor 1254	2024/12/18					<0.05	ug/L				
9831396	Aroclor 1260	2024/12/18	86	60 - 130	79	60 - 130	<0.05	ug/L				
9831396	Total PCB	2024/12/18	86	60 - 130	79	60 - 130	<0.05	ug/L	NC	40		
9831436	Redox Potential	2024/12/17			97	80 - 120			1.0	20		
9831454	Alkalinity (Total as CaCO3)	2024/12/17			95	85 - 115	<1.0	mg/L	0.87	20		
9831457	pH	2024/12/17			102	98 - 103			0.73	N/A		
9831467	Conductivity	2024/12/17			102	85 - 115	<1.0	umho/cm	0.78	10		
9831468	Fluoride (F-)	2024/12/17	99	80 - 120	104	80 - 120	<0.10	mg/L	8.5	20		
9831608	Bromide (Br-)	2024/12/17	103	80 - 120	104	80 - 120	<1.0	mg/L	NC	20		
9831699	Aluminum (Al)	2024/12/17	101	80 - 120	101	80 - 120	<4.9	ug/L	NC	20		
9831699	Antimony (Sb)	2024/12/17	103	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
9831699	Arsenic (As)	2024/12/17	100	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
9831699	Barium (Ba)	2024/12/17	101	80 - 120	98	80 - 120	<2.0	ug/L	0.54	20		
9831699	Beryllium (Be)	2024/12/17	103	80 - 120	106	80 - 120	<0.40	ug/L	NC	20		
9831699	Bismuth (Bi)	2024/12/17	96	80 - 120	98	80 - 120	<1.0	ug/L	NC	20		
9831699	Boron (B)	2024/12/17	94	80 - 120	99	80 - 120	<10	ug/L	3.2	20		
9831699	Cadmium (Cd)	2024/12/17	97	80 - 120	94	80 - 120	<0.090	ug/L	NC	20		
9831699	Calcium (Ca)	2024/12/17	NC	80 - 120	100	80 - 120	<200	ug/L	0.75	20		
9831699	Chromium (Cr)	2024/12/17	101	80 - 120	102	80 - 120	<5.0	ug/L	NC	20		
9831699	Cobalt (Co)	2024/12/17	97	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
9831699	Copper (Cu)	2024/12/17	103	80 - 120	100	80 - 120	<0.90	ug/L	NC	20		
9831699	Iron (Fe)	2024/12/17	99	80 - 120	99	80 - 120	<100	ug/L	1.4	20		
9831699	Lead (Pb)	2024/12/17	97	80 - 120	99	80 - 120	<0.50	ug/L	NC	20		
9831699	Lithium (Li)	2024/12/17	101	80 - 120	110	80 - 120	<5.0	ug/L	3.1	20		
9831699	Magnesium (Mg)	2024/12/17	NC	80 - 120	98	80 - 120	<50	ug/L	1.3	20		
9831699	Manganese (Mn)	2024/12/17	96	80 - 120	96	80 - 120	<2.0	ug/L	6.3	20		
9831699	Molybdenum (Mo)	2024/12/17	105	80 - 120	102	80 - 120	<0.50	ug/L	4.8	20		
9831699	Nickel (Ni)	2024/12/17	94	80 - 120	96	80 - 120	<1.0	ug/L	NC	20		
9831699	Potassium (K)	2024/12/17	102	80 - 120	101	80 - 120	<200	ug/L	2.1	20		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9831699	Selenium (Se)	2024/12/17	98	80 - 120	99	80 - 120	<2.0	ug/L	NC	20		
9831699	Silicon (Si)	2024/12/17	99	80 - 120	97	80 - 120	<50	ug/L	0.87	20		
9831699	Silver (Ag)	2024/12/17	96	80 - 120	94	80 - 120	<0.090	ug/L	NC	20		
9831699	Sodium (Na)	2024/12/17	NC	80 - 120	100	80 - 120	<100	ug/L	0.62	20		
9831699	Strontium (Sr)	2024/12/17	NC	80 - 120	95	80 - 120	<1.0	ug/L	0.97	20		
9831699	Thallium (Tl)	2024/12/17	98	80 - 120	96	80 - 120	<0.050	ug/L	NC	20		
9831699	Tin (Sn)	2024/12/17	101	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
9831699	Titanium (Ti)	2024/12/17	98	80 - 120	98	80 - 120	<5.0	ug/L	NC	20		
9831699	Tungsten (W)	2024/12/17	101	80 - 120	101	80 - 120	<1.0	ug/L	NC	20		
9831699	Uranium (U)	2024/12/17	100	80 - 120	97	80 - 120	<0.10	ug/L	5.5	20		
9831699	Vanadium (V)	2024/12/17	100	80 - 120	100	80 - 120	<0.50	ug/L	NC	20		
9831699	Zinc (Zn)	2024/12/17	97	80 - 120	99	80 - 120	<5.0	ug/L	0.25	20		
9831699	Zirconium (Zr)	2024/12/17	103	80 - 120	99	80 - 120	<1.0	ug/L	NC	20		
9832463	Diuron	2024/12/18	82	40 - 130	79	40 - 130	<10	ug/L	NC	40		
9832463	Guthion (Azinphos-methyl)	2024/12/18	94	40 - 130	90	40 - 130	<2.0	ug/L	NC	40		
9833772	Glyphosate	2024/12/18	80	50 - 130	105	50 - 130	<10	ug/L	NC	40		
9833873	2,3,4,6-Tetrachlorophenol	2024/12/19	93	30 - 130	96	30 - 130	<0.50	ug/L	2.9	40		
9833873	2,4,6-Trichlorophenol	2024/12/19	78	30 - 130	80	30 - 130	<0.50	ug/L	5.3	40		
9833873	2,4-D	2024/12/19	87	30 - 130	92	30 - 130	<1.0	ug/L	1.7	40		
9833873	2,4-Dichlorophenol	2024/12/19	69	30 - 130	71	30 - 130	<0.25	ug/L	8.8	40		
9833873	Alachlor	2024/12/19	87	40 - 130	88	40 - 130	<0.50	ug/L	1.1	40		
9833873	Atrazine + Desethyl-atrazine	2024/12/19	59	30 - 130	60	30 - 130	<1.0	ug/L	0.23	40		
9833873	Atrazine	2024/12/19	85	30 - 130	87	30 - 130	<0.50	ug/L	0.49	40		
9833873	Benzo(a)pyrene	2024/12/19	96	30 - 130	102	30 - 130	<0.0050	ug/L	2.2	40		
9833873	Bromoxynil	2024/12/19	89	40 - 130	93	40 - 130	<0.50	ug/L	0.14	40		
9833873	Carbaryl	2024/12/19	88	40 - 130	93	40 - 130	<5.0	ug/L	0.69	40		
9833873	Carbofuran	2024/12/19	88	40 - 130	93	40 - 130	<5.0	ug/L	0.62	40		
9833873	Chlorpyrifos (Dursban)	2024/12/19	87	40 - 130	91	40 - 130	<1.0	ug/L	0.18	40		
9833873	Des-ethyl atrazine	2024/12/19	32	30 - 130	33	30 - 130	<0.50	ug/L	0.48	40		
9833873	Diazinon	2024/12/19	81	40 - 130	85	40 - 130	<1.0	ug/L	1.1	40		
9833873	Dicamba	2024/12/19	81	30 - 130	86	30 - 130	<1.0	ug/L	0.84	40		
9833873	Diclofop-methyl	2024/12/19	93	40 - 130	97	40 - 130	<0.90	ug/L	1.5	40		

QUALITY ASSURANCE REPORT(CONT'D)

			Matrix Spike		SPIKED BLANK		Method Blank		RPD		QC Standard	
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	UNITS	Value (%)	QC Limits	% Recovery	QC Limits
9833873	Dimethoate	2024/12/19	70	40 - 130	74	40 - 130	<2.5	ug/L	2.4	40		
9833873	Malathion	2024/12/19	83	40 - 130	88	40 - 130	<5.0	ug/L	0.87	40		
9833873	MCPA	2024/12/19	92	10 - 130	96	10 - 130	<10	ug/L	1.0	40		
9833873	Metolachlor	2024/12/19	82	40 - 130	84	40 - 130	<0.50	ug/L	0.73	40		
9833873	Metribuzin (Sencor)	2024/12/19	70	40 - 130	69	40 - 130	<5.0	ug/L	5.7	40		
9833873	Pentachlorophenol	2024/12/19	90	25 - 130	94	25 - 130	<0.50	ug/L	0.41	40		
9833873	Phorate	2024/12/19	77	40 - 130	75	40 - 130	<0.50	ug/L	1.4	40		
9833873	Picloram	2024/12/19	30	10 - 130	32	10 - 130	<5.0	ug/L	5.6	40		
9833873	Prometryne	2024/12/19	92	30 - 130	89	30 - 130	<0.25	ug/L	2.9	40		
9833873	Simazine	2024/12/19	72	40 - 130	74	40 - 130	<1.0	ug/L	0.65	40		
9833873	Terbufos	2024/12/19	73	40 - 130	71	40 - 130	<0.50	ug/L	0.20	40		
9833873	Triallate	2024/12/19	89	40 - 130	93	40 - 130	<1.0	ug/L	0.25	40		
9833873	Trifluralin	2024/12/19	114	40 - 130	111	40 - 130	<1.0	ug/L	0.99	40		
9840853	Acetylene	2024/12/20					<0.002	L/m3				
9840853	Ethane	2024/12/20					<0.002	L/m3				
9840853	Ethylene	2024/12/20					<0.002	L/m3	9.3	20		
9840853	Methane	2024/12/20					<0.005	L/m3				
9840853	Propane	2024/12/20					<0.002	L/m3				
9840853	Propylene	2024/12/20					<0.002	L/m3				

N/A = Not Applicable

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

Surrogate: A pure or isotopically labeled compound whose behavior mirrors the analytes of interest. Used to evaluate extraction efficiency.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spike amount was too small to permit a reliable recovery calculation (matrix spike concentration was less than the native sample concentration)

NC (Duplicate RPD): The duplicate RPD was not calculated. The concentration in the sample and/or duplicate was too low to permit a reliable RPD calculation (absolute difference <= 2x RDL).

Bureau Veritas Job #: C4BE177
Report Date: 2024/12/23

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST PHILLIP
Sampler Initials: MA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Cristina Carriere, Senior Scientific Specialist

Louise Harding, Scientific Specialist

Vasan Thiagarajah, Analyst, Compressed Gases

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

C4BE177
2024/12/11 14:55

Bureau Veritas
6740 Campobello Road, Mississauga, Ontario Canada L5N 2L8 Tel:(905) 817-5700 Toll-free:800-563-6266 Fax:(905) 817-5777 www.bvna.com

Page 1 of 1

CHAIN OF CUSTODY RECORD

INVOICE TO:		REPORT TO:		PROJECT INFORMATION:		Laboratory Use Only:	
Company Name:	#14090 WSP Canada Inc.	Company Name:	WSP CANADA INC	Quotation #:	C41059	Bureau Veritas Job #:	Bottle Order #:
Attention:	Central Accounting	Attention:	WILSON REUSING	P.O. #:			1027490
Address:	1931 Robertson Rd Ottawa ON K2H 5B7	Address:	1931 ROBERTSON RD OTTAWA ON	Project:	CA0045364.1132	COC #:	Project Manager:
Tel:	(613) 592-9600 Fax: (613) 592-9601	Tel:	613-592-9600 Fax:	Project Name:	ST. PHILLIP	C#1027490-01-01	Katherine Szozda
Email:	capayablesinvoice@wsp.com	Email:	wilson.reusing@wsp.com	Site #:			
				Sampled By:	B. ARMITAGE		

MOE REGULATED DRINKING WATER OR WATER INTENDED FOR HUMAN CONSUMPTION MUST BE SUBMITTED ON THE BUREAU VERITAS DRINKING WATER CHAIN OF CUSTODY

Regulation 153 (2011)	Other Regulations	Special Instructions
☐ Table 1 ☐ Res/Park ☐ Medi.m/Fine ☐ Table 2 ☐ Ind/Comm ☐ Coarse ☐ Table 3 ☐ Agri/Other ☐ For RSC ☐ Table ___	☐ CCME ☐ Sanitary Sewer Bylaw ☐ Reg 558 ☐ Storm Sewer Bylaw ☐ MISA Municipality ___ ☐ PWQO ☐ Reg 406 Table ___ ☒ Other NOT FOR HUMAN CONSUMPTION	

Include Criteria on Certificate of Analysis (Y/N)? ___

ANALYSIS REQUESTED (PLEASE BE SPECIFIC)

Turnaround Time (TAT) Required:
Please provide advance notice for rush projects

Regular (Standard) TAT: ☒
(will be applied if Rush TAT is not specified):
Standard TAT = 5-7 Working days for most tests..
Please note: Standard TAT for certain tests such as BOD and Dioxins/Furans are > 5 days - contact your Project Manager for details.

Job Specific Rush TAT (if applies to entire submission)
Date Required: ___ Time Required: ___ ☐
Rush Confirmation Number: ___ *(call lab for #)*

	Sample Barcode Label	Sample (Location) Identification	Date Sampled	Time Sampled	Matrix	Field Filtered (please circle): Metals / Hg / Cr VI	Dissolved Ca, Mg, Na + SAR	Redox Potential	Iron Related and Sulphur Related Bacteria	Dissolved Gases in Water	# of Bottles	Comments
1		SA-1	24/12/11	1 PM	GW		AS PER ATTACHED SHEET					
2												
3												
4												
5												
6												
7												
8												
9												
10												

NONT-2024-12-2411

Received in Ottawa
MICRO

* RELINQUISHED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	RECEIVED BY: (Signature/Print)	Date: (YY/MM/DD)	Time	# jars used and not submitted
B. ARMITAGE	24/12/11	2:45PM	Rodrigo da Silva	2024/12/11	14:55	
			S. SUCHAR SALWAN	2024/12/12	08:29	

Laboratory Use Only

Time Sensitive	Temperature (°C) on Recei	Custody Seal	Yes	No
	11/10/10 3/10/9/10 Ice	Present		✓
		Intact		✓

* UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS'S STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/COC-TERMS-AND-CONDITIONS.

* IT IS THE RESPONSIBILITY OF THE RELINQUISHER TO ENSURE THE ACCURACY OF THE CHAIN OF CUSTODY RECORD. AN INCOMPLETE CHAIN OF CUSTODY MAY RESULT IN ANALYTICAL TAT DELAYS.

** SAMPLE CONTAINER, PRESERVATION, HOLD TIME AND PACKAGE INFORMATION CAN BE VIEWED AT WWW.BVNA.COM/ENVIRONMENTAL-LABORATORIES/RESOURCES/CHAIN-CUSTODY-FORMS-COCS.

SAMPLES MUST BE KEPT COOL (< 10° C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

White: Bureau Veritas Yellow: Client
Custody Seal Present Intact
Media Yes No

Bureau Veritas Canada (2019) Inc.

C4BE177
2024/12/11 14:55

WATER ANALYSIS PARAMETERS

THIS SHEET ATTACHED TO CHAIN OF CUSTODY # 1027490-01-01

- Conductivity
- pH
- Alkalinity
- Hardness
- Ion Balance
- Langelier Index
- Sodium Absorption Ratio
- Oxidation/Reduction Potential

- Turbidity
- Colour
- Ultraviolet Transmittance

- Solids, Total Suspended
- Solids, Total Dissolved

- Chemical Oxygen Demand
- Total Organic Carbon
- Dissolved Organic Carbon

- Tannin & Lignin
- Phenols (4AAP)

- Silica

- Ammonia, Total (As N)
- Nitrate (As N)
- Nitrite (As N)
- Total Kjeldahl Nitrogen
- Total Organic Nitrogen

- Total Phosphorus
- Orthophosphate

- Bromide
- Chloride
- Fluoride

- Sulphate
- Sulphide (as S)
- Sulphide (as H_2S)

- Aluminum (Al)
- Antimony (Sb)
- Arsenic (As)
- Barium (Ba)
- Beryllium (Be)
- Bismuth (Bi)
- Boron (B)
- Cadmium (Cd)
- Calcium (Ca)
- Cesium (Cs)
- Chromium (Cr)
- Cobalt (Co)
- Copper (Cu)
- Iron (Ee)
- Lead (Pb)
- Lithium (Li)
- Magnesium (Mg)
- Manganese (Mn)
- Mercury (Hg)
- Molybdenum (Mo)
- Nickel (Ni)
- Potassium (K)
- Selenium (Se)
- Silicon (Si)
- Silver (Ag)
- Sodium (Na)
- Strontium (Sr)
- Thallium (Ti)
- Tin (Sn)
- Titanium (Ti)
- Tungsten (W)
- Uranium (U)
- Vanadium (V)
- Zinc (Z)
- Zirconium (Zr)

- E. coli
- Total Coliform
- Fecal Coliform
- Heterotrophic Plate Count

- Iron Bacteria
- Sulfur Bacteria

- Dissolved Gases

- O. Reg. 170/03 Schedule 23 Inorganics
- O. Reg. 170/03 Schedule 24 Organics

- O. Reg. 153/04 PHC F1-F4, BTEX

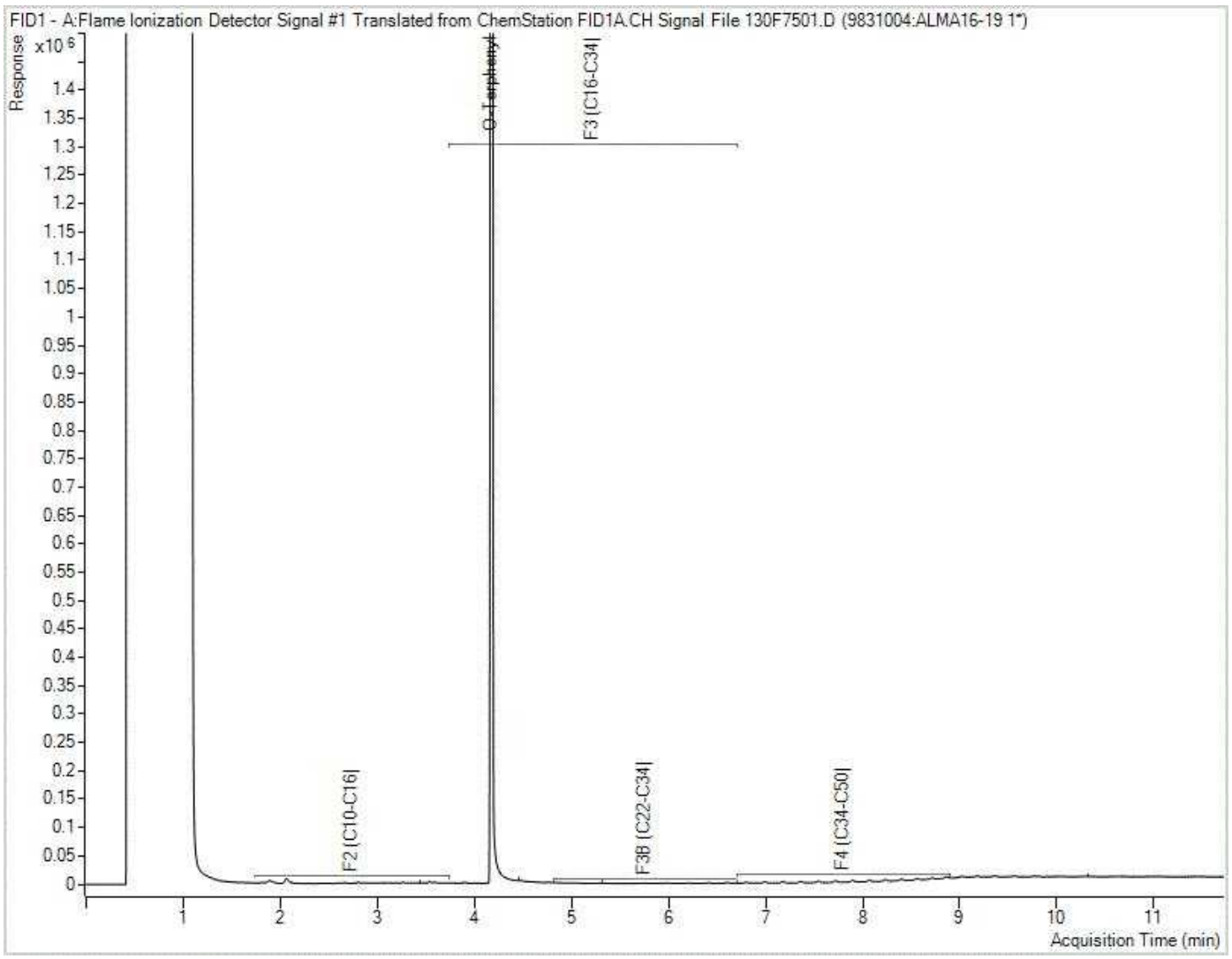
Notes: Results compared to Ontario Drinking Water Quality Standards (ODWQS).

1345 Rosemount Avenue
Cornwall, ON
Canada K6J 3E5

T: +1 613 933-5602
F: +1 613 936-0335
wsp.com

REVISION: APRIL 2023

Petroleum Hydrocarbons F2-F4 in Water Chromatogram



Note: This information is provided for reference purposes only. Should detailed chemist interpretation or fingerprinting be required, please contact the laboratory.

Exceedance Summary Table – ODWS (2002)

Result Exceedances

Sample ID	Bureau Veritas ID	Parameter	Criteria	Result	DL	UNITS
No Exceedances						

The exceedance summary table is for information purposes only and should not be considered a comprehensive listing or statement of conformance to applicable regulatory guidelines.

Your Project #: CA0045364.1132
Site Location: ST. PHILIPS
Your C.O.C. #: N/A

Attention: Wilson Reusing

WSP Canada Inc.
1931 Robertson Rd
Ottawa, ON
CANADA K2H 5B7

Report Date: 2024/12/30
Report #: R8462942
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4BO067
Received: 2024/12/19, 14:05

Sample Matrix: Water
Samples Received: 1

Analyses	Quantity	Date Extracted	Date Analyzed	Laboratory Method	Analytical Method
Total Coliforms/ E. coli, CFU/100mL (1)	1	N/A	2024/12/20	CAM SOP-00551	MECP-E3407
Fecal coliform, (CFU/100mL) (1)	1	N/A	2024/12/20	CAM SOP-00552	SM9222D, MECP E3371
Heterotrophic plate count, (CFU/mL) (1)	1	N/A	2024/12/20	CAM SOP-00512	SM 9215 B
Iron Related Bacteria (1)	1	N/A	2024/12/20	CAM SOP 00554	DBILWO5
Sulfate Reducing Bacteria (1)	1	N/A	2024/12/20	CAM SOP 00554	DBSLWO5

Remarks:

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

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

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

Solid sample results, except biota, are based on dry weight unless otherwise indicated. Organic analyses are not recovery corrected except for isotope dilution methods.
Results relate to samples tested. When sampling is not conducted by Bureau Veritas, results relate to the supplied samples tested.

Reference Method suffix “m” indicates test methods incorporate validated modifications from specific reference methods to improve performance.
* RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
(1) This test was performed by Bureau Veritas Mississauga, 6740 Campobello Rd , Mississauga, ON, L5N 2L8

Your Project #: CA0045364.1132
Site Location: ST. PHILIPS
Your C.O.C. #: N/A

Attention: Wilson Reusing

WSP Canada Inc.
1931 Robertson Rd
Ottawa, ON
CANADA K2H 5B7

Report Date: 2024/12/30
Report #: R8462942
Version: 1 - Final

CERTIFICATE OF ANALYSIS

BUREAU VERITAS JOB #: C4BO067
Received: 2024/12/19, 14:05

Encryption Key

Katherine Szozda
Project Manager
30 Dec 2024 09:54:38

Please direct all questions regarding this Certificate of Analysis to:
Katherine Szozda, Project Manager
Email: Katherine.Szozda@bureauveritas.com
Phone# (613)274-0573 Ext:7063633

==========

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

Bureau Veritas Job #: C4BO067
Report Date: 2024/12/30

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST. PHILIPS
Sampler Initials: MA

MICROBIOLOGY (WATER)

Bureau Veritas ID		AMHT01	
Sampling Date		2024/12/19 12:40	
COC Number		N/A	
	UNITS	**SA-2**	**QC Batch**
Microbiological			
Fecal coliform	CFU/100mL	0	9840814
Heterotrophic plate count	CFU/mL	0	9840815
Iron Related Bacteria	P-A/15mL	ABSENT	9840839
Sulfate Reducing Bacteria	P-A/15mL	ABSENT	9840842
Background	CFU/100mL	0	9840761
Total Coliforms	CFU/100mL	0	9840761
Escherichia coli	CFU/100mL	0	9840761
QC Batch = Quality Control Batch			

Bureau Veritas Job #: C4BO067
Report Date: 2024/12/30

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST. PHILIPS
Sampler Initials: MA

TEST SUMMARY

Bureau Veritas ID: AMHT01
Sample ID: SA-2
Matrix: Water

Collected: 2024/12/19
Shipped:
Received: 2024/12/19

Test Description	Instrumentation	Batch	Extracted	Date Analyzed	Analyst
Total Coliforms/ E. coli, CFU/100mL	PL	9840761	N/A	2024/12/20	Rayane Gama Santos
Fecal coliform, (CFU/100mL)	PL	9840814	N/A	2024/12/20	Rayane Gama Santos
Heterotrophic plate count, (CFU/mL)	PL	9840815	N/A	2024/12/20	Jessica (Ya Ping) Qiang
Iron Related Bacteria		9840839	N/A	2024/12/20	Paramjit Paramjit
Sulfate Reducing Bacteria		9840842	N/A	2024/12/20	Paramjit Paramjit

GENERAL COMMENTS

Each temperature is the average of up to three cooler temperatures taken at receipt

Package 1	7.7°C

Results relate only to the items tested.

Bureau Veritas 100 – 36 Antares Dr. Nepean, ON, K2E 7W5 Phone: 613-274-0573 Website: www.bvna.com

Bureau Veritas Job #: C4BO067
Report Date: 2024/12/30

WSP Canada Inc.
Client Project #: CA0045364.1132
Site Location: ST. PHILIPS
Sampler Initials: MA

VALIDATION SIGNATURE PAGE

The analytical data and all QC contained in this report were reviewed and validated by:

Jessica (Ya Ping) Qiang, Analyst II

Rayane Gama Santos, Analyst 2

Bureau Veritas has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per ISO/IEC 17025, signing the reports. For Service Group specific validation, please refer to the Validation Signatures page if included, otherwise available by request. For Department specific Analyst/Supervisor validation names, please refer to the Test Summary section if included, otherwise available by request. This report is authorized by Rodney Major, General Manager responsible for Ontario Environmental laboratory operations.

C4BO067
2024/12/19 14:05

www.BVNA.com

6740 Campobello Road, Mississauga, Ontario L5N 2L8
Phone: 905-817-5700 Fax: 905-817-5779 Toll Free: 800-563-6266

CHAIN OF CUSTODY RECORD

ENV COC - 00014v6

Invoice Information	Invoice to (requires report) ☐	Report Information (if differs from invoice)		Project Information		LAB USE ONLY - PLACE STICKER HERE
Company:	WSP CANADA	Company:		Quotation #:		
Contact Name:	WILSON REUSING	Contact Name:		P.O. #/ AFE#:		
Street Address:	1931 ROBERTSON RD	Street Address:		Project #:	CA0045364.1132	
City:	OTTAWA Prov: ON Postal Code:	City:	Prov: Postal Code:	Site #:		
Phone:	613. 519-722-4293	Phone:		Site Location:	ST. PHILLIP	Rush Confirmation #:
Email:	wilson.reusing@wsp.com	Email:		Site Location Province:	ON	
Copies:		Copies:		Sampled By:	M. ARMITAGE	

Regulatory Criteria

REG 153: ☐ Table 1 ☐ Table 2 ☐ Table 3 ☐ Table _____ ☐ Res/Park ☐ Ind/Comm ☐ Agri/other ☐ Med/Fine ☐ Coarse ☐ For RSC

OTHER: ☐ CCME ☐ Reg 406 Table: _____ ☐ Reg 558* ☐ Sanitary Sewer Bylaw *min 3 day TAT ☐ Storm Sewer Bylaw ☐ MISA Municipality _____ ☐ PWQO ☐ Oth _____

Include Criteria on Certificate of Analysis (check if yes): ☐

SAMPLES MUST BE KEPT COOL (<10°C) FROM TIME OF SAMPLING UNTIL DELIVERY TO BUREAU VERITAS

	Sample Identification (Please print or Type)	Date Sampled YYYY	MM	DD	Time (24hr) HH	MM	Matrix	1 FIELD FILTERED	2 FIELD PRESERVED	3 LAB FILTRATION REQUIRED	4 BTEX/ F1	5 F2 - F4	6 VOCs	7 Reg 153 metals and inorganics	8 Reg 153 ICPMS metals	9 Reg 153 metals (Hg, CrVI, ICPMS + Sals, HWS - B)	10 E. coli	11 TC	12 FC	13 HPC	14 ILON BACTERIA	15 SULFER BACTERIA	16	17	18	19	20	21 # OF CONTAINERS SUBMITTED	22 HOLD - DO NOT ANALYZE
1	SA-2	24	12	19	12	40	GW										✓	✓	✓	✓	✓	✓							
2																													
3																													
4																													
5																													
6																													
7																													
8																													
9																													
10																													
11																													
12																													

NONT-2024-12-4378

MICRO

Received in Ottawa

Regular Turnaround Time (TAT)

☐ 5 to 7 Day ☐ 10 Day

Rush Turnaround Time (TAT) *Surcharges apply

☐ Same Day ☐ 1 Day ☐ 2 Day ☐ 3 Day ☐ 4 Day

Date Required: YYYY MM DD

Comments

*UNLESS OTHERWISE AGREED TO IN WRITING, WORK SUBMITTED ON THIS CHAIN OF CUSTODY IS SUBJECT TO BUREAU VERITAS STANDARD TERMS AND CONDITIONS. SIGNING OF THIS CHAIN OF CUSTODY DOCUMENT IS ACKNOWLEDGMENT AND ACCEPTANCE OF OUR TERMS AND CONDITIONS WHICH ARE AVAILABLE FOR VIEWING AT WWW.BVNA.COM/TERMS-AND-CONDITIONS OR BY CALLING THE LABORATORY LISTED ABOVE TO OBTAIN A COPY

LAB USE ONLY	Yes	No	°C	1	2	3
Seal present		✓	Not packed			
Seal intact		✓		7	8	8
Cooling media present	✓					

LAB USE ONLY	Yes	No	°C	1	2	3
Seal present	✓					
Seal intact	✓					
Cooling media present	✓			7	2	2

LAB USE ONLY	Yes	No	°C	1	2	3	Temperature reading by:
Seal present							
Seal intact							
Cooling media present							

	Relinquished by: (Signature/ Print)	Date YYYY	MM	DD	Time HH	MM	Received by: (Signature/ Print)	Date YYYY	MM	DD	Time HH	MM	Special instructions
1	M. ARMITAGE	24	12	19	2PM		Accepted via Santrax DBT	2024	12	19	14	05	
2							SUSAN SULLIVAN	2024	12	20	08	25	

APPENDIX E

Historical Analytical Results

Ontario **Drinking-Water Systems Regulation O. Reg. 170/03**

2019-2020 ANNUAL REPORT

Drinking-Water System Number:	**260 015 574**
Drinking-Water System Name:	St. Philip Catholic School
Drinking-Water System Owner:	Ottawa Catholic School Board
Drinking-Water System Category:	Small Non-Municipal Non-Residential
Period being reported:	**April 01, 2019 – March 31, 2020**

Complete if your Category is Large Municipal Residential or Small Municipal Residential	***Complete for all other Categories.***
Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [ ]	**Number of Designated Facilities served:** 1
Is your annual report available to the public at no charge on a web site on the Internet? Yes [ ] No [ ]	**Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [X] No [ ]**
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	**Number of Interested Authorities you report to:** 1
	Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [X] No [ ]

Indicate how you notified system users that your annual report is available and is free of charge.

- **[ ] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[ ] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[X] Public access/notice via other method** - Notice in School Newsletter

Describe your Drinking-Water System

St. Philip Catholic School is served by an on-site well supply. The drilled well is equipped with a deep well submersible pump. The well casing is extended above grade. Ultraviolet (UV) disinfection system, and there are dual water softeners and 2 x 10" sediment filters preceding the UV system.

List all water treatment chemicals used over this reporting period

Water Softening Salt

Were any significant expenses incurred to?

[X] Install required equipment
[ ] Repair required equipment
[ ] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

There were no significant expenses for the period of April 2019 to March 2020

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	12	0 – 0	0 – 0	N/A	
Distribution	12	0 – 0	0 – 0	N/A	

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	**N/A**	**N/A**
Chlorine	**N/A**	**N/A**

***NOTE**: For continuous monitors use 8760 as the number of samples.*

***NOTE**: Record the unit of measure if it is **not** milligrams per litre.*

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Mar 23, 2017	<0.0005	mg/L	None
Arsenic	Mar 23, 2017	<0.001	mg/L	None
Barium	Mar 23, 2017	<0.01	mg/L	None
Boron	Mar 23, 2017	0.24	mg/L	None
Cadmium	Mar 23, 2017	<0.0001	mg/L	None
Chromium	Mar 23, 2017	0.001	mg/L	None
Lead – S (DF1 Grd Flr)	Jun 26, 2019	<0.001	mg/L	None
Lead – F (DF1 Grd Flr)	Jun 26, 2019	<0.001	mg/L	None
Mercury	Mar 23, 2017	<0.001	mg/L	None
Selenium	Mar 23, 2017	<0.001	mg/L	None
Sodium	July 25, 2017	205	mg/L	Yes *
Sodium (Raw)	July 6, 2017	39	mg/L	None
Uranium	Mar 23, 2017	<0.001	mg/L	None
Fluoride	July 25, 2017	0.35	mg/L	None
Nitrite	Apr 23, 2019	<0.10	mg/L	None
Nitrate	Apr 23, 2019	<0.10	mg/L	None
Nitrite	Jul 23, 2019	<0.10	mg/L	None
Nitrate	Jul 23, 2019	<0.10	mg/L	None
Nitrite	Oct 22, 2019	<0.10	mg/L	None
Nitrate	Oct 22, 2019	<0.10	mg/L	None
Nitrite	Jan 20, 2020	<0.10	mg/L	None
Nitrate	Jan 20, 2020	<0.10	mg/L	None

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
July 25, 2017	Sodium	205	mg/L	Re-sample	Aug 29, 2017
Aug 29, 2017	Sodium	206	mg/l	Signs Posted	

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Atrazine	Mar 23, 2017	<1.0	µg/L	None
Aldicarb	Mar 23, 2017	<9	µg/L	None
Aldrin + Dieldrin	Mar 23, 2017	<0.006	µg/L	None
Atrazine + N-dealkylated metobolites	Mar 23, 2017	<0.2	µg/L	None
Azinphos-methyl	Mar 23, 2017	<2	µg/L	None
Bendiocarb	Mar 23, 2017	<2	µg/L	None
Benzene	Mar 23, 2017	<0.5	µg/L	None
Benzo(a)pyrene	Mar 23, 2017	<0.01	µg/L	None
Bromoxynil	Mar 23, 2017	<0.5	µg/L	None
Carbaryl	Mar 23, 2017	<5	µg/L	None
Carbofuran	Mar 23, 2017	<5	µg/L	None

Carbon Tetrachloride	Mar 23, 2017	<0.2	µg/L	None
Chlordane (Total)	Mar 23, 2017	<0.006	µg/L	None
Chlorpyrifos	Mar 23, 2017	<1	µg/L	None
De-ethylated atrazine	Mar 23, 2017	<1.0	µg/L	None
Diazinon	Mar 23, 2017	<1	µg/L	None
Dicamba	Mar 23, 2017	<1	µg/L	None
1,2-Dichlorobenzene	Mar 23, 2017	<0.4	µg/L	None
1,4-Dichlorobenzene	Mar 23, 2017	<0.4	µg/L	None
1,2-Dichloroethane-d4	Mar 23, 2017	114	%	None
1,1-Dichloroethylene (vinylidene chloride)	Mar 23, 2017	<0.5	µg/L	None
Dichloromethane	Mar 23, 2017	<4.0	µg/L	None
2-4 Dichlorophenol	Mar 23, 2017	<0.5	µg/L	None
2,4-Dichlorophenoxy acetic acid (2,4-D)	Mar 23, 2017	<1	µg/L	None
Diclofop-methyl	Mar 23, 2017	<0.9	µg/L	None
Dimethoate	Mar 23, 2017	<2.5	µg/L	None
Diquat	Mar 23, 2017	<5	µg/L	None
Diuron	Mar 23, 2017	<10	µg/L	None
g-chlordane	Mar 23, 2017	<0.006	µg/L	None
Glyphosate	Mar 23, 2017	<10	µg/L	None
Malathion	Mar 23, 2017	<5	µg/L	None
MCPA	Mar 23, 2017	<10	µg/L	None
Metolachlor	Mar 23, 2017	<1.0	µg/L	None
Metribuzin	Mar 23, 2017	<5	µg/L	None
Monochlorobenzene	Mar 23, 2017	<0.2	µg/L	None
op-DDT	Mar 23, 2017	<0.006	µg/L	None
Oxychlordane	Mar 23, 2017	<0.006	µg/L	None
Paraquat	Mar 23, 2017	<1	µg/L	None
Pentachlorophenol	Mar 23, 2017	<0.5	µg/L	None
Phorate	Mar 23, 2017	<0.5	µg/L	None
Picloram	Mar 23, 2017	<5	µg/L	None
pp-DDD	Mar 23, 2017	<0.006	µg/L	None
pp-DDE	Mar 23, 2017	<0.006	µg/L	None
pp-DDT	Mar 23, 2017	<0.006	µg/L	None
Polychlorinated Biphenyls(PCB)	Mar 23, 2017	<0.1	µg/L	None
Prometryne	Mar 23, 2017	<0.25	µg/L	None
Simazine	Mar 23, 2017	<1	µg/L	None
Terbufos	Mar 23, 2017	<0.4	µg/L	None
Tetrachloroethylene	Mar 23, 2017	<0.3	µg/L	None
2,3,4,6-Tetrachlorophenol	Mar 23, 2017	<0.5	µg/L	None
Triallate	Mar 23, 2017	<1	µg/L	None
Trichloroethylene	Mar 23, 2017	<0.3	µg/L	None
2,4,6-Trichlorophenol	Mar 23, 2017	<0.5	µg/L	None
Toluene-d8	Mar 23, 2017	101	%	None
Trifluralin	Mar 23, 2017	<0.1	µg/L	None
Vinyl Chloride	Mar 23, 2017	<0.2	µg/L	None

Ontario **Drinking-Water Systems Regulation O. Reg. 170/03**

2020-2021 ANNUAL REPORT

Drinking-Water System Number:	**260 015 574**
Drinking-Water System Name:	St. Philip Catholic School
Drinking-Water System Owner:	Ottawa Catholic School Board
Drinking-Water System Category:	Small Non-Municipal Non-Residential
Period being reported:	**April 01, 2020 – March 31, 2021**

Complete if your Category is Large Municipal Residential or Small Municipal Residential	***Complete for all other Categories.***
Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [ ]	**Number of Designated Facilities served:** 1
Is your annual report available to the public at no charge on a web site on the Internet? Yes [ ] No [ ]	**Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [X] No [ ]**
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	**Number of Interested Authorities you report to:** 1
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Indicate how you notified system users that your annual report is available and is free of charge.

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- **[ ] Public access/notice via a Public Library**
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Describe your Drinking-Water System

St. Philip Catholic School is served by an on-site well supply. The drilled well is equipped with a deep well submersible pump. The well casing is extended above grade. Ultraviolet (UV) disinfection system, and there are dual water softeners and 2 x 10" sediment filters preceding the UV system.

List all water treatment chemicals used over this reporting period

Water Softening Salt

Were any significant expenses incurred to?

[ ] Install required equipment
[ ] Repair required equipment
[x] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

The dual water softener system was replaced at an approximate cost of $5,600.

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	12	0 – 0	0 – 0	N/A	
Distribution	12	0 – 0	0 – 0	N/A	

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	**N/A**	**N/A**
Chlorine	**N/A**	**N/A**

***NOTE**: For continuous monitors use 8760 as the number of samples.*

***NOTE**: Record the unit of measure if it is **not** milligrams per litre.*

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Mar 23, 2017	<0.0005	mg/L	None
Arsenic	Mar 23, 2017	<0.001	mg/L	None
Barium	Mar 23, 2017	<0.01	mg/L	None
Boron	Mar 23, 2017	0.24	mg/L	None
Cadmium	Mar 23, 2017	<0.0001	mg/L	None
Chromium	Mar 23, 2017	0.001	mg/L	None
Lead – S (DF2BF Grd Flr)	Jun 25, 2020	<0.001	mg/L	None
Lead – F (DF2BF Grd Flr)	Jun 25, 2020	<0.001	mg/L	None
Mercury	Mar 23, 2017	<0.001	mg/L	None
Selenium	Mar 23, 2017	<0.001	mg/L	None
Sodium	July 25, 2017	205	mg/L	Yes *
Sodium (Raw)	July 6, 2017	39	mg/L	None
Uranium	Mar 23, 2017	<0.001	mg/L	None
Fluoride	July 25, 2017	0.35	mg/L	None
Nitrite	Apr 20, 2020	<0.10	mg/L	None
Nitrate	Apr 20, 2020	<0.10	mg/L	None
Nitrite	Jul 28, 2020	<0.10	mg/L	None
Nitrate	Jul 28, 2020	<0.10	mg/L	None
Nitrite	Oct 20, 2020	<0.10	mg/L	None
Nitrate	Oct 20, 2020	<0.10	mg/L	None
Nitrite	Jan 19, 2021	<0.10	mg/L	None
Nitrate	Jan 19, 2021	<0.10	mg/L	None

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
July 25, 2017	Sodium	205	mg/L	Re-sample	Aug 29, 2017
Aug 29, 2017	Sodium	206	mg/l	Signs Posted	

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Atrazine	Mar 23, 2017	<1.0	µg/L	None
Aldicarb	Mar 23, 2017	<9	µg/L	None
Aldrin + Dieldrin	Mar 23, 2017	<0.006	µg/L	None
Atrazine + N-dealkylated metobolites	Mar 23, 2017	<0.2	µg/L	None
Azinphos-methyl	Mar 23, 2017	<2	µg/L	None
Bendiocarb	Mar 23, 2017	<2	µg/L	None
Benzene	Mar 23, 2017	<0.5	µg/L	None
Benzo(a)pyrene	Mar 23, 2017	<0.01	µg/L	None
Bromoxynil	Mar 23, 2017	<0.5	µg/L	None
Carbaryl	Mar 23, 2017	<5	µg/L	None
Carbofuran	Mar 23, 2017	<5	µg/L	None

Carbon Tetrachloride	Mar 23, 2017	<0.2	µg/L	None
Chlordane (Total)	Mar 23, 2017	<0.006	µg/L	None
Chlorpyrifos	Mar 23, 2017	<1	µg/L	None
De-ethylated atrazine	Mar 23, 2017	<1.0	µg/L	None
Diazinon	Mar 23, 2017	<1	µg/L	None
Dicamba	Mar 23, 2017	<1	µg/L	None
1,2-Dichlorobenzene	Mar 23, 2017	<0.4	µg/L	None
1,4-Dichlorobenzene	Mar 23, 2017	<0.4	µg/L	None
1,2-Dichloroethane-d4	Mar 23, 2017	114	%	None
1,1-Dichloroethylene (vinylidene chloride)	Mar 23, 2017	<0.5	µg/L	None
Dichloromethane	Mar 23, 2017	<4.0	µg/L	None
2-4 Dichlorophenol	Mar 23, 2017	<0.5	µg/L	None
2,4-Dichlorophenoxy acetic acid (2,4-D)	Mar 23, 2017	<1	µg/L	None
Diclofop-methyl	Mar 23, 2017	<0.9	µg/L	None
Dimethoate	Mar 23, 2017	<2.5	µg/L	None
Diquat	Mar 23, 2017	<5	µg/L	None
Diuron	Mar 23, 2017	<10	µg/L	None
g-chlordane	Mar 23, 2017	<0.006	µg/L	None
Glyphosate	Mar 23, 2017	<10	µg/L	None
Malathion	Mar 23, 2017	<5	µg/L	None
MCPA	Mar 23, 2017	<10	µg/L	None
Metolachlor	Mar 23, 2017	<1.0	µg/L	None
Metribuzin	Mar 23, 2017	<5	µg/L	None
Monochlorobenzene	Mar 23, 2017	<0.2	µg/L	None
op-DDT	Mar 23, 2017	<0.006	µg/L	None
Oxychlordane	Mar 23, 2017	<0.006	µg/L	None
Paraquat	Mar 23, 2017	<1	µg/L	None
Pentachlorophenol	Mar 23, 2017	<0.5	µg/L	None
Phorate	Mar 23, 2017	<0.5	µg/L	None
Picloram	Mar 23, 2017	<5	µg/L	None
pp-DDD	Mar 23, 2017	<0.006	µg/L	None
pp-DDE	Mar 23, 2017	<0.006	µg/L	None
pp-DDT	Mar 23, 2017	<0.006	µg/L	None
Polychlorinated Biphenyls(PCB)	Mar 23, 2017	<0.1	µg/L	None
Prometryne	Mar 23, 2017	<0.25	µg/L	None
Simazine	Mar 23, 2017	<1	µg/L	None
Terbufos	Mar 23, 2017	<0.4	µg/L	None
Tetrachloroethylene	Mar 23, 2017	<0.3	µg/L	None
2,3,4,6-Tetrachlorophenol	Mar 23, 2017	<0.5	µg/L	None
Triallate	Mar 23, 2017	<1	µg/L	None
Trichloroethylene	Mar 23, 2017	<0.3	µg/L	None
2,4,6-Trichlorophenol	Mar 23, 2017	<0.5	µg/L	None
Toluene-d8	Mar 23, 2017	101	%	None
Trifluralin	Mar 23, 2017	<0.1	µg/L	None
Vinyl Chloride	Mar 23, 2017	<0.2	µg/L	None

Ontario **Drinking-Water Systems Regulation O. Reg. 170/03**

2021-2022 ANNUAL REPORT

Drinking-Water System Number:	**260 015 574**
Drinking-Water System Name:	St. Philip Catholic School
Drinking-Water System Owner:	Ottawa Catholic School Board
Drinking-Water System Category:	Small Non-Municipal Non-Residential
Period being reported:	**April 01, 2021 – March 31, 2022**

Complete if your Category is Large Municipal Residential or Small Municipal Residential	***Complete for all other Categories.***
Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [ ]	**Number of Designated Facilities served:** 1
Is your annual report available to the public at no charge on a web site on the Internet? Yes [ ] No [ ]	**Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [X] No [ ]**
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	**Number of Interested Authorities you report to:** 1
	Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [X] No [ ]

Indicate how you notified system users that your annual report is available and is free of charge.

- **[ ] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[ ] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[X] Public access/notice via other method** - Notice in School Newsletter

Describe your Drinking-Water System

St. Philip Catholic School is served by an on-site well supply. The drilled well is equipped with a deep well submersible pump. The well casing is extended above grade. Ultraviolet (UV) disinfection system, and there are dual water softeners and 2 x 10" sediment filters preceding the UV system.

List all water treatment chemicals used over this reporting period

Water Softening Salt

Were any significant expenses incurred to?

[ ] Install required equipment
[ ] Repair required equipment
[x] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

U.V. Ballast replacement February 2021. Cost $1400

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	12	0 – 0	0 – 0	N/A	
Distribution	12	0 – 0	0 – 0	N/A	

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	**N/A**	**N/A**
Chlorine	**N/A**	**N/A**

***NOTE**: For continuous monitors use 8760 as the number of samples.*

***NOTE**: Record the unit of measure if it is **not** milligrams per litre.*

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Mar 22, 2022	<0.0005	mg/L	None
Arsenic	Mar 22, 2022	<0.001	mg/L	None
Barium	Mar 22, 2022	<0.01	mg/L	None
Boron	Mar 22, 2022	0.25	mg/L	None
Cadmium	Mar 22, 2022	<0.0001	mg/L	None
Chromium	Mar 22, 2022	0.001	mg/L	None
Lead – S (DF2B Grd Flr)	Jun 30, 2021	<0.002	mg/L	None
Lead – F (DF2B Grd Flr)	Jun 30, 2021	<0.001	mg/L	None
Mercury	Mar 22, 2022	<0.0001	mg/L	None
Selenium	Mar 22, 2022	<0.001	mg/L	None
Sodium	July 25, 2017	205	mg/L	Yes *
Sodium (Raw)	July 6, 2017	39	mg/L	None
Uranium	Mar 22, 2022	<0.001	mg/L	None
Fluoride	July 25, 2017	0.35	mg/L	None
Nitrite	Apr 20, 2021	<0.10	mg/L	None
Nitrate	Apr 20, 2021	<0.10	mg/L	None
Nitrite	Jul 26, 2021	<0.10	mg/L	None
Nitrate	Jul 26, 2021	<0.10	mg/L	None
Nitrite	Oct 19, 2021	<0.10	mg/L	None
Nitrate	Oct 19, 2021	<0.10	mg/L	None
Nitrite	Jan 19, 2022	<0.10	mg/L	None
Nitrate	Jan 19, 2022	<0.10	mg/L	None

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
July 25, 2017	Sodium	205	mg/L	Re-sample	Aug 29, 2017
Aug 29, 2017	Sodium	206	mg/l	Signs Posted	

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Mar 22, 2022	<0.5	µg/L	None
Atrazine + N-dealkylated metobolites	Mar 22, 2022	<1.0	µg/L	None
Azinphos-methyl	Mar 22, 2022	<2	µg/L	None
Benzene	Mar 22, 2022	<0.5	µg/L	None
Benzo(a)pyrene	Mar 22, 2022	<0.01	µg/L	None
4-bromofluorobenzene	Mar 22, 2022	76	%	None
Bromoxynil	Mar 22, 2022	<0.5	µg/L	None
Carbaryl	Mar 22, 2022	<5	µg/L	None
Carbofuran	Mar 22, 2022	<5	µg/L	None
Carbon Tetrachloride	Mar 22, 2022	<0.2	µg/L	None
Chlorpyrifos	Mar 22, 2022	<1	µg/L	None

Diazinon	Mar 22, 2022	<1	µg/L	None
Dicamba	Mar 22, 2022	<1	µg/L	None
1,2-Dichlorobenzene	Mar 22, 2022	<0.4	µg/L	None
1,4-Dichlorobenzene	Mar 22, 2022	<0.4	µg/L	None
1,2-Dichloroethane	Mar 22, 2022	<0.2	µg/L	None
1,2-Dichloroethane-d4	Mar 22, 2022	96	%	None
1,1-Dichloroethylene (vinylidene chloride)	Mar 22, 2022	<0.5	µg/L	None
Dichloromethane	Mar 22, 2022	<4.0	µg/L	None
2-4 Dichlorophenol	Mar 22, 2022	<1.0	µg/L	None
2,4-Dichlorophenoxyacetic acid (2,4-D)	Mar 22, 2022	<1	µg/L	None
Diclofop-methyl	Mar 22, 2022	<0.9	µg/L	None
Dimethoate	Mar 22, 2022	<2.5	µg/L	None
Diquat	Mar 22, 2022	<5	µg/L	None
Diuron	Mar 22, 2022	<10	µg/L	None
Glyphosate	Mar 22, 2022	<10	µg/L	None
Malathion	Mar 22, 2022	<0.5	µg/L	None
MCPA	Mar 22, 2022	<10	µg/L	None
Metolachlor	Mar 22, 2022	<1.0	µg/L	None
Metribuzin	Mar 22, 2022	<5	µg/L	None
Monochlorobenzene	Mar 22, 2022	<0.5	µg/L	None
Paraquat	Mar 22, 2022	<1	µg/L	None
Pentachlorophenol	Mar 22, 2022	<1.0	µg/L	None
Phorate	Mar 22, 2022	<0.5	µg/L	None
Picloram	Mar 22, 2022	<5	µg/L	None
Polychlorinated Biphenyls(PCB)	Mar 22, 2022	<0.1	µg/L	None
Prometryne	Mar 22, 2022	<0.25	µg/L	None
Simazine	Mar 22, 2022	<1	µg/L	None
Terbufos	Mar 22, 2022	<0.4	µg/L	None
Tetrachloroethylene	Mar 22, 2022	<0.3	µg/L	None
2,3,4,6-Tetrachlorophenol	Mar 22, 2022	<1.0	µg/L	None
Triallate	Mar 22, 2022	<1	µg/L	None
Trichloroethylene	Mar 22, 2022	<0.3	µg/L	None
2,4,6-Trichlorophenol	Mar 22, 2022	<0.7	µg/L	None
Toluene-d8	Mar 22, 2022	98	%	None
Trifluralin	Mar 22, 2022	<1.0	µg/L	None
Vinyl Chloride	Mar 22, 2022	<0.2	µg/L	None

Ontario **Drinking-Water Systems Regulation O. Reg. 170/03**

2022-2023 ANNUAL REPORT

Drinking-Water System Number:	**260 015 574**
Drinking-Water System Name:	St. Philip Catholic School
Drinking-Water System Owner:	Ottawa Catholic School Board
Drinking-Water System Category:	Small Non-Municipal Non-Residential
Period being reported:	**April 01, 2022 – March 31, 2023**

Complete if your Category is Large Municipal Residential or Small Municipal Residential	***Complete for all other Categories.***
Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [ ]	**Number of Designated Facilities served:** 1
Is your annual report available to the public at no charge on a web site on the Internet? Yes [ ] No [ ]	**Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [X] No [ ]**
Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.	**Number of Interested Authorities you report to:** 1
	Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [X] No [ ]

Indicate how you notified system users that your annual report is available and is free of charge.

- **[ ] Public access/notice via the web**
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- **[ ] Public access/notice via a newspaper**
- **[ ] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[X] Public access/notice via other method** - Notice in School Newsletter

Describe your Drinking-Water System

St. Philip Catholic School is served by an on-site well supply. The drilled well is equipped with a deep well submersible pump. The well casing is extended above grade. Ultraviolet (UV) disinfection system, and there are dual water softeners and 2 x 10" sediment filters preceding the UV system.

List all water treatment chemicals used over this reporting period

Water Softening Salt

Were any significant expenses incurred to?

[ ] Install required equipment
[ ] Repair required equipment
[x] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

U.V. Ballast replacement February 2021. Cost $1400

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	12	0 – 0	0 – 0	N/A	
Distribution	12	0 – 0	0 – 0	N/A	

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	**N/A**	**N/A**
Chlorine	**N/A**	**N/A**

***NOTE**: For continuous monitors use 8760 as the number of samples.*

***NOTE**: Record the unit of measure if it is **not** milligrams per litre.*

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Mar 22, 2022	<0.0005	mg/L	None
Arsenic	Mar 22, 2022	<0.001	mg/L	None
Barium	Mar 22, 2022	<0.01	mg/L	None
Boron	Mar 22, 2022	0.25	mg/L	None
Cadmium	Mar 22, 2022	<0.0001	mg/L	None
Chromium	Mar 22, 2022	0.001	mg/L	None
Lead – S (DF2B Grd Flr)	Jun 30, 2021	<0.002	mg/L	None
Lead – F (DF2B Grd Flr)	Jun 30, 2021	<0.001	mg/L	None
Mercury	Mar 22, 2022	<0.0001	mg/L	None
Selenium	Mar 22, 2022	<0.001	mg/L	None
Sodium	July 26, 2022	214	mg/L	Yes *
Uranium	Mar 22, 2022	<0.001	mg/L	None
Fluoride	June 27, 2022	0.34	mg/L	None
Nitrite	Apr 29, 2022	<0.10	mg/L	None
Nitrate	Apr 29, 2022	<0.10	mg/L	None
Nitrite	Jul 26, 2022	<0.10	mg/L	None
Nitrate	Jul 26, 2022	<0.10	mg/L	None
Nitrite	Oct 18, 2022	<0.10	mg/L	None
Nitrate	Oct 18, 2022	<0.10	mg/L	None
Nitrite	Jan 23, 2023	<0.10	mg/L	None
Nitrate	Jan 23, 2023	<0.10	mg/L	None

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
July 25, 2017	Sodium	205	mg/L	Re-sample	Aug 29, 2017
Aug 29, 2017	Sodium	206	mg/l	Signs Posted	

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Mar 22, 2022	<0.5	µg/L	None
Atrazine + N-dealkylated metobolites	Mar 22, 2022	<1.0	µg/L	None
Azinphos-methyl	Mar 22, 2022	<2	µg/L	None
Benzene	Mar 22, 2022	<0.5	µg/L	None
Benzo(a)pyrene	Mar 22, 2022	<0.01	µg/L	None
4-bromofluorobenzene	Mar 22, 2022	76	%	None
Bromoxynil	Mar 22, 2022	<0.5	µg/L	None
Carbaryl	Mar 22, 2022	<5	µg/L	None
Carbofuran	Mar 22, 2022	<5	µg/L	None
Carbon Tetrachloride	Mar 22, 2022	<0.2	µg/L	None
Chlorpyrifos	Mar 22, 2022	<1	µg/L	None
Diazinon	Mar 22, 2022	<1	µg/L	None

Dicamba	Mar 22, 2022	<1	µg/L	None
1,2-Dichlorobenzene	Mar 22, 2022	<0.4	µg/L	None
1,4-Dichlorobenzene	Mar 22, 2022	<0.4	µg/L	None
1,2-Dichloroethane	Mar 22, 2022	<0.2	µg/L	None
1,2-Dichloroethane-d4	Mar 22, 2022	96	%	None
1,1-Dichloroethylene (vinylidene chloride)	Mar 22, 2022	<0.5	µg/L	None
Dichloromethane	Mar 22, 2022	<4.0	µg/L	None
2-4 Dichlorophenol	Mar 22, 2022	<1.0	µg/L	None
2,4-Dichlorophenoxyacetic acid (2,4-D)	Mar 22, 2022	<1	µg/L	None
Diclofop-methyl	Mar 22, 2022	<0.9	µg/L	None
Dimethoate	Mar 22, 2022	<2.5	µg/L	None
Diquat	Mar 22, 2022	<5	µg/L	None
Diuron	Mar 22, 2022	<10	µg/L	None
Glyphosate	Mar 22, 2022	<10	µg/L	None
Malathion	Mar 22, 2022	<0.5	µg/L	None
MCPA	Mar 22, 2022	<10	µg/L	None
Metolachlor	Mar 22, 2022	<1.0	µg/L	None
Metribuzin	Mar 22, 2022	<5	µg/L	None
Monochlorobenzene	Mar 22, 2022	<0.5	µg/L	None
Paraquat	Mar 22, 2022	<1	µg/L	None
Pentachlorophenol	Mar 22, 2022	<1.0	µg/L	None
Phorate	Mar 22, 2022	<0.5	µg/L	None
Picloram	Mar 22, 2022	<5	µg/L	None
Polychlorinated Biphenyls(PCB)	Mar 22, 2022	<0.1	µg/L	None
Prometryne	Mar 22, 2022	<0.25	µg/L	None
Simazine	Mar 22, 2022	<1	µg/L	None
Terbufos	Mar 22, 2022	<0.4	µg/L	None
Tetrachloroethylene	Mar 22, 2022	<0.3	µg/L	None
2,3,4,6-Tetrachlorophenol	Mar 22, 2022	<1.0	µg/L	None
Triallate	Mar 22, 2022	<1	µg/L	None
Trichloroethylene	Mar 22, 2022	<0.3	µg/L	None
2,4,6-Trichlorophenol	Mar 22, 2022	<0.7	µg/L	None
Toluene-d8	Mar 22, 2022	98	%	None
Trifluralin	Mar 22, 2022	<1.0	µg/L	None
Vinyl Chloride	Mar 22, 2022	<0.2	µg/L	None

Ontario **Drinking-Water Systems Regulation O. Reg. 170/03**

2023-2024 ANNUAL REPORT

Drinking-Water System Number:	**260 015 574**
Drinking-Water System Name:	St. Philip Catholic School
Drinking-Water System Owner:	Ottawa Catholic School Board
Drinking-Water System Category:	Small Non-Municipal Non-Residential
Period being reported:	**April 01, 2023 – March 31, 2024**

Complete if your Category is Large Municipal Residential or Small Municipal Residential	***Complete for all other Categories.***
Does your Drinking-Water System serve more than 10,000 people? Yes [ ] No [ ]	**Number of Designated Facilities served:** 1
Is your annual report available to the public at no charge on a web site on the Internet? Yes [ ] No [ ]	**Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [X] No [ ]**
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Describe your Drinking-Water System

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[ ] Install required equipment
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[x] Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred

U.V. Ballast replacement February 2021. Cost $1400

Microbiological testing done under the Schedule 10, 11 or 12 of Regulation 170/03, during this reporting period.

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	12	0 – 0	0 – 0	N/A	
Distribution	12	0 – 0	0 – 0	N/A	

Operational testing done under Schedule 7, 8 or 9 of Regulation 170/03 during the period covered by this Annual Report.

	Number of Grab Samples	Range of Results (min #)-(max #)
Turbidity	**12**	**0.21 - 0.98**
Chlorine	**N/A**	**N/A**

***NOTE**: For continuous monitors use 8760 as the number of samples.*

***NOTE**: Record the unit of measure if it is **not** milligrams per litre.*

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	Mar 22, 2022	<0.0005	mg/L	None
Arsenic	Mar 22, 2022	<0.001	mg/L	None
Barium	Mar 22, 2022	<0.01	mg/L	None
Boron	Mar 22, 2022	0.25	mg/L	None
Cadmium	Mar 22, 2022	<0.0001	mg/L	None
Chromium	Mar 22, 2022	0.001	mg/L	None
Lead – S (DF2B Grd Flr)	Jun 30, 2021	<0.002	mg/L	None
Lead – F (DF2B Grd Flr)	Jun 30, 2021	<0.001	mg/L	None
Mercury	Mar 22, 2022	<0.0001	mg/L	None
Selenium	Mar 22, 2022	<0.001	mg/L	None
Sodium	July 26, 2022	214	mg/L	Yes *
Uranium	Mar 22, 2022	<0.001	mg/L	None
Fluoride	June 27, 2022	0.34	mg/L	None
Nitrite	Apr 18, 2023	<0.10	mg/L	None
Nitrate	Apr 18, 2023	<0.10	mg/L	None
Nitrite	Jul 25, 2023	<0.10	mg/L	None
Nitrate	Jul 25, 2023	<0.10	mg/L	None
Nitrite	Oct 17, 2023	<0.10	mg/L	None
Nitrate	Oct 17, 2023	<0.10	mg/L	None
Nitrite	Jan 24, 2024	<0.10	mg/L	None
Nitrate	Jan 24, 2024	<0.10	mg/L	None

Provide details on the notices submitted in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 and reported to Spills Action Centre

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
July 25, 2017	Sodium	205	mg/L	Re-sample	Aug 29, 2017
Aug 29, 2017	Sodium	206	mg/l	Signs Posted	

Summary of Organic parameters sampled during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	Mar 22, 2022	<0.5	µg/L	None
Atrazine + N-dealkylated metobolites	Mar 22, 2022	<1.0	µg/L	None
Azinphos-methyl	Mar 22, 2022	<2	µg/L	None
Benzene	Mar 22, 2022	<0.5	µg/L	None
Benzo(a)pyrene	Mar 22, 2022	<0.01	µg/L	None
4-bromofluorobenzene	Mar 22, 2022	76	%	None
Bromoxynil	Mar 22, 2022	<0.5	µg/L	None
Carbaryl	Mar 22, 2022	<5	µg/L	None
Carbofuran	Mar 22, 2022	<5	µg/L	None
Carbon Tetrachloride	Mar 22, 2022	<0.2	µg/L	None
Chlorpyrifos	Mar 22, 2022	<1	µg/L	None
Diazinon	Mar 22, 2022	<1	µg/L	None

Dicamba	Mar 22, 2022	<1	µg/L	None
1,2-Dichlorobenzene	Mar 22, 2022	<0.4	µg/L	None
1,4-Dichlorobenzene	Mar 22, 2022	<0.4	µg/L	None
1,2-Dichloroethane	Mar 22, 2022	<0.2	µg/L	None
1,2-Dichloroethane-d4	Mar 22, 2022	96	%	None
1,1-Dichloroethylene (vinylidene chloride)	Mar 22, 2022	<0.5	µg/L	None
Dichloromethane	Mar 22, 2022	<4.0	µg/L	None
2-4 Dichlorophenol	Mar 22, 2022	<1.0	µg/L	None
2,4-Dichlorophenoxyacetic acid (2,4-D)	Mar 22, 2022	<1	µg/L	None
Diclofop-methyl	Mar 22, 2022	<0.9	µg/L	None
Dimethoate	Mar 22, 2022	<2.5	µg/L	None
Diquat	Mar 22, 2022	<5	µg/L	None
Diuron	Mar 22, 2022	<10	µg/L	None
Glyphosate	Mar 22, 2022	<10	µg/L	None
Malathion	Mar 22, 2022	<0.5	µg/L	None
MCPA	Mar 22, 2022	<10	µg/L	None
Metolachlor	Mar 22, 2022	<1.0	µg/L	None
Metribuzin	Mar 22, 2022	<5	µg/L	None
Monochlorobenzene	Mar 22, 2022	<0.5	µg/L	None
Paraquat	Mar 22, 2022	<1	µg/L	None
Pentachlorophenol	Mar 22, 2022	<1.0	µg/L	None
Phorate	Mar 22, 2022	<0.5	µg/L	None
Picloram	Mar 22, 2022	<5	µg/L	None
Polychlorinated Biphenyls(PCB)	Mar 22, 2022	<0.1	µg/L	None
Prometryne	Mar 22, 2022	<0.25	µg/L	None
Simazine	Mar 22, 2022	<1	µg/L	None
Terbufos	Mar 22, 2022	<0.4	µg/L	None
Tetrachloroethylene	Mar 22, 2022	<0.3	µg/L	None
2,3,4,6-Tetrachlorophenol	Mar 22, 2022	<1.0	µg/L	None
Triallate	Mar 22, 2022	<1	µg/L	None
Trichloroethylene	Mar 22, 2022	<0.3	µg/L	None
2,4,6-Trichlorophenol	Mar 22, 2022	<0.7	µg/L	None
Toluene-d8	Mar 22, 2022	98	%	None
Trifluralin	Mar 22, 2022	<1.0	µg/L	None
Vinyl Chloride	Mar 22, 2022	<0.2	µg/L	None

APPENDIX F

Golder Associates Ltd. Report 05-1120-930, April 2013

April 19, 2013

Summary of Well Testing St. Philip Catholic School Richmond, Ontario

Submitted to:
Michael Blood
Ottawa Catholic School Board
570 West Hunt Club Road
Ottawa, Ontario
K2G 3R4

REPORT

Report Number: 05-1120-930

Distribution:

1 eCopy - Ottawa Catholic School Board
2 Copies - Ottawa Catholic School Board
2 Copies - Golder Associates

Golder Associates

Table of Contents

1.0 INTRODUCTION

Golder Associates Ltd. was retained by the Ottawa Catholic School Board to carry out an assessment of a well (W1) at St. Philip Catholic School located at 79 Maitland Street, Richmond, Ontario. The testing is required by the City of Ottawa to confirm sufficient capacity for any expansion of water use.

The testing of W1 included an 8-hour pumping test and a general water quality analysis. The following provides a summary of the well testing program completed on W1.

It is our understanding that St. Philip School currently has a full time equivalent (FTE) population of 216 and, due to changes from half day to full day classes, the FTE will increase to up to 275 in September 2013. We also understand that two new washroom facilities are planned to accommodate the increase in students. The purpose of this pump test is to determine if there is adequate capacity in W1 to service the expanded school. The flows at the school are limited to a peak rate 0.58 L/s (~9 USgpm) using a flow restrictor. The daily water use at the school is estimated to be 8,250 L/day based on Ontario Ministry of the Environment estimates of 30 L/student per day.

2.0 AQUIFER TESTING METHODOLOGY AND OBSERVATIONS

An 8-hour pumping test and recovery was conducted for W1 on March 13, 2013. The existing pump was removed and replaced with a temporary pump capable of higher flow rates.

The test began at a rate 45 L/min (12 USgpm) and increased to approximately 57 L/min (15 USgpm). On March 14, 2013 following recovery measurements, a 40 minute pump test was conducted at 68 L/min (~18 USgpm).

The static water level before any pumping was measured to be 2.76 metres below the top of well casing. The total well depth is 22.56 metres from the top of the well casing.

Water level measurements were manually taken using water level tapes. Measurements at the pumping well were initially taken at gradually increasing intervals from ten-seconds to ten-minutes as the pumping test progressed.

3.0 WELL PUMPING TEST ANALYSIS

On March 13, 2013, W1 was pumped at 45 L/min for the first 7 minutes of the test. For the remainder of the 8 hour test, W1 was pumped at 57 L/min. The total drawdown at the end of pumping was 1.2 metres, yielding a specific capacity of 47 L/min/m of drawdown. This drawdown represents 6% of the total available drawdown. The well recovered to 95 percent of the observed drawdown in 50 minutes from pump shut down.

The transmissivities at various points during the test were estimated based on the pumping well data using the Cooper and Jacob equation (Cooper & Jacob, 1946) as follows:

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

Where:
T= transmissivity
Q= pumping rate in m^3 / sec
Δh= drawdown in metres over one log cycle (10s to 100s or 100s to 1000s etc.)

A plot of drawdown versus time from the well data indicates a linear semi-logarithmic relationship at fixed rates. The transmissivities from the drawdown data were calculated to be approximately 3.5 x 10^{-3} m^2/sec at the initial pump rate of 45 L/min, and 1.0 x 10^{-3} m^2/sec at the higher flow rate of 56 L/min.

During recovery, transmissivities of 1.5 x 10^{-4} m^2/sec and 1.3 x 10^{-3} m^2/sec were estimated for early and late recovery respectively.

The late stage transmissivity of 1.3 x 10^{-3} m^2/sec during the recovery period is similar to the late stage transmissivity of 1.0 x 10^{-3} m^2/sec during the 8 hour pump test. This similarity increases confidence in the estimated values.

The next day on March 14, W1 was pumped again for 40 minutes at 68 L/min. The transmissivity was estimated from the drawdown data at 5.2 x 10^{-4} m^2/sec and 1.7 x 10^{-3} m^2/sec for early and late drawdown respectively.

The total drawdown at the end of the 8 hour pump test was 1.11 metres representing approximately 6% of the available drawdown and yielding a specific capacity of 61 L/min/m of drawdown.

Drawdown and recovery graphs are found in Appendix B.

4.0 REVIEW OF WELL CAPACITY AND PROPOSED CONSUMPTION

The total volume of water pumped during the 8 hour pump test was approximately 27,000 L. Based on the future maximum daily water use for the school of 8,250 L/day with the expansion at St. Philip, and the large available drawdown remaining after testing at 3.27 times the anticipated future maximum daily demand, there is sufficient capacity in the well to support the school.

Based on the results from the pumping tests and typical water use by a school, W1 has sufficient capacity for the expansion of St. Philip School to at least the proposed 275 Full Time Equivalent Students.

5.0 GROUNDWATER QUALITY AND CHLORINATION

At the beginning of the pump test, the well was shock-chlorinated using liquid sodium hypochlorite. At the 45 minute mark, the chlorine concentration was measured to be 0.0 mg/L and the first bacteria and water quality samples were taken. At the end of the 8 hour pump test, the chlorine concentration was measured to be 0.3 mg/L. Water quality samples were taken at this time. Due to the presence of chlorine residual, no bacteria samples were collected.

On March 14th, the chlorine addition process was repeated before the second pump test. At the end of the test, the chlorine concentration was measured to be 0.0 mg/L, and the second bacteria sample was taken.

All samples were sent for analysis at Exova (Accutest) Laboratories Ltd. in Ottawa, Ontario. The results are presented in Appendix A.

Based on the results of the water quality testing, the water meets all applicable health related drinking water quality.

At the 45 minute mark of the initial test, the iron concentration and turbidity was above the Aesthetic Objective levels of 0.3 mg/L and 1 NTU respectively. These parameters both fell below the Aesthetic Objective levels in the later sample.

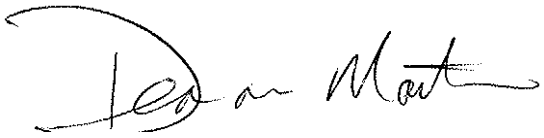
For use as a drinking water source at a school facility, it is recommended that UV disinfection be maintained at the school as required by Ontario Regulation 170/03.

6.0 CLOSING

This report summarizes the well testing and subsequent analysis completed at St. Philip Catholic School by Golder. An 8-hour pumping test was completed on the existing school (W1). Based on the results of the pumping test, W1 has a sustainable yield for a school in excess of the current 9 USGPM (34 L/min.). No exceedances of heath based water quality limits were observed in samples taken during the pump test.

We trust that this meets your current requirements. Should you have any concerns, please do not hesitate to contact the undersigned.

GOLDER ASSOCIATES LTD.



Daniel Shaver, M.A.Sc.
Environmental Consultant

Dennis Martin M.Sc. (Eng), P.Eng
Associate, Senior Hydrogeologist and
Environmental Engineer

DPS/DGM/lc
n:\active\2005\1120\environmental\05-1120-930 ott-calr c.s.b - misc. assist. - 01-1377\st. philip pump test\05-1120-930 st philip hydrogeological report 19april2013.docx

APPENDIX A

Water Quality Results

St. Philip Catholic School, Well Water Quality Results,
79 Maitland, Richmond, Ontario

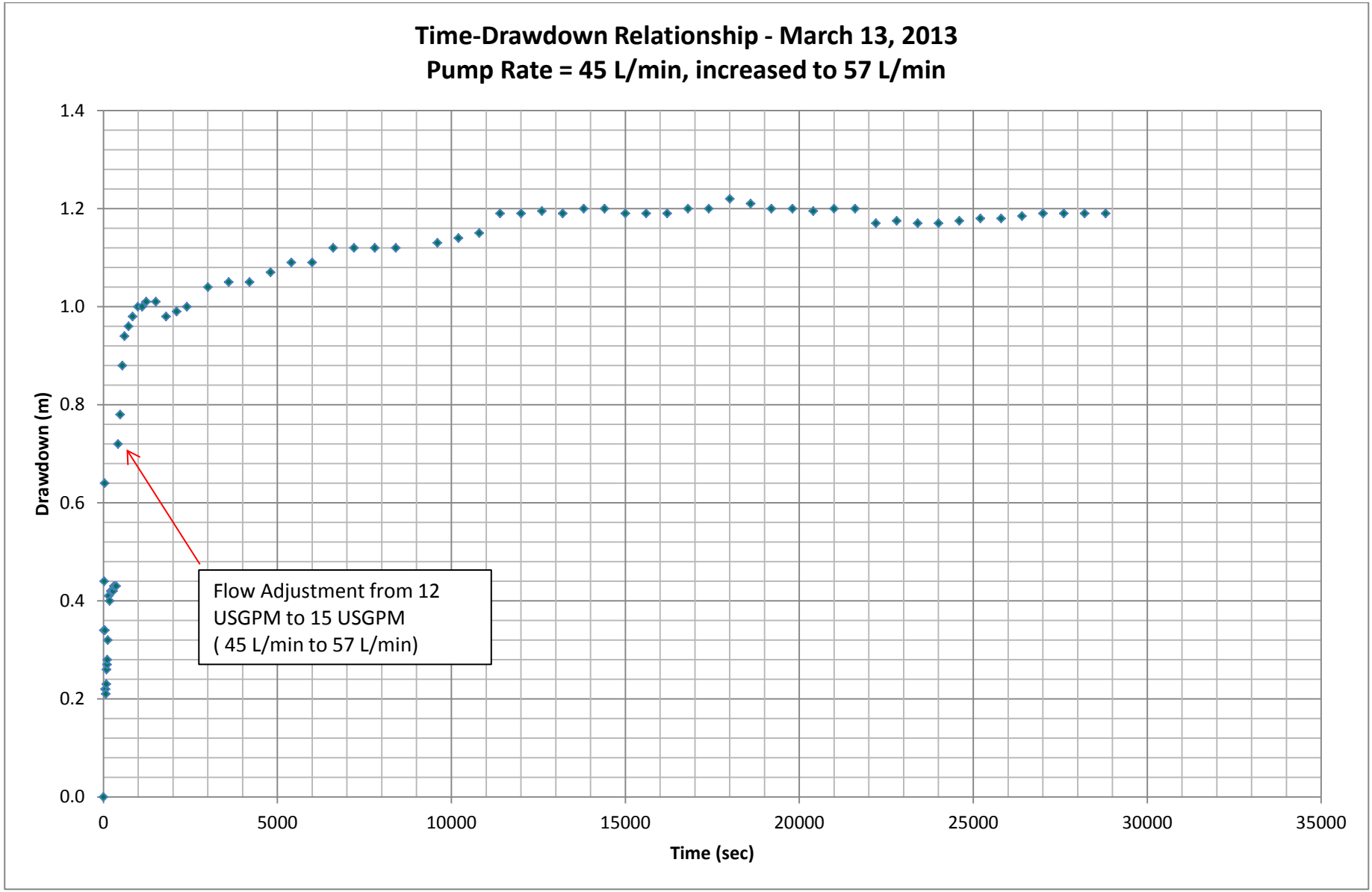
PARAMETER	March 13, 45 min	March 14th, End of Test	Guideline
Bacterial			
Escherichia coli (units - CFU/100mL)	0	0	MAC - 0
Faecal coliforms (units - CFU/100mL)	0	0	-
Faecal streptococcus (units - CFU/100mL)*	0	0	-
Heterotrophic Plate Count (units - CFU/1mL)	0	0	-
Total coliforms (units - CFU/100mL)	0	0	MAC - 0
Chlorine Residual (mg/L)	0	0	-
	45 min	**8 hour**	
General Chemistry			-
Alkalinity as CaCO3	243	244	OG- 500
Ammonia (N-NH3)	0.07	0.07	-
Calcium	78	77	-
Chloride	71	68	AO - 250
Colour (units - TCU)	3	<2	AO - 5
Conductivity (Lab) (units - uS/cm)	755	739	-
Dissolved Organic Carbon	1.2	1.2	AO – 5
Fluoride	0.31	0.32	MAC – 1.5
Hardness as CaCO3	306	303	OG – 500
Hydrogen Sulphide	<0.01	<0.01	AO – 0.05
Ion Balance	1.04	1.01	-
Iron	0.39	0.11	AO - 0.3
Magnesium	27	27	-
Manganese	0.02	<0.01	AO - 0.05
Nitrate (N-NO3)	<0.10	<0.10	MAC – 10
Nitrite (N-NO2)	<0.10	<0.10	MAC – 1
pH (Lab) (pH units)	7.88	7.85	6.5 to 8.5
Phenols	<0.001	<0.001	-
Potassium	4	4	-
Sodium	*45*	*39*	AO – 200*

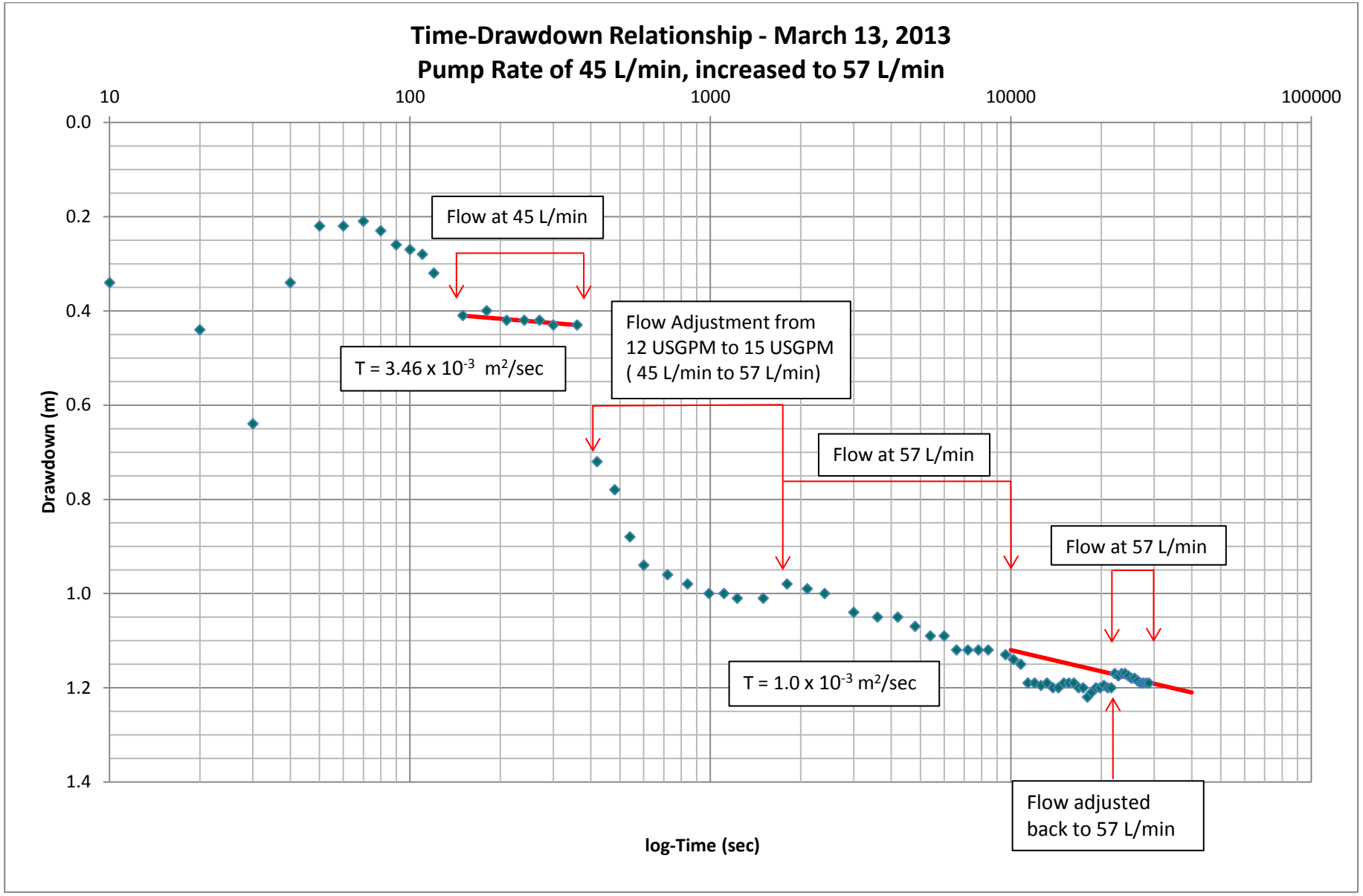
PARAMETER	March 13, 45 min	March 14th, End of Test	Guideline
Sulphate	47	46	AO – 500
Tannin & Lignin	<0.1	<0.1	-
Total Dissolved Solids	491	480	AO – 500
Total Kjeldahl Nitrogen	0.13	0.19	-
Turbidity (units - NTU)	2.0	0.3	MAC – 1
UV Transmittance	99%	98.7%	-

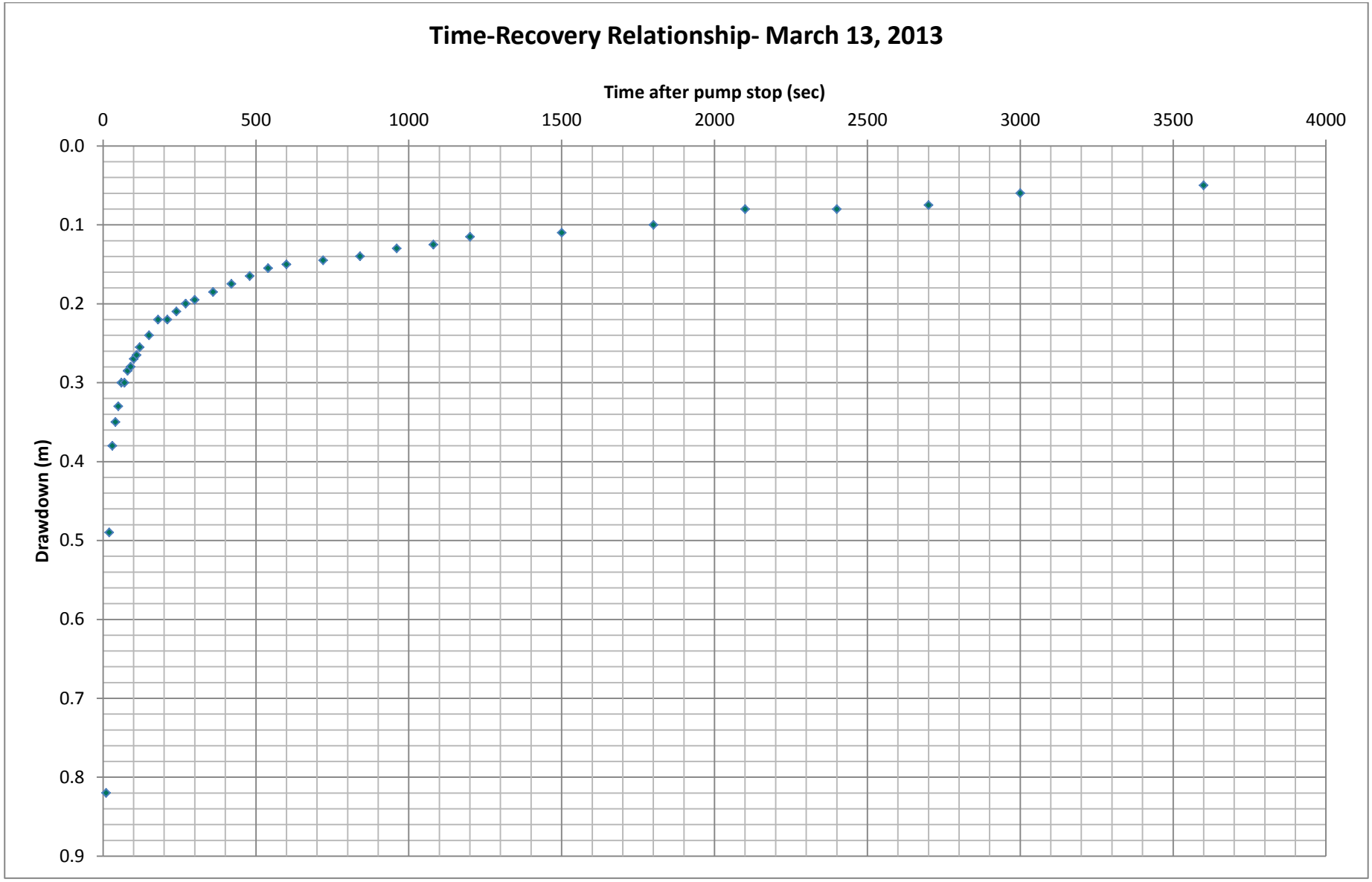
Notes:
all units are mg/L unless otherwise noted
Bold Values - indicate an exceedance of applicable health related water quality standards
AO – Aesthetic Objective
OG – Operational Guideline
MAC – Maximum acceptable concentration (health objective)
TCU - true colour units
NTU - nephelometric turbidity unit
*"Warning Level" of 20 mg/L for individuals on low sodium diets. Notifications coordinated as port of O.Reg. 170 by the school board

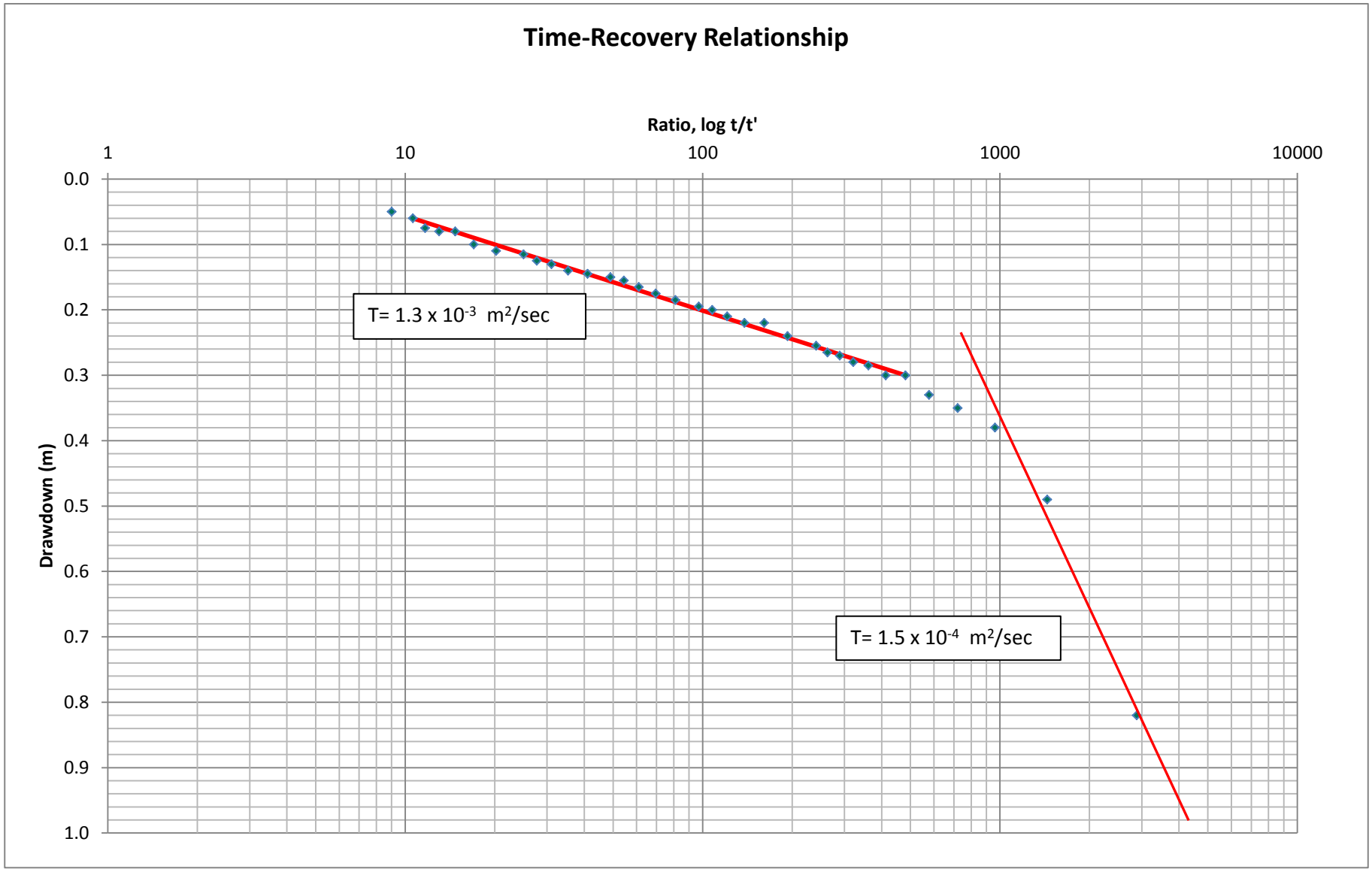
APPENDIX B

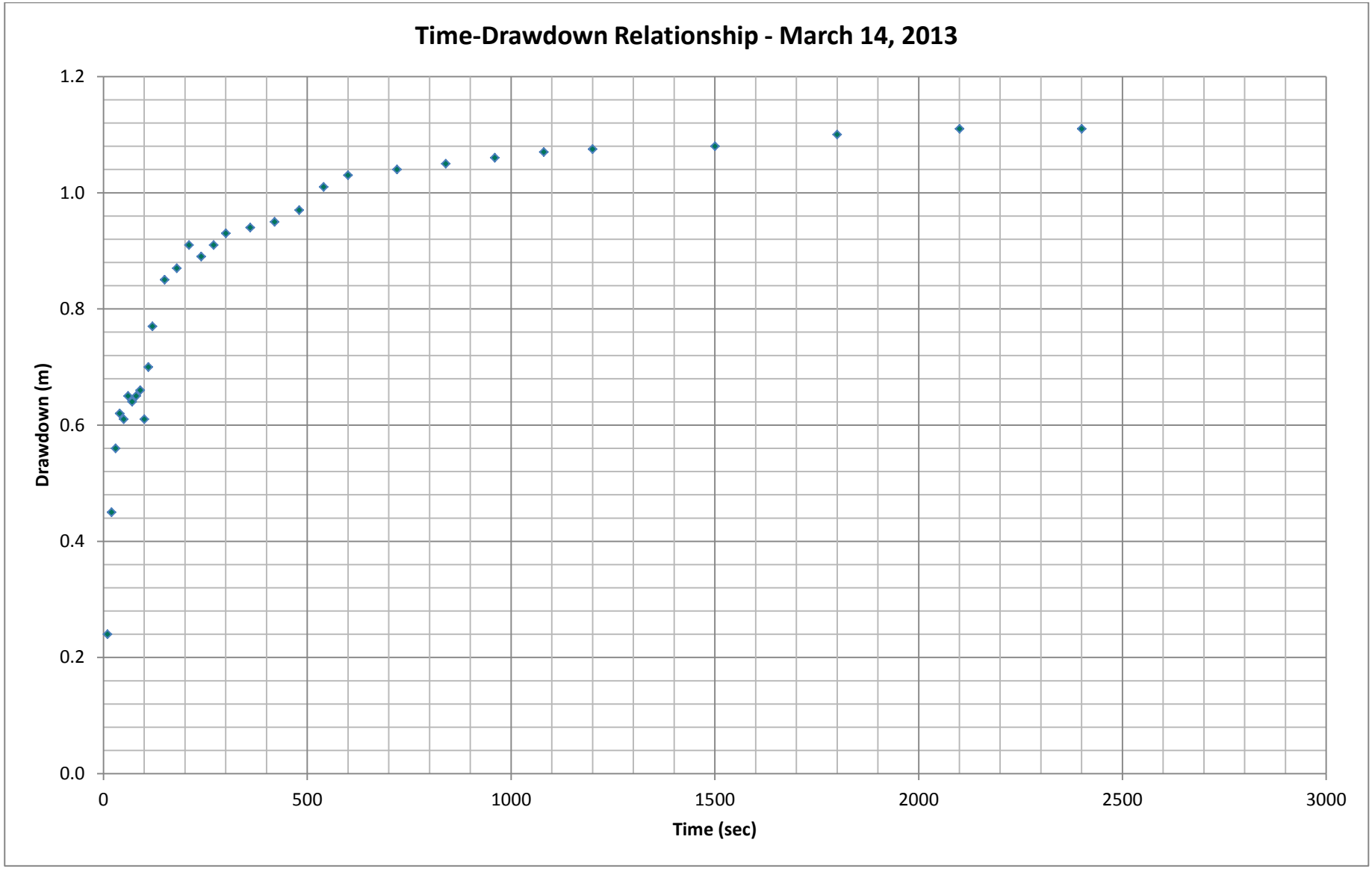
Data Plots

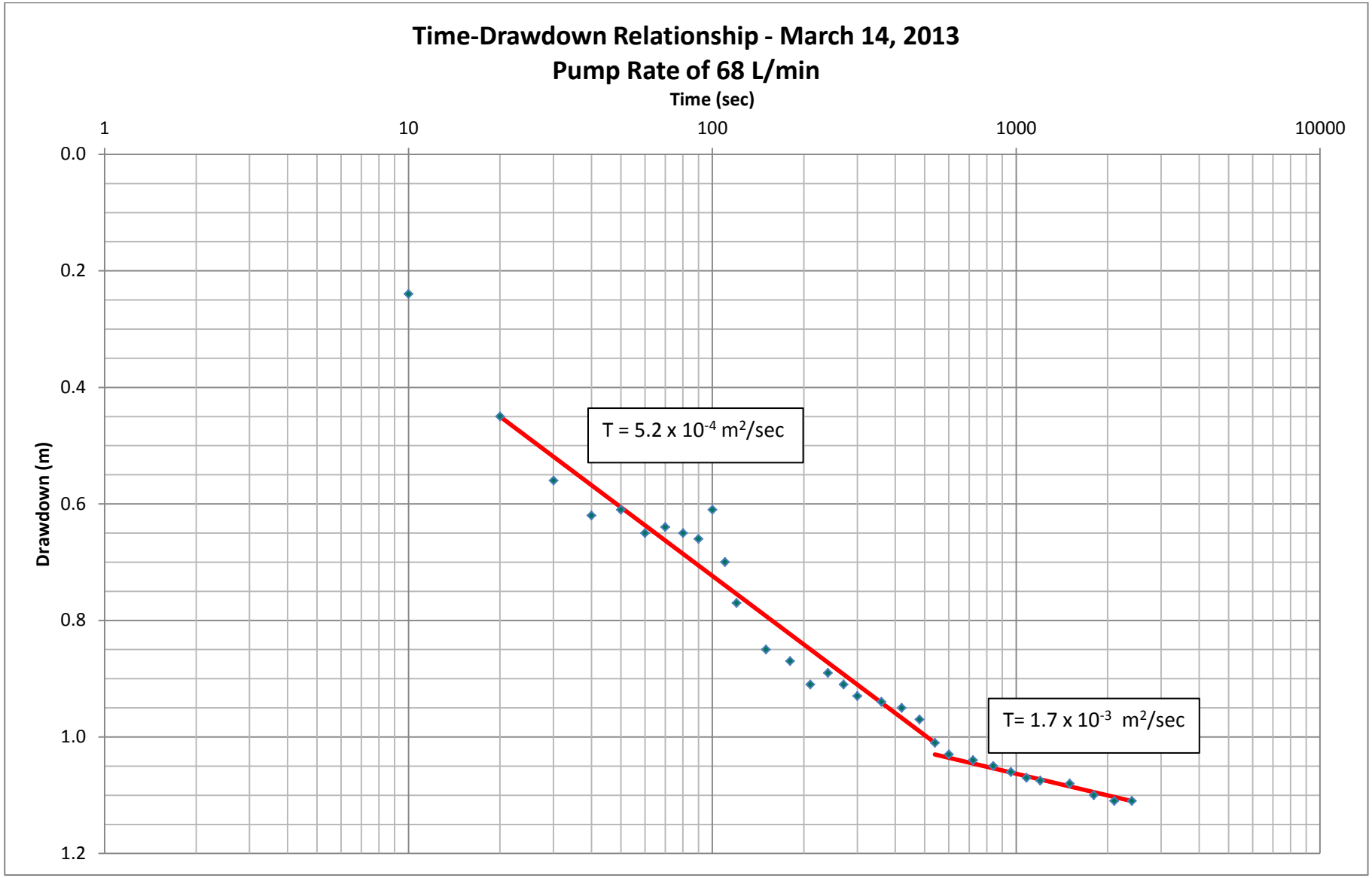

Time-Drawdown Relationship - March 13, 2013
Pump Rate = 45 L/min, increased to 57 L/min
Drawdown (m)
1.4
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
5000
10000
15000
20000
25000
30000
35000
Time (sec)
Flow Adjustment from 12 USGPM to 15 USGPM (45 L/min to 57 L/min)


Time-Drawdown Relationship - March 13, 2013
Pump Rate of 45 L/min, increased to 57 L/min
10
100
1000
10000
100000
0.0
0.2
0.4
0.6
0.8
1.0
1.2
1.4
Drawdown (m)
log-Time (sec)
Flow at 45 L/min
T = 3.46 x 10-3 m2/sec
Flow Adjustment from
12 USGPM to 15 USGPM
(45 L/min to 57 L/min)
Flow at 57 L/min
Flow at 57 L/min
T = 1.0 x 10-3 m2/sec
Flow adjusted
back to 57 L/min


Time-Recovery Relationship- March 13, 2013
Time after pump stop (sec)
0
500
1000
1500
2000
2500
3000
3500
4000
Drawdown (m)
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9


Time-Recovery Relationship
Ratio, log t/t'
1
10
100
1000
10000
0.0
0.1
0.2
0.3
0.4
0.5
0.6
0.7
0.8
0.9
1.0
Drawdown (m)
T= 1.3 x 10-3 m2/sec
T= 1.5 x 10-4 m2/sec


Time-Drawdown Relationship - March 14, 2013
Drawdown (m)
1.2
1.0
0.8
0.6
0.4
0.2
0.0
0
500
1000
1500
2000
2500
3000
Time (sec)


Time-Drawdown Relationship - March 14, 2013
Pump Rate of 68 L/min
Time (sec)
1
10
100
1000
10000
Drawdown (m)
0.0
0.2
0.4
0.6
0.8
1.0
1.2
T = 5.2 x 10-4 m2/sec
T= 1.7 x 10-3 m2/sec

APPENDIX C

Well Records

Well ID Number: 1509232

Well Audit Number: *none*
Well Tag Number: *none*

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

Well Location

Address of Well Location	*Township*	*Lot*	*Concession*
not available	Richmond Village		
County/District/Municipality	*City/Town/Village*	*Province*	*Postal Code*
OTTAWA-CARLETON		ON	n/a

UTM Coordinates *Municipal Plan and Sublot Number* *Other*

NAD83 — Zone 18
Easting: 434345.6
Northing: 5003862

Overburden and Bedrock Materials Interval

General Colour	*Most Common Material*	*Other Materials*	*General Description*	*Depth From*	*Depth To*
	MSND	BLDR		0 ft	24 ft
GREY	LMSN			24 ft	80 ft

Annular Space/Abandonment Sealing Record

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

Method of Construction

Cable Tool

Well Use

Public

Status of Well

Water Supply

Construction Record - Casing

Inside Diameter	*Open Hole OR material*	*Depth From*	*Depth To*
8 inch	STEEL		24 ft
8 inch	OPEN HOLE		80 ft

Construction Record - Screen

Outside Diameter	*Material*	*Depth From*	*Depth To*
	X		

Well Contractor and Well Technician Information

Results of Well Yield Testing

After test of well yield, water was
CLOUDY

If pumping discontinued, give reason

Pump intake set at

Pumping Rate
45 GPM

Duration of Pumping
1 h:0 m

Final water level
20 ft

If flowing give rate

Recommended pump depth
45 ft

Recommended pump rate
20 GPM

Well Production
PUMP

Draw Down Time (min)	*Water level*	*Recovery Time (min)*	*Water level*
SWL	8 ft		
1			
2			
3			
4			
5			
10			
15			
20			
25			
30			
40			
45			
50			

Well Contractor's Licence Number	3504	*Disinfected?*	60

Water Details

Water Found at Depth	*Kind*
80 ft	Fresh

Hole Diame

Depth	
From	*To*

Audit Number: *none*
Date Well Completed: June 23, 1960
Date Well Record Received by MOE: Januar 23, 1961

APPENDIX D

Raw Water Level Data

March 13th, 8 Hour Pump Test: Raw Data

Static Water Level: 2.76 m

Total Well Depth: 22.56 m

Start Time: 9:15 AM

Pump intake set at 75 ft

Time (s)	Water Level (m)	Notes
0	2.76	static
10	3.1	10 USGPM
20	3.2	
30	3.4	
40	3.1	
50	2.98	
60	2.98	
70	2.97	
80	2.99	12 USGPM
90	3.02	
100	3.03	
110	3.04	
120	3.08	
150	3.17	
180	3.16	
210	3.18	
240	3.18	
270	3.18	12 USGPM
300	3.19	
360	3.19	
420	3.48	15 USGPM
480	3.54	
540	3.64	
600	3.7	
720	3.72	15 USGPM
840	3.74	
990	3.76	
1110	3.76	15 USGPM
1230	3.77	
1500	3.77	
1800	3.74	15 USGPM
2100	3.75	
2400	3.76	
3000	3.8	took sample at 45 min

Time (s)	Water Level (m)	Notes
3600	3.81	
4200	3.81	
4800	3.83	
5400	3.85	15 USGPM
6000	3.85	
6600	3.88	
7200	3.88	
7800	3.88	
8400	3.88	
9600	3.89	
10200	3.9	15 USGPM
10800	3.91	
11400	3.95	
12000	3.95	
12600	3.955	
13200	3.95	15 USGPM
13800	3.96	
14400	3.96	15 USGPM
15000	3.95	
15600	3.95	
16200	3.95	
16800	3.96	
17400	3.96	
18000	3.98	
18600	3.97	
19200	3.96	
19800	3.96	
20400	3.955	
21000	3.96	Slight flow Adjustment
21600	3.96	15 USGPM
22200	3.93	
22800	3.935	
23400	3.93	
24000	3.93	
24600	3.935	
25200	3.94	
25800	3.94	
26400	3.945	
27000	3.95	

Time (s)	Water Level (m)	Notes
27600	3.95	
28200	3.95	
28800	3.95	Chlorine is 0.3 mg/L

March 13th Recovery Test: Raw Data

Total Well Depth: 22.56 m

Pump off at: 5:25 PM

Time since pump stop (s)	Water Level (m)
10	3.58
20	3.25
30	3.14
40	3.11
50	3.09
60	3.06
70	3.06
80	3.045
90	3.04
100	3.03
110	3.025
120	3.015
150	3.0
180	2.98
210	2.98
240	2.97
270	2.96
300	2.955
360	2.945
420	2.935
480	2.925
540	2.915
600	2.91
720	2.905
840	2.9
960	2.89
1080	2.885
1200	2.875
1500	2.87
1800	2.86
2100	2.84

Time since pump stop (s)	Water Level (m)
2400	2.84
2700	2.835
3000	2.82
3600	2.81

March 14th, Day 2 Pump Test: Raw Data

Static Water Level: 2.64 m
Total Well Depth: 22.56 m
Start Time: 9:15 AM
Pump intake set at 75 ft

Time (sec)	WL	Notes
0	2.64	Static
10	3	18 USGPM
20	3.21	
30	3.32	
40	3.38	
50	3.37	
60	3.41	
70	3.4	
80	3.41	
90	3.42	
100	3.37	
110	3.46	
120	3.53	
150	3.61	
180	3.63	
210	3.67	
240	3.65	
270	3.67	
300	3.69	
360	3.7	
420	3.71	
480	3.73	
540	3.77	
600	3.79	
720	3.8	
840	3.81	
960	3.82	
1080	3.83	
1200	3.835	Chlorine is 0.3 mg/L

Time (sec)	WL	Notes
1500	3.84	
1800	3.86	
2100	3.87	
2400	3.87	

APPENDIX E

Laboratory Analytical Results

EXOVA OTTAWA

Certificate of Analysis

Client: Golder Associates Ltd. (Ottawa)
32 Steacie Drive
Kanata, ON
K2K 2A9
Attention: Mr. Dennis Martin
PO#:
Invoice to: Golder Associates Ltd. (Ottawa)

Report Number: 1304326
Date Submitted: 2013-03-14
Date Reported: 2013-03-18
Project: 05-1120-0930
COC #: 162842

Dear Dennis Martin:

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: _____

Dragana Dzeletovic
Microbiology Laboratory Team Lead

EXOVA OTTAWA

Certificate of Analysis

Exova

Client: Golder Associates Ltd. (Ottawa)
32 Steacie Drive
Kanata, ON
K2K 2A9
Attention: Mr. Dennis Martin
PO#:
Invoice to: Golder Associates Ltd. (Ottawa)

Report Number: 1304326
Date Submitted: 2013-03-14
Date Reported: 2013-03-18
Project: 05-1120-0930
COC #: 162842

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D.
					1015650 Groundwater 2013-03-13 45 Min
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	0
	Faecal Coliforms	0	ct/100mL		0
	Faecal Streptococcus	0	ct/100mL		0
	Heterotrophic Plate Count	0	ct/1mL		0
	Total Coliforms	0	ct/100mL	MAC-0	0

Guideline = ODWSOG *** = Guideline Exceedence**
** = Analysis completed at Mississauga, Ontario.
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.

EXOVA OTTAWA

Certificate of Analysis

Client: Golder Associates Ltd. (Ottawa)
32 Steacie Drive
Kanata, ON
K2K 2A9
Attention: Mr. Dennis Martin
PO#:
Invoice to: Golder Associates Ltd. (Ottawa)

Report Number: 1304372
Date Submitted: 2013-03-14
Date Reported: 2013-03-18
Project: 05-1120-0930
COC #: 162844

Dear Dennis Martin:

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: _____

Dragana Dzeletovic
Microbiology Laboratory Team Lead

EXOVA OTTAWA

Certificate of Analysis

Exova

Client: Golder Associates Ltd. (Ottawa)
32 Steacie Drive
Kanata, ON
K2K 2A9
Attention: Mr. Dennis Martin
PO#:
Invoice to: Golder Associates Ltd. (Ottawa)

Report Number: 1304372
Date Submitted: 2013-03-14
Date Reported: 2013-03-18
Project: 05-1120-0930
COC #: 162844

Group	Analyte	MRL	Units	Guideline	Lab I.D. Sample Matrix Sample Type Sampling Date Sample I.D. 1015762 Groundwater 2013-03-14 8Hr - 2
Microbiology	Escherichia Coli	0	ct/100mL	MAC-0	0
	Faecal Coliforms	0	ct/100mL		0
	Faecal Streptococcus	0	ct/100mL		0
	Heterotrophic Plate Count	0	ct/1mL		0
	Total Coliforms	0	ct/100mL	MAC-0	0

Guideline = ODWSOG *** = Guideline Exceedence**
** = Analysis completed at Mississauga, Ontario.
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.

EXOVA OTTAWA

Certificate of Analysis

Client: Golder Associates Ltd. (Ottawa)
32 Steacie Drive
Kanata, ON
K2K 2A9
Attention: Mr. Dennis Martin
PO#:
Invoice to: Golder Associates Ltd. (Ottawa)

Report Number: 1304346
Date Submitted: 2013-03-14
Date Reported: 2013-03-20
Project: 05-1120-0930
COC #: 162842

Dear Dennis Martin:

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: _____

Lorna Wilson
Inorganic Laboratory Supervisor

Client: Golder Associates Ltd. (Ottawa)
32 Steacie Drive
Kanata, ON
K2K 2A9
Attention: Mr. Dennis Martin
PO#:
Invoice to: Golder Associates Ltd. (Ottawa)

Report Number: 1304346
Date Submitted: 2013-03-14
Date Reported: 2013-03-20
Project: 05-1120-0930
COC #: 162842

Group	Analyte	MRL	Units	Guideline	Lab I.D. / Sample Matrix / Sample Type / Sampling Date / Sample I.D.		
					1015687 Water 2013-03-13 45 min	1015688 Water 2013-03-13 8 hr
Calculations	Hardness as CaCO3	1	mg/L	OG-100	306*	303*
	Ion Balance	0.01			1.04	1.01
	TDS (COND - CALC)	1	mg/L	AO-500	491	480
General Chemistry	Alkalinity as CaCO3	5	mg/L	OG-500	243	244
	Cl	1	mg/L	AO-250	71	68
	Colour	2	TCU	AO-5	3	<2
	Conductivity	5	uS/cm		755	739
	DOC	0.5	mg/L	AO-5	1.2	1.2
	F	0.10	mg/L	MAC-1.5	0.31	0.32
	N-NO2	0.10	mg/L	MAC-1.0	<0.10	<0.10
	N-NO3	0.10	mg/L	MAC-10.0	<0.10	<0.10
	pH	1.00		6.5-8.5	7.88	7.85
	S2-	0.01	mg/L	AO-0.05	<0.01	<0.01
	SO4	3	mg/L	AO-500	47	46
	Turbidity	0.1	NTU	MAC-1.0	2.0*	0.3
	UV Transmittance @ 254 nm	0.1	%		99.0	98.7
Metals	Ca	1	mg/L		78	77
	Fe	0.03	mg/L	AO-0.3	0.39*	0.11
	K	1	mg/L		4	4
	Mg	1	mg/L		27	27
	Mn	0.01	mg/L	AO-0.05	0.02	<0.01
	Na	2	mg/L	AO-200	45	39
Nutrients	N-NH3	0.02	mg/L		0.07	0.07
	Phenols	0.001	mg/L		<0.001	<0.001
	Tannin & Lignin	0.1	mg/L		<0.1	<0.1
	Total Kjeldahl Nitrogen	0.10	mg/L		0.13	0.19

Guideline = ODWSOG *** = Guideline Exceedence**
** = Analysis completed at Mississauga, Ontario.
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.

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32 Steacie Drive
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K2K 2A9
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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 0 **Analysis Date** 2013-03-19 **Method** C SM2340B			
Hardness as CaCO3			
Ion Balance			
TDS (COND - CALC)			
Run No 247328 **Analysis Date** 2013-03-14 **Method** C SM2130B			
Turbidity	<0.1 NTU	93	73-127
Run No 247336 **Analysis Date** 2013-03-14 **Method** UV TRAN			
UV Transmittance @ 254 nm		79	83-133
Run No 247349 **Analysis Date** 2013-03-15 **Method** C SM2120C			
Colour	<2 TCU	95	90-110
Run No 247350 **Analysis Date** 2013-03-15 **Method** SM 4110C			
Cl	<1 mg/L	100	90-112
SO4	<3 mg/L	100	90-110
Run No 247353 **Analysis Date** 2013-03-15 **Method** C SM4500-Norg-C			
Total Kjeldahl Nitrogen	<0.10 mg/L	97	77-123

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
Run No 247356 **Analysis Date** 2013-03-15 **Method** C SM4500-NH3D			
N-NH3	<0.02 mg/L	95	85-115
Run No 247357 **Analysis Date** 2013-03-14 **Method** SM 2320B			
Alkalinity as CaCO3	<5 mg/L	99	95-105
Conductivity	<5 uS/cm	99	95-105
F	<0.10 mg/L	100	90-110
pH	5.71	100	90-110
Run No 247361 **Analysis Date** 2013-03-15 **Method** C SM5530D			
Phenols	<0.001 mg/L	88	73-127
Run No 247388 **Analysis Date** 2013-03-15 **Method** M SM3120B-3500C			
Ca	<1 mg/L	99	80-120
K	<1 mg/L	104	80-120
Mg	<1 mg/L	96	80-120
Na	<2 mg/L	104	80-120
Run No 247400 **Analysis Date** 2013-03-15 **Method** C SM4500-S2-D			
S2-	<0.01 mg/L	92	
Run No 247401 **Analysis Date** 2013-03-15 **Method** C SM4500-NO3-F			

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QC Summary

Analyte	Blank	QC % Rec	QC Limits
N-NO2	<0.10 mg/L	100	80-120
N-NO3	<0.10 mg/L	100	80-120
Run No 247424 **Analysis Date** 2013-03-18 **Method** C SM5550B			
Tannin & Lignin	<0.1 mg/L	90	80-120
Run No 247438 **Analysis Date** 2013-03-15 **Method** EPA 200.8			
Fe	<0.03 mg/L	107	88-112
Mn	<0.01 mg/L	106	91-109
Run No 247480 **Analysis Date** 2013-03-18 **Method** C SM5310C			
DOC	<0.5 mg/L	97	84-116
Run No 247512 **Analysis Date** 2013-03-19 **Method** C SM4500-NH3D			
N-NH3	<0.02 mg/L	100	85-115
Run No 247530 **Analysis Date** 2013-03-19 **Method** EPA 200.8			
Fe	<0.03 mg/L	108	88-112
Mn	<0.01 mg/L	102	91-109

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As a global, employee-owned organisation with over 50 years of experience, Golder Associates is driven by our purpose to engineer earth's development while preserving earth's integrity. We deliver solutions that help our clients achieve their sustainable development goals by providing a wide range of independent consulting, design and construction services in our specialist areas of earth, environment and energy.

For more information, visit golder.com

Africa	+ 27 11 254 4800
Asia	+ 86 21 6258 5522
Australasia	+ 61 3 8862 3500
Europe	+ 356 21 42 30 20
North America	+ 1 800 275 3281
South America	+ 56 2 2616 2000

solutions@golder.com
www.golder.com

Golder Associates Ltd.
32 Steacie Drive
Kanata, Ontario, K2K 2A9
Canada
T: +1 (613) 592 9600

Golder Associates

wsp.com