2024 Annual Report, Bobcaygeon Transfer Station

Environmental Compliance Approval No. A341307

April 8, 2025

Prepared for:
The Municipality of Trent Lakes

Cambium Reference: 10520-005

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Executive Summary

The Bobcaygeon transfer site operates under the Ministry of the Environment, Conservation and Parks amended Environmental Compliance Approval A341307, issued November 28, 2023. The site is on part Lot 17, Concession 19, geographic township of Harvey, Municipality of Trent Lakes, County of Peterborough. The site is at 42 County Road 36, near the community of Bobcaygeon. The total site area is 4.0 ha and has an approved refuse placement area of 1.6 ha. The site ceased landfilling in 2002 and now operates as a waste transfer station.

This report presents the results of the 2024 activities that were completed at the Bobcaygeon Waste Disposal Site. The report and activities have been completed and reported on in general conformance with the November 2010 Ministry of the Environment Technical Guidance Document entitled *Monitoring and Reporting for Waste Disposal Sites – Groundwater and Surface Water* (MOE, 2010). The Monitoring and Screening Checklist is provided in Appendix A.

Groundwater elevations were within historical ranges. The groundwater flow continued to be south-southeasterly, with a northeast/northwest component south of the site in the vicinity of Wilderness Park Road. Consistent with historical findings, a predominant downward vertical gradient was calculated between aquifers.

Water quality at the site is monitored in the shallow (upper) and deep (middle and lower) aquifers. A weak leachate signature and road salt impacts were present in the upper bedrock monitors immediately adjacent the waste mound. There were minimal impacts to the deep bedrock aquifer, confirming that impacts were restricted vertically at the site. Impacts were not interpreted to extend much beyond the property boundary.

The site-specific groundwater trigger mechanism was not activated in 2024.

Primarily non-site related impacts were in the off-site monitoring wells adjacent Wilderness Park Road, south of the site. Impacts were attributed to the historical Bobcaygeon South/Verulam landfills.

Landfill gas monitoring was completed at the site and was detected at leachate monitor 97-3 in May. No other wells had concentrations greater than 0.05% methane by volume in 2024, consistent with historical results.

The site was operated in compliance with the conditions of the Environmental Compliance Approval in 2024. Recommendations have been provided regarding the future operation of the Site and work to be completed in 2025 including application of the trigger mechanism immediately following each monitoring event.

Respectfully submitted,

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1.0 Introduction

The Corporation of the Municipality of Trent Lakes (Municipality) retained Cambium Inc. (Cambium) to complete the 2024 annual monitoring program for the Bobcaygeon Transfer Station and closed landfill (Site). The Site operates under Ontario Ministry the Environment, Conservation and Parks (Ministry) amended Environmental Compliance Approval (ECA) No. A341307, issued November 28, 2023 (Appendix B).

To aid in the understanding of the history and development of the Site, the following information is included digitally in the report package:

- *Bobcaygeon Landfill Report, Preliminary Groundwater Investigation* (EMMS, 1995), and Addendum #1 to this document
- *North Landfill Site Closure Plan* (TSH, 2002), in Association with Hydroterra Limited
- *Updated Hydrogeologic Report, 2002 to 2006 Results, Township of Galway-Cavendish and Harvey North Landfill* (Hydroterra, 2006)
- *Memo from Shawn Trimper and Frank Crossley, Ministry Hydrogeologists, Closed Waste Sites Northeast of the Village of Bobcaygeon, February 18, 2015*
- Environmental Compliance Approval Application, with Design and Operations Report, Maps, and other supporting documentation to amend ECA, dated May 10, 2016
- Historical water quality (WSP, 2017)
- *Transfer Station, Safety, Emergency, and Spills Procedures* (MTL, 2020a)
- *Transfer Station Standard Operating Procedures* (MTL, 2020b)
- Environmental Compliance Approval Application, with supporting documentation, dated November 19, 2020

1.1 Site Location

The Site is on part of Lot 17, Concession 19, geographic Harvey Township, Municipality of Trent Lakes, County of Peterborough. The municipal address for the Site is 42 County Road 36, Trent Lakes, near the community of Bobcaygeon (Figure 1). The Universal Transverse Mercator (UTM) coordinates for the Site entrance are Zone 17, 695520 m east, 4936383 m north.

1.2 Site Description

The Site operated as a natural attenuation landfill for the disposal of domestic waste from 1978 until 2002. This Site has been identified by the Ministry as the Bobcaygeon/North Site. Since 2003, the Site has been operated by the Township as a transfer station for the collection of non-hazardous residential, industrial, commercial, and institutional waste from within the Municipality of Trent Lakes, as well as several items that are collected for diversion. Site details are in Embedded Table 1. A Local Topography Plan and Existing Conditions plan are on Figure 2 and Figure 3, respectively.

Embedded Table 1 Site Details

Total Site Area	4.0 ha
Closed Landfill Area of Refuse Placement	1.6 ha

As discussed in a memo dated February 18, 2015 (attached digitally to this report), there were various unidentified areas within and/or around the Site that were historically used for landfilling operations. The sites were identified as:

- Verulam Site (ECA A341302)
- Thompson Gravel Site (ECA A341305)
- Bobcaygeon/South Site (ECA A320201)

It is understood these sites existed on Lots 16 and/17, Concession 19, north of Wilderness Park Road. The sites operated for up to 30 years and were all closed to landfilling by 1978 when the Bobcaygeon North Site was issued an approval. The Bobcaygeon/South and

Verulam sites are believed to be on the parcel of land south of the Site and north of Wilderness Park Road (Figure 2). Specifically, monitoring well nests 98-1 and 98-2 are at the inferred southern edge of the Bobcaygeon/South and Verulam sites. The Thompson Gravel Site location is uncertain but was believed to overlap with the Bobcaygeon/North Site and possibly encroaches the property boundary to the south.

1.3 Scope of Work

The scope of the 2024 work program was based on the results of the 2023 monitoring program (Cambium, 2024), the requirements of the ECA, and included:

- Groundwater elevation monitoring
- Groundwater sampling and analysis
- Evaluation of groundwater quality against the Ontario Drinking Water Quality Standards (ODWQS) and Reasonable Use Concept (RUC) values developed in accordance with Ministry Guideline B-7
- An overview of site development and operations
- Preparation of this report

This report presents the results of the 2024 work program, provides an assessment of the current landfill impact of the Site on the surrounding groundwater environment, and a summary of the operational activities at the Site. Cambium has provided recommendations for the 2025 monitoring program and site operations based on the 2024 results and assessment.

2.0 Methodology

The 2024 work program was completed to maintain compliance with the Site ECA and Ministry guidelines and regulations. As such, the monitoring program was completed consistent with *Guidance Manual for Landfill Sites Receiving Municipal Waste* (MOEE, 1993), *Landfill Standards* (MECP, 2021), and *Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface Water, Technical Guidance Document* (MOE, 2010).

Field tasks were completed following Cambium's Standard Operating Procedures developed from recognized standard procedures such as those listed above and *Guidance on Sampling and Analytical Methods for use at Contaminated Sites in Ontario* (MOEE, 1996). A health and safety program was developed for site-specific conditions and all Cambium personnel working on the project were familiarized and required to follow the identified protocol.

Groundwater samples were stored in coolers with freezer packs and maintained at less than 10°C during transport to SGS in Lakefield, Ontario. SGS is accredited by the Canadian Associations for Laboratory Accreditation Inc. for specific environmental tests listed in the scope of accreditation. Groundwater samples were submitted at the frequency and for analysis of the parameters outlined in Table 1.

2.1 Groundwater Monitoring Program

The following tasks were completed as part of the 2024 groundwater monitoring program:

- Prior to sampling, water levels were measured at each monitoring well using an electronic water level tape.
- The purge volume was calculated on-site during each monitoring event using the measured water level, well depth, and the well diameter. Each groundwater monitoring well to be sampled was purged of approximately three well volumes. For wells with low recovery, at least one saturated well volume was purged prior to sampling. Purged water was disposed on the ground, down-gradient of each respective well.

- Samples were collected using dedicated polyethylene tubing equipped with inertial-lift foot valves.
- Groundwater samples for metals and dissolved organic carbon (DOC) analysis were field filtered.
- Field measurements were recorded for pH, conductivity, temperature, dissolved oxygen (DO), and oxygen reduction potential (ORP).

Groundwater samples were collected on May 29 and November 14 from the on-site monitoring wells listed below. Due to an equipment error, field measurements and observations were not recorded at 97-2-L in May. There were no other deviations from the monitoring program outlined in Table 1.

- 97-1-U
- 97-1-M
- 97-1-L
- 97-2-U
- 97-2-L
- 97-3
- 98-1-U
- 98-1-M
- 98-1-L
- 98-2-U
- 98-2-M
- 98-2-L
- 98-3-U
- 98-3-M
- 98-3-L
- 00-1-U
- 00-1-M
- 00-1-L
- BH16-1S
- BH16-1D

Monitoring wells included in the groundwater monitoring program are shown in Figure 2, Figure 4, Figure 5, and Figure 6. The UTM coordinates for the monitoring locations are in Table 2. Groundwater results are discussed in Section 4.2. Field data sheets and precipitation sheets are in Appendix C. Laboratory Certificates of Analysis are in Appendix D. Photographs of each monitoring location are in Appendix E.

2.2 Surface Water Monitoring Program

There is no surface water near the Site and surface water monitoring is not included in the environmental monitoring program.

2.3 Residential Well Monitoring Program

Residential wells identified in the monitoring program include:

- Empire Fuels
- 515 Riverside
- 396 Riverside
- 320 Riverside
- 68 County Road 36
- 130 County Road 36

In 2024, all residential monitoring wells were sampled except for the following:

- 130 County Road 36 was not sampled as the casing was sieved and the well could not be accessed in May or November. The property owner was notified.
- 515 Riverside was not sampled in November as the well tap was shut off.

Results from the residential well sampling are discussed in Section 4.3. Available water well records are in Appendix F. Residential well locations are included in Figure 2. Field data sheets are in Appendix C and laboratory Certificates of Analysis are in Appendix D.

2.4 Quality Assurance / Quality Control Program

Quality Assurance/Quality Control (QA/QC) measures were in place to ensure the integrity of sample collection and analysis. Cambium collected blind field duplicate samples for groundwater and surface water as part of the QA/QC program. A minimum of 10% of the total samples were collected. In addition to these samples, the laboratory completed internal QA/QC. The duplicate samples were collected at the same time and location as the original samples. Duplicate samples were collected by filling the bottles for the same analysis at the sample time to ensure samples were consistent. Other key parts of Cambium's QA/QC program included:

- Calibration of field equipment at the start of each day. Equipment was checked throughout the day, as necessary.
- Laboratory grade detergent and distilled water were used for decontamination of non-disposable equipment. Care is taken to avoid cross contamination.
- Use of new nitrile gloves at each sample location.
- Use of dedicated tubing and inertial foot-valves at each groundwater well to prevent potential cross-contamination and reduce waste.

- Where wells were sediment laden or have limited water volumes, a peristatic pump was used to purge well and complete sampling.

Blind duplicate groundwater samples were collected from the following locations as part of the QA/QC program. The results of the QA/QC program are presented in Section 4.1.

- 97-3 and 98-3-U in May
- 97-3 and 98-3-M in November

2.5 Landfill Gas Monitoring Program

Landfill gas (LFG) is not actively managed at the Site. The large, open site area and isolated location from the public supports passive landfill gas management, which allows generated landfill gas to naturally disperse through the waste and naturally-permeable cover to the atmosphere.

Landfill gas monitoring is conducted on a yearly basis. The purpose of the monitoring is to assess compliance with Section 4.10 of *Landfill Standards, A Guideline on the Regulatory and Approval Requirements for New and Expanding Landfilling Sites* (MOEE, 1998).

An RKI Eagle II calibrated for methane was used to collect landfill gas measurements. Equipment was calibrated for methane daily by Cambium field staff prior to heading out to site. Calibration standards were brought to Site in the event the instrument needed to be recalibrated (e.g., due to elevated readings, equipment malfunction, etc.).

Landfill gas measurements were collected prior to measuring groundwater levels or collecting samples. Methane concentrations were measured at each location. The following methodology was used to collect landfill gas measurements:

- Upon arrival to site, the RKI Eagle II was turned on and ran for five minutes prior to any measurements to allow the equipment to acclimatize.
- Weather conditions for the monitoring event and previous day were recorded including barometric pressure.
- Prior to each reading, the ambient air methane concentration was recorded.

- The well cap was removed, and the gas probe was inserted into the top headspace of the well. A hand was used to cap the top of the well to reduce the amount of gas lost to the atmosphere.
- The peak methane concentration was recorded.
- Water levels measurements were taken at all monitoring locations.

Landfill gas monitoring was conducted at all onsite wells during the May and November 2024 events. Due to an equipment error, measurements were not recorded at 97-2-L in May. There were no other deviations from the monitoring program outlined in Table 1. The landfill gas monitoring results are discussed in Section 4.4. Field data sheets are in Appendix C.

2.6 Site Inspection and Operations Overview

Site operations were observed during visits completed in May and November 2024. During these visits, the items listed below were inspected on accessed areas of the Site and observations noted in the field file. In early 2025, the Municipality provided additional 2024 site operations information. Site inspection results are presented in Section 5.0.

- Litter control
- Condition and layout of recycling bins
- Condition and layout of access roads, access gates
- Status of monitoring well security
- Condition of final cover
- Presence of leachate seeps

3.0 Geological and Hydrogeological Context

3.1 Topography and Drainage

The Site is in the Kawartha Lakes tertiary watershed and the Pigeon Lake quaternary watershed. The flow in the area generally collects from the northeast areas of Peterborough County and drains southwest through Trent Lakes and into the Lower Buckhorn Lake (TCC, 2014).

Locally, the Site is well drained. Drainage is controlled by topography and overland flow which collects in low lying areas, migrating south via natural depressions and roadside ditches, ultimately discharging to Pigeon Lake (1 km south). Despite temporal drainage, there are no reported permanent or semi-permanent surface water features in the down-gradient flow path between the Site and Pigeon Lake.

The closest provincially significant wetland is identified as the Nogie's Creek Mouth about 4 km northeast of the Site. Additionally, there are two evaluated wetlands identified as Sturgeon Lake No. 7 to the west and Bobcaygeon West to the southwest. Both evaluated wetlands are about 3.5 km from the Site. Based on the limited surface water features surrounding the Site, a surface water monitoring program does not exist for the Site.

3.1.1 Precipitation Data

A review of the 2024 precipitation data for Peterborough County from the Trent U Farm station (Government of Canada, 2025a) in comparison to the average precipitation data for 1991 to 2020 for Peterborough (Government of Canada, 2025b) indicated that the annual precipitation was about normal but varied month to month. January, June, September, and December received normal precipitation. April and July received 35 to 95% more precipitation than normal. The remaining months received about 30 to 70% less than normal. The monthly precipitation, as well as the amount of precipitation during and in the three days prior to the sampling events is summarized in Embedded Table 2. Refer to Appendix C for field sheets and climate data.

Embedded Table 2 Historical and 2024 Precipitation Data

Sampling Date	Average Monthly Precipitation (mm) (1991 – 2020)	2024 Precipitation (mm)	Precipitation During and Prior to Sampling (mm)
May 29	79.4	38.7	9.4
November 14	76.3	31.7	3.6

3.2 Hydrogeology

The hydrogeology of the Site has been characterized by others and documented in the following reports:

- *Bobcaygeon Landfill Report, Preliminary Groundwater Investigation* (EMMS, 1995) and Addendum #1 to this document
- *North Landfill Site Closure Plan* (TSH, 2002), in Association with Hydroterra Limited
- *Updated Hydrogeologic Report, 2002 to 2006 Results, Township of Galway-Cavendish and Harvey North Landfill* (Hydroterra, 2006)
- *Township of Galway-Cavendish and Harvey North Landfill Site, 2007 Annual Monitoring Report* (TSH, 2008)
- *2016 Annual Monitoring Report - Bobcaygeon Closed Landfill Site / Transfer Station* (WSP, 2017)

The following is a summary of currently understood hydrogeological setting of the Site based on the above references. Refer to Table 3 for a summary of the monitoring well information and Appendix F for borehole logs.

There are currently 20 monitoring wells at the Site, installed as well nests in eight locations from 1997 to 2016. Due to a general lack of shallow overburden groundwater, all wells are installed as bedrock wells, except for three wells which are installed as interface wells (97-1-U, 97-2-U, and 97-3). The well nests typically include three installation depths, except for monitoring well 97-3 which is installed as a single well and well nests 97-2 and BH16-1 which

have only two installation depths. Specifically, 97-2-U monitors the upper unit, BH16-1S monitors the middle unit, and monitors 97-2-L and BH16-1D monitor the lower unit.

Embedded Table 3 provides a summary of the minimum and maximum well depths in each region (i.e., upper, middle, and lower), as well as the average groundwater elevations observed.

Embedded Table 3 Well Installation Depths and Water Table Elevations

Well Group	Screen Elevation (masl)		Depth (mbgs)		Average Water Elevation (masl)		
	Min	Max	Min	Max	Min	Max	Average
Upper	251.7	262.5	2.6	10.1	255.1	261.7	257.5
Middle	246.3	254.5	7.3	15.5	253.2	260.4	255.6
Lower	239.0	252.5	13.2	22.9	252.6	256.3	254.4

Note:
asl means above sea level.
bgs means below ground surface.

The overburden encountered on-site consists primarily of sand and gravel or sand and gravel till (some cobbles and boulders, clay, dense) and ranged in thickness from 3.0 mbgs (00-1) to 7.62 mbgs (97-2). Although no significant overburden water table was encountered, the overburden was described as moist to wet in available boreholes except for well nest 00-1 where it was noted to be dry.

Bedrock in and around the Site is limestone of the Verulam Formation, underlain by limestone and shale of the Gull/River Shadow Lake Formation and/or Precambrian granitic and metasedimentary rocks. All bedrock wells on-site were installed in the limestone bedrock, except for monitor 00-1-L which was installed in limestone and red shale. The limestone bedrock was reported as competent with limited water bearing fractures. The only water bearing fractures reported are summarized in Embedded Table 4. Note that no information on water bearing fractures were provided from the wells installed in 2016 (BH16-1).

Embedded Table 4 Summary of Water Bearing Fractures

Well	Region	Fracture Depth (mbgs)
97-3	Upper	4.6
97-1	Upper	4.3
00-1	Upper	5.2 to 7.0

Despite the limited water bearing fractures noted on the borehole logs, the bedrock formations in the vicinity of the Site were reported to be highly permeable (TSH, 2002).

Bedrock elevations for the monitoring wells at the Site range from 262.2 to 254.8 masl. Although the bedrock slopes to the south, bedrock elevations to the southeast of the waste mound are lower than the bedrock elevations along Wilderness Park Road, southwest of the Site and waste mound. As discussed further in Section 3.2.2, it is interpreted that the groundwater table generally follows the slope of the bedrock and flows south-southeast. There is a small component of southwest flow that exists from the waste mound to wells 97-3 and 97-2 given the slope of the bedrock in this area. Refer to Figure 7 for bedrock elevations.

A description of monitors used to evaluate each groundwater area is described below:

- Well nest 00-1 is northwest of the waste mound and represents background water quality.
- 97-3 is immediately adjacent and down-gradient to the waste mound. Due to the installation depth (shallow aquifer), groundwater monitoring well 97-3 has been deemed to be representative of landfill leachate quality at the Site.
- Well nests 97-1, 97-2, and BH16-1 are down-gradient of the waste mound, adjacent the southern property boundary. Well nests 97-1 and BH16-1 are down-gradient and southeast of the waste mound. Well nest 97-2 is down-gradient and southwest of the waste mound.
- Down-gradient off-site water quality is monitored by well nests 98-1, 98-2, and 98-3 south of the property boundary. Nests 98-1 and 98-2 are adjacent to and north of Wilderness Park Road, 125 m south of the Site. Nest 98-3 is immediately south (within 30 m) of the property boundary, south of well nest 97-1.

3.2.1 Well Records

Of the Ministry water well records available in the vicinity of the Site (Figure 2; (Cambium, 2018)), 40 records were for domestic water supply wells down-gradient of the Site, between the waste disposal property and Pigeon Lake. The records were for wells installed from 1950 to 2016, with most of the wells installed before the mid-1990s. As such, the amount of detail and accuracy of the locations of the well records varied significantly.

A review of these records indicated that all wells were installed in bedrock, primarily in limestone. The domestic water supply wells were installed at depths ranging from 3.7 mbgs to 38.1 mbgs, at an average depth of 10.6 mbgs. Shale was noted in a few well records, typically around 12 to 15 mbgs, and sandstone was noted in at least one record at 7.6 mbgs, extending to 21.3 mbgs. Where observed, granitic bedrock was reported below the limestone, shale, and/or sandstone bedrock, at depths typically ranging from 16.8 mbgs to 21.3 mbgs. There was one well record where granitic bedrock was at only 2.7 mbgs.

Given the number of domestic water supply wells down-gradient of the Site, a residential water quality program is completed for the Site, as discussed in Section 4.3.

3.2.2 Groundwater Flow Direction

Historically, the groundwater direction has been reported to be influenced by the topography of the underlying bedrock. Groundwater elevations collected from the upper, middle, and lower bedrock monitoring wells in 2024 were used to define the horizontal groundwater flow direction at the Site.

Groundwater elevation data is summarized in Table 2. The elevations of each region have been displayed separately on Figure 8 (interface/upper), Figure 9 (middle), and Figure 10 (lower). Significant fluctuations in groundwater elevations are common, generally following a seasonal pattern. Groundwater elevations were generally within historical ranges in 2024.

Water elevations typically vary significantly within each well nest, except for nests 97-1, 98-2, and 98-3 where the middle and lower wells have been similar and inferred to be hydraulically connected.

As summarized in Embedded Table 3, there are three distinct water table elevations. When comparing the average water table elevations from 2014 to 2024 at the Site, the middle and lower regions were interpreted to be hydraulically connected to some degree, whereas the upper wells represent a separate aquifer. As such, the upper region (and wells) is identified as the shallow aquifer, and the middle and lower regions are identified as the deep aquifer for assessment purposes.

The general groundwater flow direction was south-southeast in 2024 as displayed in Figure 4 (upper), Figure 5 (middle), and Figure 6 (lower).

As briefly discussed in Section 3.2, the bedrock elevation is high at well 97-3 relative to adjacent well nest 97-2 (Figure 7). Furthermore, the bedrock elevation reported along Wilderness Park Road was higher than the bedrock elevation reported at well nests 97-1 and 98-3. As such, there is a preferential flow pathway to the southeast from the waste mound, with the potential for a small component of flow to the southwest toward well nest 97-2. This is reflected in the water table elevations in the middle and lower regions (deep aquifer), as the water elevations at well nests 98-1 and 98-2 south of the Site are typically higher than the water table elevations at well nest 97-1 and 98-3 southeast of the waste mound. This indicates a potential for a northward component of flow from Wilderness Park Road. The primary flow path for impacted water is to the south-southeast from the waste mound, ultimately to Pigeon Lake, with a minor component of flow to the southwest near well nest 97-2.

The horizontal hydraulic gradients calculated in 2024 are summarized in Embedded Table 5.

Embedded Table 5 Calculated Hydraulic Gradients, 2024

Event	Upper	Middle	Lower
Spring	0.023 m/m southeast 0.017 m/m southwest	0.028 m/m southeast 0.026 m/m southwest	0.011 m/m southeast 0.008 m/m west
Autumn	0.029 m/m southeast 0.018 m/m southwest	0.035 m/m southeast 0.031 m/m southwest	0.011 m/m southeast 0.007 m/m east

3.2.3 Vertical Gradients

Using elevations from the upper (interface/bedrock), middle (bedrock), and lower (bedrock) monitors at the Site, vertical gradients were calculated in 2024 (Table 4). Upward vertical gradients were calculated at well nests 98-2 in May and November between the middle and lower aquifers; downward vertical gradients were calculated at the rest of the monitoring well nests in 2024, consistent with historical results.

3.2.4 Conceptual Site Model

Given the lack of surface water features surrounding the Site, the depth to the water table (i.e., greater than 2 mbgs and an average of 6 mbgs), and the predominant downward vertical gradients calculated, the primary flow path for leachate impacted groundwater is the bedrock aquifer. Impacted groundwater will flow primarily south-southeast from the waste mound toward Pigeon Lake. Due to the bedrock topography, there is a small component of flow that extends southwest from the waste mound, toward well nest 97-2. The primary receptor of potential impacts from the Site are the adjacent domestic water supply wells south of the Site.

4.0 Results and Discussion

Water quality results from the monitoring program are used to assess the existence, extent, and degree of impacts to the groundwater environment related to waste disposal site activities at the Site.

To ensure appropriate actions are in place to respond to degradation in groundwater quality beyond an acceptable level, site-specific trigger levels and contingency measures aid in the assessment of impacts from leachate contamination and help to prevent adverse impacts to the environments surrounding the waste disposal site.

This section presents the results of the 2024 monitoring program.

4.1 Quality Assurance / Quality Control

Results from the analyses completed on the blind duplicate QA/QC samples were evaluated. Parameter concentrations were considered significantly different if the relative percent difference (RPD) between the duplicate and the parent samples was greater than 30% when both results were greater than five times the reported detection limit (RDL).

The duplicate groundwater analyses were compared to the originals. Overall, the duplicate samples correlated well with the parent samples and met the data quality objective of 30% except for boron at 98-3-U in May.

Parent/duplicate samples with only one measurable concentration or with results reporting less than five times the RDL were assessed qualitatively. Evaluation of these parent/duplicate samples did not identify significant data quality issues.

Considering the low variation between the parent and duplicate samples, the groundwater results were interpreted with confidence.

4.2 Groundwater Quality

Groundwater analysis data for 2011 to 2024 are in Table 5, Table 6, and Table 7. Data from 2002 to 2010 is included digitally with the report package.

To assess water quality impacts related to landfill site operations, the analytical results for groundwater samples collected on-site were compared to background water quality and historical data, and compliance was assessed using ODWQS (MOE, 2006) and RUC (MOEE, 1994). Groundwater analysis results for neighbouring residential water wells were compared against the ODWQS (MOE, 2006).

4.2.1 Background

When evaluating the impact of any waste disposal site on a groundwater resource, a reference point or value must be established to assist in determining the magnitude of the impact. The quality of the groundwater that is non-impacted by the waste disposal site operation (i.e., background water quality) should be used for comparison purposes.

Given the location of monitoring nest 00-1 up-gradient of the waste mound, the groundwater results for these monitoring wells are representative of background water quality at the Site.

The water quality at wells 00-1-M and 00-1-L have been similar, confirming these two units are hydraulically connected and make up the deep aquifer. Key differences between the shallow aquifer (i.e., 00-1-U) compared to the deep aquifer include:

- Elevated concentrations of barium, chloride, calcium, nitrate, and sodium, and low concentrations of boron, hardness, iron, magnesium, manganese, and sulphate, in the shallow aquifer.
- Evidence of impacts at monitor 00-1-U have been exhibited by seasonally elevated concentrations of alkalinity, barium, calcium, chloride, conductivity, hardness, sodium, and total dissolved solids (TDS). Given the up-gradient location of this monitor the impacts were attributed to a non-waste related source (likely road salt).
- TDS concentrations regularly exceed the ODWQS at 00-1-U and at 00-1-L. Well 00-1-M has only intermittently exceeded the ODWQS for TDS. Iron and manganese concentrations intermittently exceed the ODWQS at monitors 00-1-M and 00 1-L. DOC concentrations have intermittently exceeded the ODWQS at monitors 00-1-U and 00-1-M.

Water quality data from 2024 was generally consistent with historical results and parameter concentrations remained stable. Only TDS at all locations and iron at 00-1-L did not meet ODWQS during one or more events in 2024, consistent with historical results. The water quality at these locations remained representative of background groundwater quality.

4.2.2 Leachate Characteristics

A comparison of water quality results from leachate monitoring well 97-3 to background monitoring well nest 00-1 indicated that the landfill leachate is characterized by elevated concentrations of those parameters outlined in Embedded Table 6, identified as the leachate indicator parameters (LIPs) for the Site.

Embedded Table 6 Leachate Indicator Parameters

alkalinity	ammonia	barium	boron
calcium	chloride	conductivity	DOC
hardness	iron	manganese	sodium
chemical oxygen demand (COD)		TDS	

Many concentrations at 97-3 increased following site closure, including many of the LIPs. Since 2017, most parameter concentrations have stabilized or have decreased despite some significant seasonal and annual fluctuations. Parameter concentrations in 2024 were generally consistent with historical results including iron, manganese, alkalinity, TDS, hardness, and DOC not meeting the ODWQS in both May and November. Field pH (low) also did not meet the ODWQS in May.

4.2.3 Perimeter Monitoring Wells

4.2.3.1 Shallow Aquifer

A weak leachate signature is present at monitors 97-1-U and 97-2-U; however, concentrations have typically been less than the leachate monitor (97-3). This confirms that natural attenuation is occurring at the Site. Historically, concentrations of all LIPs have been greater at monitor 97-2-U compared to monitor 97-1-U except for COD, confirming the southwest flow

component discussed in Section 3.2.2. Concentrations of many parameters fluctuate seasonally at these locations.

Consistent with the background water quality at monitor 00-1-U, TDS (persistently) and DOC (intermittently) concentrations have exceeded the ODWQS at monitors 97-1-U and 97-2-U. In addition, concentrations of hardness at both locations, chloride at 97-2-U, and manganese at 97-1-U have intermittently exceeded the ODWQS.

Concentrations in 2024 were generally consistent with historical results. Chloride and TDS at 97-2-U and TDS at 97-1-U did not meet the ODWQS during one or more events in 2024.

4.2.3.2 Deep Aquifer

Limited, if any, impacts have been evident in the deep aquifer at wells 97-1-M, 97-1-L, 97-2-L, BH16-1S, and BH16-1D. The only parameter concentrations elevated at these down-gradient locations compared to the background water quality at 00-1-M and 00 1-L have been:

- 97-1-M: barium, nitrate
- 97-1-L: barium, nitrate
- 97-2-L: boron, nitrate
- BH16-1S: alkalinity, COD, barium, calcium, nitrate, sodium
- BH16-1D: boron

The water quality results in the perimeter deep aquifer wells have generally met the ODWQS criteria except for occasional TDS exceedances at monitor 97-1-M and occasional DOC exceedances at all locations.

The water quality at these monitors in 2024 was generally consistent with historical results. Increasing trends were noted at all locations except BH16-1S for calcium and hardness, consistent with the background monitors. Chloride and alkalinity at BH16-1D were also increasing. There were no ODWQS exceedances at BH16-1S/D, 97-1-M/L, or 97-2-L in 2024.

Although the elevated LIP concentrations may indicate marginal impacts from leachate at these deep monitoring wells, it is more likely the elevated concentrations were due to natural variation in the deep aquifer water quality.

4.2.4 Off-site Monitoring Wells

4.2.4.1 Shallow Aquifer

Monitoring wells 98-1-U, 98-2-U, and 98-3-U monitor the water quality in the upper bedrock, south of the Site.

Water quality at monitor 98-3-U has historically been similar to background water quality except for slightly elevated alkalinity, barium, boron, calcium, and magnesium concentrations. Trends have fluctuated overtime but have been stable. This continued in 2024.

Water quality at monitors 98-1-U and 98-2-U have been comparable to each other and several parameter concentrations have been greater than background water quality at one or both of these monitors including the following: alkalinity, barium, boron, calcium, conductivity, DOC, hardness, magnesium, sulphate, and TDS. Some concentrations have been elevated at these wells compared to up-gradient monitor 97-2-U, including alkalinity, boron, DOC, magnesium, and sulphate. This was indicative of impacts at these locations that were not related to the Bobcaygeon North Site. Trends have been stable over time; increasing barium at 98-1-U and increasing chloride at 98-2-U noted in recent years were stabilizing in 2024.

The following ODWQS exceedances have been reported at these monitors historically:

- 98-1-U: Seasonal exceedances of alkalinity, TDS, and hardness; intermittent exceedances of DOC
- 98-2-U: Persistent exceedances of TDS; intermittent exceedances hardness; occasional exceedances of DOC, iron, and manganese
- 98-3-U: Occasional exceedances of TDS, DOC, and manganese since 2017

Water quality in 2024 in the off-site down-gradient upper bedrock monitors generally remained generally consistent with historical results. The following concentrations exceeded the ODWQG during one or more occasions in 2024:

- 98-1-U: alkalinity, TDS, hardness
- 98-2-U: TDS, hardness
- 98-3-U: TDS, manganese

Marginal impacts have been present at 98-3-U. Elevated parameter concentrations at 98-1-U and 98-2-U have not been attributed to the (Bobcaygeon North) Site. It had been speculated the elevated concentrations were related to a non-waste source such as the road or adjacent land uses (nitrate). As discussed in Section 1.2, historical landfill activities (Bobcaygeon South/Verulam landfills) were identified on the parcel of land between the Site and Wilderness Park Road in a 2015 Ministry memo (included digitally with this report). Elevated concentrations at 98-2-U and 98-1-U were likely a result of the historical landfilling activities. Although impacts could be present at these locations from the Bobcaygeon North Site as well (cumulative impacts), given parameter concentrations at these locations have been elevated compared to up-gradient wells in closer proximity to the Site and the component of flow to the northeast from well nest 98-1 and Wilderness Park Road (and northwest in the lower bedrock), impacts from the Site to these locations is unlikely.

Following a review of the *2020 Annual Report* (Cambium, 2021), the Ministry groundwater reviewer agreed the shallow aquifer is where impacts were primarily occurring. The reviewer interpreted the impacts at these locations to be related to the Bobcaygeon landfill site and the offsite landfill. As noted above, the offsite landfill is more likely the source of the elevated concentrations at 98-1-U and 98-2-U than the Bobcaygeon North Site (Cambium, 2024).

4.2.4.2 Deep Aquifer

Wells 98-1-M, 98-2-M, and 98-3-M monitor the water quality in the middle bedrock and wells 98-1-L, 98-2-L, and 98-3-L monitor the lower portion of the deep bedrock aquifer south of the Site.

The only deep aquifer monitoring well south of the Site with notably elevated parameter concentrations has been monitoring well 98-2-L. The following parameter concentrations have typically been elevated at this location, which continued in 2024: boron, calcium, conductivity, chloride, hardness, iron, manganese, sodium, and TDS. Although not LIPs, sulphate and magnesium have also been elevated at this location. Consistent with the shallow aquifer, these elevated parameter concentrations were also greater than monitor 97-2-L, in closer proximity to the Bobcaygeon North waste mound.

The remaining deep aquifer wells have had only limited elevated parameter concentrations compared to background wells, if any, including the following:

- 98-1-M: barium
- 98-1-L: conductivity, TDS, boron, sodium, sulphate
- 98-3-M: none
- 98-3-L: boron, sodium

The following ODWQS exceedances have been typical at these monitors:

- 98-1-M: Occasional exceedances of DOC
- 98-1-L: Persistent exceedances of TDS; occasional exceedances of DOC and hardness
- 98-2-M: Occasional exceedances of DOC, TDS, and manganese
- 98-2-L: Persistent exceedances of TDS, sulphate, hardness, iron, and manganese; occasional exceedances of DOC
- 98-3-M: Occasional exceedances of TDS, iron, and manganese prior to 2017; occasional exceedances of DOC
- 98-3-L: Occasional exceedances of TDS and DOC

In 2024, the water quality at monitors 98-1-M/L, 98-2-M/L, and 98-3-M/L were generally consistent with historical results. The following exceptions were noted:

- Calcium and hardness were increasing at all locations, consistent with 00-1-M/L

- Chloride was increasing to varying degrees at 98-2-M/L and 98-3-M
- Ammonia was greater than historical ranges at 98-3-L in November
- Boron, conductivity, sulphate, and sodium at 98-2-M was greater than historical ranges in November

The following ODWQS exceedances were noted during one or more events in 2024:

- 98-1-L: TDS
- 98-2-L: iron, TDS, hardness, sulphate
- 98-3-L: manganese, TDS

Elevated parameter concentrations south of the Site in the deeper aquifer have been attributed to non-site related impacts (likely due to the historical Bobcaygeon South/Verulam landfill or a non-waste source).

4.2.5 Groundwater VOC Analysis

Volatile organic compound (VOC) analysis was completed during the autumn of 2022 sampling event at 98-2-U, 98-2-L, and 97-3. All VOC parameter concentrations were less than RDLs (Table 7). The next VOC monitoring events will be in the autumn of 2027.

4.2.6 Summary of Groundwater Quality

Water quality down-gradient of the waste mound is monitored in both the shallow (upper) and deep aquifers (middle and lower). Aside from minor connectivity at well nest 97-1, the shallow and deep aquifer are not interpreted to be hydraulically connected.

Background water quality is monitored at well nest 00-1. Minor impacts from a non-site related source such as road salt have been in the shallow aquifer at this location. Leachate quality has been characterized at 97-3, immediately south and adjacent the waste mound. The leachate quality has had elevated concentrations of most analyzed parameters. Concentrations of sulphate and nitrate have been low in the leachate.

There was a weak leachate signature present at shallow aquifer monitors 97-1-U and 97-2-U, southeast and southwest of the waste mound, respectively. Impacts have been greater southwest (and closer) to the waste mound (97-2-U); however, road salt impacts have also been evident at this location. Limited impacts, if any, have been in the deep aquifer on-site, monitored by wells 97-1-M, 97-1-L, 97-2-L, BH16-1S, and BH16-1D.

Marginal impacts (attributed to the Site) have been evident at 98-3-U. Impacts were not present in the deep aquifer at this location (98-3-M and 98-3-L).

There have been elevated parameter concentrations at off-site wells 98-1-U and 98-2-U in the shallow aquifer and in the deep aquifer well 98-2-L. All other off-site monitoring wells have had water quality similar to background. Notably, well 98-2-L has had elevated concentrations of most parameters, including non-LIP sulphate (e.g., boron, calcium, conductivity, hardness, sulphate, magnesium, TDS). Elevated concentrations in this well have been greater than the monitoring wells immediately south of the waste mound. With a northeast (and northwest in the deeper aquifer) groundwater flow south of the Site between well nests 98-1 and nests 97-1 and 98-3 (and 97-2), the elevated parameter concentrations have been attributed to a non-site related source (e.g., historical landfill).

Impacts from the Site extended to the southwest and southeast in the shallow aquifer; however, due to natural attenuation, the impacts did not extend much beyond the waste mound. Given the lack of impact at monitor 98-3-U, 30 m down-gradient of the property boundary, impacts beyond an acceptable limit off-site were not expected.

Impacts from the Site were restricted vertically to the shallow aquifer due to the competency of the deeper bedrock. Minor non-site impacts were at various perimeter wells (shallow aquifer), including the background well, likely from road salt application on County Road 36. There was a non-site related impact (i.e., off-site historical landfill) in the monitoring wells adjacent Wilderness Park Road, south of the Site, primarily in the shallow aquifer (i.e., well nests 98-1 and 98-2), with marginal impacts in the deep aquifer at well 98-2.

Comments received from the Ministry’s groundwater reviewer interpreted the impacts in the shallow aquifer offsite partially to the Bobcaygeon North Site. As discussed herein, impacts at

98-1 and 98-2 were (primarily) attributed to the historical Bobcaygeon South/Verulam landfill and not to the (Bobcaygeon North) Site.

4.2.7 Groundwater Compliance Assessment

The Ministry RUC applies to operating waste disposal sites and sites closed post 1986. As the Site closed in 2002, the RUC applies to the Site. To ensure appropriate actions are in place to respond to any potential degradation in groundwater quality beyond an acceptable level, site-specific trigger levels have been developed for the Site. The trigger mechanism proposed in the *2022 Annual Report* (Cambium, 2024) was supported by the Technical Support Section in 2023 with minor modifications and was subsequently approved by the amended ECA, issued November 28, 2023 (Appendix B). Relevant correspondence is in the 2023 annual report and included digitally with this report.

The trigger criteria for the Site are the RUC values developed in accordance with Ministry Guideline B-7 (MOEE, 1994). The Ministry Guideline B-7 states that, in accordance with the appropriate criteria for particular uses, a change in quality of the groundwater on an adjacent property will be accepted only as follows (Ministry Procedure B-7-1):

> *The quality cannot be degraded by an amount in excess of 50% of the difference between background and the ODWQS for non-health related parameters and in excess of 25% of the difference between background and the ODWQS for health-related parameters. Background is to be the quality of the groundwater prior to any man-made contamination.*

The maximum concentration of a particular contaminant that is considered acceptable in the groundwater beneath an adjacent property is calculated in accordance with the following relationship:

$$C_m = C_b + x\,(C_r - C_b)$$

Where,

C_m is maximum concentration accepted

C_b is background concentration

C_r is maximum concentration permitted in accordance with the ODWQS

x is a constant that reduces the contamination to a level that is considered by the Ministry to have a negligible effect on water use (i.e., 0.5 for non-health related parameters and 0.25 for health-related parameters

The RUC values were calculated using the median value of the background concentration (C_b) from a minimum of the previous five sampling events as required by Ministry Eastern Region Technical Support Section. Where background concentrations were less than the laboratory RDL, the RDL was used as the background concentration. Where the background concentrations exceeded ODWQS, the C_b value was set as the RUC value. The calculated C_m values for the Site were set as the RUC values.

The trigger criteria should be comprised of the identified LIPs (Embedded Table 6) except chloride, sodium, hardness, and TDS. These parameters should be excluded given the road salt impacts evident throughout the Site including background well nest 00-1.

The RUC assessment should include the following monitoring wells along the perimeter of the Site and just beyond: nested wells 97-1, 97-2, BH16-1, and 98-3. Well nest 00-1 (background) should be included for reference.

4.2.7.1 Trigger Mechanism

The trigger mechanism for the Site should include a three-tier system. **Tier One** is monitoring of the landfill related parameters as outlined in the approved monitoring program.

Following each sampling event, the water quality will be assessed, and Tier Two will be initiated if: one or more parameter concentrations at the trigger location are greater than the trigger concentration on three consecutive occasions.

Tier Two includes the following steps:

1. Notify the Municipality and the District Manager of the trigger exceedance(s).
2. Complete an assessment to determine if the trigger exceedance(s) is causing unacceptable impacts to down-gradient groundwater users and if the landfill is a contributing source to the elevated concentrations. The assessment should consider the need to sample at additional groundwater locations and/or the need for analysis of additional parameters to assess compliance (such as per- and polyfluoroalkyl substances (PFAS)).
3. If adverse impacts are expected to down-gradient groundwater users and/or additional testing is determined to be required to assess the potential impacts, Tier Three of the trigger will be activated.

Tier Three includes the following:

1. Immediately notify the District Manager of the trigger initiation.
2. Within three months of the original trigger exceedance, provide the District Manager with the results of the assessment completed as part of Tier Two, including the proposed sampling plan for review and approval, if applicable.
3. If assessment or confirmatory testing indicates that adverse impacts are expected and/or evident to down-gradient groundwater users and are landfill-related, development of a contingency plan that includes an evaluation of remedial options in consultation with the Municipality and the Ministry, with discussions to occur within six months of the original trigger exceedance.
4. Implementation of the contingency plan. The contingency plan will provide recommendations for any remedial measures that would address the potential impacts and the subsequent quality monitoring to confirm acceptable groundwater conditions. Any recommendation for remedial action should include a time frame for completion of studies and implementation, as well as recommended changes to the monitoring program to assess the effectiveness of the action taken.

4.2.7.2 2024 Assessment

The newly approved trigger mechanism was applied to the 2024 data. There were no cases where a parameter concentration exceeded the trigger criteria for three or more consecutive events.

4.3 Residential Water Quality

Water quality data from 2011 to 2024 are summarized in Table 8. Historical residential well sampling data from 2002 to 2010 are included digitally.

A domestic well survey was previously recommended by the Ministry; a confirmation of completion of the domestic well survey was requested in 2022 (Cambium, 2024). As documented in the *2016 Annual Report* (WSP, 2017), a well survey was completed in 2015 and four additional residents (private well owners) agreed to participate in the monitoring program. This program has continued since that time and has been updated as necessary to ensure at least six locations in the vicinity of the Site are included in annual testing. Results of the program have been documented in each annual report.

The residential well sample identified as ‘Empire’ is northwest of Peterborough County Road 36, 75 m up-gradient of the waste mound. Historically, water quality at this well exhibited ODWQS exceedances for TDS and a single elevated concentration of sodium in 2015.

Formerly identified as 95 County Road 36 (WSP, 2017), residential well 68 Peterborough County Road 36 is 65 m cross-gradient from the waste mound. This well has often had TDS concentrations greater than the ODWQS.

There has been a single exceedance of TDS concentrations greater than ODWQS criteria at residential well 515 Riverside Drive, about 1 km southeast and down-gradient of the waste mound. The well was not sampled during the November 2024 sampling event as the resident was not home and the tap was shut off.

Additional residential wells were added to the program in 2017. Residential wells 320 Riverside and 396 Riverside are about 825 and 765 m southeast and down-gradient of the waste mound,

respectively. No ODWQS exceedances have been reported at 320 Riverside and one exceedance of iron was reported at 396 Riverside.

The resident for the well identified as 314 Riverside did not wish to be included in any further monitoring events after October 2017. As such, the well at 130 Peterborough County Road 36 was permanently added to the monitoring program in 2018 (sampled once before in 2016). Occasional elevated iron concentrations have been reported at this well. This well was reported as damaged (well cap seized) in November 2022 and remained inaccessible in 2024; the resident was notified.

Water quality data at all sampled residential wells were similar to background water quality at the Site (i.e., well nest 00-1). No site related impacts were evident at the residential wells included in the monitoring program in 2024. Furthermore, there were few exceedances of the ODWQS criteria at any of the residential wells sampled in 2024, as detailed below.

- Empire Fuels: sodium and TDS in May and November

Given the significant decrease in hardness and increase in sodium at the Empire well in 2024, it was suspected that the water was being treated with a softener. This should be confirmed prior to sampling in 2025.

Although elevated sodium concentrations were not attributed to site impacts, they were greater than the ODWQS criteria of 200 mg/L. Given that the sodium concentrations exceeded 20 mg/L at several of the residential wells, the homeowners and local Medical Officer of Health were notified in 2018, as required by the ODWQS (Cambium, 2020). This correspondence was also sent to the Ministry's Peterborough District Office.

4.4 Landfill Gas Monitoring

Landfill gas, specifically methane and carbon dioxide, is derived from the decomposition of organic wastes. The biological decomposition process results in the generation of landfill gas until some period, likely decades, after the landfilling of that waste ceases. Landfill gas presents a potential hazard because methane-air mixtures can be explosive at concentrations

between 5% and 17% methane by volume (50,000 ppm to 170,000 ppm) in air (Werner Sölken, 2021).

Once landfill gases are produced under the surface, they tend to migrate from the landfill through pore spaces within the refuse and cover material. Landfill gases are lighter than air and naturally tend to move upward, usually through the landfill surface. Where upward migration is restricted by densely compact waste or impermeable landfill cover, gases tend to migrate horizontally. Generally, a landfill's peak production of gas occurs within five to seven years following closure and gas is no longer produced 20 years following closure; however, small quantities of gas may continue to be emitted from a landfill for 50 or more years.

Landfill gas monitoring was completed to assess compliance with Section 4.10 of *Landfill Standards, A Guideline on the Regulatory and Approval Requirements for New and Expanding Landfilling Sites* (MOEE, 1998), which states that methane gas concentrations must be:

- less than 2.5% methane gas in the subsurface at the property boundary,
- less than 1.0% methane in an on-site building, or its foundation, and
- less than 0.05% methane (i.e. not present) in a building, or its foundation, which is located off-site.

Landfill gas monitoring was conducted at the Site in 2024 to assess the potential gas hazard at the Site. The results of the landfill gas monitoring program are documented in the field data sheets (Appendix C) and summarized in Table 9. Landfill gas was detected at leachate monitor 97-3 (2% methane by volume), in May. No other wells had concentrations greater than 0.05% methane by volume in 2024, consistent with historical results.

4.5 Adequacy of Monitoring Program

To have a refined and concise monitoring program at the Site, the existing monitoring program is reviewed annually to determine if it sufficiently monitors impacts at the Site. Following the 2024 assessment, the monitoring program continues to effectively characterize site conditions, groundwater, and any groundwater discharges from the Site, and includes data that relates to background water conditions. At the Site, in whole or in part:

- All monitoring wells were confirmed to be in good condition and secure.
- All fieldwork for groundwater investigations was done in accordance with the established SOPs (including internal/external QA/QC).
- All groundwater sampling for the monitoring period was successfully completed in accordance with the ECA.
- The Site has an adequate contingency plan in place.
- Design and operational measures were adequate to prevent potential human health impacts and impairments of the environment.
- Unacceptable impacts were not anticipated to down-gradient users.

5.0 Site Operations

This section presents a summary of 2024 operations for the Site. The requirements of ECA Condition 51, related to the Transfer Station operation are addressed as follows:

- Monthly balance of waste received and transferred from the Transfer Station (Section 5.8 and Table 10).
- Summary of any rejected wastes (Section 5.6).
- Summary of any incidents and complaints received (Section 5.5).
- Description of any operational changes and/or Transfer Station improvements undertaken and all other operational issues (Section 5.9).

5.1 Site Access and Security

The Site is well screened by surrounding forest and thick vegetation. Site access is controlled from Peterborough County Road 36 by a chain linked fence which was in good condition in 2024. The Municipality uses video surveillance equipment to deter trespassing at the Site. An access pass card is provided to all tax paying residents of the Municipality, where access is only permitted during operational hours and with the presence of a site attendant.

Signage is posted at the gate and the attendant shelter, which lists the hours of operation, emergency contact information, acceptable waste types, site rules, and a warning against illegal dumping.

The hours of operation in 2024 were as followed:

Summer (April 15 to September 15)

Sunday ..... 11:00 AM to 7:00 PM
Tuesday, Friday, Saturday ..... 8:00 AM to 4:30 PM

Winter (September 16 to April 14)

Sunday ..... 11:00 AM to 4:00 PM
Tuesday and Saturday ..... 8:00 AM to 4:30 PM

All Municipal sites are closed on Christmas Day, New Years Day, Family Day, Good Friday, Easter Monday, and Canada Day.

All Municipal sites are open on Victoria Day, Civic Holiday, Labour Day, and Thanksgiving Monday and operate on Sunday Hours.

5.2 Operating Procedures

In 2024, all transfer operations were conducted under the supervision and direction of the site attendant, employed by the Municipality. The site attendant was responsible for ensuring that the safe and orderly operation and maintenance of the Site complied with the requirements of the ECA and the *Environmental Protection Act* and its Regulations as administered by the Ministry. The site attendant's responsibilities included, but were not limited to the following:

- controlling admission of authorized vehicles with acceptable wastes
- ensuring proper daily litter control
- controlling collection and haulage of materials by a licensed hauler
- maintain a daily record of all operations which are available for inspection by the Ministry

As part of the daily operation of the Site and outlined in the Standard Operating Procedures (MTL, 2020b), the site attendant used the following forms on each operating day, as applicable:

- TS-1 Daily Inspection Form
- TS-2 Issues and Deficiencies Forms
- TS-3 Daily Incoming Waste Form
- TS-4 Tipping Fee Form
- TS-5 Tire Form
- TS-6 Reuse Centre Form
- TS-7 Unaccepted Refused Waste & Entry Form

- TS-8 Complaint Form
- TS-9 Record of Materials Removed Form

5.3 Training

Staff from the Municipality and private contractors operated the Site. All employees working at the transfer station are properly trained for the tasks that they are expected to perform and are provided with continued on-the-job training. No formal training was completed in 2024; however, the Municipality offered health and safety, and on-the-job training related to the operations of the Site.

In 2022, all site attendants completed paintball gun training for bear control, productive conflict training, and a refresher course on Workplace Hazardous Material Information Systems (WHMIS). In addition, meetings were held on April 11 and September 29, 2022 to discuss the following: upcoming waste events, waste documentation, a review on the ECA, the *Transfer Station, Safety, Emergency, and Spills Procedures* (MTL, 2020b), and the *Transfer Station Standard Operating Procedures* (MTL, 2020a), etc.

5.4 Site Inspections

The following section discusses observations during site inspections conducted by Cambium and discusses information provided by the Municipality in 2024.

Daily site inspections of the on-site equipment and facilities were completed by the site attendant, as per ECA Condition 40.

There were no environmental and/or operational problems that were negatively impacting the environment observed by Cambium or the Municipality during site inspections in 2024.

5.4.1 Litter Control

As noted by Cambium staff, the Site was in good condition. Minimal evidence of blown litter was observed during site visits in 2024.

The intent of good housekeeping practices is to protect on-site worker health and safety, and the surrounding environment from nuisance effects. Nuisance effects are minimized by adopting good housekeeping measures as part of the Site operations. Regular housekeeping is essential to control such nuisances as:

- Blowing and loose litter
- Odour
- Rodents and insects
- Scavenging birds

5.4.2 Roads

The access road has sufficient width at the entrance and within the Site to allow unimpeded winter travel and access for emergency and snow removal equipment. The site access roads were observed to be well maintained and graded and were reported to be regularly cleared of snow with a sand mixture applied as needed by the Municipality during the winter months.

5.4.3 Final Cover Integrity

The waste mound was adequately covered and there was minimal evidence of erosion observed during visits in 2024. Furthermore, the waste mound was well vegetated, which is an effective erosion control measure. No seeps were noted during any site visits conducted in 2024.

5.5 Complaints and Incidents

ECA Condition 41(a) requires the Municipality to record the nature of the complaint and remediate the issue to prevent recurrence in the future. The Municipality reported that there were no complaints received regarding the Site in 2024.The following incidents were reported and documented in 2024:

- Two incidents involving inappropriate and aggressive behaviour by residents. Verbal warning was issued to both the residents.

- One incident involving resident not obeying the clear bag policy and dumped waste in black bags.
- One incident of a resident attempting to remove items and dumping recycling into garbage.
- One incident where a resident salvaged a lawn mover from metal pile.

5.6 Waste Refusal

The Municipality has a Clear Bag Policy. Any garbage bag that has any visible blue box materials, municipal hazardous and special wastes (MHSW), or more than 20% divertible items (i.e., clothing, organics, waste electrical electronic equipment (WEEE)) is not accepted at the Site. The site attendant is required to fill out the “TS-7 Unaccepted Refused Waste and Entry” form as detailed in the Municipal document *Transfer Station Standard Operating Procedures* (MTL, 2020b). This Municipality keeps these forms on file.

5.7 Monitoring Well Security

As part of the 2024 groundwater monitoring program, wells listed in Table 1 were inspected and complied with R.R.O. 1990 Regulation 903 - Wells. Refer to Appendix E for photographs of the monitoring wells.

5.8 Materials Summary

The following waste types are collected at the Site; refer to Figure 3 for the collection locations of each material.

- Residential, Industrial, Commercial, and Institutional (IC&I) non-hazardous waste
- Construction and Demolition (C&D) Materials
- Bulky Items
- WEEE
- Limited MHSW
- Leaf and Yard Waste

- Blue Box Recyclables
- Scrap Metal
- Tires
- CFC Appliances

In January 2022, waste by-law B2022-004 was revoked and replaced with B2022-036 for the purposes of updating waste disposal fees, site hours, and additional detail on acceptable and prohibited waste types.

ECA Condition 26 permits an increase in MHSW quantities to be accepted at the Site as follows:

- A maximum of 200 vehicular batteries
- A maximum of three 250 L drum of lithium, dry cell, and/or rechargeable batteries
- A maximum of six 250 L capacity container for the bulk collection of empty motor oil containers
- A maximum of 300 units of fluorescent light bulbs

A maximum volume of 150 m³ of MHSW can be stored at the Site at one time.

5.8.1 Re-Use Centre

The Municipality operated a Re-Use Centre at the Site for specific materials from the spring until autumn annually. The Municipality reported that about 4 - 30 m^3 bins of materials were diverted from the Bobcaygeon site in 2024.

Acceptable Items: Small furniture, sporting goods, toys, books, housewares, select furniture, novelty items, memorabilia and collectibles, and bicycles.

Unacceptable Items: Including but not limited to; couches and large chairs, mattresses, electronics, CFC appliances, clothing and footwear, linens, auto parts, unsanitary items, and bulky items.

5.8.2 Site Usage

Site usage, as documented by the Municipality, is summarized in Embedded Table 7. Waste collected is transferred to the Peterborough Waste Management Facility. Refer to appended Table 10 for a monthly summary of materials accepted and transferred at the Site.

Embedded Table 7 Summary of Site Usage

	2024	2023	2022	2021	2020
Vehicles – Private	33,461	32,008	31,814	32,987	31,062
Bags of Garbage	38,691	36,691	37,445	39,808	38,864
Waste – Tonnes	438.78	410.45	411.06	435.34	398.25
C&D Materials – tonnes	95.98	79.00	78.05	86.94	59.81

5.8.3 Site Diversion

Embedded Table 8 provides a summary of the materials diverted from the Site in 2024, as provided by the Municipality and the County of Peterborough. In addition, about 535 m³ of brush was received at the Site in 2024, subsequently chipped and used as cover for rehabilitation on Municipal properties.

Embedded Table 8 Summary of Diverted Materials

Material	tonnes
Blue Box	
Containers	71.59
Fibres	79.01
Empty Oil/Anti-freeze Containers	0.10
Durable Plastics	4.43
Scrap Metal and White Goods	40.33
WEEE	16.59
TOTAL	**212.05**
Material	
Alcohol Containers	37,575 units
Tires	262 units
Fluorescent Tubes[1]	238 m

Notes:

1. *Municipality total in 2024.*

5.8.4 Municipal Wide Diversion

The Site is approved to accept limited MHSW, as are various other transfer stations in the Municipality including the Bobcaygeon, Buckhorn, and Cavendish sites. In 2024, the Municipality accepted 0.41 tonnes of single-cell batteries and 0.183 tonnes of car batteries. Three mattress collection events were held at the Municipality's waste disposal sites in 2024. A total of 292 mattresses were collected.

Throughout 2024, 3.33 tonnes of textiles were collected from all sites.

A seasonally operated durable plastics event is run by the Municipality. In 2024, 18.01 tonnes of durable plastics were collected from all municipally operated waste disposal sites in 2024.

The Municipality provides its residents with numerous methods to promote waste diversion at home. The following items were sold in 2023:

- Composters: 12 units
- Digestors: 5 units

- Kitchen Catcher (compost bins): 11 units
- Foodcycler: 121 units

5.9 Site and Documentation Reviews and Updates

The following documents are maintained by the Municipality, reviewed annually, and updated as required.

- Current Design and Operations Plan consisting of the following and associated supporting documents:
  - *North Landfill Site Transfer Station, Design, Operation, Maintenance and Closure Report* (TSH, 2002)
  - Letter from TSH to the Ministry, dated June 19, 2002, with details pertaining to, the volume of waste to be stored, the contingency plan and construction schedule, and documents pertaining to the name change for the Township and the contingency and emergency plan
  - Letter and supporting documentation dated October 19, 2006, to the Ministry from TSH providing additional information for the requested addendum to permit the chipping and storage of wood waste at the Transfer Station. The supporting documentation includes Drawing No. 2 - Bobcaygeon (North) Landfill Site Proposed Final Contours dated October 19, 2006
  - Environmental Compliance Approval application, dated May 10, 2016, and includes the Design and Operations Report, maps, and supporting documentation
  - email correspondence from Cambium, providing feedback on updated changes to the MHSW program
  - *Transfer Station Safety, Emergency and Spills Procedures* (MTL, 2020a)
  - *Transfer Station Standard Operating Procedures* (MTL, 2020b)

Specifically,

- The Design and Operations Plan was reviewed on December 21, 2023. No changes were made.
- The *Standard Operating Procedures* and *Emergency Spills Procedure* were reviewed on October 12, 2023. Minor housekeeping related updates were made.

No improvements to the transfer station were completed by the Municipality in 2024.Copies of the operations procedures and emergency spills procedures are included with this report digitally.

5.10 Compliance with Ministry Approval

Based on the scope of work completed at the Bobcaygeon transfer station, the information provided by the Municipality, and the results of monitoring program compliance with all conditions of the ECA were achieved in 2024.

6.0 Conclusions and Recommendations

Based on the 2024 monitoring program, Cambium provides the following conclusions regarding the Bobcaygeon waste disposal site.

- Results of the groundwater elevation monitoring indicated that the shallow and deep aquifer flowed predominantly to the south-southeast. Components to the southwest from the waste mound and to the northwest/northeast from Wilderness Park Road were also present.
- Consistent with historical results, there was a predominant downward vertical gradient calculated between most monitoring well nests.
- The water quality at the Site is monitored in the shallow (upper) and deep (middle and lower) aquifers. Results indicated that site-related impacts were occurring in the upper bedrock monitors with minimal, if any, impacts in the deep bedrock aquifer. The site-related impacts were to the southwest and southeast of the waste mound, with marginal impacts at the closest off-site monitor 98-3-U (30 m down-gradient of the property boundary).
- A non-site related impact was impacting the off-site monitoring wells (98-1 and 98-2) adjacent Wilderness Park Road, south of the Site. The historical Bobcaygeon South/Verulam landfills were the suspected source of elevated concentrations in these wells.
- Given the lack of persistently elevated concentrations which have exceeded the RUC criteria at down-gradient well nest 98-3 (30 m south of property boundary) and at perimeter well nest BH16-1, the Site was not considered to be causing significant offsite impacts.
- Volatile organic compound analysis was completed in 2022. VOCs are not required to be sampled until autumn 2027 per the amended ECA.
- The site-specific trigger was not activated in 2024.
- Methane was detected at leachate monitor 97-3 (2% methane by volume) in May. No other wells had concentrations greater than 0.05% methane by volume in 2024.

- According to Municipal and County records, 439 tonnes of waste, 96 tonnes of construction and demolition waste, 150 tonnes of containers and fibres, and 61 tonnes of various other materials were accepted and transferred off-site in 2024. Not included in these tonnages were 535 m³ brush, 37,575 alcohol containers, and 262 tires.
- The Site was operated in compliance with all ECA Conditions.

Based on the results of the 2024 monitoring program, Cambium recommends the following:

- Groundwater and residential well monitoring should continue in 2025 as described in the monitoring program.
- It should be confirmed if the water at the Empire well is being treated with a softener in 2025.
- Application of the trigger mechanism should occur after each monitoring event in 2025.

References

Cambium. (2018). *2017 Annual Report, Bobcaygeon Waste Disposal Site.*

Cambium. (2020). *2019 Annual Monitoring Report, Bobcaygeon Waste Disposal Site.*

Cambium. (2021). *2020 Annual Report, Bobcaygeon Transfer Station.* Cambium Inc.

Cambium. (2024). *2023 Annual Report, Bobcaygeon Transfer Station.* Cambium Inc.

EMMS. (1995). *Bobcaygeon Landfill Report, Preliminary Groundwater Investigation.* Environmental Management & Monitoring Services Inc.

Government of Canada. (2025a). *Historical Data*. Retrieved 2025, from Past weather and climate: http://climate.weather.gc.ca/historical_data/search_historic_data_e.html

Government of Canada. (2025b). *Canadian Climate Normals or Averages 1991-2020*. Retrieved 2025, from National Climate Data and Information Archive: https://climate.weather.gc.ca/climate_normals/

Hydroterra. (2006). *Updated Hydrogeologic Report, 2002 to 2006 Results, Township of Galway-Cavendish and Harvey North Landfill.* Hydroterra Limited.

MECP. (2021). *Landfill Standards: A guideline on the regulatory and approval requirements for new or expanding landfilling sites. .*

MOE. (2006). *Technical Support Document for Ontario Drinking Water Quality Standards, Objectives and Guidelines.* Ministry of the Environment.

MOE. (2010). *Monitoring and Reporting for Waste Disposal Sites, Groundwater and Surface Water, Technical Guidance Document.* Ministry of the Environment.

MOEE. (1993). *Guidance Manual for Landfill Sites Receiving Municipal Waste .* Ministry of the Environment and Energy.

MOEE. (1994). *Incorporation of the Reasonable Use Concept into MOEE Groundwater Management Activities.* Ministry of the Environment and Energy.

MOEE. (1996). *Guidance on Sampling and Analytical Methods for Use at Contaminated Site in Ontario.* Ministry of the Environment and Energy.

MOEE. (1998). *A Guideline on the Regulatory and Approval Requirements for New or Expanding Landfill Sites.* Ministry of the Environment and Energy.

MTL. (2020a). *Transfer Station Safety, Emergency and Spills Procedures.* Municipality of Trent Lakes.

MTL. (2020b). *Transfer Station Standard Operating Procedures.* Muncipality of Trent Lakes.

TCC. (2014). *Trent Assessment Report.* Trent Conservation Coalition.

TSH. (2002). *North Landfill Site Closure Plan.* Totten Sims Hubicki.

TSH. (2008). *Township of Galway-Cavendish and Harvey North Landfill Site, 2007 Annual Monitoring Report.* Totten Sims Hubicki.

Werner Sölken. (2021, December 30). *What is %LEL / %UEL / PID*. Retrieved from GOALZERO: https://www.wermac.org/safety/safety_what_is_lel_and_uel.html

WSP. (2017). *2016 Annual Monitoring Report - Bobcaygeon Closed Landfill Site / Transfer Station.* WSP Canada Inc.

Glossary of Terms

- **Active Face/Area**
  The portion of the landfill facility where waste is currently being deposited, spread and/or, compacted prior to the placement of cover material.
- **Adverse Environmental Impact**
  Any direct or indirect undesirable effect on the environment resulting from an emission or discharge that is caused or likely to be caused by human activity.
- **Annual Report**
  Report documenting the results of water quality, environmental quality, and operations monitoring for the year, or for a period as prescribed in the Certificate of Approval.
- **Approved Design and Operations Plan**
  The design of a landfill site and its facilities which have been submitted along with the application documents for which formal Ministry approval has been issued through the Certificate of Approval.
- **Approved Site or Facility**
  A landfill site/facility for which there is an existing and current Certificate of Approval.
- **Aquifer**
  A geologic unit (soil or rock) that contains sufficient saturated permeable material to yield measurable quantities of water to wells and springs.
- **Attenuation**
  Natural process through which the concentrations of landfill generated contaminants are reduced to safe levels.
- **Borehole**
  A hole drilled for soil sampling purposes.
- **Buffer Area**
  An area of land situated within the peripheral area surrounding an active filling area, but limited in extent to the property boundary, assigned to provide space for remedial measures, contaminant control measures, and for the reduction or elimination of adverse environmental impact caused by migrating contaminants.
- **Certificate of Approval**
  The license or permit issued by the Ministry for the operation of a landfill site. Issued to the owner of the site with conditions of compliance stated therein.
- **Contaminant**
  A compound, element, or physical parameter, usually resulting from human activity, or found at elevated concentrations that have or may have a harmful effect on public health or the environment.
- **Contaminant Migration Path**
  Route by which a contaminant will move from the site into adjacent properties or the natural environment. Usually a route that offers the least resistance to movement.
- **Contamination Attenuation Zone**
  The zone beneath the surface, located beyond the landfill site boundary, where contaminants will be naturally attenuated to predetermined levels. Also, see Reasonable Use Policy.
- **Contingency Plan**
  A documented plan detailing a co-ordinated course of action to be followed to control and remediate occurrences such as a fire, explosion, or release of contaminants in an uncontrolled manner that could threaten the environment and public health.
- **Cover Material**
  Material approved by the Ministry that is used to cover compacted solid waste. Usually, a soil with suitable characteristics for specific end-use.
- **Site Development Plan and Operations Report**
  Development and Operations Plan or Report is a document detailing the planned sequence of activities through the landfill site's active life, the control systems, site facilities and monitoring systems that are necessary. This document is required for obtaining a Certificate of Approval.
- **Design Capacity**
  The maximum amount of waste that is planned to be disposed of at a landfill site.
- **Detection Limit**
  Concentration under which a parameter cannot be quantitatively measured.

- **EAA or EA Act**
  Environmental Assessment Act, Revised Statutes of Ontario, 1990. One of the primary acts of legislation intended to protect, conserve, and wisely manage Ontario's environment through regulating planning and development.
- **Environmental Compliance Approval**
  The license or permit issued by the Ministry for the operation of a landfill site. Issued to the owner of the site with conditions of compliance stated therein.
- **EPA**
  Environmental Protection Act, Revised Status of Ontario, 1990. EPA is another of the primary pieces of Provincial legislation governing the protection of the natural environment of the Province.
- **Evapotranspiration**
  The evaporation of all water from soil, snow, ice, vegetation, and other surfaces, including the water absorbed by plants, that is released to the atmosphere as vapour.
- **Fill Area**
  The area of a landfill site designed and designated for the disposal of waste.
- **Final Cover**
  Soil material or soil in combination with synthetic membranes, overlain by vegetation in a planned landscape, placed over a waste cell that has reached the end of its active life.
- **Groundwater**
  Subsurface water that occurs beneath the water table in soils and rocks that are fully saturated.
- **Hydraulic Conductivity**
  The rate of flow of water through a cross-section under a specific hydraulic gradient. It is a property of the geologic formation and the fluid, in hydrogeologic applications where the fluid is water (Units of m/day or cm/s).
- **Hydraulic Gradient**
  The head drop per unit distance in the direction of flow, the driving force for groundwater flow.
- **Hydrogeology**
  The study of subsurface waters and related geologic aspects of surface waters.
- **Impermeable Fill**
  Soil material that is placed as filling material that is sufficiently cohesive and fine grained to impede and restrict the flow of water through it.
- **In situ Testing**
  Testing done on-site, in the field, of material or naturally occurring substances in their original state.
- **Landfill Gas**
  Combustible gas (primarily methane and carbon dioxide) generated by the decomposition of organic waste materials.
- **Landfill Site**
  A parcel of land where solid waste is disposed of in or on land for the purposes of waste management.
- **Leachate**
  Water or other liquid that has been contaminated by dissolved or suspended particles due to contact with solid waste.
- **Leachate Breakout**
  Location where leachate comes to the ground surfaces; a seep or spring.
- **Limit of Filling**
  The outermost limit at which waste has been disposed of, or approved or proposed for disposal at a landfill.
- **Ministry**
  Ontario Ministry of the Environment, Conservation and Parks.
- **Monitoring**
  Regular or spontaneous procedures used to methodically inspect and collect data on the performance of a landfill site relating to environmental quality (i.e., air, leachate, gas, ground or surface water, unsaturated soils, etc.).
- **Monitoring Well**
  The constructed unit of casing (riser and screen) installed in a borehole.
- **Multi-Level Monitoring Well**
  More than one monitoring well installed at a given test well location.
- **Native Soil**
  Soil material occurring naturally in the ground at a location.

- **Natural Attenuation**
  Where contaminants are reduced to acceptable concentration levels by natural mechanisms (dilution, absorption onto the soil matrix, etc.), biological action, and chemical interaction.
- **Occupational Health and Safety Act**
  The primary act of legislation enacted by Ontario Ministry of Labour to regulate and control the safety in the workplace; also Occupational Health and Safety Act, Revised Statutes of Ontario, 1990.
- **Odour Control**
  Minimizing or eliminating the nuisance and undesirable impact of objectionable or unpleasant odours arising from waste disposal operations.
- **Open Burning**
  Burning any matter whereby the resultant combustion products are emitted directly to the atmosphere without passing through an adequate stack, duct, or chimney.
- **Operations Plan**
  A document detailing the waste disposal operations in a planned, and if necessary, a staged manner, that ensure compliance with regulatory provisions concerning the operations of a landfill site.
- **Operator (Site Operator)/Attendant**
  The individual or organization who, through ownership or under contract, manages and operates a landfill site for the purpose of waste disposal.
- **Owner**
  A person, persons, organization, or municipal authority who own a landfill facility or part of a landfill facility, and in whose name the Certificate of Approval for the site is issued.
- **Percolation**
  The movement of infiltrating water through soil.
- **Permeability**
  Often used interchangeable with hydraulic conductivity, but not strictly correct. Permeability is a property of the porous media only. Dependent upon media properties that affect flow, diameter, sphericity, roundness, and packing of the grains.
- **Piezometer**
  A well that intersects a confined aquifer.
- **Provisional Certificate of Approval (Provisional C of A)**
  Same as Certificate of Approval.
- **Reasonable Use Policy**
  A policy developed by the Ministry to stipulate limits to the level of groundwater quality impairment that may be permitted to occur at site property boundaries, to allow the reasonable use of adjacent properties or land without adversely affecting public health and the environment.
- **Recharge Zone**
  An area where precipitation or surface run-off infiltrates into the ground and then, through natural percolation enters an aquifer.
- **Recycling**
  Sorting, collecting, or processing waste materials that can be used as a substitute for the raw materials in a process or activity for the production of (the same or other) goods. For example, the "Blue Box" system, in-plant scrap handling, or raw material recovery systems. Recycling is also the marketing of products made from recycled or recycled materials.
- **Reduction (of waste or component of 3Rs program)**
  Those actions, practices, or processes that result in the production or generation of less waste.
- **Remedial Action**
  Corrective action taken to clean-up or remedy a spill, an uncontrolled discharge of a contaminant, or a breach in a facility or its operations, in order to minimize the consequent threat to public health and the environment.
- **Representative Sample**
  A small portion of soil, water, etc. which can be subjected to testing and analysis, that is expected to yield results that will reliably represent the identical characteristics of the source of the material or of a larger body of material.
- **Reuse (component of 3Rs program)**
  The use of an item again in its original form, for a similar purpose as originally intended, or to fulfil a different function.
- **Run-off**
  The part of precipitation (rainwater, snowmelt) that flows overland and does not infiltrate the surface material (soil or rock).

- **Saturated Zone**
  The zone of a subsurface soil where all voids are filled with water.
- **Sedimentation**
  The deposition of fine grained soil in an undesirable location, caused by the scouring, erosion, and transportation of earth materials by surface run-off.
- **Sensitive Land Use**
  A land use where humans or the natural environment may experience an adverse environmental impact.
- **Settlement**
  The subsidence of the top surface and underlying waste of a landfill or waste cell as a result of densification under its own weight.
- **Site Capacity**
  The maximum amount of waste that is planned to be disposed (design capacity) or that has been disposed of at a landfill site.
- **Site Closure**
  The planned and approved cessation or termination of landfilling activities at a landfill site upon reaching its site capacity.
- **Site Life**
  The period from its inception through active period of waste disposal, to the time when a landfill site reaches its' site capacity, when it ceases to receive any further waste, including and up to closure.
- **Solid Waste**
  Any waste matter that cannot be characterized by its physical properties as a liquid waste product.
- **Solid Waste Disposal Site or Facility**
  A site or facility such as a landfill site where solid waste is disposed of.
- **Source Separation**
  The separation of various wastes at their point of generation for the purposes of recycling or further processing.
- **Standpipe**
  A monitoring well that intersects the water table aquifer.
- **Storm water**
  Run-off that occurs as a direct result of a storm event or thaw.
- **Storm water Detention**
  Control of storm water by the construction of impoundments of structures for the purpose of regulating storm water flows during high intensity rainfall events that would otherwise transport excessive amounts of sediment, cause soil erosion or cause flooding.
- **Stratigraphy**
  The geologic sub-structuring, usually layered with different distribution, deposition, and age.
- **Surface Run-off (Drainage)**
  See Run-off.
- **Surface Water**
  Water that occurs at the earth's surface (ponds, streams, rivers, lakes, oceans).
- **Sub-Soil**
  Soil horizons below the topsoil.
- **Test hole**
  A hole drilled for soil sampling purposes.
- **Topsoil**
  The uppermost layer of the soil containing appreciable organic materials in mineral soils. Adequate fertility to support plant growth.
- **Unsaturated Zone**
  The zone (also vadose zone) in a porous sub-soil, where the voids are not completely water-filled, but contain some air-filled voids. Limited above by the land surface and below by the water table.
- **Vector**
  A disease carrier and transmitter; usually an insect or rodent.
- **VOC**
  Volatile organic compounds are those compounds that will readily volatilize (convert from liquid to gas phase) at conditions normally found in the environment.

- **Waste**
  Ashes, garbage, refuse, domestic waste, industrial waste, or municipal refuse and other used products as are designated or interpreted by the provisions of the Environmental Protection Act.
- **Waste Disposal Site (Facility)**
  Any land or land covered by water upon, into, in or through which, or building or structure in which, waste is deposited or processed and any machinery or equipment or operation required for the treatment or disposal of waste.
- **Waste Management System**
  All facilities, equipment, and operations for the complete management of waste, including the collection, handling, transportation, storage, processing, and disposal thereof, and may include one or more waste disposal sites.
- **Water Table**
  The water level attained in a monitoring well, which screens the surficial unconfined aquifer.
- **Water Balance**
  Amounts of water to various components in a system so that water entering the system equals the amount of water contained within and discharged out of a system.
- **Water Level**
  The level of water in a well.
- **Well Casing**
  The pipe that is used to construct a well.
- **Well Screen**
  A filtering device used to keep sediment from entering a well.
- **Wetlands**
  Areas where water is at, near or above the land surface long enough to be capable of supporting aquatic or hydrolytic vegetation, and which have soils indicative of wet conditions.

Abbreviations

RFP	Request For Proposal
ha	hectare
Ministry	Ontario Ministry of the Environment, Conservation and Parks
tonne	metric ton
MNRF	Ontario Ministry of Natural Resources and Forestry
t	metric tonne
ECA	Environmental Compliance Approval
µS	microSiemens
EPA	Environmental Protection Act
ODWQS	Ontario Drinking Water Quality Standards
EAA	Environmental Assessment Act
PC of A	Provisional Certificate of Approval
MW	monitoring well
PWQO	Provincial Water Quality Objectives
masl	metres above sea level
TOC	Total Organic Carbon
pg	picogram
VOC	Volatile Organic Compound
ng	nanogram
BTU	British Thermal Unit
µg	microgram
°C	temperature in degrees Celsius
g	gram
N/A	not available
kg	kilogram
%	percent
L	Litre
cfm	cubic feet per minute
mg/L	milligrams per litre
ppmdv	part per million by dry volume
mm	millimetre
ppmv	part per million by volume
m	metre
ppm	part per million
km	kilometre
min	minimum
m^3	cubic metre
max	maximum
m^2	square metre

Standard Limitations

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A site assessment is created using data and information collected during the investigation of a site and based on conditions encountered at the time and particular locations at which fieldwork is conducted. The information, sample results and data collected represent the conditions only at the specific times at which and at those specific locations from which the information, samples and data were obtained and the information, sample results and data may vary at other locations and times. To the extent that Cambium's work or report considers any locations or times other than those from which information, sample results and data was specifically received, the work or report is based on a reasonable extrapolation from such information, sample results and data but the actual conditions encountered may vary from those extrapolations.

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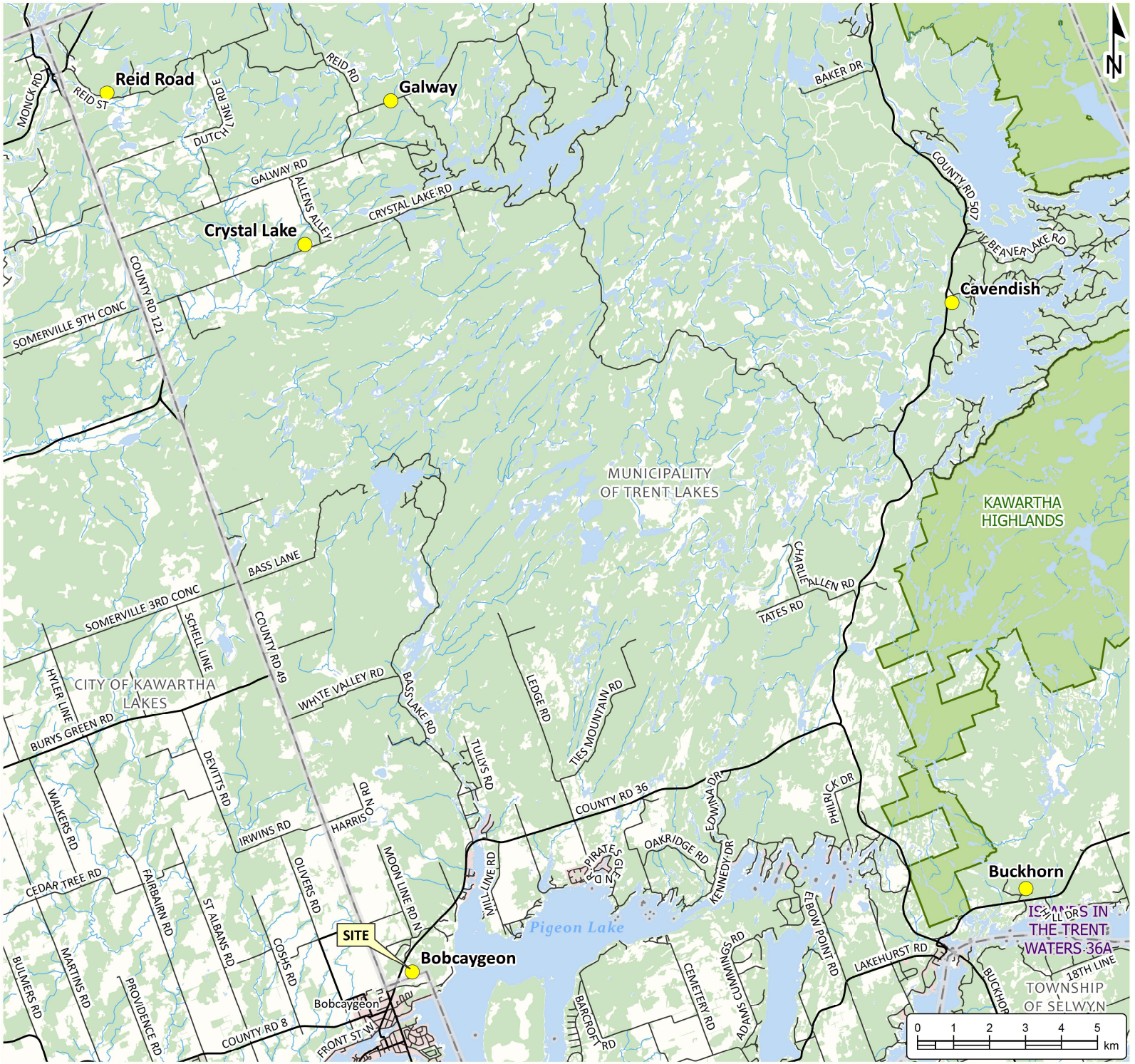
Appended Figures

BOBCAYGEON TRANSFER STATION

42 PETERBOROUGH COUNTY ROAD 36
Trent Lakes, Ontario
Municipality of Trent Lakes



LEGEND

- Trent Lakes Waste Disposal Sites
- Major Road
- Minor Road
- Watercourse
- First Nations Reserve
- Municipal Boundary
- Provincial Park
- Built Up Area
- Wooded Area
- Water Area

Notes:
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- Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.
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SITE LOCATION PLAN

Project No.:	10520-005	Date:	March 2025
		Rev.:	
Scale:	1:150,000	Projection:	NAD 1983 UTM Zone 17N
Created by:	DBC	Checked by:	SNR
Figure:	1		

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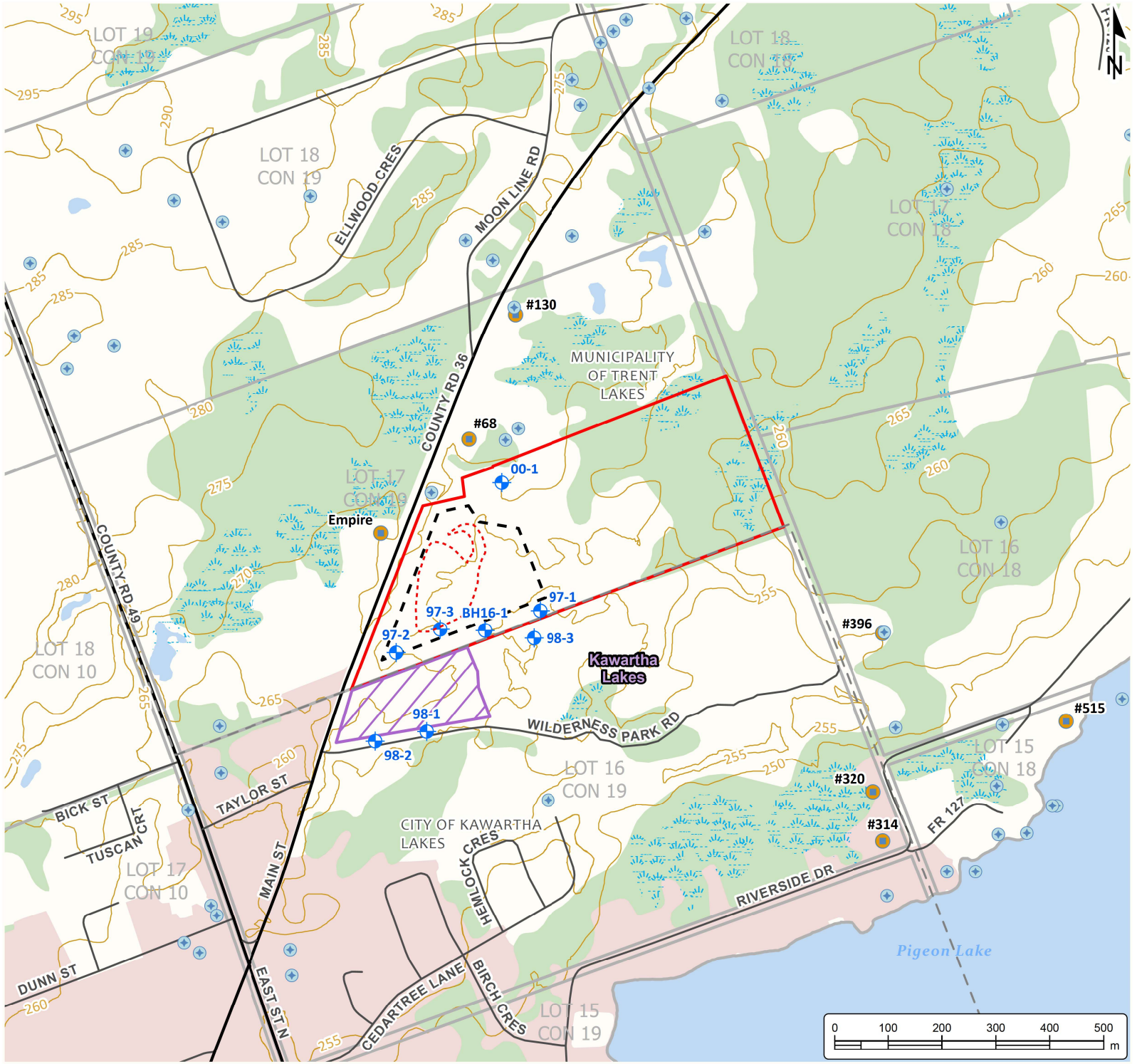

BOBCAYGEON TRANSFER STATION

42 PETERBOROUGH COUNTY ROAD 36
Trent Lakes, Ontario
Municipality of Trent Lakes

LEGEND

- Ministry Well Record
- Monitoring Well Location
- Residential Monitoring Well
- Major Road
- Minor Road
- Contour (5m Interval)
- Approved Limit of Waste (4 ha)
- Limit of Existing Waste (1.6 ha)
- Site (22 ha)
- Approximate Area of Historical Bobcaygeon South/Verulam Sites
- Municipal Boundary
- Lot/Concession
- OWB Tertiary Watershed
- Unevaluated Wetland
- Water Area
- Wooded Area
- Built Up Area

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LOCAL TOPOGRAPHY PLAN

Project No.:	10520-005	Date:	March 2025
		Rev.:	
Scale:	1:10,000	Projection:	NAD 1983 UTM Zone 17N
Created by:	DBC	Checked by:	SNR
Figure:	2		

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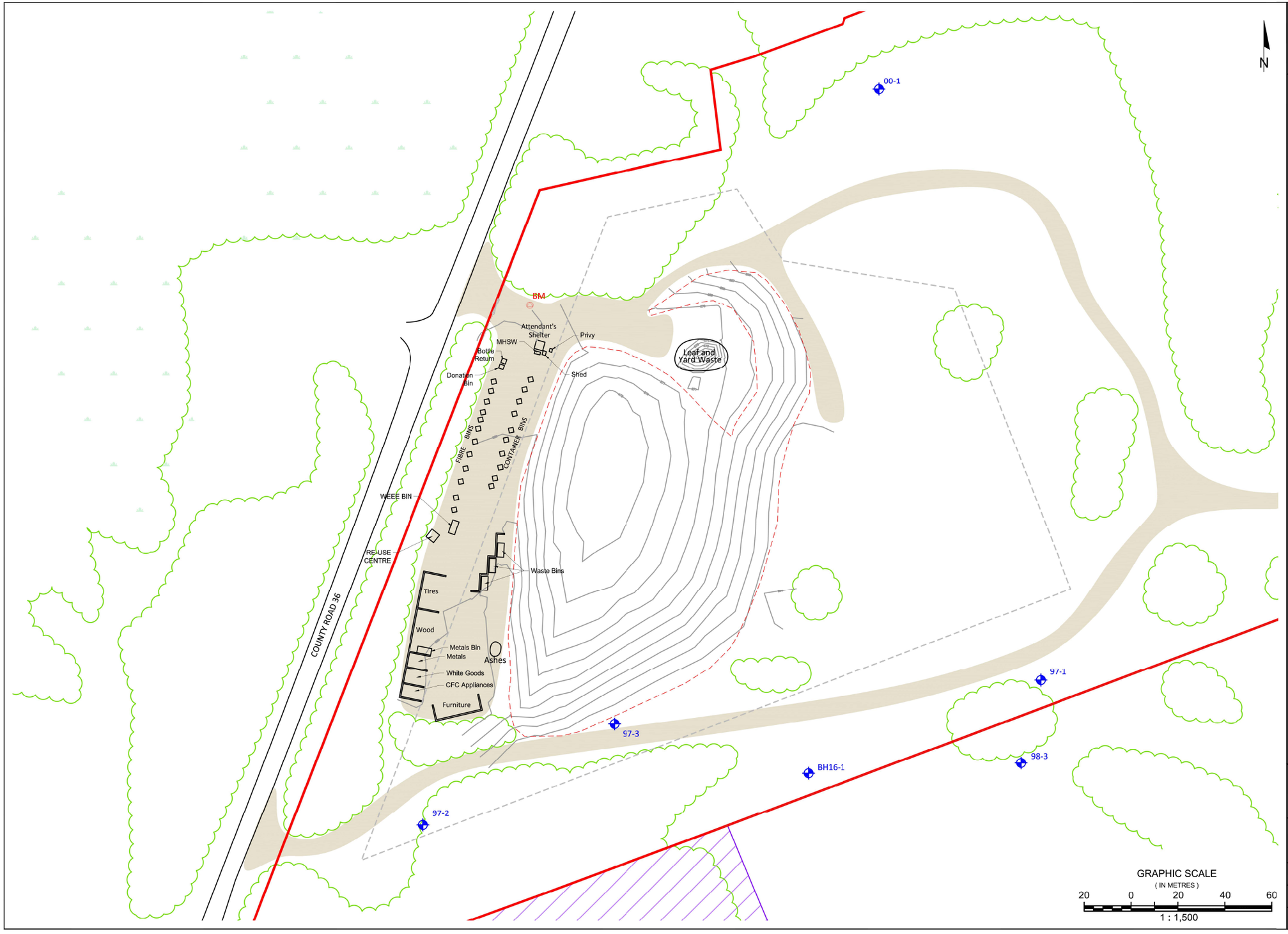

BOBCAYGEON TRANSFER STATION

42 PETERBOROUGH COUNTY ROAD 36
Trent Lakes, Ontario
Municipality of Trent Lakes

LEGEND

- Monitoring Well Location
- Benchmark
- Topographic Contour Line
- Site (22 ha.)
- Existing Limit of Waste (1.6 ha.)
- Approved Waste Disposal Area (4 ha.)
- Fence
- Gate
- On-site Road
- Approximate Tree Line
- Low Lying Wet Area
- Approximate Area of Historical Bobcaygeon South/Verulam Sites

Notes:
1. Base mapping features were obtained from the WSP 2016 Landfill Monitoring Report - Figure 3 - Site Plan.
2. Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.

Benchmarks:
1. Nail in pole. Elevation 270.58 m.

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EXISTING CONDITIONS

Project No.:	Date:	March 2024
10520-005	Rev.:	
Horizontal Scale:	Vertical Scale:	
1:1500		N/A
Drawn By:	Checked By:	Figure:
TLC	SNR	3

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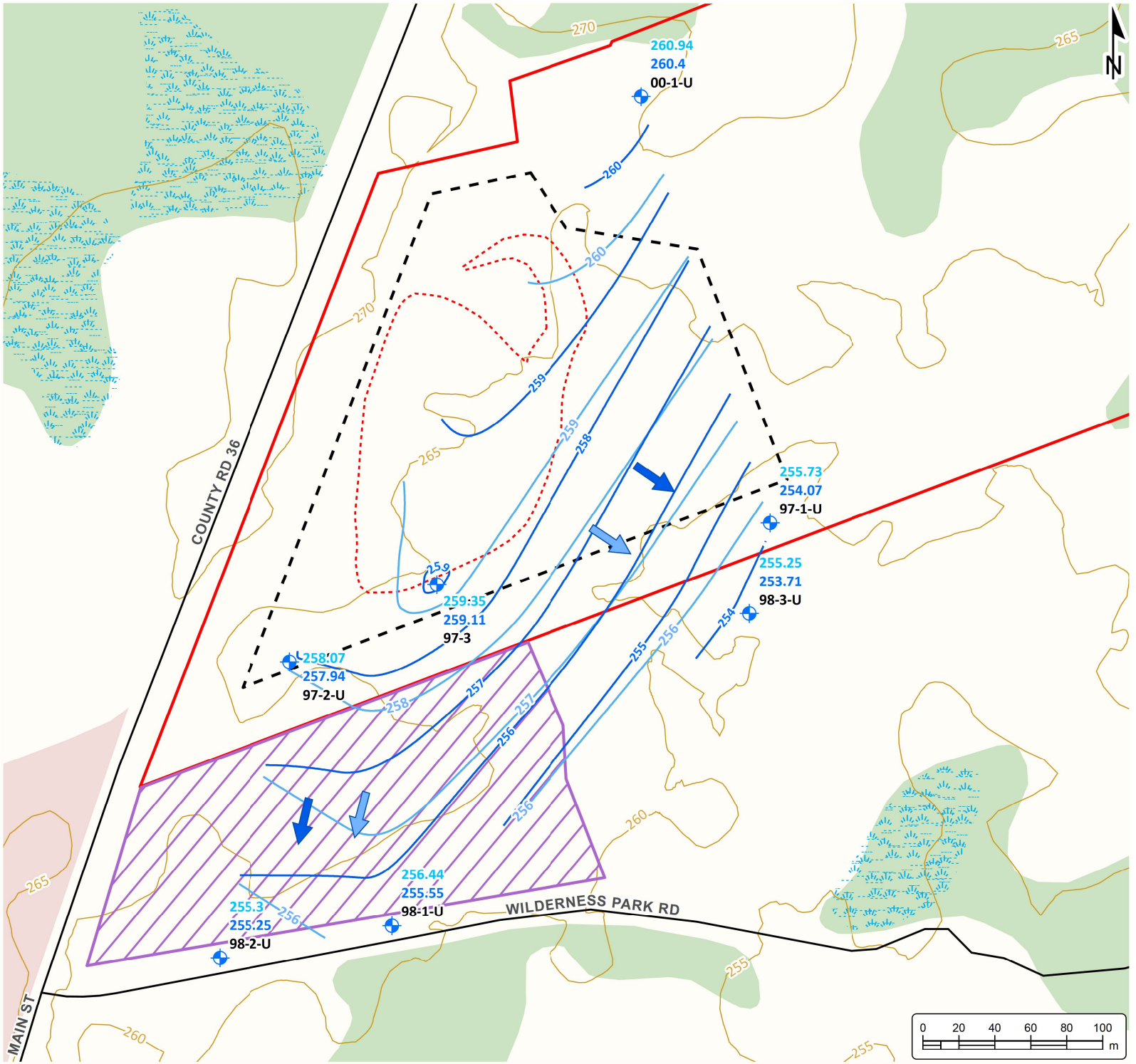

BOBCAYGEON TRANSFER STATION

42 PETERBOROUGH COUNTY ROAD 36
Trent Lakes, Ontario
Municipality of Trent Lakes

LEGEND

- Monitoring Well - Upper Bedrock
- Road
- Contour (5m Interval)
- Groundwater Contour April, 2024
- Groundwater Contour November, 2024
- 260.94 Groundwater Elevation April, 2024
- 260.94 Groundwater Elevation November, 2024
- Groundwater Flow Direction April, 2024
- Groundwater Flow Direction November, 2024
- Unevaluated Wetland
- Wooded Area
- Built Up Area
- Approved Limit of Waste (4 ha)
- Limit of Existing Waste (1.6 ha)
- Site (22 ha)
- Approximate Area of Historical Bobcaygeon South/Verulam Sites

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UPPER BEDROCK GROUNDWATER CONFIGURATION

Project No.: 10520-005		Date: March 2025	Rev.:
Scale: 1:3,000		Projection: NAD 1983 UTM Zone 17N	
Created by: DBC	Checked by: SNR	Figure: 4	

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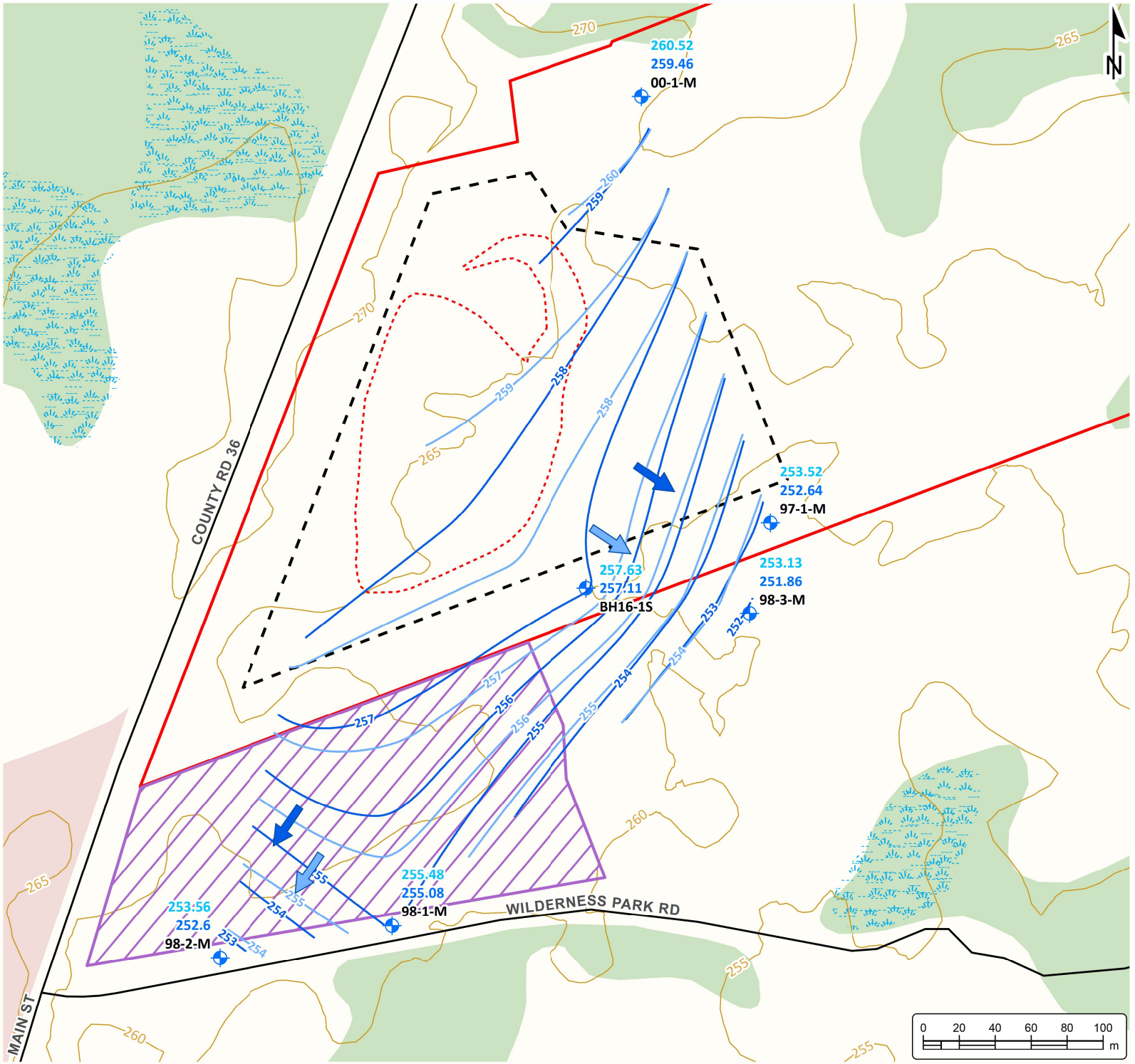

BOBCAYGEON TRANSFER STATION

42 PETERBOROUGH COUNTY ROAD 36
Trent Lakes, Ontario
Municipality of Trent Lakes

LEGEND

- Monitoring Well - Middle Bedrock
- Road
- Contour (5m Interval)
- Groundwater Contour April, 2024
- Groundwater Contour November, 2024
- 260.94 Groundwater Elevation April, 2024
- 260.94 Groundwater Elevation November, 2024
- Groundwater Flow Direction April, 2024
- Groundwater Flow Direction November, 2024
- Unevaluated Wetland
- Wooded Area
- Built Up Area
- Approved Limit of Waste (4 ha)
- Limit of Existing Waste (1.6 ha)
- Site (22 ha)
- Approximate Area of Historical Bobcaygeon South/Verulam Sites

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MIDDLE BEDROCK GROUNDWATER CONFIGURATION

Project No.: 10520-005		Date: March 2025	Rev.:
Scale: 1:3,000		Projection: NAD 1983 UTM Zone 17N	
Created by: DBC	Checked by: SNR	Figure: 5	

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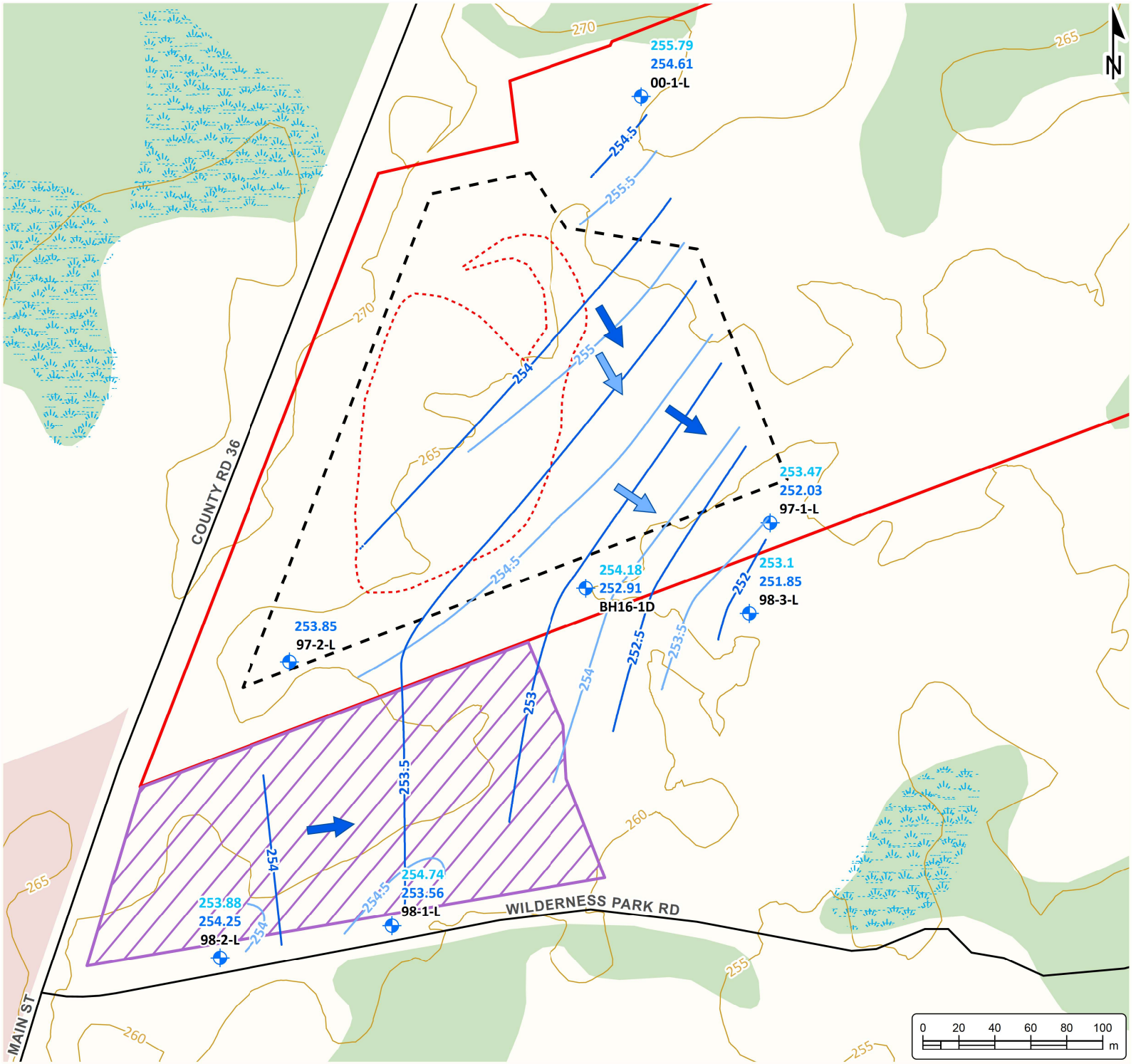

BOBCAYGEON TRANSFER STATION

42 PETERBOROUGH COUNTY ROAD 36
Trent Lakes, Ontario
Municipality of Trent Lakes

LEGEND

- Monitoring Well - Lower Bedrock
- Road
- Contour (5m Interval)
- Groundwater Contour April, 2024
- Groundwater Contour November, 2024
- 260.94 Groundwater Elevation April, 2024
- 260.94 Groundwater Elevation November, 2024
- Groundwater Flow Direction April, 2024
- Groundwater Flow Direction November, 2024
- Unevaluated Wetland
- Wooded Area
- Built Up Area
- Approved Limit of Waste (4 ha)
- Limit of Existing Waste (1.6 ha)
- Site (22 ha)
- Approximate Area of Historical Bobcaygeon South/Verulam Sites

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LOWER BEDROCK GROUNDWATER CONFIGURATION

Project No.: 10520-005		Date: March 2025	Rev.:
Scale: 1:3,000		Projection: NAD 1983 UTM Zone 17N	
Created by: DBC	Checked by: SNR	Figure: 6	

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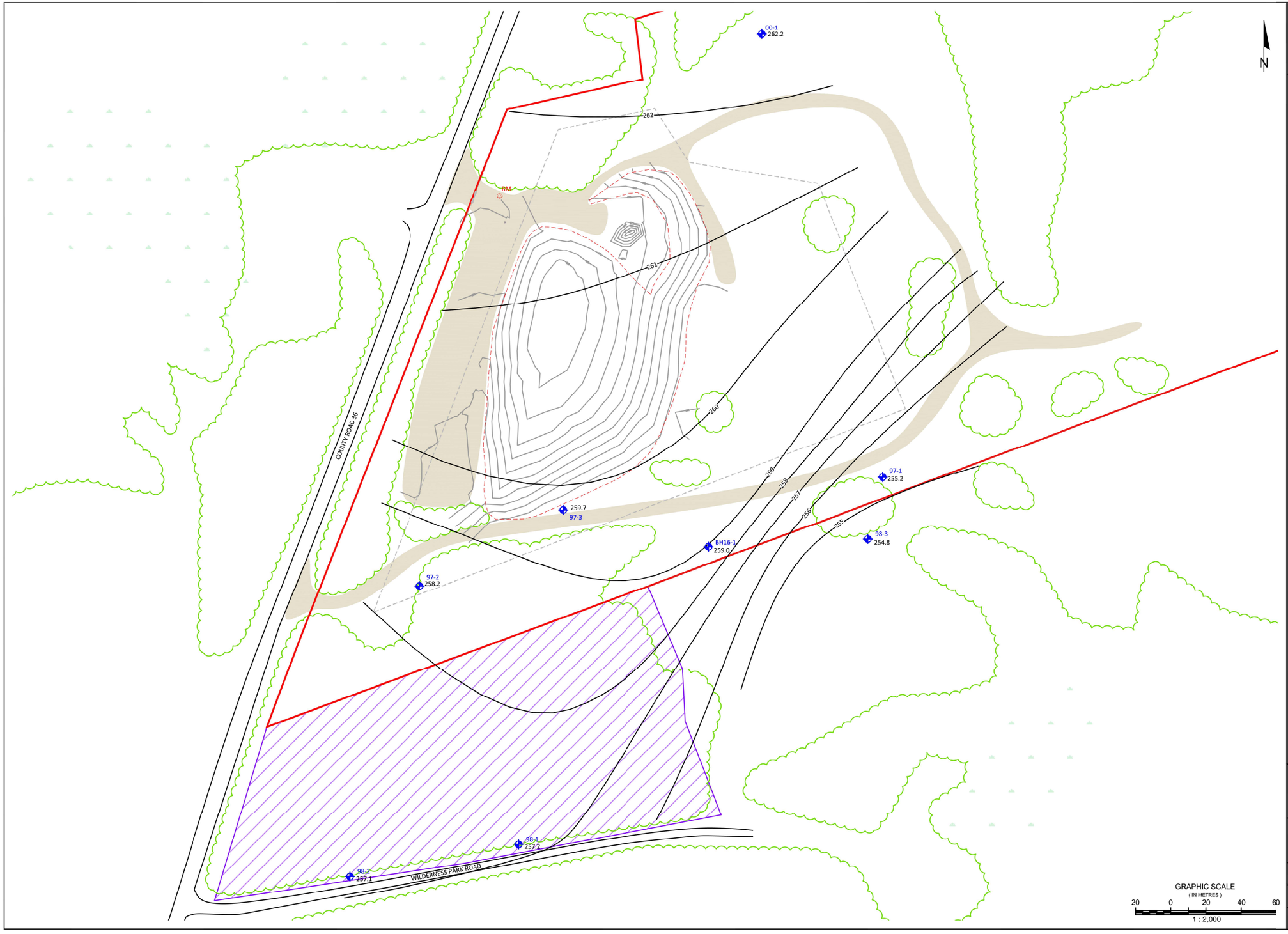

BOBCAYGEON TRANSFER STATION

42 PETERBOROUGH COUNTY ROAD 36
Trent Lakes, Ontario
Municipality of Trent Lakes

LEGEND

- Monitoring Well Location
- Benchmark
- 254.6 Bedrock Surface Elevation
- Bedrock Surface Elevation Contour
- Topographic Contour Line
- Site (22 ha.)
- Existing Limit of Waste (1.6 ha.)
- Approved Waste Disposal Area (4 ha.)
- Fence
- Gate
- On-site Road
- Approximate Tree Line
- Low Lying Wet Area
- Approximate Area of Historical Bobcaygeon South/Verulam Sites

Notes:
1. Base mapping features were obtained from the WSP 2016 Landfill Monitoring Report - Figure 3 - Site Plan.
2. Distances on this plan are in metres and can be converted to feet by dividing by 0.3048.

Benchmarks:
1. Nail in pole. Elevation 270.58 m.

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BEDROCK ELEVATION PLAN

Project No.: 10520-005		Date: March 2025	Rev.:
Horizontal Scale: 1:2,000		Vertical Scale: N/A	
Drawn By: TLC	Checked By: SNR	Figure: 7	

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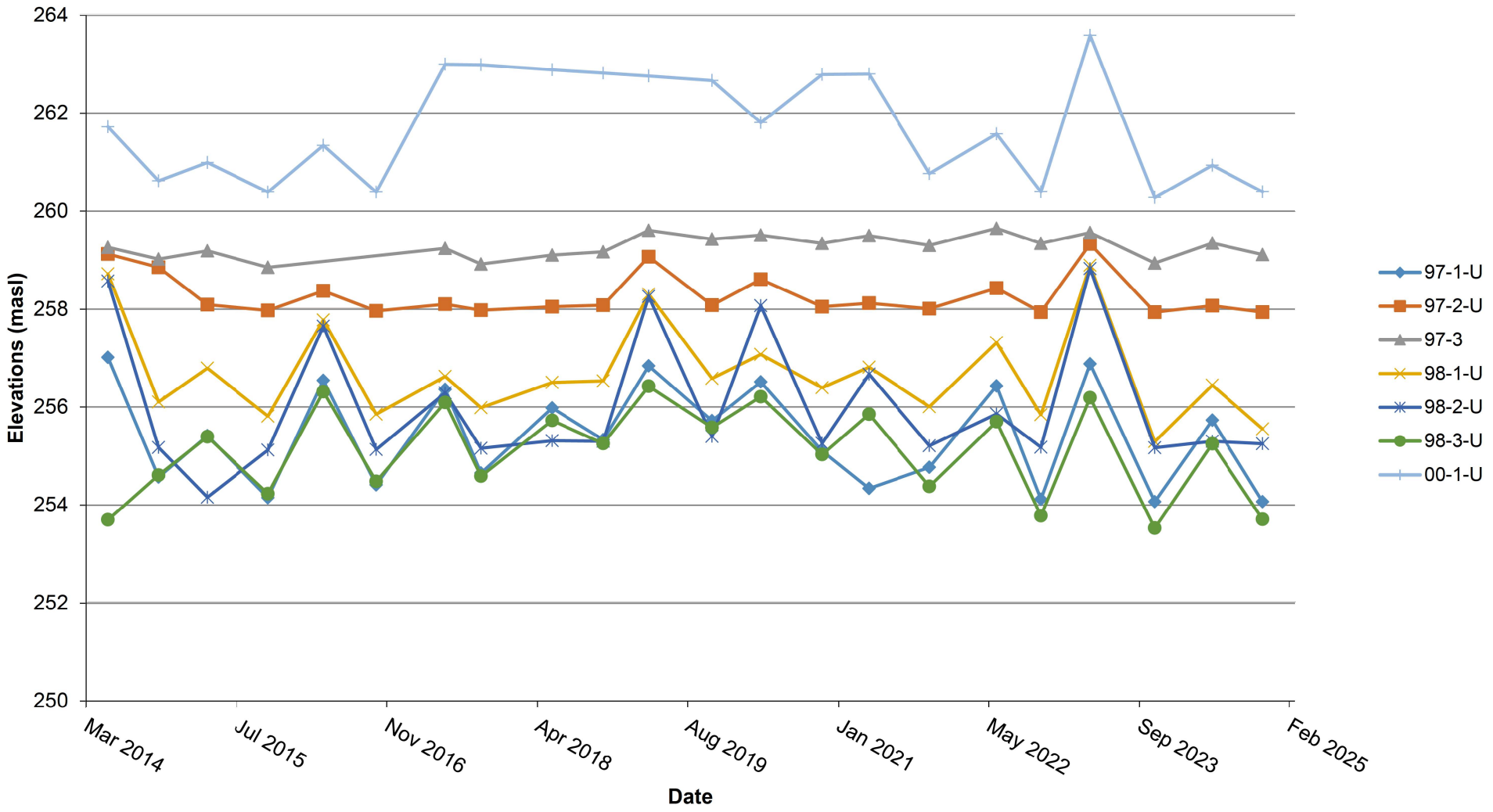
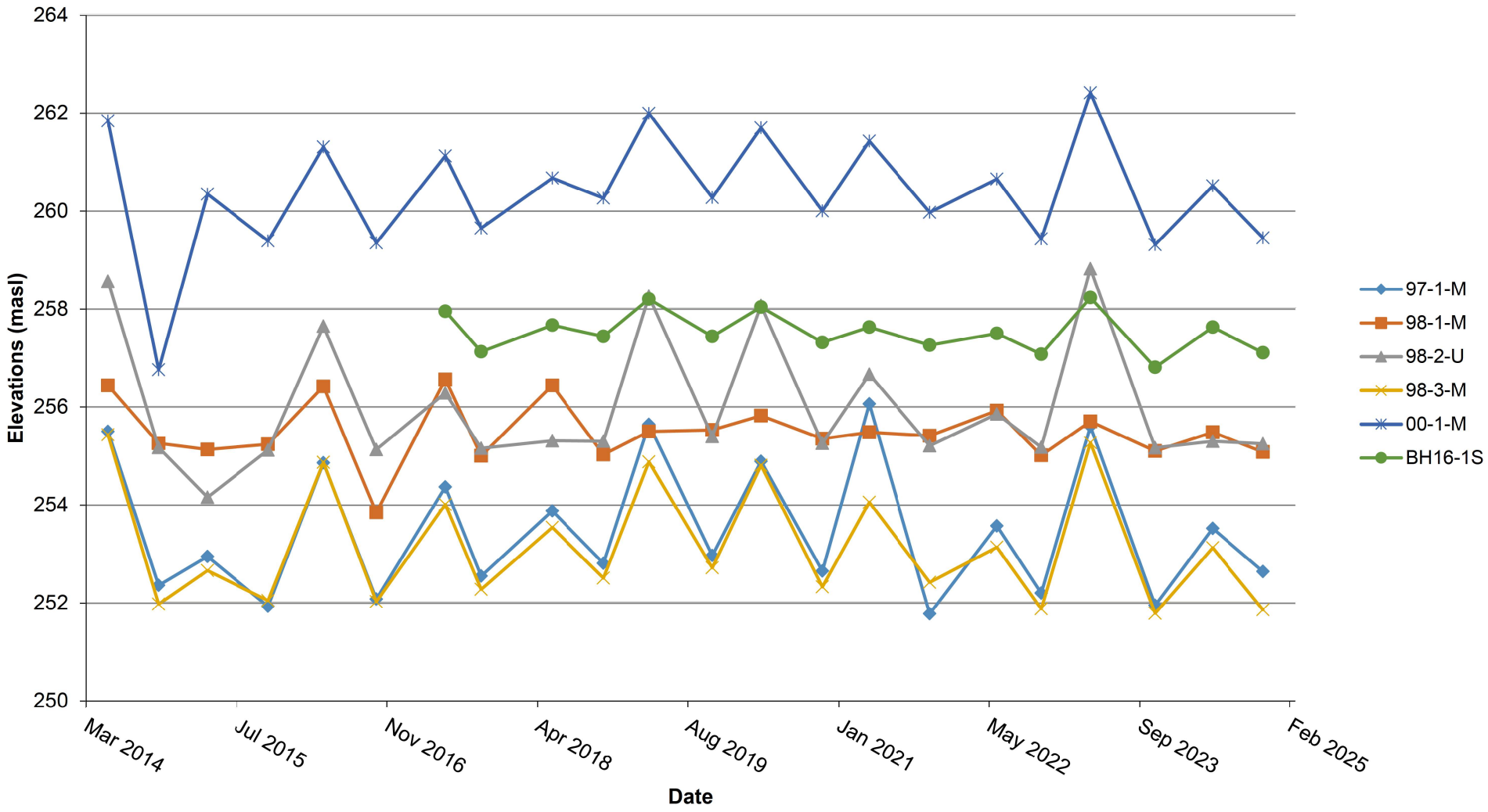


Groundwater Elevations (Interface/Upper Bedrock)

2024 Annual Report, Bobcaygeon Transfer Station
42 Peterborough County Road 36, Trent Lakes
The Municipality of Trent Lakes

Figure:	**8**
Date:	19/Nov/24
Project Manager:	Stephanie Reeder
Project No.:	10520-005

CAMBIUM

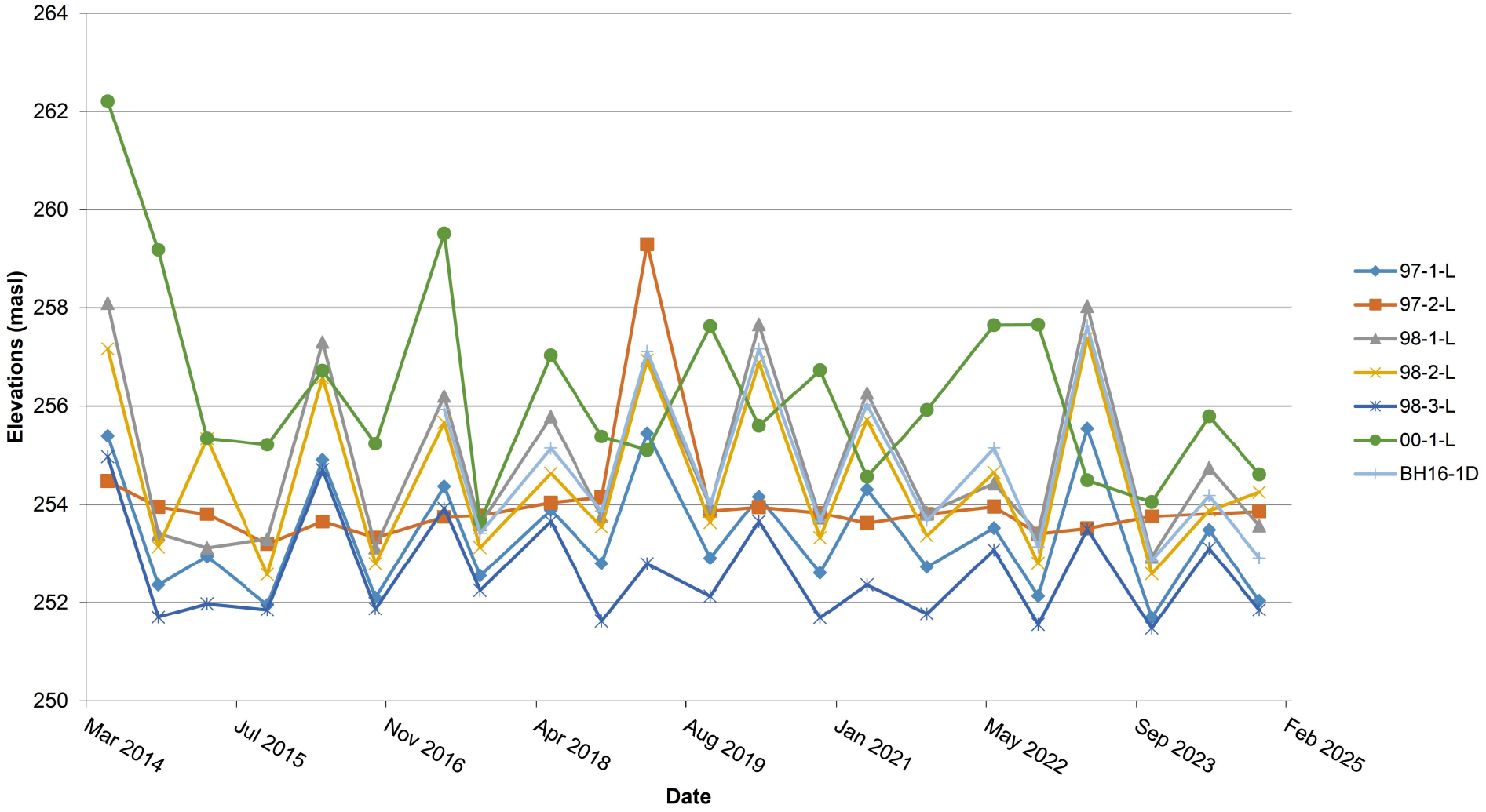


Groundwater Elevations (Middle Bedrock)

2024 Annual Report, Bobcaygeon Transfer Station
42 Peterborough County Road 36, Trent Lakes
The Municipality of Trent Lakes

Figure:	**9**
Date:	19/Nov/24
Project Manager:	Stephanie Reeder
Project No.:	10520-005

CAMBIUM



Groundwater Elevations (Lower Bedrock)

2024 Annual Report, Bobcaygeon Transfer Station
42 Peterborough County Road 36, Trent Lakes
The Municipality of Trent Lakes

Figure:	**10**
Date:	19/Nov/24
Project Manager:	Stephanie Reeder
Project No.:	10520-005

CAMBIUM

Appended Tables

Table Notes

EQL - reported detection limit for the current year

RUC - Reasonable Use Criteria

ODWQS - Ontario Drinking Water Quality Standards, O.Reg. 169/03

NV - No Value

"-" Parameter not analyzed or measured

Table 1 - Environmental Monitoring Program

Location	Task	Frequency	Parameters
GROUNDWATER			
97-1-U, 97-1-M, 97-1-L, 97-2-U, 97-2-L, 97-3, 98-1-U, 98-1-M, 98-1-L, 98-2-U, 98-2-M, 98-2-L, 98-3-U, 98-3-M, 98-3-L, 00-1-U, 00-1-M, 00-1-L, BH16-1S, BH16-1D Empire, 515 Riverside, 68 County Rd 36, 396 Riverside, 320 Riverside, 130 County Road 36 QA/QC 1 QAQC 2	• Measure groundwater levels • Groundwater sampling • Field Measurements (pH, temperature, conductivity, dissolved oxygen, ORP)	Twice Annually (Spring and Autumn)	Alkalinity, Ammonia, Barium, Boron, Calcium, Chloride, Conductivity, COD, DOC, Iron, Magnesium, Manganese, Nitrate, pH, Sodium, TDS, Sulphate, Hardness
97-3		Twice Annually (Spring and Autumn)	BOD, TSS
All Existing Monitors	• Measure combustible gas % by volume methane	Twice Annually (Spring and Autumn)	Methane
97-3, 98-2-U, 98-2-L Trip Blank		Once every 5 years (Next in Autumn 2027)	EPA 624 VOCs

Table 2 - Groundwater Elevation Data

Monitor	Northing Easting [1]	Original Ground Elevation (masl)	Stick Up (m)	Depth (m)	Measuring Point (masl)	12-May-14	27-Oct-14	7-Apr-15	27-Oct-15	28-Apr-16	21-Oct-16	7-Jun-17	4-Oct-17	28-May-18	15-Nov-18	15-Apr-19	11-Nov-19	20-Apr-20	9-Nov-20	14-Apr-21	2-Nov-21
97-1-U	*695759, 4936218*	*259.9*	*0.73*	*7.24*	*260.61*	*257.01*	*254.57*	*255.41*	*254.15*	*256.54*	*254.41*	*256.36*	*254.65*	*255.98*	*255.33*	*256.84*	*255.72*	*256.51*	*255.10*	*254.34*	*254.77*
97-1-M	695759, 4936218	259.9	0.75	11.68	260.63	255.50	252.36	252.95	251.93	254.86	252.08	254.37	252.55	253.88	252.81	255.64	252.97	254.89	252.65	256.06	251.78
97-1-L	695759, 4936218	259.9	0.73	17.77	260.60	255.39	252.36	252.94	251.95	254.90	252.10	254.36	252.54	253.88	252.79	255.44	252.90	254.15	252.60	254.30	252.72
97-2-U	*695493, 4936159*	*265.7*	*0.95*	*9.37*	*266.68*	*259.12*	*258.85*	*258.09*	*257.97*	*258.37*	*257.96*	*258.10*	*257.98*	*258.05*	*258.08*	*259.07*	*258.08*	*258.61*	*258.05*	*258.12*	*258.01*
97-2-L	695493, 4936159	265.7	0.94	14.18	266.67	254.47	253.95	253.80	253.19	253.65	253.32	253.74	253.77	254.03	254.14	259.29	253.86	253.94	253.82	253.61	253.80
97-3	*695576, 4936201*	*262.9*	*1.08*	*5.79*	*263.96*	*259.26*	*259.02*	*259.19*	*258.85*	-	-	*259.24*	*258.92*	*259.10*	*259.17*	*259.61*	*259.43*	*259.51*	*259.34*	*259.50*	*259.30*
98-1-U	*695549, 4936011*	*260.1*	*0.89*	*5.80*	*260.96*	*258.72*	*256.10*	*256.79*	*255.81*	*257.78*	*255.85*	*256.62*	*255.98*	*256.50*	*256.53*	*258.30*	*256.58*	*257.07*	*256.39*	*256.81*	*256.00*
98-1-M	695549, 4936011	260.1	0.89	9.96	260.96	256.44	255.26	255.13	255.24	256.42	253.85	256.56	255.00	256.44	255.03	255.50	255.53	255.82	255.35	255.48	255.41
98-1-L	695549, 4936011	260.1	0.87	14.24	260.94	258.09	253.40	253.11	253.29	257.30	253.12	256.20	253.59	255.78	253.75	256.93	253.95	257.66	253.72	256.26	253.83
98-2-U	*695453, 4935994*	*261.8*	*0.92*	*11.02*	*262.77*	*258.57*	*255.17*	*254.16*	*255.12*	*257.65*	*255.13*	*256.29*	*255.16*	*255.31*	*255.30*	*258.26*	*255.40*	*258.07*	*255.26*	*256.67*	*255.21*
98-2-M	695453, 4935994	261.8	0.90	16.44	262.75	254.62	253.49	253.03	253.17	253.98	252.49	254.38	251.77	254.37	253.27	253.17	253.92	253.28	253.47	253.08	253.39
98-2-L	695453, 4935994	261.8	0.90	23.77	262.75	257.16	253.13	255.33	252.57	256.58	252.79	255.67	253.12	254.63	253.54	256.93	253.63	256.89	253.32	255.72	253.36
98-3-U	*695749, 4936183*	*259.3*	*0.50*	*7.89*	*259.83*	*253.70*	*254.61*	*255.39*	*254.23*	*256.31*	*254.48*	*256.09*	*254.59*	*255.72*	*255.25*	*256.42*	*255.58*	*256.21*	*255.03*	*255.85*	*254.38*
98-3-M	695749, 4936183	259.3	0.79	13.26	260.12	255.43	251.98	252.66	252.05	254.87	252.03	254.01	252.28	253.54	252.51	254.88	252.72	254.81	252.33	254.06	252.42
98-3-L	695749, 4936183	259.3	0.83	18.21	260.17	254.96	251.70	251.97	251.85	254.70	251.87	253.92	252.25	253.65	251.62	252.79	252.13	253.65	251.69	252.36	251.77
00-1-U	*695692, 4936472*	*265.1*	*0.85*	*8.64*	*265.93*	*261.72*	*260.62*	*260.99*	*260.39*	*261.34*	*260.39*	*263.00*	*262.99*	*262.89*	*262.82*	*262.76*	*262.67*	*261.81*	*262.79*	*262.80*	*260.77*
00-1-M	695692, 4936472	265.1	0.81	13.00	265.89	261.84	256.76	260.35	259.39	261.31	259.35	261.13	259.66	260.68	260.27	262.00	260.28	261.70	260.01	261.43	259.98
00-1-L	695692, 4936472	265.1	0.82	19.13	265.90	262.20	259.18	255.34	255.21	256.72	255.23	259.52	253.65	257.03	255.38	255.10	257.63	255.60	256.73	254.56	255.92
BH16-1S	695658, 4936181	261.8	0.67	8.00	262.49	-	-	-	-	-	-	257.95	257.13	257.67	257.44	258.20	257.44	258.04	257.32	257.63	257.26
BH16-1D	695659, 4936179	261.6	0.84	16.02	262.45	-	-	-	-	-	-	255.93	253.41	255.14	253.87	257.11	254.00	257.16	253.65	256.03	253.67

1. Zone 17.
Italicized text represents the upper wells installed in the shallow aquifer.
Unformatted text represents the middle wells installed in the deep aquifer.
Shaded test represents the lower wells installed in the deep aquifer.

Table 2 - Groundwater Elevation Data

Monitor	Northing Easting [1]	Original Ground Elevation (masl)	Stick Up (m)	Depth (m)	Measuring Point (masl)	12-May-14	13-Jun-22	7-Nov-22	19-Apr-23	20-Nov-23	29-May-24	14-Nov-24
97-1-U	*695759, 4936218*	*259.9*	*0.73*	*7.24*	*260.61*	*257.01*	*256.43*	*254.12*	*256.88*	*254.07*	*255.73*	*254.07*
97-1-M	695759, 4936218	259.9	0.75	11.68	260.63	255.50	253.57	252.20	255.60	251.95	253.52	252.64
97-1-L	695759, 4936218	259.9	0.73	17.77	260.60	255.39	253.51	252.13	255.54	251.69	253.47	252.03
97-2-U	*695493, 4936159*	*265.7*	*0.95*	*9.37*	*266.68*	*259.12*	*258.43*	*257.94*	*259.33*	*257.94*	*258.07*	*257.94*
97-2-L	695493, 4936159	265.7	0.94	14.18	266.67	254.47	253.95	253.39	253.50	253.75	-	253.85
97-3	*695576, 4936201*	*262.9*	*1.08*	*5.79*	*263.96*	*259.26*	*259.65*	*259.34*	*259.56*	*258.94*	*259.35*	*259.11*
98-1-U	*695549, 4936011*	*260.1*	*0.89*	*5.80*	*260.96*	*258.72*	*257.31*	*255.84*	*258.89*	*255.29*	*256.44*	*255.55*
98-1-M	695549, 4936011	260.1	0.89	9.96	260.96	256.44	255.92	255.01	255.70	255.10	255.48	255.08
98-1-L	695549, 4936011	260.1	0.87	14.24	260.94	258.09	254.42	253.41	258.03	252.93	254.74	253.56
98-2-U	*695453, 4935994*	*261.8*	*0.92*	*11.02*	*262.77*	*258.57*	*255.86*	*255.18*	*258.83*	*255.17*	*255.30*	*255.25*
98-2-M	695453, 4935994	261.8	0.90	16.44	262.75	254.62	254.39	252.57	253.26	253.72	253.56	252.60
98-2-L	695453, 4935994	261.8	0.90	23.77	262.75	257.16	254.65	252.80	257.39	252.59	253.88	254.25
98-3-U	*695749, 4936183*	*259.3*	*0.50*	*7.89*	*259.83*	*253.70*	*255.70*	*253.78*	*256.19*	*253.53*	*255.25*	*253.71*
98-3-M	695749, 4936183	259.3	0.79	13.26	260.12	255.43	253.14	251.88	255.27	251.79	253.13	251.86
98-3-L	695749, 4936183	259.3	0.83	18.21	260.17	254.96	253.07	251.55	253.49	251.48	253.10	251.85
00-1-U	*695692, 4936472*	*265.1*	*0.85*	*8.64*	*265.93*	*261.72*	*261.58*	*260.40*	*263.59*	*260.28*	*260.94*	*260.40*
00-1-M	695692, 4936472	265.1	0.81	13.00	265.89	261.84	260.66	259.44	262.42	259.32	260.52	259.46
00-1-L	695692, 4936472	265.1	0.82	19.13	265.90	262.20	257.65	257.66	254.49	254.05	255.79	254.61
BH16-1S	695658, 4936181	261.8	0.67	8.00	262.49	-	257.50	257.08	258.23	256.81	257.63	257.11
BH16-1D	695659, 4936179	261.6	0.84	16.02	262.45	-	255.14	253.13	257.63	252.86	254.18	252.91

1. Zone 17.
Italicized text represents the upper wells installed in the shallow aquifer.
Unformatted text represents the middle wells installed in the deep aquifer.
Shaded test represents the lower wells installed in the deep aquifer.

CAMBIUM

Table 3 - Monitoring Well Information

Monitor Well	Ground Elevation (masl)	Measuring Point Elevation (masl)	Depth below Meas. Pt. (m)	Depth (mbgs)	Diameter (mm)	Stick-Up (m)	Screen Length (m)	Bottom of Screen Elevation (masl)	Top of Screen Elevation (masl)	Unit Screened
97-1-U	*259.9*	*260.61*	*7.24*	*6.51*	*50.8*	*0.73*	*1.5*	*253.37*	*254.869*	*Overburden/Limestone*
97-1-M	259.9	260.63	11.68	10.93	50.8	0.754	1.6	248.951	250.551	Limestone
97-1-L	259.9	260.60	17.77	17.04	50.8	0.726	1.6	242.833	244.433	Limestone
97-2-U	*265.7*	*266.68*	*9.37*	*8.42*	*50.8*	*0.946*	*1.5*	*257.308*	*258.808*	*Overburden/Limestone*
97-2-L	265.7	266.67	14.18	13.24	50.8	0.942	1.5	252.494	253.994	Limestone
97-3	*262.9*	*263.96*	*5.79*	*4.71*	*50.8*	*1.078*	*1.2*	*258.169*	*259.369*	*Overburden/Fractured Limestone*
98-1-U	*260.1*	*260.96*	*5.80*	*4.91*	*50.8*	*0.89*	*1.5*	*255.162*	*256.662*	*Fractured Limestone*
98-1-M	260.1	260.96	9.96	9.07	50.8	0.89	1.5	251.001	252.501	Limestone
98-1-L	260.1	260.94	14.24	13.37	50.8	0.87	1.5	246.701	248.201	Limestone
98-2-U	*261.8*	*262.77*	*11.02*	*10.10*	*50.8*	*0.92*	*0.5*	*251.747*	*252.247*	*Limestone*
98-2-M	261.8	262.75	16.44	15.54	50.8	0.90	1.5	246.308	247.808	Limestone
98-2-L	261.8	262.75	23.77	22.87	50.8	0.90	1.3	238.977	240.277	Limestone
98-3-U	*259.3*	*260.18*	*8.24*	*7.39*	*50.8*	*0.85*	*1.5*	*251.941*	*253.441*	*Limestone*
98-3-M	259.3	260.15	13.29	12.47	50.8	0.82	1.5	246.862	248.362	Limestone
98-3-L	259.3	260.17	18.21	17.38	50.8	0.83	1.9	241.958	243.858	Limestone/Red Shale
00-1-U	*265.1*	*265.93*	*3.46*	*2.61*	*50.8*	*0.85*	*1.5*	*262.465*	*263.965*	*Fractured Limestone*
00-1-M	265.1	265.89	13.00	12.19	50.8	0.81	1.5	252.885	254.385	Limestone
00-1-L	265.1	265.90	19.13	18.31	50.8	0.82	1.5	246.767	248.267	Limestone
BH16-1S	261.8	262.49	8.00	7.33	38.1	0.67	1.5	254.49	255.99	Limestone
BH16-1D	261.6	262.45	16.02	15.18	38.1	0.84	3	246.427	249.427	Limestone

Notes:
Italicized text represents the upper wells installed in the shallow aquifer.
Unformatted text represents the middle wells installed in the deep aquifer.
Shaded test represents the lower wells installed in the deep aquifer.

CAMBIUM

Table 4 - Vertical Hydraulic Gradients

Monitor	Difference in Elevation of Bottom of Screen	Vertical Gradients +downward, -upward																						Unit Screened
		12-May-14	27-Oct-14	7-Apr-15	27-Oct-15	28-Apr-16	21-Oct-16	7-Jun-17	4-Oct-17	28-May-18	15-Nov-18	15-Apr-19	11-Nov-19	20-Apr-20	9-Nov-20	4-Apr-21	2-Nov-21	13-Jun-22	2-Nov-22	19-Apr-23	20-Nov-23	29-May-24	14-Nov-24	
97-1-U	4.42	0.342	0.500	0.557	0.502	0.380	0.527	0.450	0.475	0.475	0.570	0.271	0.622	0.366	0.554	-0.390	0.676	0.647	0.434	0.289	0.479	0.500	0.323	Overburden/Limestone
97-1-M																								Limestone
97-1-U	10.54	0.154	0.210	0.234	0.209	0.156	0.219	0.189	0.200	0.199	0.241	0.132	0.267	0.224	0.237	0.003	0.194	0.277	0.188	0.127	0.226	0.214	0.193	Overburden/Limestone
97-1-L																								Limestone
97-1-M	6.12	0.018	0.000	0.002	-0.003	-0.007	-0.003	0.001	0.001	-0.0003	0.003	0.032	0.011	0.121	0.008	0.287	-0.154	0.009	0.011	0.009	0.042	0.008	0.099	Limestone
97-1-L																								Limestone
97-2-U	4.81	0.966	1.018	0.891	0.993	0.980	0.964	0.904	0.873	0.834	0.817	-0.047	0.875	0.969	0.877	0.936	0.873	0.929	0.944	1.210	0.869	-	0.848	Overburden/Bedrock
97-2-L																								Limestone
98-1-U	4.16	0.548	0.202	0.399	0.137	0.327	0.481	0.015	0.236	0.015	0.361	0.673	0.253	0.301	0.250	0.320	0.142	0.334	0.200	0.767	0.046	0.231	0.113	Fractured Limestone
98-1-M																								Limestone
98-1-U	8.46	0.074	0.319	0.435	0.298	0.057	0.323	0.050	0.283	0.085	0.329	0.162	0.311	-0.070	0.316	0.065	0.257	0.342	0.287	0.102	0.279	0.201	0.235	Fractured Limestone
98-1-L																								Limestone
98-1-M	4.30	-0.384	0.433	0.470	0.453	-0.205	0.170	0.084	0.328	0.153	0.298	-0.333	0.367	-0.428	0.379	-0.181	0.367	0.349	0.372	-0.542	0.505	0.172	0.353	Limestone
98-1-L																								Limestone
98-2-U	5.44	0.726	0.309	0.208	0.359	0.675	0.485	0.351	0.623	0.173	0.373	0.936	0.272	0.880	0.329	0.660	0.334	0.270	0.480	1.024	0.266	0.320	0.487	Limestone
98-2-M																								Limestone
98-2-U	12.77	0.110	0.160	-0.092	0.200	0.084	0.183	0.049	0.160	0.053	0.138	0.104	0.139	0.092	0.152	0.074	0.145	0.095	0.186	0.113	0.202	0.111	0.078	Limestone
98-2-L																								Limestone
98-2-M	7.33	-0.346	0.049	-0.314	0.082	-0.355	-0.041	-0.176	-0.184	-0.035	-0.037	-0.513	0.040	-0.492	0.021	-0.360	0.004	-0.035	-0.031	-0.563	0.154	-0.044	-0.225	Limestone
98-2-L																								Limestone
98-3-U	5.08	-0.341	0.518	0.538	0.429	0.284	0.482	0.409	0.455	0.429	0.539	0.303	0.563	0.275	0.531	0.352	0.386	0.337	0.337	0.181	0.343	0.417	0.364	Limestone
98-3-M																								Limestone
98-3-U	9.98	-0.126	0.291	0.343	0.238	0.161	0.261	0.218	0.235	0.208	0.364	0.364	0.346	0.257	0.335	0.350	0.262	0.251	0.403	0.271	0.206	0.216	0.187	Limestone
98-3-L																								Limestone/Red Shale
98-3-M	4.90	0.096	0.057	0.141	0.041	0.035	0.033	0.019	0.007	-0.022	0.182	0.427	0.121	0.237	0.131	0.347	0.133	0.163	0.472	0.363	0.064	0.007	0.002	Limestone
98-3-L																								Limestone/Red Shale
00-1-U	9.58	-0.013	0.403	0.067	0.104	0.003	0.109	0.195	0.348	0.231	0.266	0.079	0.249	0.011	0.290	0.143	0.082	0.096	0.100	0.122	0.100	0.044	0.098	Fractured Limestone
00-1-M																								Limestone
00-1-U	15.70	-0.031	0.092	0.360	0.330	0.294	0.329	0.222	0.595	0.373	0.474	0.488	0.321	0.395	0.386	0.525	0.309	0.250	0.174	0.580	0.397	0.328	0.369	Fractured Limestone
00-1-L																								Limestone
00-1-M	6.12	-0.059	-0.396	0.819	0.683	0.750	0.673	0.263	0.982	0.596	0.799	1.127	0.433	0.997	0.536	1.123	0.663	0.492	0.291	1.296	0.861	0.773	0.792	Limestone
00-1-L																								Limestone
BH16-1S	8.06	-	-	-	-	-	-	0.251	0.462	0.314	0.443	0.136	0.427	0.110	0.456	0.199	0.446	0.293	0.490	0.075	0.490	0.428	0.521	Limestone
BH16-1D																								Limestone

Notes:
Negative values indicate an upward vertical gradient.
Positive values indicate a downward vertical gradient.

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U
				Date	11 May 2011	02 May 2012	28 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	06 Apr 2015	27 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018
	Unit	EQL	***Bobcaygeon GW SH***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	80	84	107	77	90	70	112	93	130	77	109	76	89	91
Boron (filtered)	µg/L	2	***2,509***	**5,000**	20	15	22	29	25	15	60	19	25	12	21	14	19	18
Calcium (filtered)	µg/L	10			130,000	121,000	165,000	128,000	125,000	94,100	140,000	137,000	145,000	113,000	134,000	116,000	122,000	120,000
Chloride	µg/L	500		**250,000**	97,000	70,500	225,000	46,300	48,300	38,000	159,000	136,000	166,000	55,200	134,000	58,100	73,400	78,200
Iron (filtered)	µg/L	5	***155***	**300**	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<5	7	<5
Magnesium (filtered)	µg/L	1			5,600	3,880	8,720	5,800	3,580	33,200	4,980	5,840	5,950	3,500	5,080	4,230	4,530	4,540
Manganese (filtered)	µg/L	0.01	***26***	**50**	-	<2	<2	20	<2	<2	<2	<2	<2	<2	3	<1	1	<1
Sodium (filtered)	µg/L	10		**200,000**	65,000	41,000	127,000	54,700	33,200	10,200	83,200	74,800	94,200	31,300	78,700	48,300	51,700	57,000
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	298	299	333	301	338	262	325	321	308	276	351	283	321	278
Total Dissolved Solids	mg/L	3		**500**	**548**	482	**764**	486	412	380	**674**	496	**680**	390	**616**	419	**503**	412
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	-	318	448	344	327	372	370	366	387	297	356	307	324	319
Chemical Oxygen Demand	mg/L	5			<4	6	<5	<5	<5	9	<5	<5	<5	<5	<5	<5	<5	<5
Total Suspended Solids	mg/L	2			-	126	616	300	51	197	67	213	238	141	204	-	-	-
Biochemical Oxygen Demand	mg/L	2			-	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	-	-
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.2	3.3	1.7	2	2.6	***4.8***	1.7	2.4	1.1	1.3	2.6	2.1	***5.1***	***10.8***
Sulphate (filtered)	mg/L	1		**500**	18	14.1	33.1	11.3	12.8	116	21.4	21.9	20.9	12.1	23.1	13	14	16
Ammonia as N	mg/L	0.01			<0.05	<0.02	<0.02	<0.02	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	<0.01	0.01
Nitrate (as N)	mg/L	0.05		**10**	1.4	0.68	<0.05	0.42	0.51	0.13	2.2	1.65	2.51	0.36	3.54	0.98	1.25	0.83
Electrical Conductivity (Lab)	µS/cm	1			910	758	1,290	909	789	745	1,240	1,030	1,150	691	1,080	761	914	785
pH (Lab)	-	0.05		**6.5-8.5**	7.85	8.18	8.21	7.79	8.12	7.97	7.65	8.12	7.99	8.02	7.08	7.73	7.77	7.84
DO (Field)	mg/L				-	-	-	-	-	-	-	-	-	7.9	8.7	6.08	5.23	7.96
Redox (Field)	mV				-	-	-	-	-	-	-	-	-	-	-	84	165	135
Temperature (Field)	°C				-	-	-	-	-	-	-	-	-	8.7	9.4	9	9.4	9
Conductivity (field)	µS/cm				-	-	-	-	-	-	-	-	-	890	912	1,010	920	870
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	-	-	-	7.7	7.3	7.11	7.05	7.36

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	00-1-U	97-1-U
				Date	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011
	Unit	EQL	***Bobcaygeon GW SH***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	117	80	93	68	82	73	100	97.6	98.5	69.8	112	75.8	108	150
Boron (filtered)	µg/L	2	***2,509***	**5,000**	18	16	15	12	17	11	24	18	44	21	32	23	28	20
Calcium (filtered)	µg/L	10			147,000	117,000	129,000	110,000	129,000	114,000	139,000	132,000	133,000	113,000	151,000	126,000	142,000	120,000
Chloride	µg/L	500		**250,000**	147,000	124,000	155,000	78,300	144,000	90,500	87,200	120,000	140,000	64,000	120,000	62,000	120,000	22,000
Iron (filtered)	µg/L	5	***155***	**300**	101	19	21	8	23	9	20	<7	38	10	13	<7	<7	<100
Magnesium (filtered)	µg/L	1			5,840	3,890	6,220	3,220	4,600	3,390	4,680	3,360	5,670	3,180	4,740	4,440	4,570	5,600
Manganese (filtered)	µg/L	0.01	***26***	**50**	18	3	1	2	23	1	6	0.38	4.49	0.29	4.65	0.20	0.09	-
Sodium (filtered)	µg/L	10		**200,000**	96,600	57,200	87,900	30,700	49,300	32,200	57,000	58,100	62,900	35,500	63,900	43,200	59,700	12,000
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	314	271	297	260	285	283	283	292	324	276	307	297	200	279
Total Dissolved Solids	mg/L	3		**500**	**602**	**516**	**578**	407	**580**	459	426	**566**	**580**	397	**526**	483	**534**	342
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	392	308	348	288	341	299	367	344	355	295	395	333	374	-
Chemical Oxygen Demand	mg/L	5			<5	<5	6	13	<5	29	8	<8	<8	<8	<8	<8	<8	15
Total Suspended Solids	mg/L	2			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand	mg/L	2			-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.3	1.5	1.3	2.5	0.5	3.3	2.2	2	2	2	1	2	2	2.1
Sulphate (filtered)	mg/L	1		**500**	21	18	20	16	25	21	18	22	24	17	25	16	32	10
Ammonia as N	mg/L	0.01			0.04	0.06	0.03	0.05	0.04	0.01	0.02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.09
Nitrate (as N)	mg/L	0.05		**10**	1.49	0.67	1.97	0.5	1	0.2	0.83	0.64	1.08	0.41	1.90	0.71	1.19	0.4
Electrical Conductivity (Lab)	µS/cm	1			1,120	969	1,080	776	1,080	868	811	932	925	718	937	811	910	624
pH (Lab)	-	0.05		**6.5-8.5**	7.63	7.71	7.57	7.78	7.7	7.87	8.1	7.67	7.42	8.15	7.49	8.20	8.07	7.83
DO (Field)	mg/L				4.22	5.29	4.7	9.81	3.74	9.6	9.3	8.95	8.3	9.76	8.46	6.74	10.35	-
Redox (Field)	mV				141	177	180	66	106	183	191	325	99	229	192	62	74	-
Temperature (Field)	°C				7.7	7	7.7	9.9	9.1	6.7	6.3	16.8	9.6	6.5	7.4	9.2	8	-
Conductivity (field)	µS/cm				1,040	820	1,070	510	1,178	694	801	1,026	788	575	-	767	759	-
pH (Field)	-			**6.5-8.5**	6.97	6.94	6.95	7.84	7.13	7.29	7.06	7.18	6.77	6.86	**6.26**	7.12	7.21	-

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U
				Date	02 May 2012	29 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	06 Apr 2015	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018
	Unit	EQL	*Bobcaygeon GW SH*	ODWQS														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	152	183	160	207	302	268	197	250	263	270	***331***	262	241	254
Boron (filtered)	µg/L	2	***2,509***	**5,000**	18	55	17	59	38	40	50	52	26	43	24	54	21	43
Calcium (filtered)	µg/L	10			133,000	141,000	136,000	168,000	147,000	162,000	147,000	192,000	154,000	186,000	167,000	167,000	140,000	162,000
Chloride	µg/L	500		**250,000**	15,100	7,980	20,300	21,100	39,100	29,600	32,400	19,200	49,000	66,300	179,000	133,000	132,000	107,000
Iron (filtered)	µg/L	5	***155***	**300**	<10	<10	<10	<10	<10	<10	<10	<10	<10	50	<5	5	<5	<5
Magnesium (filtered)	µg/L	1			6,660	8,570	6,340	8,360	8,770	8,700	8,590	10,800	7,570	9,790	8,020	9,070	7,340	7,810
Manganese (filtered)	µg/L	0.01	***26***	**50**	3	<2	3	<2	3	3	3	<2	2	17	5	1	<1	1
Sodium (filtered)	µg/L	10		**200,000**	8,630	6,160	11,400	10,700	39,000	19,000	17,500	19,100	36,000	40,300	135,000	76,500	79,600	72,200
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	323	350	325	***427***	***416***	***414***	356	***445***	383	***484***	383	***404***	320	370
Total Dissolved Solids	mg/L	3		**500**	416	400	394	**572**	**568**	**534**	412	**564**	**502**	**650**	**800**	**718**	**534**	**590**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	360	387	366	454	403	440	402	**524**	416	**505**	450	455	380	437
Chemical Oxygen Demand	mg/L	5			6	<5	<5	16	13	<5	<5	6	<5	<5	48	46	34	7
Total Suspended Solids	mg/L	2			2,120	1,250	1,600	2,230	359	1,340	1,630	769	828	2,170	-	-	-	-
Biochemical Oxygen Demand	mg/L	2			<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	-	-	-	-
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.5	2.2	***4***	2.5	***5.4***	3.2	2.5	***4.3***	***4.3***	2.8	***3.8***	***3.9***	***8.3***	***3.6***
Sulphate (filtered)	mg/L	1		**500**	19.9	17.2	20.4	17.4	33.5	23	24.3	22.1	24	31.3	27	25	16	19
Ammonia as N	mg/L	0.01			0.05	<0.02	<0.02	0.03	0.04	<0.02	<0.02	<0.02	<0.02	<0.02	<0.01	0.03	0.03	0.03
Nitrate (as N)	mg/L	0.05		**10**	1.84	2.64	1.69	1.95	2	2.24	2.54	3.48	2.96	3.4	2.09	2.75	0.92	1.92
Electrical Conductivity (Lab)	µS/cm	1			632	686	749	886	989	936	790	905	897	1,090	1,450	1,310	1,000	1,100
pH (Lab)	-	0.05		**6.5-8.5**	7.95	7.86	7.76	7.62	8.02	7.8	7.99	7.8	7.99	6.93	7.64	7.68	7.8	7.67
DO (Field)	mg/L				-	-	-	-	-	-	-	-	9.4	8	9.12	9.99	6.75	3.66
Redox (Field)	mV				-	-	-	-	-	-	-	-	-	-	77	174	-4	125
Temperature (Field)	°C				-	-	-	-	-	-	-	-	11	11	12.2	13.7	9.7	9.9
Conductivity (field)	µS/cm				-	-	-	-	-	-	-	-	929	848	1,700	1,750	1,120	1,000
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	-	-	7.7	7.1	7.01	7.17	6.97	7.24

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-1-U	97-2-U	97-2-U
				Date	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	02 May 2012
	Unit	EQL	***Bobcaygeon GW SH***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	155	260	***401***	***427***	***320***	266	163	260	***399***	270	238	253	180	220
Boron (filtered)	µg/L	2	***2,509***	**5,000**	15	28	23	59	28	55	46	70	18	39	21	39	50	55
Calcium (filtered)	µg/L	10			111,000	148,000	244,000	840,000	193,000	180,000	110,000	184,000	199,000	180,000	151,000	183,000	180,000	175,000
Chloride	µg/L	500		**250,000**	50,500	81,900	176,000	67,500	160,000	54,200	30,000	77,000	250,000	73,000	87,000	60,000	160,000	220,000
Iron (filtered)	µg/L	5	***155***	**300**	<5	<5	***744***	22	11	69	<7	***178***	<7	7	<7	76	<100	<10
Magnesium (filtered)	µg/L	1			6,400	7,590	9,890	13,400	9,360	9,000	5,230	8,520	10,100	8,570	6,410	8,620	5,300	5,640
Manganese (filtered)	µg/L	0.01	***26***	**50**	<1	4	***162***	***1,430***	1	16	0.32	***54.5***	1.39	12.0	0.70	16.8	-	7
Sodium (filtered)	µg/L	10		**200,000**	28,300	61,300	98,100	45,000	88,100	56,400	23,700	64,900	88,800	62,900	88,200	71,100	100,000	107,000
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	279	380	386	376	***413***	379	339	***499***	***411***	***530***	393	***477***	376	395
Total Dissolved Solids	mg/L	3		**500**	398	**529**	**715**	**532**	**722**	473	389	**726**	**760**	394	**611**	**617**	**778**	**814**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	304	401	**651**	**2,160**	**521**	487	296	496	**538**	485	403	493	-	460
Chemical Oxygen Demand	mg/L	5			24	50	11	95	69	23	<8	<8	<8	18	11	9	8	12
Total Suspended Solids	mg/L	2			-	-	-	-	-	-	-	-	-	-	-	-	-	744
Biochemical Oxygen Demand	mg/L	2			-	-	-	-	-	-	-	-	-	-	-	-	-	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	3.5	2.4	3.5	3.1	3.2	1.5	3	3	3	2	2	2	1.5	2
Sulphate (filtered)	mg/L	1		**500**	11	16	22	23	31	24	14	31	36	22	24	21	29	30.5
Ammonia as N	mg/L	0.01			0.07	0.04	0.02	0.05	0.01	0.02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	0.04
Nitrate (as N)	mg/L	0.05		**10**	2.42	2.47	1.72	2.02	2.85	2.73	1.71	3.20	2.17	1.89	2.26	2.36	1.5	1.98
Electrical Conductivity (Lab)	µS/cm	1			760	992	1,320	998	1,330	893	676	1,090	1,340	1,080	1,050	1,080	1,280	1,360
pH (Lab)	-	0.05		**6.5-8.5**	7.76	7.46	7.47	7.62	7.74	8.02	7.83	7.50	7.87	7.15	8.10	7.88	7.59	8
DO (Field)	mg/L				9.54	-	7.24	5.37	10.61	5.98	9.74	5.77	9.62	7.82	10.9	7.18	-	-
Redox (Field)	mV				153	6	67	255	183	81	320	193	-155	158	118	124	-	-
Temperature (Field)	°C				6	8.9	7.4	13.7	9	10.4	11	11.6	5.4	8.4	9.6	7.2	-	-
Conductivity (field)	µS/cm				630	1,080	1,220	838	1,265	901	664	1,646	1,008	1,164	973	829	-	-
pH (Field)	-			**6.5-8.5**	7.22	6.9	7.23	6.81	7.07	6.71	6.95	**6.49**	6.72	**6.37**	6.6	6.92	-	-

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U
				Date	29 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	07 Apr 2015	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019
	Unit	EQL	*Bobcaygeon GW SH*	ODWQS														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	290	187	248	158	314	286	***342***	169	306	179	258	203	***326***	185
Boron (filtered)	µg/L	2	***2,509***	**5,000**	85	45	71	41	107	86	96	38	102	59	88	52	91	23
Calcium (filtered)	µg/L	10			192,000	188,000	159,000	122,000	205,000	215,000	221,000	147,000	208,000	148,000	179,000	162,000	214,000	169,000
Chloride	µg/L	500		**250,000**	**269,000**	202,000	177,000	26,000	**296,000**	**285,000**	**336,000**	184,000	**302,000**	109,000	163,000	183,000	**298,000**	182,000
Iron (filtered)	µg/L	5	***155***	**300**	***533***	<10	***239***	<10	<10	<10	<10	<10	***798***	<5	145	23	22	<5
Magnesium (filtered)	µg/L	1			6,060	5,850	5,250	9,900	6,690	7,150	7,430	4,750	7,020	4,900	6,230	5,640	7,120	4,980
Manganese (filtered)	µg/L	0.01	***26***	**50**	16	5	8	<1	8	5	<2	8	***30***	5	18	8	14	3
Sodium (filtered)	µg/L	10		**200,000**	148,000	116,000	109,000	22,200	128,000	141,000	168,000	93,500	153,000	90,600	107,000	106,000	181,000	74,000
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	***434***	365	***421***	372	***409***	***436***	***463***	328	***484***	361	***414***	347	***424***	364
Total Dissolved Solids	mg/L	3		**500**	**924**	**774**	**730**	498	**1,040**	**926**	**1,120**	**656**	**1,010**	**627**	**790**	**664**	**1,010**	**687**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	**504**	494	419	345	**539**	**566**	**582**	387	**548**	391	473	428	**564**	443
Chemical Oxygen Demand	mg/L	5			<5	<5	5	10	<5	<5	<5	<5	22	6	<5	<5	14	9
Total Suspended Solids	mg/L	2			74	421	780	890	169	146	244	136	149	-	-	-	-	-
Biochemical Oxygen Demand	mg/L	2			<5	6	<5	<5	<5	<5	<5	<5	<5	-	-	-	-	-
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***5.3***	3	***7***	***7.5***	2	2.5	2.6	1.7	3.1	***15.8***	***4.2***	***15.6***	2.6	1.5
Sulphate (filtered)	mg/L	1		**500**	35.6	29.1	29.9	29.3	33.7	37.3	29.4	23.5	33.1	19	19	20	28	16
Ammonia as N	mg/L	0.01			0.06	<0.02	0.04	0.02	<0.02	<0.02	<0.02	<0.02	0.08	<0.01	0.03	0.01	0.1	0.06
Nitrate (as N)	mg/L	0.05		**10**	<0.05	1.94	2.5	2.38	2.74	3.23	3.6	2.32	3.38	1.8	2.62	1.79	3.28	1.38
Electrical Conductivity (Lab)	µS/cm	1			1,600	1,420	1,360	865	1,870	1,710	1,930	1,160	1,820	1,140	1,440	1,230	1,840	1,270
pH (Lab)	-	0.05		**6.5-8.5**	7.97	7.64	7.72	8.03	7.42	7.89	7.87	7.94	7.1	7.35	7.63	7.7	7.57	7.65
DO (Field)	mg/L				-	-	-	-	-	-	-	9.8	7.34	8.39	7.07	9.55	7.72	5.41
Redox (Field)	mV				-	-	-	-	-	-	-	-	-	11	126	42	154	169
Temperature (Field)	°C				-	-	-	-	-	-	-	12.1	9.7	11.9	12.7	18.7	8	7
Conductivity (field)	µS/cm				-	-	-	-	-	-	-	644	1,537	1,280	1,330	1,280	1,500	1,050
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	-	8.1	6.9	6.9	6.93	7.06	7.17	7.14

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-2-U	97-3	97-3	97-3
				Date	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	02 May 2012	29 Nov 2012
	Unit	EQL	*Bobcaygeon GW SH*	ODWQS														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	272	155	***374***	254	291	217	311	128	***328***	216	314	310	***322***	***345***
Boron (filtered)	µg/L	2	***2,509***	**5,000**	83	26	108	59	94	51	108	19	118	59	118	430	397	538
Calcium (filtered)	µg/L	10			178,000	158,000	250,000	187,000	199,000	183,000	209,000	136,000	243,000	178,000	230,000	210,000	207,000	230,000
Chloride	µg/L	500		**250,000**	**302,000**	130,000	**351,000**	222,000	108,000	**330,000**	**410,000**	150,000	**380,000**	**260,000**	**330,000**	180,000	181,000	154,000
Iron (filtered)	µg/L	5	***155***	**300**	18	9	***815***	66	29	23	126	<7	14	70	<7	***6,300***	***4,670***	***6,210***
Magnesium (filtered)	µg/L	1			6,600	4,500	7,400	6,110	6,880	5,060	7,160	3,640	8,300	6,020	7,840	18,000	17,400	19,200
Manganese (filtered)	µg/L	0.01	***26***	**50**	12	3	***34***	5	7	1.68	11.2	1.59	1.95	12.6	0.94	-	***596***	***630***
Sodium (filtered)	µg/L	10		**200,000**	186,000	77,600	198,000	137,000	192,000	142,000	197,000	71,800	194,000	147,000	185,000	120,000	104,000	103,000
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	***418***	340	***414***	398	357	368	***480***	314	***467***	373	***404***	***573***	***612***	***606***
Total Dissolved Solids	mg/L	3		**500**	**970**	**589**	**1,070**	**782**	**882**	**986**	**1,240**	500	**1,090**	**849**	**1,030**	**1,040**	**944**	**892**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	472	413	**655**	493	**526**	477	**552**	355	**640**	470	**606**	-	**589**	**653**
Chemical Oxygen Demand	mg/L	5			9	<5	<5	8	<5	<8	<8	<8	12	<8	<8	35	32	29
Total Suspended Solids	mg/L	2			-	-	-	-	-	-	-	-	-	-	-	-	7,990	1,910
Biochemical Oxygen Demand	mg/L	2			-	-	-	-	-	-	-	-	-	-	-	-	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.2	3.3	0.3	2.6	1.6	2	2	<1	3	2	2	***8.4***	***10.3***	***25.3***
Sulphate (filtered)	mg/L	1		**500**	27	18	28	23	27	30	33	20	33	24	29	43	44.2	54.4
Ammonia as N	mg/L	0.01			0.03	0.01	0.22	0.03	0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	16	12.8	12.9
Nitrate (as N)	mg/L	0.05		**10**	3.02	1.6	3.06	2.14	1.92	1.88	2.48	1.09	2.48	1.66	2.66	0.2	1.06	<0.05
Electrical Conductivity (Lab)	µS/cm	1			1,770	1,100	1,940	1,440	1,610	1,640	1,960	933	1,910	1,480	1,790	1,710	1,620	1,510
pH (Lab)	-	0.05		**6.5-8.5**	7.59	7.59	7.58	7.93	7.99	7.89	7.26	7.96	7.28	8.01	7.82	7.23	7.85	7.92
DO (Field)	mg/L				9.83	6.47	2.94	7.41	4.87	5.83	4.36	7.69	8.13	9.14	6.44	-	-	-
Redox (Field)	mV				136	122	103	367	155	307	99	-159	178	107	47	-	-	-
Temperature (Field)	°C				6.6	10.3	9.8	14.5	8.8	12.9	9.5	7.9	7.6	10.5	8.6	-	-	-
Conductivity (field)	µS/cm				1,630	940	1,926	1,138	1,556	19	1,658	792	1,686	1,483	1,513	-	-	-
pH (Field)	-			**6.5-8.5**	7	7.2	6.76	6.87	6.69	6.9	6.66	7.18	**6.39**	6.84	6.76	-	-	-

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	97-3	97-3	97-3	97-3	97-3	97-3	97-3	97-3	97-3	97-3	97-3	97-3	97-3
				Date	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	06 Apr 2015	27 Oct 2015	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020
	Unit	EQL	*Bobcaygeon GW SH*	ODWQS														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	***361***	***394***	316	***342***	275	***350***	***388***	***446***	***391***	***392***	***405***	***401***	***399***	***339***
Boron (filtered)	µg/L	2	***2,509***	**5,000**	602	535	543	655	435	554	721	1,020	604	732	536	864	657	540
Calcium (filtered)	µg/L	10			247,000	197,000	188,000	210,000	198,000	205,000	213,000	213,000	218,000	225,000	214,000	201,000	225,000	226,000
Chloride	µg/L	500		**250,000**	208,000	181,000	174,000	154,000	103,000	80,200	119,000	120,000	172,000	145,000	**337,000**	175,000	159,000	30,200
Iron (filtered)	µg/L	5	***155***	**300**	***10,500***	***12,300***	***8,550***	***13,200***	***1,310***	***4,840***	***5,710***	***14,400***	***2,800***	***6,130***	***1,220***	***8,590***	***4,580***	***5,850***
Magnesium (filtered)	µg/L	1			20,900	19,100	18,800	20,800	16,200	16,900	23,600	27,000	22,100	22,500	22,200	24,200	22,600	17,600
Manganese (filtered)	µg/L	0.01	***26***	**50**	***652***	***625***	***652***	***614***	***342***	***503***	***1,110***	***813***	***902***	***689***	***623***	***826***	***856***	***661***
Sodium (filtered)	µg/L	10		**200,000**	134,000	126,000	111,000	105,000	72,600	68,900	103,000	117,000	120,000	118,000	152,000	131,000	112,000	43,100
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	***622***	***694***	***607***	***657***	***580***	***637***	***751***	***795***	***663***	***680***	***582***	***728***	***635***	***570***
Total Dissolved Solids	mg/L	3		**500**	**1,420**	**1,050**	**940**	**674**	**768**	**786**	**1,040**	**1,080**	**966**	**988**	**1,250**	**1,070**	**958**	**677**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	**703**	**571**	**547**	**610**	**561**	**581**	**629**	**643**	**636**	**655**	**626**	**602**	**655**	**637**
Chemical Oxygen Demand	mg/L	5			26	44	32	35	24	16	42	57	36	229	43	66	34	7
Total Suspended Solids	mg/L	2			7,630	2,250	369	274	195	314	290	110	200	8,000	90	110	24	18
Biochemical Oxygen Demand	mg/L	2			<5	<5	<5	<5	<5	<5	3	-	2	7	<3	<3	<3	<3
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***12***	***21.2***	***17.1***	***13.4***	***10.1***	***10.8***	***12.5***	***15.6***	***13.9***	***13.1***	***6.7***	***10.1***	***9.4***	***7.4***
Sulphate (filtered)	mg/L	1		**500**	49	43.7	46.8	57.7	49.7	39	34	34	35	35	32	35	39	22
Ammonia as N	mg/L	0.01			12.9	20.4	15.3	15.7	8	11.6	25.8	30.1	18.6	23.6	26.3	35.2	22.8	14.4
Nitrate (as N)	mg/L	0.05		**10**	<0.5	<0.5	<0.5	<0.25	1.78	<0.25	<0.05	<0.05	<0.05	<0.05	0.32	<0.05	<0.05	0.09
Electrical Conductivity (Lab)	µS/cm	1			1,900	1,900	1,760	1,870	1,410	1,450	1,890	1,960	1,760	1,800	2,260	1,940	1,750	1,250
pH (Lab)	-	0.05		**6.5-8.5**	7.51	7.43	7.9	7.22	7.94	7.84	7.01	7.2	7.76	7.38	7.4	7.48	7.33	7.12
DO (Field)	mg/L				-	-	-	-	-	-	2.98	5.93	3.41	0.37	2.37	5.27	3.52	2.12
Redox (Field)	mV				-	-	-	-	-	-	53	187	54	169	196	164	156	98
Temperature (Field)	°C				-	-	-	-	-	-	12.1	15.9	14	7.7	7	7.6	9.7	13.7
Conductivity (field)	µS/cm				-	-	-	-	-	-	2,100	1,750	1,790	1,390	1,590	1,820	1,150	1,343
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	6.64	6.83	6.71	6.88	6.8	6.57	6.86	6.64

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	97-3	97-3	97-3	97-3	97-3	97-3	97-3	97-3	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U
				Date	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	01 May 2011	04 May 2012	28 Nov 2012	04 Jun 2013	05 Dec 2013
	Unit	EQL	*Bobcaygeon GW SH*	ODWQS														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	***465***	***459***	300	***334***	***392***	***333***	***378***	316	120	120	141	160	136	143
Boron (filtered)	µg/L	2	***2,509***	**5,000**	744	983	414	628	473	560	704	533	150	150	88	140	148	130
Calcium (filtered)	µg/L	10			232,000	223,000	195,000	196,000	208,000	224,000	219,000	228,000	150,000	150,000	166,000	178,000	165,000	148,000
Chloride	µg/L	500		**250,000**	217,000	131,000	110,000	66,000	250,000	83,000	170,000	42,000	8,000	7,000	55,000	6,660	13,600	6,170
Iron (filtered)	µg/L	5	***155***	**300**	***3,720***	***13,800***	***3,370***	***7,620***	***3,170***	***6,640***	***8,610***	***6,400***	<100	<100	<10	<10	<10	<10
Magnesium (filtered)	µg/L	1			25,100	27,200	15,400	20,400	21,400	18,700	23,400	17,800	9,600	9,800	8,200	11,600	10,400	10,100
Manganese (filtered)	µg/L	0.01	***26***	**50**	***785***	***851***	***484***	***668***	***888***	***680***	***824***	***746***	-	-	<2	<2	<2	<2
Sodium (filtered)	µg/L	10		**200,000**	141,000	121,000	59,300	60,100	119,000	57,800	110,000	35,100	8,900	8,500	34,900	7,050	11,700	6,270
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	***690***	***725***	***660***	***722***	***670***	***647***	***726***	***677***	363	361	***460***	***462***	397	***419***
Total Dissolved Solids	mg/L	3		**500**	**1,140**	**942**	**809**	**843**	**983**	**797**	**943**	**689**	478	476	**592**	**534**	480	438
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	**683**	**669**	**550**	**574**	**607**	**635**	**644**	**643**	-	-	448	492	455	411
Chemical Oxygen Demand	mg/L	5			45	59	25	17	24	27	37	23	7	6	<5	<5	<5	9
Total Suspended Solids	mg/L	2			73	44	98	88	43	176	52	84	-	-	143	81	26	21
Biochemical Oxygen Demand	mg/L	2			<3	<3	4	8	<4	<12	6	5	-	-	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***8.4***	***10.4***	***9***	***10***	***8***	***7***	***10***	***7***	2.1	2.2	3	***4.7***	3	***7.8***
Sulphate (filtered)	mg/L	1		**500**	39	36	29	32	50	28	32	25	42	38	34.5	38.5	51.8	40.3
Ammonia as N	mg/L	0.01			28	31.2	19.6	21.7	26.6	17.8	27.3	13.1	<0.05	<0.05	<0.02	<0.02	<0.02	<0.02
Nitrate (as N)	mg/L	0.05		**10**	<0.05	<0.05	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.74	0.7	1.06	<0.05	0.81	0.57
Electrical Conductivity (Lab)	µS/cm	1			2,060	1,720	1,420	1,510	1,880	1,480	1,800	1,330	790	776	996	878	884	821
pH (Lab)	-	0.05		**6.5-8.5**	7.54	8	7.23	7.40	7.87	7.21	7.83	7.88	7.67	7.86	7.79	8.05	7.61	7.86
DO (Field)	mg/L				2.45	5.24	2.58	3.46	1.82	5.29	3.54	7.16	-	-	-	-	-	-
Redox (Field)	mV				156	159	161	-31	87	8	-33	-21	-	-	-	-	-	-
Temperature (Field)	°C				8.7	10.5	12.7	11.4	8.3	8.8	11.1	9.6	-	-	-	-	-	-
Conductivity (field)	µS/cm				2,009	1,618	1,569	1,205	1,584	1,862	1,768	1,112	-	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	6.59	6.62	6.68	6.56	6.63	6.67	**6.42**	6.74	-	-	-	-	-	-

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U
				Date	12 May 2014	27 Oct 2014	07 Apr 2015	29 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020
	Unit	EQL	***Bobcaygeon GW SH***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	171	216	124	-	175	213	128	233	146	207	155	173	203	237
Boron (filtered)	µg/L	2	***2,509***	**5,000**	164	249	107	-	137	199	139	291	154	173	119	181	206	211
Calcium (filtered)	µg/L	10			156,000	226,000	152,000	270,000	191,000	230,000	149,000	231,000	148,000	209,000	175,000	170,000	194,000	239,000
Chloride	µg/L	500		**250,000**	102,000	50,900	15,000	128,000	103,000	63,800	12,900	28,500	34,000	29,200	121,000	22,600	80,600	26,700
Iron (filtered)	µg/L	5	***155***	**300**	<10	<10	<10	-	<10	54	<5	11	12	<5	<5	<5	96	<5
Magnesium (filtered)	µg/L	1			8,770	13,900	9,190	11,900	9,520	11,800	8,640	14,800	9,870	12,400	8,300	11,700	10,500	13,200
Manganese (filtered)	µg/L	0.01	***26***	**50**	<2	<2	<2	-	8	5	1	2	1	<1	<1	<1	23	1
Sodium (filtered)	µg/L	10		**200,000**	60,100	27,400	11,900	31,900	58,200	37,200	14,800	21,800	24,100	19,400	49,400	20,400	61,600	19,600
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	***407***	***534***	393	***502***	***445***	***586***	368	***540***	372	***483***	372	***432***	***418***	***482***
Total Dissolved Solids	mg/L	3		**500**	**670**	**808**	442	**938**	**652**	**778**	455	**701**	462	**596**	**641**	**528**	**620**	**600**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	426	**622**	417	**723**	**516**	**623**	408	**638**	411	**573**	472	473	**528**	**652**
Chemical Oxygen Demand	mg/L	5			11	<5	<5	8	8	<5	11	6	<5	12	19	13	12	<5
Total Suspended Solids	mg/L	2			20	28	54	28	26	48	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand	mg/L	2			<5	<5	<5	<5	<5	<5	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***4.7***	***4.2***	2.7	***4.4***	***3.6***	***4.4***	***8.8***	***15.1***	***12.9***	***6.4***	***4.4***	***4.7***	***4.9***	3.5
Sulphate (filtered)	mg/L	1		**500**	57.1	89	34.5	65.2	57.7	77.7	36	84	40	43	34	49	44	48
Ammonia as N	mg/L	0.01			0.67	<0.02	<0.02	0.03	0.52	0.02	0.08	0.09	0.1	0.02	0.07	0.03	1.52	0.01
Nitrate (as N)	mg/L	0.05		**10**	3.53	3.84	1.13	2.42	3.24	2.61	1.88	3.64	2.05	2.49	2.75	2.68	3.35	3.12
Electrical Conductivity (Lab)	µS/cm	1			1,210	1,380	809	1,400	1,220	1,310	828	1,270	874	1,110	1,190	990	1,150	117
pH (Lab)	-	0.05		**6.5-8.5**	7.96	7.1	8.07	8.01	7.92	6.88	7.35	7.12	7.72	7.48	7.6	7.41	7.41	7.09
DO (Field)	mg/L				-	-	-	-	6.8	4.7	6.48	2.71	9	3.73	2.48	4.7	1.91	4.42
Redox (Field)	mV				-	-	-	-	-	-	37	131	9	128	156	104	68	261
Temperature (Field)	°C				-	-	-	-	8	10	16.6	12.9	13.7	9	5	8.4	8.1	10.4
Conductivity (field)	µS/cm				-	-	-	-	1,235	1,104	980	1,210	930	990	980	990	730	890
pH (Field)	-			**6.5-8.5**	-	-	-	-	7.4	7.2	6.62	6.57	7.02	6.95	7.05	7.06	6.84	6.69

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-1-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U
				Date	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	01 May 2012	01 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014
	Unit	EQL	*Bobcaygeon GW SH*	ODWQS														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	150	227	191	237	220	230	155	227	90	77	102	89	88	98
Boron (filtered)	µg/L	2	***2,509***	**5,000**	93	214	115	285	173	259	135	205	230	194	266	226	176	64
Calcium (filtered)	µg/L	10			156,000	232,000	188,000	224,000	182,000	247,000	145,000	216,000	160,000	155,000	176,000	184,000	152,000	119,000
Chloride	µg/L	500		**250,000**	12,500	25,600	28,000	39,000	240,000	41,000	6,000	27,000	81,000	91,800	96,800	90,900	81,700	90,600
Iron (filtered)	µg/L	5	***155***	**300**	5	21	29	44	<7	<7	<7	<7	***1,000***	43	<10	***210***	<10	<10
Magnesium (filtered)	µg/L	1			8,870	13,100	9,240	13,700	10,300	14,400	9,960	12,000	16,000	15,800	16,800	18,900	14,600	7,360
Manganese (filtered)	µg/L	0.01	***26***	**50**	<1	4	0.36	6.09	0.46	0.48	0.19	0.34	-	18	***41***	18	17	2
Sodium (filtered)	µg/L	10		**200,000**	12,300	19,800	13,100	24,600	82,200	28,700	7,470	16,900	64,000	63,200	61,200	64,200	54,800	61,600
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	366	***509***	***488***	***535***	***449***	***503***	361	***524***	***400***	***452***	***467***	***444***	***420***	325
Total Dissolved Solids	mg/L	3		**500**	402	**559**	**626**	**874**	**726**	**746**	440	**654**	**688**	**652**	**724**	**646**	**596**	**672**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	426	**634**	**508**	**615**	496	**676**	404	**589**	-	452	**509**	**537**	440	327
Chemical Oxygen Demand	mg/L	5			9	15	12	12	<8	14	10	11	13	6	<5	9	5	<5
Total Suspended Solids	mg/L	2			-	-	-	-	-	-	-	-	-	666	95	1,210	704	1,460
Biochemical Oxygen Demand	mg/L	2			-	-	-	-	-	-	-	-	-	<5	<5	9	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***6.1***	***7***	***4***	***5***	2	***4***	3	3	1.9	2.7	***5.6***	2	2.7	***6.8***
Sulphate (filtered)	mg/L	1		**500**	20	50	40	86	56	87	41	68	60	72.5	80.3	78.5	67.9	25.4
Ammonia as N	mg/L	0.01			<0.01	0.03	<0.1	<0.1	0.9	<0.1	<0.1	<0.1	0.07	<0.02	0.07	0.02	0.11	0.03
Nitrate (as N)	mg/L	0.05		**10**	1.42	3.11	3.41	4.14	2.36	4.31	0.94	2.77	0.7	0.85	<0.05	0.52	0.48	1.58
Electrical Conductivity (Lab)	µS/cm	1			767	1,040	998	1,230	1,290	1,180	711	1,100	1,110	1,140	1,200	1,270	1,110	965
pH (Lab)	-	0.05		**6.5-8.5**	7.8	8.06	7.52	7.46	7.96	7.26	8.12	7.83	7.46	7.93	7.99	7.62	7.63	7.81
DO (Field)	mg/L				8.68	6.64	8.5	4.97	2.62	8.63	9.39	5.9	-	-	-	-	-	-
Redox (Field)	mV				375	199	369	243	191	180	135	91	-	-	-	-	-	-
Temperature (Field)	°C				7.8	9.8	11.5	10	9.2	8.3	9.8	8.6	-	-	-	-	-	-
Conductivity (field)	µS/cm				525	1,022	1,055	1,004	1,140	1,283	766	898	-	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	6.72	6.6	6.74	**6.39**	6.57	6.62	6.81	6.65	-	-	-	-	-	-

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U
				Date	27 Oct 2014	07 Apr 2015	27 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021
	Unit	EQL	***Bobcaygeon GW SH***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	111	105	105	94	91	137	101	104	102	124	104	144	112	169
Boron (filtered)	µg/L	2	***2,509***	**5,000**	214	198	198	99	188	155	208	227	196	115	179	76	189	157
Calcium (filtered)	µg/L	10			180,000	198,000	189,000	156,000	174,000	183,000	171,000	184,000	181,000	175,000	178,000	176,000	191,000	208,000
Chloride	µg/L	500		**250,000**	102,000	117,000	111,000	115,000	103,000	91,500	80,000	107,000	97,800	169,000	130,000	93,900	101,000	167,000
Iron (filtered)	µg/L	5	***155***	**300**	***793***	<10	<10	<10	<10	<5	<5	<5	<5	<5	<5	***867***	10	5
Magnesium (filtered)	µg/L	1			15,600	15,600	15,600	9,500	14,500	10,900	16,200	18,600	16,400	11,200	16,600	7,920	15,600	12,600
Manganese (filtered)	µg/L	0.01	***26***	**50**	***63***	3	4	3	7	5	4	9	2	2	23	***79***	1	1
Sodium (filtered)	µg/L	10		**200,000**	66,600	68,400	72,900	68,700	65,400	78,200	62,800	72,800	69,800	84,300	78,600	65,800	70,100	99,000
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	***445***	***472***	***461***	395	***484***	***455***	***442***	***444***	***427***	363	***423***	325	399	***452***
Total Dissolved Solids	mg/L	3		**500**	**696**	**726**	**772**	**762**	**672**	**705**	**683**	**658**	**670**	**715**	**705**	**505**	**643**	**766**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	**514**	**559**	**536**	429	494	**502**	494	**536**	**520**	484	**513**	473	**542**	**572**
Chemical Oxygen Demand	mg/L	5			23	<5	<5	<5	<5	46	36	<5	30	11	260	8	<5	5
Total Suspended Solids	mg/L	2			994	502	204	836	420	-	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand	mg/L	2			<5	<5	<5	<5	<5	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.4	2.2	1.3	2.1	***4.2***	***3.7***	***5.7***	***12.3***	***4***	2.8	2	2	0.8	***3.6***
Sulphate (filtered)	mg/L	1		**500**	85.9	69.7	65.8	39.8	65.7	43	52	64	64	32	66	27	62	43
Ammonia as N	mg/L	0.01			0.2	<0.02	<0.02	<0.02	<0.02	0.05	0.02	0.03	0.04	0.05	0.05	0.03	<0.01	<0.01
Nitrate (as N)	mg/L	0.05		**10**	0.73	2.42	2.31	2.09	2.12	2.75	1.67	1.49	2.06	1.83	1.34	1.36	1.11	2.25
Electrical Conductivity (Lab)	µS/cm	1			1,360	1,300	1,280	1,110	1,220	1,280	1,240	1,220	1,240	1,320	1,300	950	1,190	1,410
pH (Lab)	-	0.05		**6.5-8.5**	7.4	7.86	7.92	7.95	6.9	7.24	7.64	7.66	7.56	7.66	7.48	7.57	7.38	7.74
DO (Field)	mg/L				-	-	-	6.8	5	3.32	6.54	6.82	6.14	5.01	3.95	6.72	4.75	2.53
Redox (Field)	mV				-	-	-	-	-	34	124	37	136	155	118	75	247	356
Temperature (Field)	°C				-	-	-	9.9	9.6	17.4	13.4	14.4	7.8	8	7.3	8.1	9.3	12
Conductivity (field)	µS/cm				-	-	-	1,206	1,030	1,440	1,160	1,200	1,120	1,020	1,220	740	888	1,105
pH (Field)	-			**6.5-8.5**	-	-	-	7.2	6.8	6.5	6.98	7.03	7.21	7	6.92	7.04	6.93	6.78

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U
				Date	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	11 May 2011	02 May 2012	12 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014
	Unit	EQL	*Bobcaygeon GW SH*	ODWQS														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	117	162	128	106	107	102	104	98	134	141	123	169	139	167
Boron (filtered)	µg/L	2	***2,509***	**5,000**	195	159	190	60	177	199	201	30	66	92	46	52	34	129
Calcium (filtered)	µg/L	10			193,000	224,000	200,000	139,000	210,000	186,000	193,000	110,000	116,000	127,000	116,000	145,000	130,000	140,000
Chloride	µg/L	500		**250,000**	116,000	200,000	190,000	170,000	220,000	130,000	130,000	18,000	10,600	11,700	15,300	23,900	112,000	19,600
Iron (filtered)	µg/L	5	***155***	**300**	***175***	8	8	<7	<7	<7	21	<100	<10	15	<10	<10	<10	<10
Magnesium (filtered)	µg/L	1			16,600	12,500	16,100	6,520	16,700	16,400	16,100	6,800	7,900	8,390	8,710	8,890	4,170	9,290
Manganese (filtered)	µg/L	0.01	***26***	**50**	***28***	1.59	5.61	1.30	1.68	5.39	2.77	-	<2	***38***	***46***	<2	11	12
Sodium (filtered)	µg/L	10		**200,000**	78,300	79,400	80,300	87,600	85,900	77,200	71,400	9,300	5,920	5,460	8,480	9,090	71,900	13,800
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	356	***519***	***467***	***407***	***459***	***448***	***464***	274	293	323	296	***403***	311	356
Total Dissolved Solids	mg/L	3		**500**	**593**	**823**	**900**	**691**	**754**	**800**	**709**	382	384	360	370	456	490	472
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	**551**	**610**	**566**	373	**594**	**533**	**547**	-	322	352	326	399	342	388
Chemical Oxygen Demand	mg/L	5			16	<8	<8	<8	9	14	<8	<4	7	<5	<5	6	7	<5
Total Suspended Solids	mg/L	2			-	-	-	-	-	-	-	-	360	359	5,200	348	64	146
Biochemical Oxygen Demand	mg/L	2			-	-	-	-	-	-	-	-	<5	<5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.1	***4***	2	1	2	2	2	1.6	2.5	***3.8***	2	2.8	2.1	1.9
Sulphate (filtered)	mg/L	1		**500**	63	66	62	38	70	68	65	13	24.1	16.9	19.6	17.4	21.1	23.3
Ammonia as N	mg/L	0.01			0.09	<0.1	<0.1	<0.1	<0.1	0.1	<0.1	<0.05	<0.02	0.18	<0.02	0.02	<0.02	0.15
Nitrate (as N)	mg/L	0.05		**10**	1.61	4.41	2.50	1.58	1.74	1.31	3.13	0.6	3.42	1.76	2.54	2.96	1.32	2.47
Electrical Conductivity (Lab)	µS/cm	1			1,110	1,480	1,360	1,210	1,320	1,290	1,290	597	607	654	679	837	988	842
pH (Lab)	-	0.05		**6.5-8.5**	8.01	7.37	7.48	7.99	7.39	7.96	7.93	7.79	8.04	8.01	7.7	7.84	7.92	7.83
DO (Field)	mg/L				6.47	6.12	6.18	6.86	2.81	4.93	6.88	-	-	-	-	-	-	-
Redox (Field)	mV				119	355	147	-174	187	142	70	-	-	-	-	-	-	-
Temperature (Field)	°C				7.9	16.8	-	9.5	8.4	10.6	8.8	-	-	-	-	-	-	-
Conductivity (field)	µS/cm				1,141	1,566	1,116	898	1,211	1,220	1,029	-	-	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	6.77	6.71	6.67	6.92	**6.46**	6.61	6.79	-	-	-	-	-	-	-

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U
				Date	07 Apr 2015	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021
	Unit	EQL	***Bobcaygeon GW SH***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***317***	**1,000**	123	171	40	169	179	167	219	140	76	131	235	170	258	182
Boron (filtered)	µg/L	2	***2,509***	**5,000**	67	92	239	117	25	109	34	65	20	51	28	80	43	89
Calcium (filtered)	µg/L	10			113,000	141,000	63,800	142,000	158,000	143,000	182,000	126,000	81,300	122,000	202,000	151,000	196,000	155,000
Chloride	µg/L	500		**250,000**	13,400	18,700	11,500	22,500	76,200	34,900	147,000	24,600	40,000	33,400	163,000	30,200	109,000	31,500
Iron (filtered)	µg/L	5	***155***	**300**	<10	<10	20	<10	<5	5	<5	<5	<5	6	<5	<5	10	28
Magnesium (filtered)	µg/L	1			7,610	9,110	26,900	8,620	8,490	9,050	10,700	7,270	4,730	7,730	10,900	8,090	11,500	9,370
Manganese (filtered)	µg/L	0.01	***26***	**50**	<2	<2	19	6	***144***	1	***142***	<1	<1	4	3	1	3	8
Sodium (filtered)	µg/L	10		**200,000**	7,530	11,500	12,400	11,200	69,600	25,800	85,300	17,300	20,600	17,000	86,500	13,700	75,600	22,200
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	283	346	207	396	390	360	***412***	311	203	299	377	317	***425***	329
Total Dissolved Solids	mg/L	3		**500**	324	434	326	446	**606**	479	**647**	374	299	379	**677**	398	**641**	385
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	313	390	270	390	430	395	499	345	223	337	**550**	411	**537**	426
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	7	5	<5	<5	20	40	24	40	<5	12
Total Suspended Solids	mg/L	2			608	458	87	273	-	-	-	-	-	-	-	-	-	-
Biochemical Oxygen Demand	mg/L	2			<5	<5	<5	<5	-	-	-	-	-	-	-	-	-	-
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.8	1.7	0.8	1.8	***5.1***	***8.1***	***8***	2.3	2.9	2.3	3.3	1.1	***3.9***	3.4
Sulphate (filtered)	mg/L	1		**500**	21.6	19.8	86.2	23.9	26	22	27	14	11	11	22	16	34	22
Ammonia as N	mg/L	0.01			<0.02	<0.02	0.06	<0.02	0.02	<0.01	0.03	0.03	0.06	0.05	0.02	0.03	0.01	<0.01
Nitrate (as N)	mg/L	0.05		**10**	1.99	1.76	<0.25	1.63	2.78	2.17	1.56	1.6	1.31	1.85	1.01	1.07	2.46	1.83
Electrical Conductivity (Lab)	µS/cm	1			611	745	570	784	1,100	871	1,200	718	576	727	1,250	760	1,190	737
pH (Lab)	-	0.05		**6.5-8.5**	8.19	8.03	8.14	7.02	7.31	7.61	7.47	7.72	7.9	7.63	7.43	7.58	7.69	8.1
DO (Field)	mg/L				-	-	5.6	7.2	2.59	4.98	2.61	5.75	8.52	5.98	2.8	6.7	3.78	6.11
Redox (Field)	mV				-	-	-	-	-5	128	98	120	148	111	75	263	372	100
Temperature (Field)	°C				-	-	8.1	11.2	11.2	13.1	11.2	9.9	7	9.1	7.8	10.9	8.7	10.2
Conductivity (field)	µS/cm				-	-	990	699	1,220	990	1,360	720	520	730	830	602	868	731
pH (Field)	-			**6.5-8.5**	-	-	7.4	8	6.68	6.94	6.73	7.5	7.55	7.16	7.05	6.92	**6.43**	6.82

Table 5 - Groundwater Quality - Interface Upper Bedrock

				Location Code	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U	98-3-U
				Date	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024
	Unit	EQL	*Bobcaygeon GW SH*	ODWQS						
Barium (filtered)	µg/L	0.08	***317***	**1,000**	113	159	215	190	183	154
Boron (filtered)	µg/L	2	***2,509***	**5,000**	37	93	52	69	41	72
Calcium (filtered)	µg/L	10			113,000	141,000	189,000	178,000	173,000	146,000
Chloride	µg/L	500		**250,000**	45,000	43,000	97,000	51,000	120,000	36,000
Iron (filtered)	µg/L	5	***155***	**300**	7	<7	7	<7	<7	<7
Magnesium (filtered)	µg/L	1			5,020	8,720	9,240	9,090	9,630	9,590
Manganese (filtered)	µg/L	0.01	***26***	**50**	1.41	7.13	0.29	0.46	***169***	1.46
Sodium (filtered)	µg/L	10		**200,000**	31,100	28,800	88,600	42,400	91,600	31,100
Alkalinity (total) as CaCO3	mg/L	2	***399***	**500**	328	***415***	***455***	***443***	***408***	***416***
Total Dissolved Solids	mg/L	3		**500**	426	**563**	**680**	**571**	**723**	500
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	304	388	**510**	483	471	403
Chemical Oxygen Demand	mg/L	5			<8	<8	<8	18	15	12
Total Suspended Solids	mg/L	2			-	-	-	-	-	-
Biochemical Oxygen Demand	mg/L	2			-	-	-	-	-	-
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2	2	3	2	2	2
Sulphate (filtered)	mg/L	1		**500**	20	32	50	27	32	24
Ammonia as N	mg/L	0.01			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	0.05		**10**	2.17	2.61	4.26	2.73	2.42	2.05
Electrical Conductivity (Lab)	µS/cm	1			764	835	1,240	1,000	1,130	892
pH (Lab)	-	0.05		**6.5-8.5**	7.58	7.44	7.94	7.24	8.01	7.98
DO (Field)	mg/L				6.34	6.78	3.92	4.64	3.61	4.14
Redox (Field)	mV				292	182	138	153	180	98
Temperature (Field)	°C				12.5	10.1	9.2	9.4	10.1	9.4
Conductivity (field)	µS/cm				739	681	1,095	884	1,139	664
pH (Field)	-			**6.5-8.5**	7.03	6.87	**6.49**	6.58	6.52	7.07

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L
				Date	11 May 2011	02 May 2012	28 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	06 Apr 2015	27 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	22	20	20	20	18	70	19	17	19	23	19	36	22	19	16
Boron (filtered)	µg/L	2	***2,619***	**5,000**	310	333	292	241	335	15	315	442	404	218	385	259	379	483	434
Calcium (filtered)	µg/L	10			110,000	105,000	102,000	123,000	104,000	94,100	107,000	114,000	115,000	104,000	107,000	107,000	108,000	111,000	113,000
Chloride	µg/L	500		**250,000**	31,000	29,400	34,900	16,000	16,500	18,100	21,200	5,780	6,500	19,900	10,600	30,500	16,400	6,300	6,300
Iron (filtered)	µg/L	5	***157***	**300**	***500***	***876***	***232***	<10	***276***	<10	54	***594***	15	29	***166***	143	30	***258***	***201***
Magnesium (filtered)	µg/L	1			38,000	38,000	36,000	46,700	38,700	33,200	39,000	42,500	41,500	38,300	38,100	28,600	41,200	48,900	45,700
Manganese (filtered)	µg/L	0.01	***28***	**50**	-	***93***	9	14	9	20	***71***	25	8	6	9	22	2	12	11
Sodium (filtered)	µg/L	10		**200,000**	29,000	27,400	23,500	30,100	34,800	10,200	23,100	23,000	31,100	38,700	31,700	44,600	35,600	31,300	30,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	243	242	241	234	228	222	240	208	215	238	231	223	215	205	192
Total Dissolved Solids	mg/L	3		**500**	**538**	**582**	**514**	**644**	**634**	380	**604**	**638**	**654**	**614**	**640**	**515**	**527**	471	**524**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	-	419	403	499	419	387	428	460	458	417	424	384	439	478	470
Chemical Oxygen Demand	mg/L	5			<4	9	<5	7	7	7	<5	<5	<5	<5	<5	35	<5	<5	5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	0.9	2.4	1.7	1	1.4	1.5	2.4	1.5	***3.7***	1.1	2.2	2.2	***4.7***	***3.7***	2.6
Sulphate (filtered)	mg/L	1		**500**	170	224	196	278	279	241	232	309	300	266	308	177	225	284	293
Ammonia as N	mg/L	0.01			<0.05	<0.02	<0.02	0.02	0.03	0.07	0.5	0.04	<0.02	<0.02	<0.02	<0.01	<0.01	0.03	0.05
Nitrate (as N)	mg/L	0.05		**10**	0.2	0.12	0.07	<0.25	<0.25	0.13	0.53	<0.25	<0.25	0.35	0.27	0.57	0.27	0.08	0.06
Electrical Conductivity (Lab)	µS/cm	1			883	865	804	981	936	914	940	926	967	944	950	936	959	890	938
pH (Lab)	-	0.05		**6.5-8.5**	8.04	8.2	8.27	7.87	8.27	8.18	8.12	8.2	8.07	8.05	7.47	7.86	8.09	7.95	7.91
DO (Field)	mg/L				-	-	-	-	-	-	-	-	-	7.9	8.7	6.3	6.98	6.75	4.2
Redox (Field)	mV				-	-	-	-	-	-	-	-	-	-	-	56	164	103	112
Temperature (Field)	°C				-	-	-	-	-	-	-	-	-	6.9	8.6	13.5	10.7	12.8	7.2
Conductivity (field)	µS/cm				-	-	-	-	-	-	-	-	-	957	832	1,040	910	960	870
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	-	-	-	8.2	7.2	7.42	7.6	7.57	7.38

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-M	00-1-M
				Date	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	11 May 2011	02 May 2012
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	14	33	33	37	17	17	18.8	17.1	16.9	18.7	16.6	16.0	23	25
Boron (filtered)	µg/L	2	***2,619***	**5,000**	410	247	340	317	485	466	328	450	363	431	412	421	240	231
Calcium (filtered)	µg/L	10			104,000	96,200	110,000	116,000	114,000	111,000	122,000	125,000	134,000	157,000	122,000	126,000	100,000	99,700
Chloride	µg/L	500		**250,000**	6,200	45,700	20,900	11,100	5,300	5,500	10,000	12,000	7,000	8,000	9,000	4,000	36,000	42,500
Iron (filtered)	µg/L	5	***157***	**300**	***398***	42	***191***	13	***795***	***182***	9	***607***	***744***	48	36	***744***	***200***	15
Magnesium (filtered)	µg/L	1			43,400	29,500	35,900	31,900	47,200	46,800	36,900	42,500	42,700	44,300	42,100	39,500	35,000	34,300
Manganese (filtered)	µg/L	0.01	***28***	**50**	14	4	6	4	17	26	3.17	***43.6***	24.6	3.25	3.63	18.1	-	6
Sodium (filtered)	µg/L	10		**200,000**	27,200	45,100	45,800	43,800	28,000	27,400	26,200	33,600	27,000	26,900	29,400	25,800	28,000	16,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	192	225	216	183	193	203	204	213	210	208	206	212	256	268
Total Dissolved Solids	mg/L	3		**500**	487	451	473	468	486	465	**649**	**729**	**651**	**646**	**726**	**623**	**522**	**550**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	438	362	423	421	479	470	457	487	**511**	**575**	479	476	-	390
Chemical Oxygen Demand	mg/L	5			20	8	<5	<5	<5	14	9	50	<8	10	<8	<8	6	8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***4.2***	2.7	2	1.1	2.6	1.8	<1	3	1	1	1	1	1	1.7
Sulphate (filtered)	mg/L	1		**500**	285	165	252	275	292	374	320	300	340	320	320	320	130	129
Ammonia as N	mg/L	0.01			0.06	0.01	<0.01	0.03	0.03	0.05	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.28	0.04
Nitrate (as N)	mg/L	0.05		**10**	0.06	0.36	0.28	0.11	0.11	<0.05	0.08	<0.06	0.13	0.19	0.22	<0.06	0.1	0.2
Electrical Conductivity (Lab)	µS/cm	1			918	854	893	884	916	879	883	925	938	933	938	942	845	788
pH (Lab)	-	0.05		**6.5-8.5**	7.98	7.89	7.83	7.84	7.98	8.33	7.93	7.95	8.15	8.06	8.19	8.05	8.08	8.16
DO (Field)	mg/L				3.56	8.31	6.47	6.85	6.4	11.42	7.59	5.2	5.49	4.81	3.62	8.15	-	-
Redox (Field)	mV				154	170	154	260	184	161	312	102	169	129	-16	40	-	-
Temperature (Field)	°C				7	6.3	9.1	10.4	8.8	7.5	14.5	9.9	6.8	7	11.6	7.6	-	-
Conductivity (field)	µS/cm				790	880	920	690	969	804	993	967	822	1,021	920	716	-	-
pH (Field)	-			**6.5-8.5**	7.39	7.02	7.93	7.48	7.42	7.69	7.55	7.18	7.02	6.68	7.44	7.68	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M
				Date	28 Nov 2012	04 Jun 2013	05 Dec 2013	13 May 2014	27 Oct 2014	06 Apr 2015	05 Nov 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**															
Barium (filtered)	µg/L	0.08	***267***	**1,000**	26	22	26	24	22	23	20	25	32	24	27	27	26	23	23
Boron (filtered)	µg/L	2	***2,619***	**5,000**	232	220	209	236	246	242	194	230	223	240	232	267	241	239	250
Calcium (filtered)	µg/L	10			103,000	111,000	93,900	101,000	94,200	97,500	99,500	95,300	99,300	100,000	95,800	103,000	104,000	97,200	91,800
Chloride	µg/L	500		**250,000**	42,100	38,100	39,000	65,100	37,500	39,200	34,900	38,600	39,700	30,900	33,100	37,500	36,900	35,400	37,400
Iron (filtered)	µg/L	5	***157***	**300**	<10	<10	<10	<10	14	<10	<10	34	86	***501***	14	***376***	107	<5	<5
Magnesium (filtered)	µg/L	1			34,400	39,000	32,600	4,060	32,500	32,600	32,800	33,700	30,300	35,500	32,900	39,100	36,300	33,500	35,700
Manganese (filtered)	µg/L	0.01	***28***	**50**	4	4	2	<2	16	***35***	19	19	***60***	***60***	3	***38***	17	4	2
Sodium (filtered)	µg/L	10		**200,000**	12,400	12,500	10,700	38,500	39,400	30,200	34,300	28,800	25,700	26,400	18,600	21,700	16,400	14,700	20,900
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	254	255	265	254	267	277	291	285	305	87	270	276	262	256	253
Total Dissolved Solids	mg/L	3		**500**	470	500	464	486	**530**	496	482	**504**	**504**	500	447	148	428	432	416
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	399	438	369	269	369	378	384	377	373	397	375	418	409	381	376
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	<5	<5	22	<5	<5	9	<5	<5	<5	<5	11
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	3	2	2.4	2.1	1.1	1.5	1.7	1.2	1.9	3.4	***6.6***	***12.6***	3.4	2.8	***5.5***
Sulphate (filtered)	mg/L	1		**500**	107	128	113	15.7	137	132	113	132	139	104	87	113	104	114	117
Ammonia as N	mg/L	0.01			<0.02	0.12	0.03	0.05	0.1	0.07	0.15	0.06	0.16	0.14	<0.01	0.04	0.07	0.07	0.02
Nitrate (as N)	mg/L	0.05		**10**	0.1	<0.25	0.33	0.43	<0.10	<0.25	0.41	<0.25	<0.25	0.12	0.11	0.09	0.2	0.11	0.05
Electrical Conductivity (Lab)	µS/cm	1			748	854	784	822	918	838	861	857	861	909	812	796	813	820	793
pH (Lab)	-	0.05		**6.5-8.5**	8.17	7.9	8.17	8.16	7.94	8.29	8.24	8.11	7.45	6.62	8.08	8.09	7.9	8	7.92
DO (Field)	mg/L				-	-	-	-	-	-	-	7.9	8.7	3.13	8.27	7.86	2.96	7.83	7.59
Redox (Field)	mV				-	-	-	-	-	-	-	-	-	68	153	116	129	157	167
Temperature (Field)	°C				-	-	-	-	-	-	-	9.1	9	9.5	10.4	14.2	7.9	619	6.8
Conductivity (field)	µS/cm				-	-	-	-	-	-	-	870	730	950	780	850	760	710	810
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	-	8.1	7.4	7.18	7.49	7.57	7.2	7.41	7.16

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	97-1-L	97-1-L	97-1-L	97-1-L
				Date	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	11 May 2011	02 May 2012	29 Nov 2012	04 Jun 2013
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	27	30	29	28	25.8	30.6	253	30.7	25.7	26.3	29	31	28	23
Boron (filtered)	µg/L	2	***2,619***	**5,000**	264	233	248	263	204	389	196	237	232	232	250	247	277	215
Calcium (filtered)	µg/L	10			106,000	106,000	103,000	104,000	112,000	115,000	123,000	127,000	113,000	115,000	69,000	68,200	69,300	98,400
Chloride	µg/L	500		**250,000**	36,700	35,900	36,200	35,200	40,000	41,000	38,000	41,000	37,000	38,000	11,000	10,000	10,000	13,300
Iron (filtered)	µg/L	5	***157***	**300**	5	13	***166***	6	<7	14	***2,770***	<7	<7	<7	<100	<10	<10	<10
Magnesium (filtered)	µg/L	1			37,100	33,600	36,500	36,400	30,900	34,200	34,300	35,300	34,900	31,100	26,000	27,000	27,200	24,100
Manganese (filtered)	µg/L	0.01	***28***	**50**	1	9	***75***	3	0.41	0.74	***140***	1.05	1.95	0.20	-	<2	<2	<2
Sodium (filtered)	µg/L	10		**200,000**	26,500	30,800	38,000	22,200	19,200	19,500	20,400	20,200	20,400	16,200	16,000	16,300	15,300	12,600
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	260	254	274	262	310	274	287	263	278	285	204	213	201	275
Total Dissolved Solids	mg/L	3		**500**	425	422	450	403	**517**	**540**	497	474	**534**	457	356	386	342	336
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	417	403	408	410	408	429	449	462	425	416	-	281	285	345
Chemical Oxygen Demand	mg/L	5			<5	<5	30	11	<8	<8	<8	10	<8	<8	5	6	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.1	0.9	2.9	1.8	<1	2	2	1	1	1	0.8	1.1	1.3	2
Sulphate (filtered)	mg/L	1		**500**	114	107	132	117	110	100	130	100	110	97	78	104	95.4	51.9
Ammonia as N	mg/L	0.01			0.01	0.04	0.08	0.01	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02	<0.02
Nitrate (as N)	mg/L	0.05		**10**	0.16	<0.05	<0.05	0.06	0.10	0.14	0.10	0.17	0.09	0.16	1.1	1.19	0.95	2.19
Electrical Conductivity (Lab)	µS/cm	1			808	804	853	769	799	777	806	779	814	814	579	577	553	684
pH (Lab)	-	0.05		**6.5-8.5**	7.87	7.89	7.98	8.21	7.81	7.85	8.14	8.02	8.22	8.06	8.08	8.21	8.19	7.94
DO (Field)	mg/L				6.22	7.94	4.93	7.77	7.66	7.43	3.11	9.66	8.61	8.29	-	-	-	-
Redox (Field)	mV				144	63	183	160	314	109	170	115	67	60	-	-	-	-
Temperature (Field)	°C				7.9	8.2	7.5	7.3	15.8	9.7	7.7	5.5	9.1	8.2	-	-	-	-
Conductivity (field)	µS/cm				860	892	883	725	875	670	710	-	818	636	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.83	7.45	7.37	7.34	7.46	7.04	6.94	6.53	7.6	7.38	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L
				Date	05 Dec 2013	12 May 2014	27 Oct 2014	28 Oct 2015	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	39	40	49	47	72	51	57	45	45	40	63	59	53	47	35
Boron (filtered)	µg/L	2	***2,619***	**5,000**	199	197	186	251	221	239	213	258	226	199	145	207	238	271	268
Calcium (filtered)	µg/L	10			73,100	81,800	88,500	80,700	89,900	86,500	85,100	81,700	76,400	70,500	76,000	83,900	88,300	81,200	81,600
Chloride	µg/L	500		**250,000**	9,950	19,000	20,400	9,900	14,900	19,300	38,000	15,700	19,600	16,600	23,800	18,800	28,800	23,800	25,200
Iron (filtered)	µg/L	5	***157***	**300**	<10	<10	<10	<10	<10	<5	5	<5	<5	<5	<5	<5	26	<5	21
Magnesium (filtered)	µg/L	1			23,600	22,000	24,600	26,100	23,500	29,600	27,400	30,300	26,700	23,700	21,000	26,300	27,800	31,900	30,400
Manganese (filtered)	µg/L	0.01	***28***	**50**	<2	***52***	2	2	<2	<1	1	2	<1	1	<1	1	4	<1	10
Sodium (filtered)	µg/L	10		**200,000**	15,000	13,600	18,800	17,400	18,000	23,200	23,500	24,800	19,900	16,300	22,900	19,700	19,500	17,700	22,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	233	228	266	246	277	242	262	225	215	220	225	230	229	220	220
Total Dissolved Solids	mg/L	3		**500**	342	372	436	402	410	387	423	323	335	322	325	328	356	343	331
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	280	295	322	309	321	338	325	329	301	274	276	318	335	334	329
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	<5	7	7	<5	6	26	<5	<5	14	<5	8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.7	1.9	1.2	1.3	1.7	2.1	***3.9***	***8.4***	2.3	3.5	***6.1***	2.3	1	2.7	1.6
Sulphate (filtered)	mg/L	1		**500**	84.9	57.7	74.1	90.6	93.2	76	59	93	83	66	60	69	87	94	93
Ammonia as N	mg/L	0.01			<0.02	0.03	<0.02	<0.02	<0.02	<0.01	<0.01	0.01	0.02	0.04	<0.01	<0.01	0.01	<0.01	<0.01
Nitrate (as N)	mg/L	0.05		**10**	1.23	1.03	0.81	1.18	1.86	1.8	1.77	1.16	0.99	1.33	1.72	1.47	0.11	1.26	0.99
Electrical Conductivity (Lab)	µS/cm	1			619	621	743	658	688	704	769	622	645	621	627	631	685	660	638
pH (Lab)	-	0.05		**6.5-8.5**	8.15	8.15	7.75	7.79	7.21	7.94	7.94	8.09	7.98	8.08	7.78	7.9	7.84	7.96	8.2
DO (Field)	mg/L				-	-	-	-	7.7	9.06	10.64	8.47	8.75	11.39	8.05	8.92	7.84	6.96	6.83
Redox (Field)	mV				-	-	-	-	-	37	159	102	104	144	136	49	275	141	188
Temperature (Field)	°C				-	-	-	-	9.9	13.4	13.1	13.1	9.3	7	8.3	10.4	11.1	9.3	4.2
Conductivity (field)	µS/cm				-	-	-	-	623	730	690	650	630	570	680	520	513	673	619
pH (Field)	-			**6.5-8.5**	-	-	-	-	7.1	7.72	7.71	7.65	7.75	7.8	7.26	8.15	7.23	7.5	7.47

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M
				Date	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	02 May 2012	29 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	06 Apr 2015
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	39.9	38.7	39.4	49.7	38.8	38.0	39	38	36	69	65	77	113	60
Boron (filtered)	µg/L	2	***2,619***	**5,000**	217	261	195	229	223	269	190	193	280	173	195	103	135	227
Calcium (filtered)	µg/L	10			88,400	90,100	92,900	105,000	97,900	103,000	69,000	69,800	67,500	89,500	70,500	110,000	96,000	80,500
Chloride	µg/L	500		**250,000**	34,000	36,000	36,000	36,000	37,000	36,000	11,000	10,300	9,880	11,700	10,200	28,400	21,300	12,000
Iron (filtered)	µg/L	5	***157***	**300**	<7	<7	<7	<7	<7	<7	<100	<10	<10	<10	<10	<10	<20	<10
Magnesium (filtered)	µg/L	1			27,900	29,400	27,900	30,400	31,600	30,100	22,000	25,900	27,100	22,600	22,600	15,400	23,200	25,100
Manganese (filtered)	µg/L	0.01	***28***	**50**	0.18	0.26	0.12	0.65	0.15	0.11	-	<2	4	<2	<2	<2	<2	6
Sodium (filtered)	µg/L	10		**200,000**	15,800	17,000	15,900	19,500	25,800	28,400	12,000	15,300	13,000	10,400	12,400	24,800	19,100	15,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	223	223	235	218	266	280	209	219	214	251	237	320	289	239
Total Dissolved Solids	mg/L	3		**500**	400	480	394	403	466	451	396	364	350	378	354	446	412	356
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	336	346	347	388	375	381	-	281	280	317	269	338	335	304
Chemical Oxygen Demand	mg/L	5			<8	<8	<8	<8	<8	<8	<5	<5	<5	5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1	1	<1	1	2	1	0.9	1.1	1.5	2	***4.5***	2	2.5	2
Sulphate (filtered)	mg/L	1		**500**	92	85	76	87	88	100	57	84.5	103	55.7	76	45.6	52.2	81.8
Ammonia as N	mg/L	0.01			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02	0.61	<0.02	0.03	0.05	0.03
Nitrate (as N)	mg/L	0.05		**10**	1.41	1.42	1.34	1.31	1.82	1.85	1	1.26	1.12	1.66	1.36	1.4	1.52	1.33
Electrical Conductivity (Lab)	µS/cm	1			657	646	637	664	750	796	538	568	567	648	622	798	755	622
pH (Lab)	-	0.05		**6.5-8.5**	7.88	7.95	8.20	8.00	8.27	8.10	8	8.1	8.08	7.88	8.03	8.13	7.92	8.27
DO (Field)	mg/L				8.48	6.7	9.78	9.21	10.46	5.7	-	-	-	-	-	-	-	-
Redox (Field)	mV				335	136	-162	115	118	122	-	-	-	-	-	-	-	-
Temperature (Field)	°C				14	9.9	6.8	9.3	10.1	7.4	-	-	-	-	-	-	-	-
Conductivity (field)	µS/cm				687	587	567	593	740	584	-	-	-	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.48	7.23	7.56	6.8	7.05	7.51	-	-	-	-	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M
				Date	29 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	51	194	81	104	81	62	61	117	68	109	64	58	56	52.8	51.1
Boron (filtered)	µg/L	2	***2,619***	**5,000**	247	55	210	108	209	200	236	38	168	122	248	269	258	211	284
Calcium (filtered)	µg/L	10			72,700	151,000	88,400	117,000	88,900	78,000	84,400	91,400	76,400	93,500	89,200	84,800	83,500	91,700	90,400
Chloride	µg/L	500		**250,000**	9,900	37,900	15,400	77,200	28,900	21,700	17,200	28,200	25,700	20,400	22,800	27,600	28,800	40,000	38,000
Iron (filtered)	µg/L	5	***157***	**300**	<10	<10	<10	<5	5	<5	<5	<5	<5	<5	10	97	<5	40	9
Magnesium (filtered)	µg/L	1			26,100	21,000	23,700	24,800	25,500	24,500	28,100	8,950	24,400	19,000	29,700	32,600	31,800	27,100	28,700
Manganese (filtered)	µg/L	0.01	***28***	**50**	<2	<2	2	<1	<1	<1	<1	4	<1	<1	1	19	1	3.83	2.30
Sodium (filtered)	µg/L	10		**200,000**	12,100	28,900	16,300	48,100	23,300	21,800	18,600	21,600	20,700	18,500	15,600	15,600	17,500	14,800	14,700
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	240	***402***	298	293	240	221	230	266	230	239	212	229	224	241	233
Total Dissolved Solids	mg/L	3		**500**	332	**524**	410	**518**	392	307	343	325	335	318	334	347	330	411	489
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	289	464	318	394	327	296	326	265	291	312	345	346	339	340	344
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	8	6	8	13	11	8	<5	<5	<5	<5	<8	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	0.8	2.8	1.8	2.5	***6.1***	***51.1***	2	3.3	***8.5***	2.7	1.3	2.7	***4.7***	2	1
Sulphate (filtered)	mg/L	1		**500**	74	35.5	85.8	38	64	66	80	16	70	44	80	81	79	78	76
Ammonia as N	mg/L	0.01			<0.02	<0.02	<0.02	<0.01	<0.01	0.01	0.03	0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.1	<0.1
Nitrate (as N)	mg/L	0.05		**10**	1.45	5.54	1.68	3.14	1.4	0.93	1.08	2.11	1.56	1.32	0.18	1.34	1.23	1.55	1.26
Electrical Conductivity (Lab)	µS/cm	1			599	917	690	941	712	591	660	625	646	612	644	668	636	668	689
pH (Lab)	-	0.05		**6.5-8.5**	7.93	7.98	7.37	7.92	7.96	8.09	7.87	8.05	7.77	7.88	7.92	7.95	8.14	8.06	7.84
DO (Field)	mg/L				-	11	7.46	10.33	9.09	11.62	9.03	10.26	9.29	8.55	6.6	6.92	8.11	8.42	6.95
Redox (Field)	mV				-	-	-	14	155	-17	105	151	140	65	275	145	179	307	150
Temperature (Field)	°C				-	12.3	10.3	12	13.1	12.4	6.5	6	5.7	9.3	10.4	10	9	12.8	9.9
Conductivity (field)	µS/cm				-	942	631	960	700	640	660	570	690	660	506	676	605	726	630
pH (Field)	-			**6.5-8.5**	-	8.2	7.2	7.54	7.66	7.54	7.9	7.45	7.45	7.78	7.43	7.51	7.24	7.35	7.14

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-1-M	97-1-M	97-1-M	97-1-M	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L
				Date	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	02 May 2012	29 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	28 Oct 2015	01 Apr 2016	01 Oct 2016
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**													
Barium (filtered)	µg/L	0.08	***267***	**1,000**	93.2	57.9	74.2	64.9	23	21	24	20	25	22	23	25	27	25
Boron (filtered)	µg/L	2	***2,619***	**5,000**	99	235	146	196	860	680	912	713	709	756	793	765	682	709
Calcium (filtered)	µg/L	10			95,500	96,400	121,000	113,000	61,000	59,200	60,600	61,800	49,800	50,600	52,800	56,600	58,100	61,200
Chloride	µg/L	500		**250,000**	25,000	42,000	48,000	49,000	4,000	4,500	4,470	4,400	4,100	4,560	4,050	3,160	4,120	3,540
Iron (filtered)	µg/L	5	***157***	**300**	<7	<7	<7	<7	<100	<10	<10	<10	<10	<10	<10	<10	45	24
Magnesium (filtered)	µg/L	1			17,900	30,600	27,200	28,500	29,000	27,500	27,700	29,500	25,200	26,700	26,000	26,500	27,800	27,200
Manganese (filtered)	µg/L	0.01	***28***	**50**	0.27	0.42	0.30	0.15	-	<2	<2	<2	3	<2	12	8	10	20
Sodium (filtered)	µg/L	10		**200,000**	11,400	18,800	45,900	29,700	27,000	25,300	25,400	27,700	24,400	26,100	24,500	24,200	24,100	23,500
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	238	223	323	284	185	191	185	182	186	163	168	183	184	179
Total Dissolved Solids	mg/L	3		**500**	286	**574**	477	440	384	406	406	390	360	380	370	394	-	426
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	312	367	415	401	-	261	265	276	228	236	239	250	260	265
Chemical Oxygen Demand	mg/L	5			<8	15	<8	<8	7	<5	<5	<5	<5	5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	<1	1	2	1	0.6	***4.1***	1.8	<1	1.1	2.2	0.9	***4.2***	0.9	2.1
Sulphate (filtered)	mg/L	1		**500**	43	85	66	63	140	160	150	141	140	142	143	143	152	169
Ammonia as N	mg/L	0.01			<0.1	<0.1	<0.1	<0.1	0.05	<0.02	<0.02	<0.02	0.03	0.02	0.05	<0.02	<0.02	0.19
Nitrate (as N)	mg/L	0.05		**10**	1.06	1.23	2.91	2.31	0.4	0.87	0.47	0.48	<0.10	0.41	<0.10	<0.25	<0.25	<0.25
Electrical Conductivity (Lab)	µS/cm	1			525	678	857	778	651	619	614	662	603	620	644	631	639	601
pH (Lab)	-	0.05		**6.5-8.5**	8.07	7.99	8.10	8.03	8.02	8.25	8.12	7.85	8.09	8.19	8.11	7.72	8.12	8.07
DO (Field)	mg/L				10.55	6.12	7.7	8.46	-	-	-	-	-	-	-	-	8.8	9.35
Redox (Field)	mV				-154	129	113	107	-	-	-	-	-	-	-	-	-	-
Temperature (Field)	°C				6.5	8.9	11.0	7.6	-	-	-	-	-	-	-	-	10	9.3
Conductivity (field)	µS/cm				479	629	866	621	-	-	-	-	-	-	-	-	1,238	593
pH (Field)	-			**6.5-8.5**	7.1	6.67	6.86	7.32	-	-	-	-	-	-	-	-	7.4	7.4

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L
				Date	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	22	24	22	21	19	20	24	23	31	22	21.9	28.0	21.3	19.4
Boron (filtered)	µg/L	2	***2,619***	**5,000**	807	809	869	779	730	795	819	807	836	830	614	717	645	740
Calcium (filtered)	µg/L	10			61,800	55,300	55,700	57,700	51,100	50,100	57,100	65,100	67,200	58,700	102,000	107,000	104,000	135,000
Chloride	µg/L	500		**250,000**	3,400	3,600	5,100	5,000	5,400	3,500	5,100	4,600	4,900	5,000	5,000	5,000	6,000	6,000
Iron (filtered)	µg/L	5	***157***	**300**	<5	6	<5	<5	<5	<5	17	77	***243***	<5	14	47	67	17
Magnesium (filtered)	µg/L	1			30,200	30,000	31,600	29,400	27,000	28,700	29,300	29,100	30,600	30,200	24,400	24,800	27,700	29,500
Manganese (filtered)	µg/L	0.01	***28***	**50**	3	1	<1	<1	<1	<1	5	5	14	2	1.32	7.69	2.88	1.83
Sodium (filtered)	µg/L	10		**200,000**	26,900	23,600	29,000	29,700	24,300	26,100	26,800	24,700	25,700	27,000	21,000	21,100	24,100	25,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	176	170	167	159	157	158	158	154	168	177	181	166	175	168
Total Dissolved Solids	mg/L	3		**500**	353	348	317	329	322	313	311	312	316	311	411	480	397	409
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	278	262	269	265	239	243	263	282	294	271	356	369	375	459
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	12	7	18	<5	27	9	<8	<8	<8	9
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.5	2.8	***13.1***	1.8	2.7	<0.2	***4.7***	0.8	2.9	1.8	1	2	<1	<1
Sulphate (filtered)	mg/L	1		**500**	128	127	149	155	152	150	146	147	154	148	170	150	160	150
Ammonia as N	mg/L	0.01			<0.01	<0.01	<0.01	0.04	0.06	0.04	0.05	<0.01	0.02	0.02	<0.1	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	0.05		**10**	0.54	0.33	1.11	1.04	0.23	0.12	0.67	0.22	0.22	0.43	0.60	0.19	0.30	0.51
Electrical Conductivity (Lab)	µS/cm	1			642	632	611	634	621	603	600	602	609	599	610	596	615	615
pH (Lab)	-	0.05		**6.5-8.5**	8.13	8.13	8.1	8.09	8.06	7.97	7.74	8.06	8.04	8.28	8.11	7.92	8.15	8.02
DO (Field)	mg/L				8.85	9.4	12.18	6.19	12.58	8.34	10.37	11.01	7.11	9.07	7.19	7.11	11.28	9.39
Redox (Field)	mV				1	106	34	125	149	110	37	68	366	132	278	109	-160	128
Temperature (Field)	°C				14.7	14	19	6.6	6	7.1	10.5	9.3	14.2	8.3	12.5	8.9	7.4	5.3
Conductivity (field)	µS/cm				820	580	680	630	560	640	670	633	501	564	694	529	523	581
pH (Field)	-			**6.5-8.5**	7.87	7.97	7.77	8.14	7.99	8.12	8.46	7.77	7.46	7.78	7.65	7.5	7.63	7.2

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-2-L	97-2-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L
				Date	29 May 2024	14 Nov 2024	01 May 2011	01 May 2012	01 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	07 Apr 2015	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS															
Barium (filtered)	µg/L	0.08	***267***	**1,000**	18.9	20.2	17	15	15	17	18	16	17	16	17	18	16	16	16
Boron (filtered)	µg/L	2	***2,619***	**5,000**	736	754	680	521	575	662	629	706	697	762	752	647	638	695	738
Calcium (filtered)	µg/L	10			87,500	108,000	76,000	82,800	66,900	103,000	92,100	81,800	81,700	96,600	111,000	98,900	95,700	91,300	90,600
Chloride	µg/L	500		**250,000**	5,000	5,000	7,000	6,040	5,330	8,330	7,130	7,260	6,530	7,590	6,360	7,030	6,260	5,400	5,400
Iron (filtered)	µg/L	5	***157***	**300**	<7	<7	100	<10	<10	<10	***220***	<10	<10	***255***	***235***	<10	<10	<5	5
Magnesium (filtered)	µg/L	1			27,700	26,400	37,000	39,400	30,000	54,500	46,600	44,500	39,500	48,000	55,900	50,800	44,000	45,300	49,600
Manganese (filtered)	µg/L	0.01	***28***	**50**	0.18	0.09	-	3	<2	<2	17	17	3	18	28	12	<2	7	1
Sodium (filtered)	µg/L	10		**200,000**	25,700	24,100	68,000	60,700	67,200	52,800	57,800	55,100	61,600	59,700	53,800	64,100	61,700	68,900	61,600
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	170	175	214	256	226	199	213	198	225	204	190	199	232	201	193
Total Dissolved Solids	mg/L	3		**500**	417	409	**538**	**558**	**650**	**740**	**686**	**730**	**776**	**690**	**742**	**770**	**680**	**602**	**590**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	332	378	-	369	291	482	422	388	367	439	**507**	456	420	414	430
Chemical Oxygen Demand	mg/L	5			<8	<8	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	<1	1	0.7	1.3	1.1	1	1.8	2.8	0.9	1.3	1	0.7	2.3	***4.2***	***6.8***
Sulphate (filtered)	mg/L	1		**500**	140	140	250	283	224	392	353	362	316	378	430	409	381	311	275
Ammonia as N	mg/L	0.01			<0.1	<0.1	<0.05	<0.02	<0.02	0.11	0.04	<0.02	<0.02	0.03	0.11	<0.02	<0.02	0.04	<0.01
Nitrate (as N)	mg/L	0.05		**10**	0.94	0.49	0.2	0.06	0.23	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	0.09	0.07
Electrical Conductivity (Lab)	µS/cm	1			627	623	895	932	827	1,130	1,020	1,060	1,030	1,050	1,140	1,080	1,070	1,090	1,070
pH (Lab)	-	0.05		**6.5-8.5**	8.20	8.10	8.1	8.08	8.22	7.84	8.07	8.2	7.56	8.25	7.81	8.08	7.15	8.07	8.07
DO (Field)	mg/L				-	6.55	-	-	-	-	-	-	-	-	-	9.9	7.8	7.1	7.54
Redox (Field)	mV				-	36	-	-	-	-	-	-	-	-	-	-	-	12	129
Temperature (Field)	°C				-	8.1	-	-	-	-	-	-	-	-	-	8.5	9.1	22.9	12.9
Conductivity (field)	µS/cm				-	507	-	-	-	-	-	-	-	-	-	1,003	877	1,160	1,060
pH (Field)	-			**6.5-8.5**	-	7.79	-	-	-	-	-	-	-	-	-	8.4	7.1	7.72	7.52

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L
				Date	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	18	16	14	15	17	17	21	15	15.4	<0.08	17.3	17.1	14.2	15.8
Boron (filtered)	µg/L	2	***2,619***	**5,000**	770	671	738	763	807	789	821	756	604	<2	565	666	632	698
Calcium (filtered)	µg/L	10			85,200	79,900	96,700	85,800	98,600	104,000	104,000	88,600	123,000	20	113,000	129,000	97,000	122,000
Chloride	µg/L	500		**250,000**	6,800	6,100	6,300	5,400	7,100	6,200	6,700	6,500	7,000	8,000	8,000	7,000	6,000	6,000
Iron (filtered)	µg/L	5	***157***	**300**	9	16	***175***	21	130	99	***191***	83	***250***	<7	12	<7	<7	92
Magnesium (filtered)	µg/L	1			48,100	42,000	54,000	50,800	54,000	51,500	56,200	48,600	44,900	<1	42,000	43,700	41,300	44,700
Manganese (filtered)	µg/L	0.01	***28***	**50**	1	1	19	1	7	13	19	8	15.3	0.06	3.69	0.96	1.07	10.6
Sodium (filtered)	µg/L	10		**200,000**	76,500	76,900	54,300	68,500	66,900	63,200	63,700	69,100	52,200	140	65,100	74,000	67,500	57,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	183	176	167	167	162	157	172	178	184	180	182	173	182	204
Total Dissolved Solids	mg/L	3		**500**	**568**	**562**	**596**	**576**	**581**	**548**	**544**	**567**	**780**	**814**	**751**	**700**	**749**	**703**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	411	372	464	423	468	472	491	421	491	0.06	454	**502**	412	490
Chemical Oxygen Demand	mg/L	5			<5	<5	11	<5	<5	<5	<12	<5	<8	11	<8	16	8	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***39.1***	2.2	2.8	1.7	1.3	1.7	***4.3***	1.5	1	***5***	<1	1	1	1
Sulphate (filtered)	mg/L	1		**500**	396	365	376	419	426	390	369	477	440	420	400	340	350	400
Ammonia as N	mg/L	0.01			0.05	0.06	0.1	0.05	0.06	0.02	0.04	0.06	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	0.05		**10**	<0.05	0.09	<0.05	<0.05	0.08	0.13	0.18	0.06	0.10	0.13	0.11	0.19	0.12	0.10
Electrical Conductivity (Lab)	µS/cm	1			1,060	1,050	1,110	1,070	1,080	1,030	1,020	1,060	1,010	1,060	1,050	999	994	1,080
pH (Lab)	-	0.05		**6.5-8.5**	8.05	8.09	8.03	7.95	7.86	7.88	8.02	8.23	8.00	7.89	8.15	7.80	8.15	8.04
DO (Field)	mg/L				9.05	10.12	9.95	6.6	8.46	6.41	6.19	9.64	8.38	6.84	7.6	6.88	9.44	23.55
Redox (Field)	mV				11	130	148	112	64	252	360	115	339	223	56	176	141	89
Temperature (Field)	°C				13	7.3	7	6.8	8.7	9.2	9.9	7.4	17.7	9.4	8.4	7.7	10.3	7.9
Conductivity (field)	µS/cm				1,060	1,020	870	1,070	700	748	733	808	1,088	864	874	947	921	799
pH (Field)	-			**6.5-8.5**	7.8	8.11	7.93	7.61	8.4	7.72	7.56	7.85	7.71	7.28	7.54	7.7	7.56	7.63

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M
				Date	01 May 2011	01 May 2012	01 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	61	54	69	55	73	65	63	64	66	66	68	65	66	66	59
Boron (filtered)	µg/L	2	***2,619***	**5,000**	280	223	273	228	218	239	280	254	247	275	277	278	295	264	251
Calcium (filtered)	µg/L	10			97,000	98,800	104,000	102,000	93,400	80,800	94,200	94,400	96,700	105,000	103,000	92,900	92,900	94,700	84,700
Chloride	µg/L	500		**250,000**	23,000	21,900	23,000	21,800	19,800	19,700	19,900	16,500	18,200	18,400	14,900	15,200	17,700	17,500	16,600
Iron (filtered)	µg/L	5	***157***	**300**	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<5	7	<5	<5	<5
Magnesium (filtered)	µg/L	1			27,000	26,200	27,300	28,200	25,400	23,400	25,100	24,800	26,300	25,700	28,600	27,700	29,300	27,200	25,100
Manganese (filtered)	µg/L	0.01	***28***	**50**	-	<2	4	<2	2	<2	12	<2	<2	7	<1	3	<1	<1	<1
Sodium (filtered)	µg/L	10		**200,000**	23,000	20,000	20,500	22,400	23,800	20,500	20,100	20,800	21,700	21,300	23,700	19,800	23,700	21,800	19,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	264	306	301	279	293	265	273	281	279	343	299	282	270	260	254
Total Dissolved Solids	mg/L	3		**500**	466	476	436	462	408	440	454	438	426	492	428	414	366	381	374
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	-	355	372	371	338	298	339	338	350	368	376	346	353	349	315
Chemical Oxygen Demand	mg/L	5			9	<5	<5	<5	<5	7	<5	<5	<5	<5	<5	<5	<5	8	9
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.2	1.7	1.5	1	2	***5.8***	1.1	1.4	1	2.8	3.4	***4.6***	***5.1***	***4***	2.8
Sulphate (filtered)	mg/L	1		**500**	94	102	101	98.6	99.2	95.2	94.6	93.8	104	109	80	77	95	94	93
Ammonia as N	mg/L	0.01			<0.05	<0.02	<0.02	<0.02	0.04	<0.02	0.05	<0.02	<0.02	<0.02	<0.01	0.02	0.02	0.03	0.04
Nitrate (as N)	mg/L	0.05		**10**	<0.1	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.25	<0.25	<0.25	0.12	<0.05	0.07	0.07	0.08
Electrical Conductivity (Lab)	µS/cm	1			758	756	749	789	765	750	791	730	740	812	779	752	705	731	718
pH (Lab)	-	0.05		**6.5-8.5**	7.93	8.01	8.18	7.84	7.95	8.18	7.86	7.77	7.88	7.17	7.98	7.96	8.13	8.04	8.08
DO (Field)	mg/L				-	-	-	-	-	-	-	-	8	6.8	8.19	4.45	8.45	7.24	7.35
Redox (Field)	mV				-	-	-	-	-	-	-	-	-	-	20	115	3	117	135
Temperature (Field)	°C				-	-	-	-	-	-	-	-	9.1	9.6	14.7	11.1	13	8.3	7
Conductivity (field)	µS/cm				-	-	-	-	-	-	-	-	754	710	850	770	760	700	640
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	-	-	-	7.1	7.26	7.44	7.52	7.94	7.72

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-2-L	98-2-L	98-2-L
				Date	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	01 May 2012	01 Nov 2012
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	55	71	69	75	72	70.1	70.3	68.0	65.5	65.6	69.2	16	15	14
Boron (filtered)	µg/L	2	***2,619***	**5,000**	267	289	283	291	279	222	340	234	271	245	265	1,700	1,600	1,850
Calcium (filtered)	µg/L	10			82,900	94,000	101,000	99,600	96,700	115,000	119,000	122,000	146,000	109,000	121,000	290,000	257,000	278,000
Chloride	µg/L	500		**250,000**	17,000	18,100	17,600	18,900	17,500	23,000	23,000	25,000	25,000	22,000	21,000	39,000	44,900	62,800
Iron (filtered)	µg/L	5	***157***	**300**	<5	<5	13	17	95	<7	9	15	<7	<7	<7	***1,600***	***1,840***	***1,140***
Magnesium (filtered)	µg/L	1			27,500	28,100	27,600	29,200	28,600	23,100	24,600	26,400	28,500	26,100	25,100	120,000	106,000	114,000
Manganese (filtered)	µg/L	0.01	***28***	**50**	<1	<1	<1	<1	3	0.16	0.70	0.21	0.27	0.08	0.12	-	***70***	***73***
Sodium (filtered)	µg/L	10		**200,000**	21,600	21,400	20,200	21,700	20,900	16,900	17,800	19,500	19,900	19,500	18,200	81,000	72,600	76,200
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	258	247	243	273	247	276	274	257	270	268	283	19	203	185
Total Dissolved Solids	mg/L	3		**500**	371	363	368	375	346	451	483	423	443	474	420	**1,330**	**1,660**	**1,700**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	320	350	366	369	359	382	398	413	482	379	406	-	**1,080**	**1,160**
Chemical Oxygen Demand	mg/L	5			10	<5	<5	6	<5	<8	<8	<8	12	<8	<8	<4	<5	6
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.5	2.9	1.5	2.5	1.8	2	2	<1	1	1	1	0.9	***3.6***	***3.6***
Sulphate (filtered)	mg/L	1		**500**	98	90	97	100	97	97	88	96	94	97	85	**1,000**	**1,090**	**1,240**
Ammonia as N	mg/L	0.01			0.03	0.02	0.01	<0.01	0.02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.48	0.36	0.4
Nitrate (as N)	mg/L	0.05		**10**	<0.05	0.11	0.12	0.13	0.05	0.17	0.14	0.11	0.12	0.12	0.13	<0.1	<0.05	<0.10
Electrical Conductivity (Lab)	µS/cm	1			715	698	709	720	666	708	722	715	718	713	726	2,210	2,000	1,910
pH (Lab)	-	0.05		**6.5-8.5**	7.99	7.84	7.92	8.04	8.14	8.03	7.98	8.06	7.72	8.22	8.11	7.76	7.9	8.13
DO (Field)	mg/L				8.11	8.6	8.46	6.32	8.46	9.12	7.84	8.35	10.64	9.3	12.05	-	-	-
Redox (Field)	mV				99	49	253	368	177	355	162	43	176	138	83	-	-	-
Temperature (Field)	°C				6.8	9.2	9.7	11.1	8.4	18.9	8.9	8.2	7.9	9.5	8.3	-	-	-
Conductivity (field)	µS/cm				720	600	546	550	656	783	601	644	816	692	578	-	-	-
pH (Field)	-			**6.5-8.5**	7.8	8.3	7.45	7.38	7.48	7.41	7.3	7.28	7.4	7.07	7.43	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L
				Date	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	07 Apr 2015	27 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS															
Barium (filtered)	µg/L	0.08	***267***	**1,000**	16	16	17	15	15	15	16	17	13	13	13	13	12	15	14
Boron (filtered)	µg/L	2	***2,619***	**5,000**	1,560	1,470	1,760	1,690	1,650	1,830	1,670	1,670	1,710	1,900	2,030	1,860	1,770	1,940	2,040
Calcium (filtered)	µg/L	10			322,000	270,000	251,000	246,000	311,000	273,000	295,000	273,000	267,000	280,000	283,000	301,000	277,000	286,000	306,000
Chloride	µg/L	500		**250,000**	51,100	50,900	52,700	54,300	61,000	49,900	62,400	58,400	53,300	57,300	70,000	71,600	72,500	61,500	79,800
Iron (filtered)	µg/L	5	***157***	**300**	***165***	***1,480***	<10	119	***1,610***	***747***	***501***	***433***	<5	***351***	***249***	***516***	***479***	***2,170***	***1,030***
Magnesium (filtered)	µg/L	1			123,000	108,000	104,000	94,100	117,000	105,000	114,000	103,000	111,000	118,000	125,000	117,000	112,000	120,000	122,000
Manganese (filtered)	µg/L	0.01	***28***	**50**	***35***	***77***	20	***70***	***77***	***61***	***34***	***44***	4	***40***	20	***68***	***52***	***76***	***60***
Sodium (filtered)	µg/L	10		**200,000**	75,600	73,500	74,700	63,700	75,200	77,200	77,400	76,200	77,300	72,000	84,200	83,500	69,400	77,600	78,700
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	200	210	199	198	218	212	223	264	221	218	242	210	212	213	222
Total Dissolved Solids	mg/L	3		**500**	**1,800**	**1,740**	**1,710**	**1,720**	**1,830**	**1,700**	**1,730**	**1,740**	**1,180**	**1,240**	**1,130**	**1,200**	**1,200**	**1,190**	**1,150**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	**1,310**	**1,120**	**1,060**	**1,000**	**1,260**	**1,110**	**1,210**	**1,110**	**1,120**	**1,180**	**1,220**	**1,230**	**1,150**	**1,210**	**1,270**
Chemical Oxygen Demand	mg/L	5			<5	6	<5	<5	<5	<5	<5	<5	8	<5	<5	<5	6	8	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2	2.3	1.9	1.2	2.1	1.2	0.9	1.9	***5.3***	***12.2***	1.5	2.6	2.2	1.5	1.6
Sulphate (filtered)	mg/L	1		**500**	**1,150**	**1,100**	**998**	**976**	**1,100**	**971**	**1,130**	**1,020**	**811**	**808**	151	**955**	**642**	**1,050**	**966**
Ammonia as N	mg/L	0.01			0.12	0.4	0.07	0.19	0.29	0.12	0.2	0.1	0.07	0.3	0.1	0.17	0.09	0.34	0.29
Nitrate (as N)	mg/L	0.05		**10**	<0.5	<0.5	<0.5	<0.5	<0.25	<0.5	<0.5	<0.5	0.49	<0.05	0.25	0.23	0.28	<0.5	<0.05
Electrical Conductivity (Lab)	µS/cm	1			2,250	2,130	2,080	2,220	2,220	2,140	2,200	2,160	2,140	2,250	2,040	2,170	2,170	2,160	2,090
pH (Lab)	-	0.05		**6.5-8.5**	7.85	7.91	7.96	7.76	8.23	7.87	8.04	6.91	7.64	7.74	7.72	7.77	7.87	7.69	7.62
DO (Field)	mg/L				-	-	-	-	-	-	8.7	5.7	7.25	6.2	5.94	5.8	4	2.79	8.56
Redox (Field)	mV				-	-	-	-	-	-	-	-	33	125	43	135	155	112	84
Temperature (Field)	°C				-	-	-	-	-	-	12.1	9.3	16.3	12.4	12.5	8.1	8	8.2	7.8
Conductivity (field)	µS/cm				-	-	-	-	-	-	2,205	1,857	2,400	1,930	2,300	1,650	1,070	2,100	1,400
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	7.6	7	7.16	7.04	7.09	7.56	7.03	7.05	7.63

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M
				Date	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	01 May 2012	01 Nov 2012	04 Jun 2013	05 Dec 2013
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	14	16	14	14.1	15.6	11.2	11.3	10.4	11.0	30	25	29	28	29
Boron (filtered)	µg/L	2	***2,619***	**5,000**	2,000	2,020	1,960	1,340	1,620	1,320	1,730	1,600	1,590	400	248	413	378	296
Calcium (filtered)	µg/L	10			314,000	308,000	294,000	303,000	303,000	304,000	352,000	284,000	299,000	74,000	63,600	71,500	73,600	63,300
Chloride	µg/L	500		**250,000**	81,400	86,900	84,100	84,000	77,000	87,000	84,000	84,000	75,000	14,000	11,100	12,700	13,900	13,400
Iron (filtered)	µg/L	5	***157***	**300**	***171***	***286***	***460***	***494***	***1,030***	***449***	***1,050***	***305***	***283***	***300***	<10	<10	62	<10
Magnesium (filtered)	µg/L	1			117,000	121,000	117,000	95,500	105,000	105,000	115,000	107,000	98,400	27,000	21,000	25,400	28,100	24,000
Manganese (filtered)	µg/L	0.01	***28***	**50**	***40***	19	***44***	***50.2***	***71.72***	***32.75***	***60.40***	17.86	***44.6***	-	***54***	***47***	6	6
Sodium (filtered)	µg/L	10		**200,000**	78,200	82,100	81,200	63,000	67,600	72,600	77,000	77,100	69,600	22,000	15,700	26,600	19,600	18,100
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	216	235	239	244	234	244	241	246	245	235	250	240	224	226
Total Dissolved Solids	mg/L	3		**500**	**1,150**	**1,170**	**1,140**	**1,830**	**1,980**	**1,810**	**1,790**	**1,810**	**1,590**	398	300	370	328	322
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	**1,270**	**1,270**	**1,220**	**1,150**	**1,190**	**1,190**	**1,350**	**1,150**	**1,150**	-	245	283	299	257
Chemical Oxygen Demand	mg/L	5			<5	<5	21	<8	<8	<8	15	<8	<8	7	<5	<5	<5	13
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	0.3	1.7	1.4	2	1	<1	2	1	1	0.8	***7.2***	***4***	<1	2.1
Sulphate (filtered)	mg/L	1		**500**	**980**	**875**	**1,150**	**930**	**910**	**920**	**880**	**940**	**960**	70	57.9	83.7	80.2	79.8
Ammonia as N	mg/L	0.01			0.06	0.05	0.13	0.2	0.3	0.2	0.3	0.1	0.1	0.12	2.06	0.42	0.04	0.09
Nitrate (as N)	mg/L	0.05		**10**	0.34	0.33	0.25	0.27	<0.06	0.18	0.09	0.28	0.27	<0.1	<0.05	<0.05	0.12	<0.10
Electrical Conductivity (Lab)	µS/cm	1			2,090	2,120	2,060	2,050	2,120	2,130	2,110	2,110	2,110	637	581	592	648	594
pH (Lab)	-	0.05		**6.5-8.5**	7.57	7.83	8.15	7.70	7.70	7.98	7.58	8.07	7.98	7.91	7.8	8.1	7.91	7.96
DO (Field)	mg/L				3.25	4.68	7.35	6.45	4.67	6.04	5.6	8.8	15.56	-	-	-	-	-
Redox (Field)	mV				248	360	104	230	144	-177	71	114	154	-	-	-	-	-
Temperature (Field)	°C				9.2	9.9	9.2	15.5	9.5	9	7	12.2	8.5	-	-	-	-	-
Conductivity (field)	µS/cm				1,621	1,540	1,815	2,313	1,744	1,784	1,835	2,008	1,634	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.1	7.15	7.18	7.18	7.06	7.11	6.94	7.15	7.24	-	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M
				Date	12 May 2014	27 Oct 2014	08 Apr 2015	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	28	29	28	27	30	24	27	29	32	31	22	27	31	31	32
Boron (filtered)	µg/L	2	***2,619***	**5,000**	331	374	404	441	337	563	294	342	378	338	432	345	351	360	364
Calcium (filtered)	µg/L	10			55,200	60,600	70,100	66,800	69,000	70,200	59,300	63,400	69,300	68,900	69,300	61,600	68,700	72,300	70,000
Chloride	µg/L	500		**250,000**	11,700	13,700	15,600	13,900	15,800	15,900	11,700	13,400	16,000	15,600	14,900	16,000	17,900	17,400	18,300
Iron (filtered)	µg/L	5	***157***	**300**	<10	52	28	<10	<10	29	<5	5	<5	13	58	5	5	<5	<5
Magnesium (filtered)	µg/L	1			19,800	22,200	26,200	25,700	25,600	28,200	23,200	26,400	29,100	26,400	28,600	26,800	27,200	26,700	27,400
Manganese (filtered)	µg/L	0.01	***28***	**50**	27	13	15	12	7	17	<1	1	1	<1	14	1	<1	<1	<1
Sodium (filtered)	µg/L	10		**200,000**	15,000	15,300	28,600	26,800	19,800	45,600	14,700	15,100	17,900	18,200	30,900	18,000	17,000	16,900	17,800
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	193	197	242	225	227	271	193	211	209	200	212	205	192	191	203
Total Dissolved Solids	mg/L	3		**500**	326	358	362	**1,770**	340	384	298	331	288	306	378	328	293	304	303
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	219	243	283	273	278	291	244	267	293	281	291	264	284	290	288
Chemical Oxygen Demand	mg/L	5			7	<5	<5	<5	<5	<5	11	<5	<5	<5	11	6	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***6.2***	1.7	1.1	3.2	1.2	1.8	***17.3***	***5.4***	0.6	2.7	1.4	1.9	1.5	0.8	2.7
Sulphate (filtered)	mg/L	1		**500**	60.3	69	96.4	95.1	87.6	159	55	65	80	76	137	103	74	80	83
Ammonia as N	mg/L	0.01			0.02	<0.02	0.14	0.06	<0.02	0.32	0.03	<0.01	0.01	0.02	0.14	0.05	<0.01	0.01	<0.01
Nitrate (as N)	mg/L	0.05		**10**	0.36	0.28	<0.25	0.58	0.36	<0.25	0.16	<0.05	0.11	0.1	0.06	<0.05	0.11	0.06	0.11
Electrical Conductivity (Lab)	µS/cm	1			522	597	661	646	626	789	541	602	556	590	725	632	566	587	585
pH (Lab)	-	0.05		**6.5-8.5**	8.02	7.99	8.22	8.07	8.06	7.52	7.98	8.08	8.04	8	8.02	7.99	7.76	7.84	7.93
DO (Field)	mg/L				-	-	-	-	8.5	6.6	12.12	10.02	7.1	6.43	4.13	6.16	7.63	5.55	5.98
Redox (Field)	mV				-	-	-	-	-	-	5	101	21	113	137	99	72	239	358
Temperature (Field)	°C				-	-	-	-	10.1	9.5	12.8	12	13.5	8.7	8	7.9	8.1	9.2	10.7
Conductivity (field)	µS/cm				-	-	-	-	630	565	640	530	660	590	640	590	6,108	464	456
pH (Field)	-			**6.5-8.5**	-	-	-	-	7.9	7.1	7.47	7.69	7.55	8.28	7.61	7.79	8.06	7.15	7.44

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L
				Date	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	02 May 2012	28 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	29	30.4	32.9	30.1	-	28.6	28.7	20.3	30	16	15	13	17	16
Boron (filtered)	µg/L	2	***2,619***	**5,000**	384	274	370	306	-	370	355	604	640	534	596	572	620	602
Calcium (filtered)	µg/L	10			69,600	85,400	89,600	88,800	-	102,000	82,000	101,000	74,000	70,100	71,100	79,400	71,700	66,600
Chloride	µg/L	500		**250,000**	17,200	23,000	23,000	26,000	-	25,000	22,000	22,000	6,000	5,360	4,210	5,030	4,440	4,400
Iron (filtered)	µg/L	5	***157***	**300**	28	<7	<7	<7	-	<7	<7	***234***	***200***	<10	<10	13	<10	<10
Magnesium (filtered)	µg/L	1			28,600	23,100	26,000	25,900	-	27,600	27,000	34,000	26,000	25,000	24,600	26,100	24,400	24,600
Manganese (filtered)	µg/L	0.01	***28***	**50**	4	0.40	0.63	0.42	-	0.46	1.41	21.5	-	<2	<2	<2	<2	14
Sodium (filtered)	µg/L	10		**200,000**	21,900	15,200	17,200	17,800	-	18,900	20,700	60,100	65,000	54,500	49,900	64,200	53,600	56,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	217	214	209	220	-	207	221	248	164	172	146	182	165	152
Total Dissolved Solids	mg/L	3		**500**	318	334	411	380	-	334	400	471	488	**540**	476	500	482	498
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	292	309	331	328	-	367	316	391	-	278	279	306	280	268
Chemical Oxygen Demand	mg/L	5			<5	<8	<8	<8	-	10	9	<8	<4	<5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.5	1	1	<1	-	1	1	1	0.5	1	1.2	***43.5***	1.5	***4.5***
Sulphate (filtered)	mg/L	1		**500**	100	83	79	89	-	77	92	200	240	248	233	240	235	244
Ammonia as N	mg/L	0.01			0.02	<0.1	<0.1	<0.1	-	<0.1	<0.1	0.2	<0.05	<0.02	<0.02	0.29	0.05	<0.02
Nitrate (as N)	mg/L	0.05		**10**	0.06	0.15	0.06	0.41	-	0.24	0.09	<0.06	0.2	0.2	<0.05	<0.25	0.32	0.12
Electrical Conductivity (Lab)	µS/cm	1			613	599	602	638	-	620	631	854	794	750	706	779	776	783
pH (Lab)	-	0.05		**6.5-8.5**	8.28	7.69	7.86	8.11	-	7.90	8.21	8.08	8.13	7.87	8.19	8.02	7.93	8.18
DO (Field)	mg/L				8.12	7.03	6.88	-	7.54	8.39	7.25	8.53	-	-	-	-	-	-
Redox (Field)	mV				101	359	122	-	-154	153	137	63	-	-	-	-	-	-
Temperature (Field)	°C				8.2	17.7	9.4	-	9	8.2	10.7	7.4	-	-	-	-	-	-
Conductivity (field)	µS/cm				597	624	585	-	510	554	608	586	-	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.4	7.17	7.03	-	7.33	6.84	7.13	7.31	-	-	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L
				Date	27 Oct 2014	08 Apr 2015	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	14	16	16	16	37	14	14	16	14	13	14	16	30	29	15
Boron (filtered)	µg/L	2	***2,619***	**5,000**	625	617	577	519	599	572	582	627	555	547	599	589	586	566	560
Calcium (filtered)	µg/L	10			70,100	72,800	70,400	75,200	65,400	66,500	65,200	70,900	70,400	67,000	65,700	71,200	77,400	71,400	68,800
Chloride	µg/L	500		**250,000**	5,070	5,640	4,240	6,040	6,070	4,900	5,000	6,400	6,100	5,900	5,400	6,700	6,700	7,300	7,100
Iron (filtered)	µg/L	5	***157***	**300**	<10	<10	<10	<10	***167***	<5	5	6	7	18	33	<5	***176***	***212***	5
Magnesium (filtered)	µg/L	1			24,200	24,400	24,000	25,900	22,400	25,100	25,900	28,800	25,900	23,900	26,000	27,100	25,300	27,500	27,400
Manganese (filtered)	µg/L	0.01	***28***	**50**	<2	25	***48***	11	3	1	1	2	***30***	***48***	***35***	1	***31***	18	2
Sodium (filtered)	µg/L	10		**200,000**	50,900	55,600	57,400	60,900	58,300	60,600	55,300	64,500	61,900	57,700	62,700	65,900	65,200	65,300	60,800
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	150	164	167	187	177	170	163	173	169	171	169	165	165	179	185
Total Dissolved Solids	mg/L	3		**500**	474	430	**504**	482	**550**	433	423	392	407	413	395	394	398	395	389
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	275	282	275	294	256	269	269	296	282	266	271	289	297	292	285
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	<5	5	<5	<5	24	8	6	10	<5	17	12
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	0.7	2.1	2.6	0.7	1.6	2.3	***5.7***	***13.3***	2.4	2.7	3	1.5	1.8	2.2	1.4
Sulphate (filtered)	mg/L	1		**500**	232	237	210.4	253	246	187	184	218	219	219	219	215	219	224	213
Ammonia as N	mg/L	0.01			<0.02	0.02	0.02	<0.02	0.05	<0.01	<0.01	0.01	0.08	0.07	0.05	0.03	0.05	0.02	0.05
Nitrate (as N)	mg/L	0.05		**10**	<0.10	<0.25	0.11	<0.25	<0.25	0.22	0.13	0.17	0.06	0.05	<0.05	0.09	0.06	0.12	0.14
Electrical Conductivity (Lab)	µS/cm	1			791	766	775	795	757	788	769	750	776	788	756	754	761	756	745
pH (Lab)	-	0.05		**6.5-8.5**	8.13	8.37	7.96	8.02	7.64	8.08	8.14	8.09	8.13	8.09	7.98	7.9	8.03	8.08	8.29
DO (Field)	mg/L				-	-	-	10	8.1	7.89	8.82	7.12	5.56	5.59	4.39	8.03	10.34	7.02	6.52
Redox (Field)	mV				-	-	-	-	-	-61	97	-62	128	152	113	70	258	365	97
Temperature (Field)	°C				-	-	-	8.8	9.6	14.9	13.6	15.5	9.3	8	8.3	8.9	11.5	9	9.6
Conductivity (field)	µS/cm				-	-	-	770	675	850	730	800	710	700	750	600	613	528	668
pH (Field)	-			**6.5-8.5**	-	-	-	8.5	7.9	7.56	7.81	7.74	8.16	7.96	7.42	8.34	7.8	7.38	7.63

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M
				Date	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	03 May 2011	02 May 2012	28 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	07 Apr 2015
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	15.8	20.8	15.5	17.2	14.5	18.6	41	28	30	52	35	25	27	34
Boron (filtered)	µg/L	2	***2,619***	**5,000**	431	551	463	569	556	533	260	237	282	256	262	244	280	261
Calcium (filtered)	µg/L	10			77,800	78,400	81,000	98,400	77,400	82,100	71,000	75,000	68,500	70,700	66,400	60,300	62,300	62,200
Chloride	µg/L	500		**250,000**	8,000	9,000	7,000	8,000	6,000	11,000	12,000	12,300	11,500	10,800	11,100	10,700	10,400	12,000
Iron (filtered)	µg/L	5	***157***	**300**	13	59	148	<7	<7	77	***500***	***384***	<10	***164***	***309***	<10	44	***214***
Magnesium (filtered)	µg/L	1			22,200	24,600	24,100	27,200	25,200	23,800	29,000	28,000	27,500	29,300	26,700	26,500	27,500	26,400
Manganese (filtered)	µg/L	0.01	***28***	**50**	7.41	***42.3***	***34.8***	19.2	0.99	***63.0***	-	***54***	***82***	***42***	***37***	14	***189***	***58***
Sodium (filtered)	µg/L	10		**200,000**	52,400	59,600	58,900	52,800	55,000	53,800	13,000	24,600	12,500	19,400	18,000	15,200	11,500	15,000
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	186	176	177	171	111	164	239	272	213	213	213	196	207	223
Total Dissolved Solids	mg/L	3		**500**	**531**	**566**	**514**	483	**560**	460	372	372	344	346	326	328	328	324
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	285	297	301	358	297	303	-	303	284	297	276	260	269	264
Chemical Oxygen Demand	mg/L	5			<8	<8	<8	<8	<8	10	31	<5	<5	8	<5	5	88	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1	1	<1	<1	1	2	2.5	1.8	2.3	***30.5***	1.4	3.4	***6.7***	1.7
Sulphate (filtered)	mg/L	1		**500**	220	230	230	230	230	210	61	74.4	94.1	83.8	92.7	88.6	88.2	74.9
Ammonia as N	mg/L	0.01			<0.1	<0.1	<0.1	<0.1	<0.1	0.9	0.07	<0.02	0.03	0.05	0.04	0.02	4.62	0.84
Nitrate (as N)	mg/L	0.05		**10**	0.07	<0.06	0.06	0.44	0.72	<0.06	<0.1	<0.05	1.88	<0.10	<0.25	<0.10	<0.10	0.49
Electrical Conductivity (Lab)	µS/cm	1			736	703	771	746	747	768	596	633	579	571	601	587	639	589
pH (Lab)	-	0.05		**6.5-8.5**	8.09	7.76	8.18	7.71	8.30	8.01	7.99	8.09	8.07	7.94	7.81	8.12	7.81	8.19
DO (Field)	mg/L				4.98	3.23	6.01	7.94	5.99	5.68	-	-	-	-	-	-	-	-
Redox (Field)	mV				239	144	-2	143	117	-78	-	-	-	-	-	-	-	-
Temperature (Field)	°C				11.8	9.2	8.3	9	10.5	8.6	-	-	-	-	-	-	-	-
Conductivity (field)	µS/cm				655	630	676	681	737	604	-	-	-	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.7	7.41	7.77	7.04	7.41	7.64	-	-	-	-	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M
				Date	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	78	171	26	25	26	26	25	21	23	24	27	27	30	32.6	34.4
Boron (filtered)	µg/L	2	***2,619***	**5,000**	244	39	275	251	264	284	257	237	264	272	272	277	275	212	293
Calcium (filtered)	µg/L	10			60,800	145,000	61,800	61,100	60,100	63,400	63,700	58,600	57,700	63,400	69,200	67,800	65,400	75,700	83,000
Chloride	µg/L	500		**250,000**	10,500	51,300	10,300	9,000	9,200	10,800	11,000	10,000	9,600	11,000	10,500	11,300	11,400	15,000	17,000
Iron (filtered)	µg/L	5	***157***	**300**	42	<10	<10	<5	7	<5	<5	<5	<5	<5	<5	<5	90	77	144
Magnesium (filtered)	µg/L	1			25,600	9,300	25,500	28,400	29,100	31,400	29,100	26,700	29,400	29,700	28,800	30,700	29,800	24,600	27,900
Manganese (filtered)	µg/L	0.01	***28***	**50**	***84***	<2	<2	<1	1	1	<1	<1	<1	1	1	<1	***33***	18.9	22.9
Sodium (filtered)	µg/L	10		**200,000**	11,100	42,300	10,800	11,800	10,700	12,900	12,300	10,200	13,500	11,900	12,800	12,000	20,600	19,600	19,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	209	***382***	226	200	197	199	198	187	188	209	178	196	214	205	206
Total Dissolved Solids	mg/L	3		**500**	326	**570**	334	314	313	278	303	297	289	283	290	288	299	391	391
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	257	400	259	269	270	288	279	256	265	281	291	296	286	290	322
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	<5	<5	7	10	<5	<5	<5	12	98	<8	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	3.2	***4.1***	1	***7.6***	***3.9***	***10.4***	1.9	2.3	2	1.5	0.9	3.2	1.6	1	2
Sulphate (filtered)	mg/L	1		**500**	81.6	29.8	91.2	71	71	85	88	85	89	84	88	88	91	91	87
Ammonia as N	mg/L	0.01			0.05	<0.02	<0.02	<0.01	<0.01	0.01	0.2	0.06	0.03	<0.01	0.03	<0.01	0.22	<0.1	0.3
Nitrate (as N)	mg/L	0.05		**10**	<0.10	3.46	<0.25	0.11	<0.05	0.08	0.1	0.06	<0.05	0.13	0.36	0.17	0.12	0.15	0.23
Electrical Conductivity (Lab)	µS/cm	1			563	902	566	571	569	537	585	573	558	546	560	556	576	553	588
pH (Lab)	-	0.05		**6.5-8.5**	7.94	7.95	7.71	8.09	8.21	8.12	8.04	8.12	8	7.84	8.04	8.07	8.34	8.00	7.98
DO (Field)	mg/L				-	6.9	6.1	10.21	7.09	8.78	8.33	10.41	7.38	8.65	5.15	6.15	9.29	4.3	7.52
Redox (Field)	mV				-	-	-	-65	78	-53	111	132	102	44	250	365	89	160	196
Temperature (Field)	°C				-	8.6	9.9	14.3	14.7	16.1	9.7	8	8.3	9.1	9.9	8.9	9.9	12.9	9.6
Conductivity (field)	µS/cm				-	591	514	590	530	590	550	540	630	490	440	398	538	656	474
pH (Field)	-			**6.5-8.5**	-	8.1	7.7	7.83	7.76	7.78	8.39	7.99	7.65	**8.51**	7.77	7.24	7.66	7.52	7.56

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-3-M	98-3-M	98-3-M	98-3-M	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D
				Date	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	28.3	31.3	23.8	27.9	32	16	16	18	15	12	13	20	16	16
Boron (filtered)	µg/L	2	***2,619***	**5,000**	225	274	245	256	542	565	555	634	550	544	549	601	569	624
Calcium (filtered)	µg/L	10			81,800	98,300	75,900	82,600	63,300	63,100	61,600	67,100	64,000	60,700	58,700	70,000	73,500	68,200
Chloride	µg/L	500		**250,000**	19,000	20,000	20,000	19,000	19,900	11,600	14,300	15,300	16,800	16,000	18,500	18,900	19,200	21,100
Iron (filtered)	µg/L	5	***157***	**300**	25	<7	<7	74	<10	<5	18	16	24	10	19	20	54	34
Magnesium (filtered)	µg/L	1			27,500	29,300	28,300	26,400	36,000	38,700	38,700	43,200	39,100	37,700	39,100	41,900	38,700	41,500
Manganese (filtered)	µg/L	0.01	***28***	**50**	8.11	0.76	0.13	17.2	11	12	16	12	12	9	14	11	24	10
Sodium (filtered)	µg/L	10		**200,000**	12,700	12,900	12,300	15,800	26,600	23,100	19,700	24,200	22,500	19,600	21,400	22,400	20,400	22,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	210	198	205	208	234	226	228	223	223	213	219	210	209	228
Total Dissolved Solids	mg/L	3		**500**	360	340	403	343	436	392	382	349	356	359	351	357	341	360
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	317	366	306	315	306	317	313	345	321	307	307	347	343	341
Chemical Oxygen Demand	mg/L	5			<8	9	8	<8	<5	5	<5	<5	<5	8	10	7	<5	5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	<1	1	1	1	2.9	***15.1***	1.5	1.4	1.9	2.2	1.7	1.6	1.4	3
Sulphate (filtered)	mg/L	1		**500**	92	83	88	91	139	110	98	128	110	121	112	126	115	118
Ammonia as N	mg/L	0.01			0.2	<0.1	<0.1	<0.1	0.03	0.02	0.04	0.05	0.05	0.08	0.05	0.06	0.05	0.03
Nitrate (as N)	mg/L	0.05		**10**	0.17	0.22	0.17	0.17	<0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Electrical Conductivity (Lab)	µS/cm	1			583	571	587	594	724	712	694	672	685	691	675	687	656	693
pH (Lab)	-	0.05		**6.5-8.5**	8.22	8.13	8.31	8.13	8.26	7.97	8.11	8.06	8	8.02	7.89	7.97	7.78	8.01
DO (Field)	mg/L				8.73	6.24	9.73	4.58	3.9	2.82	5.54	5.03	1.72	3.2	4.13	1.86	4.07	1.79
Redox (Field)	mV				38	148	177	94	-	-10	148	43	104	146	131	160	69	146
Temperature (Field)	°C				8.5	9.5	12.2	7.3	9.6	12.3	11.7	13.2	8.3	8	7.9	10.5	11	11.4
Conductivity (field)	µS/cm				504	530	559	459	573	780	660	740	680	640	660	750	728	700
pH (Field)	-			**6.5-8.5**	7.68	7.14	7.69	7.63	7	7.45	7.62	7.57	7.8	7.76	7.39	7.87	7.67	7.51

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S
				Date	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	17	13.9	16.80	14.5	17.87	13.8	14.8	95	99	106	105	92	90	107
Boron (filtered)	µg/L	2	***2,619***	**5,000**	592	396	565	467	518	464	493	197	210	234	193	178	164	203
Calcium (filtered)	µg/L	10			66,800	91,300	103,000	100,000	119,000	85,400	102,000	112,000	110,000	120,000	126,000	114,000	110,000	129,000
Chloride	µg/L	500		**250,000**	22,100	32,000	36,000	35,000	38,000	31,000	40,000	18,100	15,300	19,700	20,400	31,700	32,600	22,300
Iron (filtered)	µg/L	5	***157***	**300**	122	20	37	25	67	35	34	<5	14	<5	7	<5	27	<5
Magnesium (filtered)	µg/L	1			40,500	31,600	37,600	37,000	39,800	35,700	36,500	23,800	24,000	26,700	24,400	20,300	20,600	20,800
Manganese (filtered)	µg/L	0.01	***28***	**50**	***32***	9.62	13.0	11.8	16.8	15.20	13.6	12	28	1	17	<1	16	4
Sodium (filtered)	µg/L	10		**200,000**	21,900	16,600	19,100	19,800	20,300	19,100	18,400	30,500	26,300	35,600	32,700	37,500	39,800	44,500
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	237	240	237	232	228	237	251	317	297	344	348	318	310	336
Total Dissolved Solids	mg/L	3		**500**	347	434	486	431	434	446	400	428	402	409	445	445	417	428
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	333	358	413	402	460	360	405	378	374	410	415	368	360	408
Chemical Oxygen Demand	mg/L	5			<5	<8	<8	<8	<8	<8	9	125	108	53	92	34	97	22
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.5	<1	1	<1	1	1	<1	***5.4***	***6.3***	3.5	***5.2***	***6***	3.1	***5.6***
Sulphate (filtered)	mg/L	1		**500**	113	92	97	120	87	92	95	56	53	69	67	67	59	59
Ammonia as N	mg/L	0.01			0.03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	0.02	0.03	0.04	0.07	0.04	0.03
Nitrate (as N)	mg/L	0.05		**10**	<0.05	<0.06	0.13	<0.06	<0.06	<0.06	<0.06	<0.05	0.09	0.2	0.36	0.8	0.55	1.26
Electrical Conductivity (Lab)	µS/cm	1			669	650	693	696	706	681	751	779	730	781	843	843	795	814
pH (Lab)	-	0.05		**6.5-8.5**	8.36	7.88	7.86	8.20	8.06	8.16	8.12	7.86	7.99	7.99	7.9	7.95	7.87	7.85
DO (Field)	mg/L				7.55	4.6	3.44	3.94	3.07	3.8	15.41	9.67	9.49	11.11	7.41	6.42	5.03	10.31
Redox (Field)	mV				161	301	96	159	122	86	102	15	141	47	116	157	135	154
Temperature (Field)	°C				9.9	12.3	10.6	8.4	8.2	10.7	8.5	12.3	17.8	15.9	9.3	7	8.9	9.3
Conductivity (field)	µS/cm				624	718	699	603	759	665	575	1,220	760	830	790	770	840	880
pH (Field)	-			**6.5-8.5**	7.43	7.53	7.21	7.45	7.36	7.15	7.65	7.22	7.42	7.43	7.5	7.5	7.07	7.65

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S
				Date	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**									
Barium (filtered)	µg/L	0.08	***267***	**1,000**	112	115	109	102	115	73.6	95.4	104	103
Boron (filtered)	µg/L	2	***2,619***	**5,000**	182	210	191	169	196	151	161	170	168
Calcium (filtered)	µg/L	10			134,000	145,000	145,000	126,000	138,000	154,000	136,000	128,000	129,000
Chloride	µg/L	500		**250,000**	20,000	23,800	20,700	28,000	26,000	-	26,000	22,000	21,000
Iron (filtered)	µg/L	5	***157***	**300**	32	107	***223***	21	59	***204***	9	<7	29
Magnesium (filtered)	µg/L	1			19,600	22,200	20,400	17,500	19,300	18,100	17,500	18,900	17,000
Manganese (filtered)	µg/L	0.01	***28***	**50**	7	28	***46***	6.33	16.3	***71.4***	2.21	0.33	10.6
Sodium (filtered)	µg/L	10		**200,000**	32,800	42,000	37,400	36,000	36,200	41,100	33,500	39,700	36,700
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	298	341	308	363	***419***	-	303	350	308
Total Dissolved Solids	mg/L	3		**500**	396	437	369	343	491	-	414	469	446
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	416	454	446	388	423	460	413	398	393
Chemical Oxygen Demand	mg/L	5			7	29	40	16	59	-	12	13	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.5	***5.3***	2.8	3	***4***	-	2	2	2
Sulphate (filtered)	mg/L	1		**500**	65	67	58	68	59	-	60	63	52
Ammonia as N	mg/L	0.01			0.01	0.05	0.03	<0.1	<0.1	-	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	0.05		**10**	0.59	0.92	0.93	1.29	0.64	-	0.42	0.58	0.39
Electrical Conductivity (Lab)	µS/cm	1			758	829	711	639	771	-	709	792	712
pH (Lab)	-	0.05		**6.5-8.5**	7.87	7.95	8.15	7.96	7.64	-	7.66	8.02	7.98
DO (Field)	mg/L				11.23	5.65	9.47	9.27	9.56	10.74	11.5	11.24	9.06
Redox (Field)	mV				78	135	173	325	131	-169	240	149	113
Temperature (Field)	°C				12.4	11	8.8	13.8	11.4	8	8.2	10.6	8.6
Conductivity (field)	µS/cm				823	875	718	902	656	672	3,536	793	626
pH (Field)	-			**6.5-8.5**	7.41	7.14	7.26	7.21	7.06	7.41	7.1	6.96	7.43

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L
				Date	11 May 2011	02 May 2012	28 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	06 Apr 2015	27 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	22	20	20	20	18	70	19	17	19	23	19	36	22	19	16
Boron (filtered)	µg/L	2	***2,619***	**5,000**	310	333	292	241	335	15	315	442	404	218	385	259	379	483	434
Calcium (filtered)	µg/L	10			110,000	105,000	102,000	123,000	104,000	94,100	107,000	114,000	115,000	104,000	107,000	107,000	108,000	111,000	113,000
Chloride	µg/L	500		**250,000**	31,000	29,400	34,900	16,000	16,500	18,100	21,200	5,780	6,500	19,900	10,600	30,500	16,400	6,300	6,300
Iron (filtered)	µg/L	5	***157***	**300**	***500***	***876***	***232***	<10	***276***	<10	54	***594***	15	29	***166***	143	30	***258***	***201***
Magnesium (filtered)	µg/L	1			38,000	38,000	36,000	46,700	38,700	33,200	39,000	42,500	41,500	38,300	38,100	28,600	41,200	48,900	45,700
Manganese (filtered)	µg/L	0.01	***28***	**50**	-	***93***	9	14	9	20	***71***	25	8	6	9	22	2	12	11
Sodium (filtered)	µg/L	10		**200,000**	29,000	27,400	23,500	30,100	34,800	10,200	23,100	23,000	31,100	38,700	31,700	44,600	35,600	31,300	30,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	243	242	241	234	228	222	240	208	215	238	231	223	215	205	192
Total Dissolved Solids	mg/L	3		**500**	**538**	**582**	**514**	**644**	**634**	380	**604**	**638**	**654**	**614**	**640**	**515**	**527**	471	**524**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	-	419	403	499	419	387	428	460	458	417	424	384	439	478	470
Chemical Oxygen Demand	mg/L	5			<4	9	<5	7	7	7	<5	<5	<5	<5	<5	35	<5	<5	5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	0.9	2.4	1.7	1	1.4	1.5	2.4	1.5	***3.7***	1.1	2.2	2.2	***4.7***	***3.7***	2.6
Sulphate (filtered)	mg/L	1		**500**	170	224	196	278	279	241	232	309	300	266	308	177	225	284	293
Ammonia as N	mg/L	0.01			<0.05	<0.02	<0.02	0.02	0.03	0.07	0.5	0.04	<0.02	<0.02	<0.02	<0.01	<0.01	0.03	0.05
Nitrate (as N)	mg/L	0.05		**10**	0.2	0.12	0.07	<0.25	<0.25	0.13	0.53	<0.25	<0.25	0.35	0.27	0.57	0.27	0.08	0.06
Electrical Conductivity (Lab)	µS/cm	1			883	865	804	981	936	914	940	926	967	944	950	936	959	890	938
pH (Lab)	-	0.05		**6.5-8.5**	8.04	8.2	8.27	7.87	8.27	8.18	8.12	8.2	8.07	8.05	7.47	7.86	8.09	7.95	7.91
DO (Field)	mg/L				-	-	-	-	-	-	-	-	-	7.9	8.7	6.3	6.98	6.75	4.2
Redox (Field)	mV				-	-	-	-	-	-	-	-	-	-	-	56	164	103	112
Temperature (Field)	°C				-	-	-	-	-	-	-	-	-	6.9	8.6	13.5	10.7	12.8	7.2
Conductivity (field)	µS/cm				-	-	-	-	-	-	-	-	-	957	832	1,040	910	960	870
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	-	-	-	8.2	7.2	7.42	7.6	7.57	7.38

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-L	00-1-M	00-1-M
				Date	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	11 May 2011	02 May 2012
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	14	33	33	37	17	17	18.8	17.1	16.9	18.7	16.6	16.0	23	25
Boron (filtered)	µg/L	2	***2,619***	**5,000**	410	247	340	317	485	466	328	450	363	431	412	421	240	231
Calcium (filtered)	µg/L	10			104,000	96,200	110,000	116,000	114,000	111,000	122,000	125,000	134,000	157,000	122,000	126,000	100,000	99,700
Chloride	µg/L	500		**250,000**	6,200	45,700	20,900	11,100	5,300	5,500	10,000	12,000	7,000	8,000	9,000	4,000	36,000	42,500
Iron (filtered)	µg/L	5	***157***	**300**	***398***	42	***191***	13	***795***	***182***	9	***607***	***744***	48	36	***744***	***200***	15
Magnesium (filtered)	µg/L	1			43,400	29,500	35,900	31,900	47,200	46,800	36,900	42,500	42,700	44,300	42,100	39,500	35,000	34,300
Manganese (filtered)	µg/L	0.01	***28***	**50**	14	4	6	4	17	26	3.17	***43.6***	24.6	3.25	3.63	18.1	-	6
Sodium (filtered)	µg/L	10		**200,000**	27,200	45,100	45,800	43,800	28,000	27,400	26,200	33,600	27,000	26,900	29,400	25,800	28,000	16,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	192	225	216	183	193	203	204	213	210	208	206	212	256	268
Total Dissolved Solids	mg/L	3		**500**	487	451	473	468	486	465	**649**	**729**	**651**	**646**	**726**	**623**	**522**	**550**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	438	362	423	421	479	470	457	487	**511**	**575**	479	476	-	390
Chemical Oxygen Demand	mg/L	5			20	8	<5	<5	<5	14	9	50	<8	10	<8	<8	6	8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***4.2***	2.7	2	1.1	2.6	1.8	<1	3	1	1	1	1	1	1.7
Sulphate (filtered)	mg/L	1		**500**	285	165	252	275	292	374	320	300	340	320	320	320	130	129
Ammonia as N	mg/L	0.01			0.06	0.01	<0.01	0.03	0.03	0.05	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	0.28	0.04
Nitrate (as N)	mg/L	0.05		**10**	0.06	0.36	0.28	0.11	0.11	<0.05	0.08	<0.06	0.13	0.19	0.22	<0.06	0.1	0.2
Electrical Conductivity (Lab)	µS/cm	1			918	854	893	884	916	879	883	925	938	933	938	942	845	788
pH (Lab)	-	0.05		**6.5-8.5**	7.98	7.89	7.83	7.84	7.98	8.33	7.93	7.95	8.15	8.06	8.19	8.05	8.08	8.16
DO (Field)	mg/L				3.56	8.31	6.47	6.85	6.4	11.42	7.59	5.2	5.49	4.81	3.62	8.15	-	-
Redox (Field)	mV				154	170	154	260	184	161	312	102	169	129	-16	40	-	-
Temperature (Field)	°C				7	6.3	9.1	10.4	8.8	7.5	14.5	9.9	6.8	7	11.6	7.6	-	-
Conductivity (field)	µS/cm				790	880	920	690	969	804	993	967	822	1,021	920	716	-	-
pH (Field)	-			**6.5-8.5**	7.39	7.02	7.93	7.48	7.42	7.69	7.55	7.18	7.02	6.68	7.44	7.68	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M
				Date	28 Nov 2012	04 Jun 2013	05 Dec 2013	13 May 2014	27 Oct 2014	06 Apr 2015	05 Nov 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**															
Barium (filtered)	µg/L	0.08	***267***	**1,000**	26	22	26	24	22	23	20	25	32	24	27	27	26	23	23
Boron (filtered)	µg/L	2	***2,619***	**5,000**	232	220	209	236	246	242	194	230	223	240	232	267	241	239	250
Calcium (filtered)	µg/L	10			103,000	111,000	93,900	101,000	94,200	97,500	99,500	95,300	99,300	100,000	95,800	103,000	104,000	97,200	91,800
Chloride	µg/L	500		**250,000**	42,100	38,100	39,000	65,100	37,500	39,200	34,900	38,600	39,700	30,900	33,100	37,500	36,900	35,400	37,400
Iron (filtered)	µg/L	5	***157***	**300**	<10	<10	<10	<10	14	<10	<10	34	86	***501***	14	***376***	107	<5	<5
Magnesium (filtered)	µg/L	1			34,400	39,000	32,600	4,060	32,500	32,600	32,800	33,700	30,300	35,500	32,900	39,100	36,300	33,500	35,700
Manganese (filtered)	µg/L	0.01	***28***	**50**	4	4	2	<2	16	***35***	19	19	***60***	***60***	3	***38***	17	4	2
Sodium (filtered)	µg/L	10		**200,000**	12,400	12,500	10,700	38,500	39,400	30,200	34,300	28,800	25,700	26,400	18,600	21,700	16,400	14,700	20,900
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	254	255	265	254	267	277	291	285	305	87	270	276	262	256	253
Total Dissolved Solids	mg/L	3		**500**	470	500	464	486	**530**	496	482	**504**	**504**	500	447	148	428	432	416
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	399	438	369	269	369	378	384	377	373	397	375	418	409	381	376
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	<5	<5	22	<5	<5	9	<5	<5	<5	<5	11
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	3	2	2.4	2.1	1.1	1.5	1.7	1.2	1.9	3.4	***6.6***	***12.6***	3.4	2.8	***5.5***
Sulphate (filtered)	mg/L	1		**500**	107	128	113	15.7	137	132	113	132	139	104	87	113	104	114	117
Ammonia as N	mg/L	0.01			<0.02	0.12	0.03	0.05	0.1	0.07	0.15	0.06	0.16	0.14	<0.01	0.04	0.07	0.07	0.02
Nitrate (as N)	mg/L	0.05		**10**	0.1	<0.25	0.33	0.43	<0.10	<0.25	0.41	<0.25	<0.25	0.12	0.11	0.09	0.2	0.11	0.05
Electrical Conductivity (Lab)	µS/cm	1			748	854	784	822	918	838	861	857	861	909	812	796	813	820	793
pH (Lab)	-	0.05		**6.5-8.5**	8.17	7.9	8.17	8.16	7.94	8.29	8.24	8.11	7.45	6.62	8.08	8.09	7.9	8	7.92
DO (Field)	mg/L				-	-	-	-	-	-	-	7.9	8.7	3.13	8.27	7.86	2.96	7.83	7.59
Redox (Field)	mV				-	-	-	-	-	-	-	-	-	68	153	116	129	157	167
Temperature (Field)	°C				-	-	-	-	-	-	-	9.1	9	9.5	10.4	14.2	7.9	619	6.8
Conductivity (field)	µS/cm				-	-	-	-	-	-	-	870	730	950	780	850	760	710	810
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	-	8.1	7.4	7.18	7.49	7.57	7.2	7.41	7.16

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	00-1-M	97-1-L	97-1-L	97-1-L	97-1-L
				Date	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	11 May 2011	02 May 2012	29 Nov 2012	04 Jun 2013
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	27	30	29	28	25.8	30.6	253	30.7	25.7	26.3	29	31	28	23
Boron (filtered)	µg/L	2	***2,619***	**5,000**	264	233	248	263	204	389	196	237	232	232	250	247	277	215
Calcium (filtered)	µg/L	10			106,000	106,000	103,000	104,000	112,000	115,000	123,000	127,000	113,000	115,000	69,000	68,200	69,300	98,400
Chloride	µg/L	500		**250,000**	36,700	35,900	36,200	35,200	40,000	41,000	38,000	41,000	37,000	38,000	11,000	10,000	10,000	13,300
Iron (filtered)	µg/L	5	***157***	**300**	5	13	***166***	6	<7	14	***2,770***	<7	<7	<7	<100	<10	<10	<10
Magnesium (filtered)	µg/L	1			37,100	33,600	36,500	36,400	30,900	34,200	34,300	35,300	34,900	31,100	26,000	27,000	27,200	24,100
Manganese (filtered)	µg/L	0.01	***28***	**50**	1	9	***75***	3	0.41	0.74	***140***	1.05	1.95	0.20	-	<2	<2	<2
Sodium (filtered)	µg/L	10		**200,000**	26,500	30,800	38,000	22,200	19,200	19,500	20,400	20,200	20,400	16,200	16,000	16,300	15,300	12,600
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	260	254	274	262	310	274	287	263	278	285	204	213	201	275
Total Dissolved Solids	mg/L	3		**500**	425	422	450	403	**517**	**540**	497	474	**534**	457	356	386	342	336
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	417	403	408	410	408	429	449	462	425	416	-	281	285	345
Chemical Oxygen Demand	mg/L	5			<5	<5	30	11	<8	<8	<8	10	<8	<8	5	6	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.1	0.9	2.9	1.8	<1	2	2	1	1	1	0.8	1.1	1.3	2
Sulphate (filtered)	mg/L	1		**500**	114	107	132	117	110	100	130	100	110	97	78	104	95.4	51.9
Ammonia as N	mg/L	0.01			0.01	0.04	0.08	0.01	<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02	<0.02
Nitrate (as N)	mg/L	0.05		**10**	0.16	<0.05	<0.05	0.06	0.10	0.14	0.10	0.17	0.09	0.16	1.1	1.19	0.95	2.19
Electrical Conductivity (Lab)	µS/cm	1			808	804	853	769	799	777	806	779	814	814	579	577	553	684
pH (Lab)	-	0.05		**6.5-8.5**	7.87	7.89	7.98	8.21	7.81	7.85	8.14	8.02	8.22	8.06	8.08	8.21	8.19	7.94
DO (Field)	mg/L				6.22	7.94	4.93	7.77	7.66	7.43	3.11	9.66	8.61	8.29	-	-	-	-
Redox (Field)	mV				144	63	183	160	314	109	170	115	67	60	-	-	-	-
Temperature (Field)	°C				7.9	8.2	7.5	7.3	15.8	9.7	7.7	5.5	9.1	8.2	-	-	-	-
Conductivity (field)	µS/cm				860	892	883	725	875	670	710	-	818	636	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.83	7.45	7.37	7.34	7.46	7.04	6.94	6.53	7.6	7.38	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L
				Date	05 Dec 2013	12 May 2014	27 Oct 2014	28 Oct 2015	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	39	40	49	47	72	51	57	45	45	40	63	59	53	47	35
Boron (filtered)	µg/L	2	***2,619***	**5,000**	199	197	186	251	221	239	213	258	226	199	145	207	238	271	268
Calcium (filtered)	µg/L	10			73,100	81,800	88,500	80,700	89,900	86,500	85,100	81,700	76,400	70,500	76,000	83,900	88,300	81,200	81,600
Chloride	µg/L	500		**250,000**	9,950	19,000	20,400	9,900	14,900	19,300	38,000	15,700	19,600	16,600	23,800	18,800	28,800	23,800	25,200
Iron (filtered)	µg/L	5	***157***	**300**	<10	<10	<10	<10	<10	<5	5	<5	<5	<5	<5	<5	26	<5	21
Magnesium (filtered)	µg/L	1			23,600	22,000	24,600	26,100	23,500	29,600	27,400	30,300	26,700	23,700	21,000	26,300	27,800	31,900	30,400
Manganese (filtered)	µg/L	0.01	***28***	**50**	<2	***52***	2	2	<2	<1	1	2	<1	1	<1	1	4	<1	10
Sodium (filtered)	µg/L	10		**200,000**	15,000	13,600	18,800	17,400	18,000	23,200	23,500	24,800	19,900	16,300	22,900	19,700	19,500	17,700	22,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	233	228	266	246	277	242	262	225	215	220	225	230	229	220	220
Total Dissolved Solids	mg/L	3		**500**	342	372	436	402	410	387	423	323	335	322	325	328	356	343	331
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	280	295	322	309	321	338	325	329	301	274	276	318	335	334	329
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	<5	7	7	<5	6	26	<5	<5	14	<5	8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.7	1.9	1.2	1.3	1.7	2.1	***3.9***	***8.4***	2.3	3.5	***6.1***	2.3	1	2.7	1.6
Sulphate (filtered)	mg/L	1		**500**	84.9	57.7	74.1	90.6	93.2	76	59	93	83	66	60	69	87	94	93
Ammonia as N	mg/L	0.01			<0.02	0.03	<0.02	<0.02	<0.02	<0.01	<0.01	0.01	0.02	0.04	<0.01	<0.01	0.01	<0.01	<0.01
Nitrate (as N)	mg/L	0.05		**10**	1.23	1.03	0.81	1.18	1.86	1.8	1.77	1.16	0.99	1.33	1.72	1.47	0.11	1.26	0.99
Electrical Conductivity (Lab)	µS/cm	1			619	621	743	658	688	704	769	622	645	621	627	631	685	660	638
pH (Lab)	-	0.05		**6.5-8.5**	8.15	8.15	7.75	7.79	7.21	7.94	7.94	8.09	7.98	8.08	7.78	7.9	7.84	7.96	8.2
DO (Field)	mg/L				-	-	-	-	7.7	9.06	10.64	8.47	8.75	11.39	8.05	8.92	7.84	6.96	6.83
Redox (Field)	mV				-	-	-	-	-	37	159	102	104	144	136	49	275	141	188
Temperature (Field)	°C				-	-	-	-	9.9	13.4	13.1	13.1	9.3	7	8.3	10.4	11.1	9.3	4.2
Conductivity (field)	µS/cm				-	-	-	-	623	730	690	650	630	570	680	520	513	673	619
pH (Field)	-			**6.5-8.5**	-	-	-	-	7.1	7.72	7.71	7.65	7.75	7.8	7.26	8.15	7.23	7.5	7.47

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-L	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M
				Date	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	02 May 2012	29 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	06 Apr 2015
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	39.9	38.7	39.4	49.7	38.8	38.0	39	38	36	69	65	77	113	60
Boron (filtered)	µg/L	2	***2,619***	**5,000**	217	261	195	229	223	269	190	193	280	173	195	103	135	227
Calcium (filtered)	µg/L	10			88,400	90,100	92,900	105,000	97,900	103,000	69,000	69,800	67,500	89,500	70,500	110,000	96,000	80,500
Chloride	µg/L	500		**250,000**	34,000	36,000	36,000	36,000	37,000	36,000	11,000	10,300	9,880	11,700	10,200	28,400	21,300	12,000
Iron (filtered)	µg/L	5	***157***	**300**	<7	<7	<7	<7	<7	<7	<100	<10	<10	<10	<10	<10	<20	<10
Magnesium (filtered)	µg/L	1			27,900	29,400	27,900	30,400	31,600	30,100	22,000	25,900	27,100	22,600	22,600	15,400	23,200	25,100
Manganese (filtered)	µg/L	0.01	***28***	**50**	0.18	0.26	0.12	0.65	0.15	0.11	-	<2	4	<2	<2	<2	<2	6
Sodium (filtered)	µg/L	10		**200,000**	15,800	17,000	15,900	19,500	25,800	28,400	12,000	15,300	13,000	10,400	12,400	24,800	19,100	15,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	223	223	235	218	266	280	209	219	214	251	237	320	289	239
Total Dissolved Solids	mg/L	3		**500**	400	480	394	403	466	451	396	364	350	378	354	446	412	356
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	336	346	347	388	375	381	-	281	280	317	269	338	335	304
Chemical Oxygen Demand	mg/L	5			<8	<8	<8	<8	<8	<8	<5	<5	<5	5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1	1	<1	1	2	1	0.9	1.1	1.5	2	***4.5***	2	2.5	2
Sulphate (filtered)	mg/L	1		**500**	92	85	76	87	88	100	57	84.5	103	55.7	76	45.6	52.2	81.8
Ammonia as N	mg/L	0.01			<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.05	<0.02	<0.02	0.61	<0.02	0.03	0.05	0.03
Nitrate (as N)	mg/L	0.05		**10**	1.41	1.42	1.34	1.31	1.82	1.85	1	1.26	1.12	1.66	1.36	1.4	1.52	1.33
Electrical Conductivity (Lab)	µS/cm	1			657	646	637	664	750	796	538	568	567	648	622	798	755	622
pH (Lab)	-	0.05		**6.5-8.5**	7.88	7.95	8.20	8.00	8.27	8.10	8	8.1	8.08	7.88	8.03	8.13	7.92	8.27
DO (Field)	mg/L				8.48	6.7	9.78	9.21	10.46	5.7	-	-	-	-	-	-	-	-
Redox (Field)	mV				335	136	-162	115	118	122	-	-	-	-	-	-	-	-
Temperature (Field)	°C				14	9.9	6.8	9.3	10.1	7.4	-	-	-	-	-	-	-	-
Conductivity (field)	µS/cm				687	587	567	593	740	584	-	-	-	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.48	7.23	7.56	6.8	7.05	7.51	-	-	-	-	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M	97-1-M
				Date	29 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	51	194	81	104	81	62	61	117	68	109	64	58	56	52.8	51.1
Boron (filtered)	µg/L	2	***2,619***	**5,000**	247	55	210	108	209	200	236	38	168	122	248	269	258	211	284
Calcium (filtered)	µg/L	10			72,700	151,000	88,400	117,000	88,900	78,000	84,400	91,400	76,400	93,500	89,200	84,800	83,500	91,700	90,400
Chloride	µg/L	500		**250,000**	9,900	37,900	15,400	77,200	28,900	21,700	17,200	28,200	25,700	20,400	22,800	27,600	28,800	40,000	38,000
Iron (filtered)	µg/L	5	***157***	**300**	<10	<10	<10	<5	5	<5	<5	<5	<5	<5	10	97	<5	40	9
Magnesium (filtered)	µg/L	1			26,100	21,000	23,700	24,800	25,500	24,500	28,100	8,950	24,400	19,000	29,700	32,600	31,800	27,100	28,700
Manganese (filtered)	µg/L	0.01	***28***	**50**	<2	<2	2	<1	<1	<1	<1	4	<1	<1	1	19	1	3.83	2.30
Sodium (filtered)	µg/L	10		**200,000**	12,100	28,900	16,300	48,100	23,300	21,800	18,600	21,600	20,700	18,500	15,600	15,600	17,500	14,800	14,700
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	240	***402***	298	293	240	221	230	266	230	239	212	229	224	241	233
Total Dissolved Solids	mg/L	3		**500**	332	**524**	410	**518**	392	307	343	325	335	318	334	347	330	411	489
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	289	464	318	394	327	296	326	265	291	312	345	346	339	340	344
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	8	6	8	13	11	8	<5	<5	<5	<5	<8	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	0.8	2.8	1.8	2.5	***6.1***	***51.1***	2	3.3	***8.5***	2.7	1.3	2.7	***4.7***	2	1
Sulphate (filtered)	mg/L	1		**500**	74	35.5	85.8	38	64	66	80	16	70	44	80	81	79	78	76
Ammonia as N	mg/L	0.01			<0.02	<0.02	<0.02	<0.01	<0.01	0.01	0.03	0.05	<0.01	0.02	<0.01	<0.01	<0.01	<0.1	<0.1
Nitrate (as N)	mg/L	0.05		**10**	1.45	5.54	1.68	3.14	1.4	0.93	1.08	2.11	1.56	1.32	0.18	1.34	1.23	1.55	1.26
Electrical Conductivity (Lab)	µS/cm	1			599	917	690	941	712	591	660	625	646	612	644	668	636	668	689
pH (Lab)	-	0.05		**6.5-8.5**	7.93	7.98	7.37	7.92	7.96	8.09	7.87	8.05	7.77	7.88	7.92	7.95	8.14	8.06	7.84
DO (Field)	mg/L				-	11	7.46	10.33	9.09	11.62	9.03	10.26	9.29	8.55	6.6	6.92	8.11	8.42	6.95
Redox (Field)	mV				-	-	-	14	155	-17	105	151	140	65	275	145	179	307	150
Temperature (Field)	°C				-	12.3	10.3	12	13.1	12.4	6.5	6	5.7	9.3	10.4	10	9	12.8	9.9
Conductivity (field)	µS/cm				-	942	631	960	700	640	660	570	690	660	506	676	605	726	630
pH (Field)	-			**6.5-8.5**	-	8.2	7.2	7.54	7.66	7.54	7.9	7.45	7.45	7.78	7.43	7.51	7.24	7.35	7.14

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-1-M	97-1-M	97-1-M	97-1-M	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L
				Date	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	02 May 2012	29 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	28 Oct 2015	01 Apr 2016	01 Oct 2016
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**													
Barium (filtered)	µg/L	0.08	***267***	**1,000**	93.2	57.9	74.2	64.9	23	21	24	20	25	22	23	25	27	25
Boron (filtered)	µg/L	2	***2,619***	**5,000**	99	235	146	196	860	680	912	713	709	756	793	765	682	709
Calcium (filtered)	µg/L	10			95,500	96,400	121,000	113,000	61,000	59,200	60,600	61,800	49,800	50,600	52,800	56,600	58,100	61,200
Chloride	µg/L	500		**250,000**	25,000	42,000	48,000	49,000	4,000	4,500	4,470	4,400	4,100	4,560	4,050	3,160	4,120	3,540
Iron (filtered)	µg/L	5	***157***	**300**	<7	<7	<7	<7	<100	<10	<10	<10	<10	<10	<10	<10	45	24
Magnesium (filtered)	µg/L	1			17,900	30,600	27,200	28,500	29,000	27,500	27,700	29,500	25,200	26,700	26,000	26,500	27,800	27,200
Manganese (filtered)	µg/L	0.01	***28***	**50**	0.27	0.42	0.30	0.15	-	<2	<2	<2	3	<2	12	8	10	20
Sodium (filtered)	µg/L	10		**200,000**	11,400	18,800	45,900	29,700	27,000	25,300	25,400	27,700	24,400	26,100	24,500	24,200	24,100	23,500
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	238	223	323	284	185	191	185	182	186	163	168	183	184	179
Total Dissolved Solids	mg/L	3		**500**	286	**574**	477	440	384	406	406	390	360	380	370	394	-	426
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	312	367	415	401	-	261	265	276	228	236	239	250	260	265
Chemical Oxygen Demand	mg/L	5			<8	15	<8	<8	7	<5	<5	<5	<5	5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	<1	1	2	1	0.6	***4.1***	1.8	<1	1.1	2.2	0.9	***4.2***	0.9	2.1
Sulphate (filtered)	mg/L	1		**500**	43	85	66	63	140	160	150	141	140	142	143	143	152	169
Ammonia as N	mg/L	0.01			<0.1	<0.1	<0.1	<0.1	0.05	<0.02	<0.02	<0.02	0.03	0.02	0.05	<0.02	<0.02	0.19
Nitrate (as N)	mg/L	0.05		**10**	1.06	1.23	2.91	2.31	0.4	0.87	0.47	0.48	<0.10	0.41	<0.10	<0.25	<0.25	<0.25
Electrical Conductivity (Lab)	µS/cm	1			525	678	857	778	651	619	614	662	603	620	644	631	639	601
pH (Lab)	-	0.05		**6.5-8.5**	8.07	7.99	8.10	8.03	8.02	8.25	8.12	7.85	8.09	8.19	8.11	7.72	8.12	8.07
DO (Field)	mg/L				10.55	6.12	7.7	8.46	-	-	-	-	-	-	-	-	8.8	9.35
Redox (Field)	mV				-154	129	113	107	-	-	-	-	-	-	-	-	-	-
Temperature (Field)	°C				6.5	8.9	11.0	7.6	-	-	-	-	-	-	-	-	10	9.3
Conductivity (field)	µS/cm				479	629	866	621	-	-	-	-	-	-	-	-	1,238	593
pH (Field)	-			**6.5-8.5**	7.1	6.67	6.86	7.32	-	-	-	-	-	-	-	-	7.4	7.4

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L	97-2-L
				Date	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	22	24	22	21	19	20	24	23	31	22	21.9	28.0	21.3	19.4
Boron (filtered)	µg/L	2	***2,619***	**5,000**	807	809	869	779	730	795	819	807	836	830	614	717	645	740
Calcium (filtered)	µg/L	10			61,800	55,300	55,700	57,700	51,100	50,100	57,100	65,100	67,200	58,700	102,000	107,000	104,000	135,000
Chloride	µg/L	500		**250,000**	3,400	3,600	5,100	5,000	5,400	3,500	5,100	4,600	4,900	5,000	5,000	5,000	6,000	6,000
Iron (filtered)	µg/L	5	***157***	**300**	<5	6	<5	<5	<5	<5	17	77	***243***	<5	14	47	67	17
Magnesium (filtered)	µg/L	1			30,200	30,000	31,600	29,400	27,000	28,700	29,300	29,100	30,600	30,200	24,400	24,800	27,700	29,500
Manganese (filtered)	µg/L	0.01	***28***	**50**	3	1	<1	<1	<1	<1	5	5	14	2	1.32	7.69	2.88	1.83
Sodium (filtered)	µg/L	10		**200,000**	26,900	23,600	29,000	29,700	24,300	26,100	26,800	24,700	25,700	27,000	21,000	21,100	24,100	25,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	176	170	167	159	157	158	158	154	168	177	181	166	175	168
Total Dissolved Solids	mg/L	3		**500**	353	348	317	329	322	313	311	312	316	311	411	480	397	409
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	278	262	269	265	239	243	263	282	294	271	356	369	375	459
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	12	7	18	<5	27	9	<8	<8	<8	9
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.5	2.8	***13.1***	1.8	2.7	<0.2	***4.7***	0.8	2.9	1.8	1	2	<1	<1
Sulphate (filtered)	mg/L	1		**500**	128	127	149	155	152	150	146	147	154	148	170	150	160	150
Ammonia as N	mg/L	0.01			<0.01	<0.01	<0.01	0.04	0.06	0.04	0.05	<0.01	0.02	0.02	<0.1	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	0.05		**10**	0.54	0.33	1.11	1.04	0.23	0.12	0.67	0.22	0.22	0.43	0.60	0.19	0.30	0.51
Electrical Conductivity (Lab)	µS/cm	1			642	632	611	634	621	603	600	602	609	599	610	596	615	615
pH (Lab)	-	0.05		**6.5-8.5**	8.13	8.13	8.1	8.09	8.06	7.97	7.74	8.06	8.04	8.28	8.11	7.92	8.15	8.02
DO (Field)	mg/L				8.85	9.4	12.18	6.19	12.58	8.34	10.37	11.01	7.11	9.07	7.19	7.11	11.28	9.39
Redox (Field)	mV				1	106	34	125	149	110	37	68	366	132	278	109	-160	128
Temperature (Field)	°C				14.7	14	19	6.6	6	7.1	10.5	9.3	14.2	8.3	12.5	8.9	7.4	5.3
Conductivity (field)	µS/cm				820	580	680	630	560	640	670	633	501	564	694	529	523	581
pH (Field)	-			**6.5-8.5**	7.87	7.97	7.77	8.14	7.99	8.12	8.46	7.77	7.46	7.78	7.65	7.5	7.63	7.2

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	97-2-L	97-2-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L
				Date	29 May 2024	14 Nov 2024	01 May 2011	01 May 2012	01 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	07 Apr 2015	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS															
Barium (filtered)	µg/L	0.08	***267***	**1,000**	18.9	20.2	17	15	15	17	18	16	17	16	17	18	16	16	16
Boron (filtered)	µg/L	2	***2,619***	**5,000**	736	754	680	521	575	662	629	706	697	762	752	647	638	695	738
Calcium (filtered)	µg/L	10			87,500	108,000	76,000	82,800	66,900	103,000	92,100	81,800	81,700	96,600	111,000	98,900	95,700	91,300	90,600
Chloride	µg/L	500		**250,000**	5,000	5,000	7,000	6,040	5,330	8,330	7,130	7,260	6,530	7,590	6,360	7,030	6,260	5,400	5,400
Iron (filtered)	µg/L	5	***157***	**300**	<7	<7	100	<10	<10	<10	***220***	<10	<10	***255***	***235***	<10	<10	<5	5
Magnesium (filtered)	µg/L	1			27,700	26,400	37,000	39,400	30,000	54,500	46,600	44,500	39,500	48,000	55,900	50,800	44,000	45,300	49,600
Manganese (filtered)	µg/L	0.01	***28***	**50**	0.18	0.09	-	3	<2	<2	17	17	3	18	28	12	<2	7	1
Sodium (filtered)	µg/L	10		**200,000**	25,700	24,100	68,000	60,700	67,200	52,800	57,800	55,100	61,600	59,700	53,800	64,100	61,700	68,900	61,600
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	170	175	214	256	226	199	213	198	225	204	190	199	232	201	193
Total Dissolved Solids	mg/L	3		**500**	417	409	**538**	**558**	**650**	**740**	**686**	**730**	**776**	**690**	**742**	**770**	**680**	**602**	**590**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	332	378	-	369	291	482	422	388	367	439	**507**	456	420	414	430
Chemical Oxygen Demand	mg/L	5			<8	<8	7	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	<1	1	0.7	1.3	1.1	1	1.8	2.8	0.9	1.3	1	0.7	2.3	***4.2***	***6.8***
Sulphate (filtered)	mg/L	1		**500**	140	140	250	283	224	392	353	362	316	378	430	409	381	311	275
Ammonia as N	mg/L	0.01			<0.1	<0.1	<0.05	<0.02	<0.02	0.11	0.04	<0.02	<0.02	0.03	0.11	<0.02	<0.02	0.04	<0.01
Nitrate (as N)	mg/L	0.05		**10**	0.94	0.49	0.2	0.06	0.23	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	0.09	0.07
Electrical Conductivity (Lab)	µS/cm	1			627	623	895	932	827	1,130	1,020	1,060	1,030	1,050	1,140	1,080	1,070	1,090	1,070
pH (Lab)	-	0.05		**6.5-8.5**	8.20	8.10	8.1	8.08	8.22	7.84	8.07	8.2	7.56	8.25	7.81	8.08	7.15	8.07	8.07
DO (Field)	mg/L				-	6.55	-	-	-	-	-	-	-	-	-	9.9	7.8	7.1	7.54
Redox (Field)	mV				-	36	-	-	-	-	-	-	-	-	-	-	-	12	129
Temperature (Field)	°C				-	8.1	-	-	-	-	-	-	-	-	-	8.5	9.1	22.9	12.9
Conductivity (field)	µS/cm				-	507	-	-	-	-	-	-	-	-	-	1,003	877	1,160	1,060
pH (Field)	-			**6.5-8.5**	-	7.79	-	-	-	-	-	-	-	-	-	8.4	7.1	7.72	7.52

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L	98-1-L
				Date	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	18	16	14	15	17	17	21	15	15.4	<0.08	17.3	17.1	14.2	15.8
Boron (filtered)	µg/L	2	***2,619***	**5,000**	770	671	738	763	807	789	821	756	604	<2	565	666	632	698
Calcium (filtered)	µg/L	10			85,200	79,900	96,700	85,800	98,600	104,000	104,000	88,600	123,000	20	113,000	129,000	97,000	122,000
Chloride	µg/L	500		**250,000**	6,800	6,100	6,300	5,400	7,100	6,200	6,700	6,500	7,000	8,000	8,000	7,000	6,000	6,000
Iron (filtered)	µg/L	5	***157***	**300**	9	16	***175***	21	130	99	***191***	83	***250***	<7	12	<7	<7	92
Magnesium (filtered)	µg/L	1			48,100	42,000	54,000	50,800	54,000	51,500	56,200	48,600	44,900	<1	42,000	43,700	41,300	44,700
Manganese (filtered)	µg/L	0.01	***28***	**50**	1	1	19	1	7	13	19	8	15.3	0.06	3.69	0.96	1.07	10.6
Sodium (filtered)	µg/L	10		**200,000**	76,500	76,900	54,300	68,500	66,900	63,200	63,700	69,100	52,200	140	65,100	74,000	67,500	57,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	183	176	167	167	162	157	172	178	184	180	182	173	182	204
Total Dissolved Solids	mg/L	3		**500**	**568**	**562**	**596**	**576**	**581**	**548**	**544**	**567**	**780**	**814**	**751**	**700**	**749**	**703**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	411	372	464	423	468	472	491	421	491	0.06	454	**502**	412	490
Chemical Oxygen Demand	mg/L	5			<5	<5	11	<5	<5	<5	<12	<5	<8	11	<8	16	8	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***39.1***	2.2	2.8	1.7	1.3	1.7	***4.3***	1.5	1	***5***	<1	1	1	1
Sulphate (filtered)	mg/L	1		**500**	396	365	376	419	426	390	369	477	440	420	400	340	350	400
Ammonia as N	mg/L	0.01			0.05	0.06	0.1	0.05	0.06	0.02	0.04	0.06	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	0.05		**10**	<0.05	0.09	<0.05	<0.05	0.08	0.13	0.18	0.06	0.10	0.13	0.11	0.19	0.12	0.10
Electrical Conductivity (Lab)	µS/cm	1			1,060	1,050	1,110	1,070	1,080	1,030	1,020	1,060	1,010	1,060	1,050	999	994	1,080
pH (Lab)	-	0.05		**6.5-8.5**	8.05	8.09	8.03	7.95	7.86	7.88	8.02	8.23	8.00	7.89	8.15	7.80	8.15	8.04
DO (Field)	mg/L				9.05	10.12	9.95	6.6	8.46	6.41	6.19	9.64	8.38	6.84	7.6	6.88	9.44	23.55
Redox (Field)	mV				11	130	148	112	64	252	360	115	339	223	56	176	141	89
Temperature (Field)	°C				13	7.3	7	6.8	8.7	9.2	9.9	7.4	17.7	9.4	8.4	7.7	10.3	7.9
Conductivity (field)	µS/cm				1,060	1,020	870	1,070	700	748	733	808	1,088	864	874	947	921	799
pH (Field)	-			**6.5-8.5**	7.8	8.11	7.93	7.61	8.4	7.72	7.56	7.85	7.71	7.28	7.54	7.7	7.56	7.63

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M
				Date	01 May 2011	01 May 2012	01 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	61	54	69	55	73	65	63	64	66	66	68	65	66	66	59
Boron (filtered)	µg/L	2	***2,619***	**5,000**	280	223	273	228	218	239	280	254	247	275	277	278	295	264	251
Calcium (filtered)	µg/L	10			97,000	98,800	104,000	102,000	93,400	80,800	94,200	94,400	96,700	105,000	103,000	92,900	92,900	94,700	84,700
Chloride	µg/L	500		**250,000**	23,000	21,900	23,000	21,800	19,800	19,700	19,900	16,500	18,200	18,400	14,900	15,200	17,700	17,500	16,600
Iron (filtered)	µg/L	5	***157***	**300**	<100	<10	<10	<10	<10	<10	<10	<10	<10	<10	<5	7	<5	<5	<5
Magnesium (filtered)	µg/L	1			27,000	26,200	27,300	28,200	25,400	23,400	25,100	24,800	26,300	25,700	28,600	27,700	29,300	27,200	25,100
Manganese (filtered)	µg/L	0.01	***28***	**50**	-	<2	4	<2	2	<2	12	<2	<2	7	<1	3	<1	<1	<1
Sodium (filtered)	µg/L	10		**200,000**	23,000	20,000	20,500	22,400	23,800	20,500	20,100	20,800	21,700	21,300	23,700	19,800	23,700	21,800	19,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	264	306	301	279	293	265	273	281	279	343	299	282	270	260	254
Total Dissolved Solids	mg/L	3		**500**	466	476	436	462	408	440	454	438	426	492	428	414	366	381	374
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	-	355	372	371	338	298	339	338	350	368	376	346	353	349	315
Chemical Oxygen Demand	mg/L	5			9	<5	<5	<5	<5	7	<5	<5	<5	<5	<5	<5	<5	8	9
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.2	1.7	1.5	1	2	***5.8***	1.1	1.4	1	2.8	3.4	***4.6***	***5.1***	***4***	2.8
Sulphate (filtered)	mg/L	1		**500**	94	102	101	98.6	99.2	95.2	94.6	93.8	104	109	80	77	95	94	93
Ammonia as N	mg/L	0.01			<0.05	<0.02	<0.02	<0.02	0.04	<0.02	0.05	<0.02	<0.02	<0.02	<0.01	0.02	0.02	0.03	0.04
Nitrate (as N)	mg/L	0.05		**10**	<0.1	<0.05	<0.05	<0.25	<0.25	<0.10	<0.10	<0.25	<0.25	<0.25	0.12	<0.05	0.07	0.07	0.08
Electrical Conductivity (Lab)	µS/cm	1			758	756	749	789	765	750	791	730	740	812	779	752	705	731	718
pH (Lab)	-	0.05		**6.5-8.5**	7.93	8.01	8.18	7.84	7.95	8.18	7.86	7.77	7.88	7.17	7.98	7.96	8.13	8.04	8.08
DO (Field)	mg/L				-	-	-	-	-	-	-	-	8	6.8	8.19	4.45	8.45	7.24	7.35
Redox (Field)	mV				-	-	-	-	-	-	-	-	-	-	20	115	3	117	135
Temperature (Field)	°C				-	-	-	-	-	-	-	-	9.1	9.6	14.7	11.1	13	8.3	7
Conductivity (field)	µS/cm				-	-	-	-	-	-	-	-	754	710	850	770	760	700	640
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	-	-	-	7.1	7.26	7.44	7.52	7.94	7.72

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-1-M	98-2-L	98-2-L	98-2-L
				Date	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	01 May 2012	01 Nov 2012
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	55	71	69	75	72	70.1	70.3	68.0	65.5	65.6	69.2	16	15	14
Boron (filtered)	µg/L	2	***2,619***	**5,000**	267	289	283	291	279	222	340	234	271	245	265	1,700	1,600	1,850
Calcium (filtered)	µg/L	10			82,900	94,000	101,000	99,600	96,700	115,000	119,000	122,000	146,000	109,000	121,000	290,000	257,000	278,000
Chloride	µg/L	500		**250,000**	17,000	18,100	17,600	18,900	17,500	23,000	23,000	25,000	25,000	22,000	21,000	39,000	44,900	62,800
Iron (filtered)	µg/L	5	***157***	**300**	<5	<5	13	17	95	<7	9	15	<7	<7	<7	***1,600***	***1,840***	***1,140***
Magnesium (filtered)	µg/L	1			27,500	28,100	27,600	29,200	28,600	23,100	24,600	26,400	28,500	26,100	25,100	120,000	106,000	114,000
Manganese (filtered)	µg/L	0.01	***28***	**50**	<1	<1	<1	<1	3	0.16	0.70	0.21	0.27	0.08	0.12	-	***70***	***73***
Sodium (filtered)	µg/L	10		**200,000**	21,600	21,400	20,200	21,700	20,900	16,900	17,800	19,500	19,900	19,500	18,200	81,000	72,600	76,200
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	258	247	243	273	247	276	274	257	270	268	283	19	203	185
Total Dissolved Solids	mg/L	3		**500**	371	363	368	375	346	451	483	423	443	474	420	**1,330**	**1,660**	**1,700**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	320	350	366	369	359	382	398	413	482	379	406	-	**1,080**	**1,160**
Chemical Oxygen Demand	mg/L	5			10	<5	<5	6	<5	<8	<8	<8	12	<8	<8	<4	<5	6
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.5	2.9	1.5	2.5	1.8	2	2	<1	1	1	1	0.9	***3.6***	***3.6***
Sulphate (filtered)	mg/L	1		**500**	98	90	97	100	97	97	88	96	94	97	85	**1,000**	**1,090**	**1,240**
Ammonia as N	mg/L	0.01			0.03	0.02	0.01	<0.01	0.02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.48	0.36	0.4
Nitrate (as N)	mg/L	0.05		**10**	<0.05	0.11	0.12	0.13	0.05	0.17	0.14	0.11	0.12	0.12	0.13	<0.1	<0.05	<0.10
Electrical Conductivity (Lab)	µS/cm	1			715	698	709	720	666	708	722	715	718	713	726	2,210	2,000	1,910
pH (Lab)	-	0.05		**6.5-8.5**	7.99	7.84	7.92	8.04	8.14	8.03	7.98	8.06	7.72	8.22	8.11	7.76	7.9	8.13
DO (Field)	mg/L				8.11	8.6	8.46	6.32	8.46	9.12	7.84	8.35	10.64	9.3	12.05	-	-	-
Redox (Field)	mV				99	49	253	368	177	355	162	43	176	138	83	-	-	-
Temperature (Field)	°C				6.8	9.2	9.7	11.1	8.4	18.9	8.9	8.2	7.9	9.5	8.3	-	-	-
Conductivity (field)	µS/cm				720	600	546	550	656	783	601	644	816	692	578	-	-	-
pH (Field)	-			**6.5-8.5**	7.8	8.3	7.45	7.38	7.48	7.41	7.3	7.28	7.4	7.07	7.43	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L
				Date	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	07 Apr 2015	27 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS															
Barium (filtered)	µg/L	0.08	***267***	**1,000**	16	16	17	15	15	15	16	17	13	13	13	13	12	15	14
Boron (filtered)	µg/L	2	***2,619***	**5,000**	1,560	1,470	1,760	1,690	1,650	1,830	1,670	1,670	1,710	1,900	2,030	1,860	1,770	1,940	2,040
Calcium (filtered)	µg/L	10			322,000	270,000	251,000	246,000	311,000	273,000	295,000	273,000	267,000	280,000	283,000	301,000	277,000	286,000	306,000
Chloride	µg/L	500		**250,000**	51,100	50,900	52,700	54,300	61,000	49,900	62,400	58,400	53,300	57,300	70,000	71,600	72,500	61,500	79,800
Iron (filtered)	µg/L	5	***157***	**300**	***165***	***1,480***	<10	119	***1,610***	***747***	***501***	***433***	<5	***351***	***249***	***516***	***479***	***2,170***	***1,030***
Magnesium (filtered)	µg/L	1			123,000	108,000	104,000	94,100	117,000	105,000	114,000	103,000	111,000	118,000	125,000	117,000	112,000	120,000	122,000
Manganese (filtered)	µg/L	0.01	***28***	**50**	***35***	***77***	20	***70***	***77***	***61***	***34***	***44***	4	***40***	20	***68***	***52***	***76***	***60***
Sodium (filtered)	µg/L	10		**200,000**	75,600	73,500	74,700	63,700	75,200	77,200	77,400	76,200	77,300	72,000	84,200	83,500	69,400	77,600	78,700
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	200	210	199	198	218	212	223	264	221	218	242	210	212	213	222
Total Dissolved Solids	mg/L	3		**500**	**1,800**	**1,740**	**1,710**	**1,720**	**1,830**	**1,700**	**1,730**	**1,740**	**1,180**	**1,240**	**1,130**	**1,200**	**1,200**	**1,190**	**1,150**
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	**1,310**	**1,120**	**1,060**	**1,000**	**1,260**	**1,110**	**1,210**	**1,110**	**1,120**	**1,180**	**1,220**	**1,230**	**1,150**	**1,210**	**1,270**
Chemical Oxygen Demand	mg/L	5			<5	6	<5	<5	<5	<5	<5	<5	8	<5	<5	<5	6	8	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2	2.3	1.9	1.2	2.1	1.2	0.9	1.9	***5.3***	***12.2***	1.5	2.6	2.2	1.5	1.6
Sulphate (filtered)	mg/L	1		**500**	**1,150**	**1,100**	**998**	**976**	**1,100**	**971**	**1,130**	**1,020**	**811**	**808**	151	**955**	**642**	**1,050**	**966**
Ammonia as N	mg/L	0.01			0.12	0.4	0.07	0.19	0.29	0.12	0.2	0.1	0.07	0.3	0.1	0.17	0.09	0.34	0.29
Nitrate (as N)	mg/L	0.05		**10**	<0.5	<0.5	<0.5	<0.5	<0.25	<0.5	<0.5	<0.5	0.49	<0.05	0.25	0.23	0.28	<0.5	<0.05
Electrical Conductivity (Lab)	µS/cm	1			2,250	2,130	2,080	2,220	2,220	2,140	2,200	2,160	2,140	2,250	2,040	2,170	2,170	2,160	2,090
pH (Lab)	-	0.05		**6.5-8.5**	7.85	7.91	7.96	7.76	8.23	7.87	8.04	6.91	7.64	7.74	7.72	7.77	7.87	7.69	7.62
DO (Field)	mg/L				-	-	-	-	-	-	8.7	5.7	7.25	6.2	5.94	5.8	4	2.79	8.56
Redox (Field)	mV				-	-	-	-	-	-	-	-	33	125	43	135	155	112	84
Temperature (Field)	°C				-	-	-	-	-	-	12.1	9.3	16.3	12.4	12.5	8.1	8	8.2	7.8
Conductivity (field)	µS/cm				-	-	-	-	-	-	2,205	1,857	2,400	1,930	2,300	1,650	1,070	2,100	1,400
pH (Field)	-			**6.5-8.5**	-	-	-	-	-	-	7.6	7	7.16	7.04	7.09	7.56	7.03	7.05	7.63

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M
				Date	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	01 May 2012	01 Nov 2012	04 Jun 2013	05 Dec 2013
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	14	16	14	14.1	15.6	11.2	11.3	10.4	11.0	30	25	29	28	29
Boron (filtered)	µg/L	2	***2,619***	**5,000**	2,000	2,020	1,960	1,340	1,620	1,320	1,730	1,600	1,590	400	248	413	378	296
Calcium (filtered)	µg/L	10			314,000	308,000	294,000	303,000	303,000	304,000	352,000	284,000	299,000	74,000	63,600	71,500	73,600	63,300
Chloride	µg/L	500		**250,000**	81,400	86,900	84,100	84,000	77,000	87,000	84,000	84,000	75,000	14,000	11,100	12,700	13,900	13,400
Iron (filtered)	µg/L	5	***157***	**300**	***171***	***286***	***460***	***494***	***1,030***	***449***	***1,050***	***305***	***283***	***300***	<10	<10	62	<10
Magnesium (filtered)	µg/L	1			117,000	121,000	117,000	95,500	105,000	105,000	115,000	107,000	98,400	27,000	21,000	25,400	28,100	24,000
Manganese (filtered)	µg/L	0.01	***28***	**50**	***40***	19	***44***	***50.2***	***71.72***	***32.75***	***60.40***	17.86	***44.6***	-	***54***	***47***	6	6
Sodium (filtered)	µg/L	10		**200,000**	78,200	82,100	81,200	63,000	67,600	72,600	77,000	77,100	69,600	22,000	15,700	26,600	19,600	18,100
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	216	235	239	244	234	244	241	246	245	235	250	240	224	226
Total Dissolved Solids	mg/L	3		**500**	**1,150**	**1,170**	**1,140**	**1,830**	**1,980**	**1,810**	**1,790**	**1,810**	**1,590**	398	300	370	328	322
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	**1,270**	**1,270**	**1,220**	**1,150**	**1,190**	**1,190**	**1,350**	**1,150**	**1,150**	-	245	283	299	257
Chemical Oxygen Demand	mg/L	5			<5	<5	21	<8	<8	<8	15	<8	<8	7	<5	<5	<5	13
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	0.3	1.7	1.4	2	1	<1	2	1	1	0.8	***7.2***	***4***	<1	2.1
Sulphate (filtered)	mg/L	1		**500**	**980**	**875**	**1,150**	**930**	**910**	**920**	**880**	**940**	**960**	70	57.9	83.7	80.2	79.8
Ammonia as N	mg/L	0.01			0.06	0.05	0.13	0.2	0.3	0.2	0.3	0.1	0.1	0.12	2.06	0.42	0.04	0.09
Nitrate (as N)	mg/L	0.05		**10**	0.34	0.33	0.25	0.27	<0.06	0.18	0.09	0.28	0.27	<0.1	<0.05	<0.05	0.12	<0.10
Electrical Conductivity (Lab)	µS/cm	1			2,090	2,120	2,060	2,050	2,120	2,130	2,110	2,110	2,110	637	581	592	648	594
pH (Lab)	-	0.05		**6.5-8.5**	7.57	7.83	8.15	7.70	7.70	7.98	7.58	8.07	7.98	7.91	7.8	8.1	7.91	7.96
DO (Field)	mg/L				3.25	4.68	7.35	6.45	4.67	6.04	5.6	8.8	15.56	-	-	-	-	-
Redox (Field)	mV				248	360	104	230	144	-177	71	114	154	-	-	-	-	-
Temperature (Field)	°C				9.2	9.9	9.2	15.5	9.5	9	7	12.2	8.5	-	-	-	-	-
Conductivity (field)	µS/cm				1,621	1,540	1,815	2,313	1,744	1,784	1,835	2,008	1,634	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.1	7.15	7.18	7.18	7.06	7.11	6.94	7.15	7.24	-	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M
				Date	12 May 2014	27 Oct 2014	08 Apr 2015	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	28	29	28	27	30	24	27	29	32	31	22	27	31	31	32
Boron (filtered)	µg/L	2	***2,619***	**5,000**	331	374	404	441	337	563	294	342	378	338	432	345	351	360	364
Calcium (filtered)	µg/L	10			55,200	60,600	70,100	66,800	69,000	70,200	59,300	63,400	69,300	68,900	69,300	61,600	68,700	72,300	70,000
Chloride	µg/L	500		**250,000**	11,700	13,700	15,600	13,900	15,800	15,900	11,700	13,400	16,000	15,600	14,900	16,000	17,900	17,400	18,300
Iron (filtered)	µg/L	5	***157***	**300**	<10	52	28	<10	<10	29	<5	5	<5	13	58	5	5	<5	<5
Magnesium (filtered)	µg/L	1			19,800	22,200	26,200	25,700	25,600	28,200	23,200	26,400	29,100	26,400	28,600	26,800	27,200	26,700	27,400
Manganese (filtered)	µg/L	0.01	***28***	**50**	27	13	15	12	7	17	<1	1	1	<1	14	1	<1	<1	<1
Sodium (filtered)	µg/L	10		**200,000**	15,000	15,300	28,600	26,800	19,800	45,600	14,700	15,100	17,900	18,200	30,900	18,000	17,000	16,900	17,800
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	193	197	242	225	227	271	193	211	209	200	212	205	192	191	203
Total Dissolved Solids	mg/L	3		**500**	326	358	362	**1,770**	340	384	298	331	288	306	378	328	293	304	303
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	219	243	283	273	278	291	244	267	293	281	291	264	284	290	288
Chemical Oxygen Demand	mg/L	5			7	<5	<5	<5	<5	<5	11	<5	<5	<5	11	6	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	***6.2***	1.7	1.1	3.2	1.2	1.8	***17.3***	***5.4***	0.6	2.7	1.4	1.9	1.5	0.8	2.7
Sulphate (filtered)	mg/L	1		**500**	60.3	69	96.4	95.1	87.6	159	55	65	80	76	137	103	74	80	83
Ammonia as N	mg/L	0.01			0.02	<0.02	0.14	0.06	<0.02	0.32	0.03	<0.01	0.01	0.02	0.14	0.05	<0.01	0.01	<0.01
Nitrate (as N)	mg/L	0.05		**10**	0.36	0.28	<0.25	0.58	0.36	<0.25	0.16	<0.05	0.11	0.1	0.06	<0.05	0.11	0.06	0.11
Electrical Conductivity (Lab)	µS/cm	1			522	597	661	646	626	789	541	602	556	590	725	632	566	587	585
pH (Lab)	-	0.05		**6.5-8.5**	8.02	7.99	8.22	8.07	8.06	7.52	7.98	8.08	8.04	8	8.02	7.99	7.76	7.84	7.93
DO (Field)	mg/L				-	-	-	-	8.5	6.6	12.12	10.02	7.1	6.43	4.13	6.16	7.63	5.55	5.98
Redox (Field)	mV				-	-	-	-	-	-	5	101	21	113	137	99	72	239	358
Temperature (Field)	°C				-	-	-	-	10.1	9.5	12.8	12	13.5	8.7	8	7.9	8.1	9.2	10.7
Conductivity (field)	µS/cm				-	-	-	-	630	565	640	530	660	590	640	590	6,108	464	456
pH (Field)	-			**6.5-8.5**	-	-	-	-	7.9	7.1	7.47	7.69	7.55	8.28	7.61	7.79	8.06	7.15	7.44

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-2-M	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L
				Date	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 May 2011	02 May 2012	28 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	29	30.4	32.9	30.1	-	28.6	28.7	20.3	30	16	15	13	17	16
Boron (filtered)	µg/L	2	***2,619***	**5,000**	384	274	370	306	-	370	355	604	640	534	596	572	620	602
Calcium (filtered)	µg/L	10			69,600	85,400	89,600	88,800	-	102,000	82,000	101,000	74,000	70,100	71,100	79,400	71,700	66,600
Chloride	µg/L	500		**250,000**	17,200	23,000	23,000	26,000	-	25,000	22,000	22,000	6,000	5,360	4,210	5,030	4,440	4,400
Iron (filtered)	µg/L	5	***157***	**300**	28	<7	<7	<7	-	<7	<7	***234***	***200***	<10	<10	13	<10	<10
Magnesium (filtered)	µg/L	1			28,600	23,100	26,000	25,900	-	27,600	27,000	34,000	26,000	25,000	24,600	26,100	24,400	24,600
Manganese (filtered)	µg/L	0.01	***28***	**50**	4	0.40	0.63	0.42	-	0.46	1.41	21.5	-	<2	<2	<2	<2	14
Sodium (filtered)	µg/L	10		**200,000**	21,900	15,200	17,200	17,800	-	18,900	20,700	60,100	65,000	54,500	49,900	64,200	53,600	56,400
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	217	214	209	220	-	207	221	248	164	172	146	182	165	152
Total Dissolved Solids	mg/L	3		**500**	318	334	411	380	-	334	400	471	488	**540**	476	500	482	498
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	292	309	331	328	-	367	316	391	-	278	279	306	280	268
Chemical Oxygen Demand	mg/L	5			<5	<8	<8	<8	-	10	9	<8	<4	<5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.5	1	1	<1	-	1	1	1	0.5	1	1.2	***43.5***	1.5	***4.5***
Sulphate (filtered)	mg/L	1		**500**	100	83	79	89	-	77	92	200	240	248	233	240	235	244
Ammonia as N	mg/L	0.01			0.02	<0.1	<0.1	<0.1	-	<0.1	<0.1	0.2	<0.05	<0.02	<0.02	0.29	0.05	<0.02
Nitrate (as N)	mg/L	0.05		**10**	0.06	0.15	0.06	0.41	-	0.24	0.09	<0.06	0.2	0.2	<0.05	<0.25	0.32	0.12
Electrical Conductivity (Lab)	µS/cm	1			613	599	602	638	-	620	631	854	794	750	706	779	776	783
pH (Lab)	-	0.05		**6.5-8.5**	8.28	7.69	7.86	8.11	-	7.90	8.21	8.08	8.13	7.87	8.19	8.02	7.93	8.18
DO (Field)	mg/L				8.12	7.03	6.88	-	7.54	8.39	7.25	8.53	-	-	-	-	-	-
Redox (Field)	mV				101	359	122	-	-154	153	137	63	-	-	-	-	-	-
Temperature (Field)	°C				8.2	17.7	9.4	-	9	8.2	10.7	7.4	-	-	-	-	-	-
Conductivity (field)	µS/cm				597	624	585	-	510	554	608	586	-	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.4	7.17	7.03	-	7.33	6.84	7.13	7.31	-	-	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L
				Date	27 Oct 2014	08 Apr 2015	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	14	16	16	16	37	14	14	16	14	13	14	16	30	29	15
Boron (filtered)	µg/L	2	***2,619***	**5,000**	625	617	577	519	599	572	582	627	555	547	599	589	586	566	560
Calcium (filtered)	µg/L	10			70,100	72,800	70,400	75,200	65,400	66,500	65,200	70,900	70,400	67,000	65,700	71,200	77,400	71,400	68,800
Chloride	µg/L	500		**250,000**	5,070	5,640	4,240	6,040	6,070	4,900	5,000	6,400	6,100	5,900	5,400	6,700	6,700	7,300	7,100
Iron (filtered)	µg/L	5	***157***	**300**	<10	<10	<10	<10	***167***	<5	5	6	7	18	33	<5	***176***	***212***	5
Magnesium (filtered)	µg/L	1			24,200	24,400	24,000	25,900	22,400	25,100	25,900	28,800	25,900	23,900	26,000	27,100	25,300	27,500	27,400
Manganese (filtered)	µg/L	0.01	***28***	**50**	<2	25	***48***	11	3	1	1	2	***30***	***48***	***35***	1	***31***	18	2
Sodium (filtered)	µg/L	10		**200,000**	50,900	55,600	57,400	60,900	58,300	60,600	55,300	64,500	61,900	57,700	62,700	65,900	65,200	65,300	60,800
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	150	164	167	187	177	170	163	173	169	171	169	165	165	179	185
Total Dissolved Solids	mg/L	3		**500**	474	430	**504**	482	**550**	433	423	392	407	413	395	394	398	395	389
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	275	282	275	294	256	269	269	296	282	266	271	289	297	292	285
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	<5	5	<5	<5	24	8	6	10	<5	17	12
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	0.7	2.1	2.6	0.7	1.6	2.3	***5.7***	***13.3***	2.4	2.7	3	1.5	1.8	2.2	1.4
Sulphate (filtered)	mg/L	1		**500**	232	237	210.4	253	246	187	184	218	219	219	219	215	219	224	213
Ammonia as N	mg/L	0.01			<0.02	0.02	0.02	<0.02	0.05	<0.01	<0.01	0.01	0.08	0.07	0.05	0.03	0.05	0.02	0.05
Nitrate (as N)	mg/L	0.05		**10**	<0.10	<0.25	0.11	<0.25	<0.25	0.22	0.13	0.17	0.06	0.05	<0.05	0.09	0.06	0.12	0.14
Electrical Conductivity (Lab)	µS/cm	1			791	766	775	795	757	788	769	750	776	788	756	754	761	756	745
pH (Lab)	-	0.05		**6.5-8.5**	8.13	8.37	7.96	8.02	7.64	8.08	8.14	8.09	8.13	8.09	7.98	7.9	8.03	8.08	8.29
DO (Field)	mg/L				-	-	-	10	8.1	7.89	8.82	7.12	5.56	5.59	4.39	8.03	10.34	7.02	6.52
Redox (Field)	mV				-	-	-	-	-	-61	97	-62	128	152	113	70	258	365	97
Temperature (Field)	°C				-	-	-	8.8	9.6	14.9	13.6	15.5	9.3	8	8.3	8.9	11.5	9	9.6
Conductivity (field)	µS/cm				-	-	-	770	675	850	730	800	710	700	750	600	613	528	668
pH (Field)	-			**6.5-8.5**	-	-	-	8.5	7.9	7.56	7.81	7.74	8.16	7.96	7.42	8.34	7.8	7.38	7.63

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-L	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M
				Date	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	03 May 2011	02 May 2012	28 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	07 Apr 2015
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	15.8	20.8	15.5	17.2	14.5	18.6	41	28	30	52	35	25	27	34
Boron (filtered)	µg/L	2	***2,619***	**5,000**	431	551	463	569	556	533	260	237	282	256	262	244	280	261
Calcium (filtered)	µg/L	10			77,800	78,400	81,000	98,400	77,400	82,100	71,000	75,000	68,500	70,700	66,400	60,300	62,300	62,200
Chloride	µg/L	500		**250,000**	8,000	9,000	7,000	8,000	6,000	11,000	12,000	12,300	11,500	10,800	11,100	10,700	10,400	12,000
Iron (filtered)	µg/L	5	***157***	**300**	13	59	148	<7	<7	77	***500***	***384***	<10	***164***	***309***	<10	44	***214***
Magnesium (filtered)	µg/L	1			22,200	24,600	24,100	27,200	25,200	23,800	29,000	28,000	27,500	29,300	26,700	26,500	27,500	26,400
Manganese (filtered)	µg/L	0.01	***28***	**50**	7.41	***42.3***	***34.8***	19.2	0.99	***63.0***	-	***54***	***82***	***42***	***37***	14	***189***	***58***
Sodium (filtered)	µg/L	10		**200,000**	52,400	59,600	58,900	52,800	55,000	53,800	13,000	24,600	12,500	19,400	18,000	15,200	11,500	15,000
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	186	176	177	171	111	164	239	272	213	213	213	196	207	223
Total Dissolved Solids	mg/L	3		**500**	**531**	**566**	**514**	483	**560**	460	372	372	344	346	326	328	328	324
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	285	297	301	358	297	303	-	303	284	297	276	260	269	264
Chemical Oxygen Demand	mg/L	5			<8	<8	<8	<8	<8	10	31	<5	<5	8	<5	5	88	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1	1	<1	<1	1	2	2.5	1.8	2.3	***30.5***	1.4	3.4	***6.7***	1.7
Sulphate (filtered)	mg/L	1		**500**	220	230	230	230	230	210	61	74.4	94.1	83.8	92.7	88.6	88.2	74.9
Ammonia as N	mg/L	0.01			<0.1	<0.1	<0.1	<0.1	<0.1	0.9	0.07	<0.02	0.03	0.05	0.04	0.02	4.62	0.84
Nitrate (as N)	mg/L	0.05		**10**	0.07	<0.06	0.06	0.44	0.72	<0.06	<0.1	<0.05	1.88	<0.10	<0.25	<0.10	<0.10	0.49
Electrical Conductivity (Lab)	µS/cm	1			736	703	771	746	747	768	596	633	579	571	601	587	639	589
pH (Lab)	-	0.05		**6.5-8.5**	8.09	7.76	8.18	7.71	8.30	8.01	7.99	8.09	8.07	7.94	7.81	8.12	7.81	8.19
DO (Field)	mg/L				4.98	3.23	6.01	7.94	5.99	5.68	-	-	-	-	-	-	-	-
Redox (Field)	mV				239	144	-2	143	117	-78	-	-	-	-	-	-	-	-
Temperature (Field)	°C				11.8	9.2	8.3	9	10.5	8.6	-	-	-	-	-	-	-	-
Conductivity (field)	µS/cm				655	630	676	681	737	604	-	-	-	-	-	-	-	-
pH (Field)	-			**6.5-8.5**	7.7	7.41	7.77	7.04	7.41	7.64	-	-	-	-	-	-	-	-

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M	98-3-M
				Date	28 Oct 2015	01 Apr 2016	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022
	Unit	EQL	*Bobcaygeon GW DP*	ODWQS														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	78	171	26	25	26	26	25	21	23	24	27	27	30	32.6	34.4
Boron (filtered)	µg/L	2	***2,619***	**5,000**	244	39	275	251	264	284	257	237	264	272	272	277	275	212	293
Calcium (filtered)	µg/L	10			60,800	145,000	61,800	61,100	60,100	63,400	63,700	58,600	57,700	63,400	69,200	67,800	65,400	75,700	83,000
Chloride	µg/L	500		**250,000**	10,500	51,300	10,300	9,000	9,200	10,800	11,000	10,000	9,600	11,000	10,500	11,300	11,400	15,000	17,000
Iron (filtered)	µg/L	5	***157***	**300**	42	<10	<10	<5	7	<5	<5	<5	<5	<5	<5	<5	90	77	144
Magnesium (filtered)	µg/L	1			25,600	9,300	25,500	28,400	29,100	31,400	29,100	26,700	29,400	29,700	28,800	30,700	29,800	24,600	27,900
Manganese (filtered)	µg/L	0.01	***28***	**50**	***84***	<2	<2	<1	1	1	<1	<1	<1	1	1	<1	***33***	18.9	22.9
Sodium (filtered)	µg/L	10		**200,000**	11,100	42,300	10,800	11,800	10,700	12,900	12,300	10,200	13,500	11,900	12,800	12,000	20,600	19,600	19,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	209	***382***	226	200	197	199	198	187	188	209	178	196	214	205	206
Total Dissolved Solids	mg/L	3		**500**	326	**570**	334	314	313	278	303	297	289	283	290	288	299	391	391
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	257	400	259	269	270	288	279	256	265	281	291	296	286	290	322
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	<5	<5	<5	7	10	<5	<5	<5	12	98	<8	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	3.2	***4.1***	1	***7.6***	***3.9***	***10.4***	1.9	2.3	2	1.5	0.9	3.2	1.6	1	2
Sulphate (filtered)	mg/L	1		**500**	81.6	29.8	91.2	71	71	85	88	85	89	84	88	88	91	91	87
Ammonia as N	mg/L	0.01			0.05	<0.02	<0.02	<0.01	<0.01	0.01	0.2	0.06	0.03	<0.01	0.03	<0.01	0.22	<0.1	0.3
Nitrate (as N)	mg/L	0.05		**10**	<0.10	3.46	<0.25	0.11	<0.05	0.08	0.1	0.06	<0.05	0.13	0.36	0.17	0.12	0.15	0.23
Electrical Conductivity (Lab)	µS/cm	1			563	902	566	571	569	537	585	573	558	546	560	556	576	553	588
pH (Lab)	-	0.05		**6.5-8.5**	7.94	7.95	7.71	8.09	8.21	8.12	8.04	8.12	8	7.84	8.04	8.07	8.34	8.00	7.98
DO (Field)	mg/L				-	6.9	6.1	10.21	7.09	8.78	8.33	10.41	7.38	8.65	5.15	6.15	9.29	4.3	7.52
Redox (Field)	mV				-	-	-	-65	78	-53	111	132	102	44	250	365	89	160	196
Temperature (Field)	°C				-	8.6	9.9	14.3	14.7	16.1	9.7	8	8.3	9.1	9.9	8.9	9.9	12.9	9.6
Conductivity (field)	µS/cm				-	591	514	590	530	590	550	540	630	490	440	398	538	656	474
pH (Field)	-			**6.5-8.5**	-	8.1	7.7	7.83	7.76	7.78	8.39	7.99	7.65	**8.51**	7.77	7.24	7.66	7.52	7.56

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	98-3-M	98-3-M	98-3-M	98-3-M	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D
				Date	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	01 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020	09 Nov 2020	14 Apr 2021
	Unit	EQL	*Bobcaygeon GW DP*	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	28.3	31.3	23.8	27.9	32	16	16	18	15	12	13	20	16	16
Boron (filtered)	µg/L	2	***2,619***	**5,000**	225	274	245	256	542	565	555	634	550	544	549	601	569	624
Calcium (filtered)	µg/L	10			81,800	98,300	75,900	82,600	63,300	63,100	61,600	67,100	64,000	60,700	58,700	70,000	73,500	68,200
Chloride	µg/L	500		**250,000**	19,000	20,000	20,000	19,000	19,900	11,600	14,300	15,300	16,800	16,000	18,500	18,900	19,200	21,100
Iron (filtered)	µg/L	5	***157***	**300**	25	<7	<7	74	<10	<5	18	16	24	10	19	20	54	34
Magnesium (filtered)	µg/L	1			27,500	29,300	28,300	26,400	36,000	38,700	38,700	43,200	39,100	37,700	39,100	41,900	38,700	41,500
Manganese (filtered)	µg/L	0.01	***28***	**50**	8.11	0.76	0.13	17.2	11	12	16	12	12	9	14	11	24	10
Sodium (filtered)	µg/L	10		**200,000**	12,700	12,900	12,300	15,800	26,600	23,100	19,700	24,200	22,500	19,600	21,400	22,400	20,400	22,300
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	210	198	205	208	234	226	228	223	223	213	219	210	209	228
Total Dissolved Solids	mg/L	3		**500**	360	340	403	343	436	392	382	349	356	359	351	357	341	360
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	317	366	306	315	306	317	313	345	321	307	307	347	343	341
Chemical Oxygen Demand	mg/L	5			<8	9	8	<8	<5	5	<5	<5	<5	8	10	7	<5	5
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	<1	1	1	1	2.9	***15.1***	1.5	1.4	1.9	2.2	1.7	1.6	1.4	3
Sulphate (filtered)	mg/L	1		**500**	92	83	88	91	139	110	98	128	110	121	112	126	115	118
Ammonia as N	mg/L	0.01			0.2	<0.1	<0.1	<0.1	0.03	0.02	0.04	0.05	0.05	0.08	0.05	0.06	0.05	0.03
Nitrate (as N)	mg/L	0.05		**10**	0.17	0.22	0.17	0.17	<0.25	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Electrical Conductivity (Lab)	µS/cm	1			583	571	587	594	724	712	694	672	685	691	675	687	656	693
pH (Lab)	-	0.05		**6.5-8.5**	8.22	8.13	8.31	8.13	8.26	7.97	8.11	8.06	8	8.02	7.89	7.97	7.78	8.01
DO (Field)	mg/L				8.73	6.24	9.73	4.58	3.9	2.82	5.54	5.03	1.72	3.2	4.13	1.86	4.07	1.79
Redox (Field)	mV				38	148	177	94	-	-10	148	43	104	146	131	160	69	146
Temperature (Field)	°C				8.5	9.5	12.2	7.3	9.6	12.3	11.7	13.2	8.3	8	7.9	10.5	11	11.4
Conductivity (field)	µS/cm				504	530	559	459	573	780	660	740	680	640	660	750	728	700
pH (Field)	-			**6.5-8.5**	7.68	7.14	7.69	7.63	7	7.45	7.62	7.57	7.8	7.76	7.39	7.87	7.67	7.51

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1D	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S
				Date	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	20 Apr 2020
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**														
Barium (filtered)	µg/L	0.08	***267***	**1,000**	17	13.9	16.80	14.5	17.87	13.8	14.8	95	99	106	105	92	90	107
Boron (filtered)	µg/L	2	***2,619***	**5,000**	592	396	565	467	518	464	493	197	210	234	193	178	164	203
Calcium (filtered)	µg/L	10			66,800	91,300	103,000	100,000	119,000	85,400	102,000	112,000	110,000	120,000	126,000	114,000	110,000	129,000
Chloride	µg/L	500		**250,000**	22,100	32,000	36,000	35,000	38,000	31,000	40,000	18,100	15,300	19,700	20,400	31,700	32,600	22,300
Iron (filtered)	µg/L	5	***157***	**300**	122	20	37	25	67	35	34	<5	14	<5	7	<5	27	<5
Magnesium (filtered)	µg/L	1			40,500	31,600	37,600	37,000	39,800	35,700	36,500	23,800	24,000	26,700	24,400	20,300	20,600	20,800
Manganese (filtered)	µg/L	0.01	***28***	**50**	***32***	9.62	13.0	11.8	16.8	15.20	13.6	12	28	1	17	<1	16	4
Sodium (filtered)	µg/L	10		**200,000**	21,900	16,600	19,100	19,800	20,300	19,100	18,400	30,500	26,300	35,600	32,700	37,500	39,800	44,500
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	237	240	237	232	228	237	251	317	297	344	348	318	310	336
Total Dissolved Solids	mg/L	3		**500**	347	434	486	431	434	446	400	428	402	409	445	445	417	428
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	333	358	413	402	460	360	405	378	374	410	415	368	360	408
Chemical Oxygen Demand	mg/L	5			<5	<8	<8	<8	<8	<8	9	125	108	53	92	34	97	22
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	1.5	<1	1	<1	1	1	<1	***5.4***	***6.3***	3.5	***5.2***	***6***	3.1	***5.6***
Sulphate (filtered)	mg/L	1		**500**	113	92	97	120	87	92	95	56	53	69	67	67	59	59
Ammonia as N	mg/L	0.01			0.03	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01	0.02	0.03	0.04	0.07	0.04	0.03
Nitrate (as N)	mg/L	0.05		**10**	<0.05	<0.06	0.13	<0.06	<0.06	<0.06	<0.06	<0.05	0.09	0.2	0.36	0.8	0.55	1.26
Electrical Conductivity (Lab)	µS/cm	1			669	650	693	696	706	681	751	779	730	781	843	843	795	814
pH (Lab)	-	0.05		**6.5-8.5**	8.36	7.88	7.86	8.20	8.06	8.16	8.12	7.86	7.99	7.99	7.9	7.95	7.87	7.85
DO (Field)	mg/L				7.55	4.6	3.44	3.94	3.07	3.8	15.41	9.67	9.49	11.11	7.41	6.42	5.03	10.31
Redox (Field)	mV				161	301	96	159	122	86	102	15	141	47	116	157	135	154
Temperature (Field)	°C				9.9	12.3	10.6	8.4	8.2	10.7	8.5	12.3	17.8	15.9	9.3	7	8.9	9.3
Conductivity (field)	µS/cm				624	718	699	603	759	665	575	1,220	760	830	790	770	840	880
pH (Field)	-			**6.5-8.5**	7.43	7.53	7.21	7.45	7.36	7.15	7.65	7.22	7.42	7.43	7.5	7.5	7.07	7.65

Table 6 - Groundwater Quality - Middle Lower Bedrock

				Location Code	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S	BH16-1S
				Date	09 Nov 2020	14 Apr 2021	02 Nov 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024
	Unit	EQL	***Bobcaygeon GW DP***	**ODWQS**									
Barium (filtered)	µg/L	0.08	***267***	**1,000**	112	115	109	102	115	73.6	95.4	104	103
Boron (filtered)	µg/L	2	***2,619***	**5,000**	182	210	191	169	196	151	161	170	168
Calcium (filtered)	µg/L	10			134,000	145,000	145,000	126,000	138,000	154,000	136,000	128,000	129,000
Chloride	µg/L	500		**250,000**	20,000	23,800	20,700	28,000	26,000	-	26,000	22,000	21,000
Iron (filtered)	µg/L	5	***157***	**300**	32	107	***223***	21	59	***204***	9	<7	29
Magnesium (filtered)	µg/L	1			19,600	22,200	20,400	17,500	19,300	18,100	17,500	18,900	17,000
Manganese (filtered)	µg/L	0.01	***28***	**50**	7	28	***46***	6.33	16.3	***71.4***	2.21	0.33	10.6
Sodium (filtered)	µg/L	10		**200,000**	32,800	42,000	37,400	36,000	36,200	41,100	33,500	39,700	36,700
Alkalinity (total) as CaCO3	mg/L	2	***371***	**500**	298	341	308	363	***419***	-	303	350	308
Total Dissolved Solids	mg/L	3		**500**	396	437	369	343	491	-	414	469	446
Hardness as CaCO3 (filtered)	mg/L	0.05		**500**	416	454	446	388	423	460	413	398	393
Chemical Oxygen Demand	mg/L	5			7	29	40	16	59	-	12	13	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	***3.5***	**5**	2.5	***5.3***	2.8	3	***4***	-	2	2	2
Sulphate (filtered)	mg/L	1		**500**	65	67	58	68	59	-	60	63	52
Ammonia as N	mg/L	0.01			0.01	0.05	0.03	<0.1	<0.1	-	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	0.05		**10**	0.59	0.92	0.93	1.29	0.64	-	0.42	0.58	0.39
Electrical Conductivity (Lab)	µS/cm	1			758	829	711	639	771	-	709	792	712
pH (Lab)	-	0.05		**6.5-8.5**	7.87	7.95	8.15	7.96	7.64	-	7.66	8.02	7.98
DO (Field)	mg/L				11.23	5.65	9.47	9.27	9.56	10.74	11.5	11.24	9.06
Redox (Field)	mV				78	135	173	325	131	-169	240	149	113
Temperature (Field)	°C				12.4	11	8.8	13.8	11.4	8	8.2	10.6	8.6
Conductivity (field)	µS/cm				823	875	718	902	656	672	3,536	793	626
pH (Field)	-			**6.5-8.5**	7.41	7.14	7.26	7.21	7.06	7.41	7.1	6.96	7.43

Table 7 - Groundwater Quality, VOCs

			Location Code	00-1-L	00-1-M	00-1-U	97-1-L	97-1-M	97-1-U	97-2-L	97-2-U	97-3	97-3	98-1-L	98-1-M	98-1-U	98-2-L	98-2-L	98-2-L
			Date	04 Jun 2013	04 Jun 2013	04 Jun 2013	04 Jun 2013	04 Jun 2013	04 Jun 2013	04 Jun 2013	04 Jun 2013	04 Jun 2013	07 Nov 2022	04 Jun 2013	04 Jun 2013	04 Jun 2013	20 Oct 2010	01 Nov 2012	05 Dec 2013
	Unit	EQL	**ODWQS**																
Benzene	µg/L	0.5	**1**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.1	<0.20	<0.20
Toluene	µg/L	0.5	**60**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	0.44	<0.5	<0.20	<0.20	<0.20	<0.2	<0.20	<0.20
Ethylbenzene	µg/L	0.5	**140**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.1	-	<0.10
Xylene (m & p)	µg/L	0.5		-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-
Xylene (o)	µg/L	0.5		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.1	-	<0.10
Xylene Total	µg/L	0.5	**90**	-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-
Acetone	µg/L	30		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<10	-	<1.0
Bromoform	µg/L	0.5		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10
Bromomethane	µg/L	0.5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.5	-	<0.20
Bromodichloromethane	µg/L	0.5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20
Carbon tetrachloride	µg/L	0.2	**2**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20	<0.1	-	<0.20
Chlorobenzene	µg/L	0.5	**80**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.1	-	<0.10
Chloroethane	µg/L	3		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<5	<0.20	<0.20	<0.20	-	-	<0.20
Chloroform	µg/L	0.5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20
Chloromethane	µg/L	2		<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<5	<0.40	<0.40	<0.40	-	-	<0.40
Dibromochloromethane	µg/L	0.5		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10
Dibromomethane	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dibromoethane,1,2-	µg/L	0.2		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10	<0.2	-	<0.10
Dibromo-3-chloropropane, 1, 2-	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,2-	µg/L	0.5	**200**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10
Dichlorobenzene, 1,3-	µg/L	0.5		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10
Dichlorobenzene, 1,4-	µg/L	0.5	**5**	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10
Dichlorodifluoromethane	µg/L	2		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	-	-	<0.20
Dibromoethene, 1,2-trans-	ug/L			<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	-	-	<0.20
Dichloroethane, 1,1-	µg/L	0.5		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.5	<0.30	<0.30	<0.30	<0.1	-	<0.30
Dichloroethane, 1,2-	µg/L	0.5	**5**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.2	-	<0.20
Dichloroethene, 1,1-	µg/L	0.5	**14**	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.5	<0.30	<0.30	<0.30	<0.1	-	<0.30
Dichloroethene, 1,2-cis-	µg/L	0.5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20
Dichloroethene, 1,2-trans-	µg/L	0.5		-	-	-	-	-	-	-	-	-	<0.5	-	-	-	-	-	-
Dichloromethane	µg/L	0.5	**50**	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.5	<0.30	<0.30	<0.30	-	<0.30	<0.30
Dichloropropane, 1,2-	µg/L	0.5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20
Dichloropropene, 1,1-	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropane, 1,3-	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropane, 2,2-	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropene, 1,3-	µg/L	0.5		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30	-	-	<0.30
Dichloropropene, 1,3- cis	µg/L	0.5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.2	-	<0.20
Dichloropropene, 1,3- trans	µg/L	0.5		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.5	<0.30	<0.30	<0.30	-	-	<0.30
Hexane	µg/L	5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	-	-	<0.20
Methyl Butyl Ketone	µg/L			<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30	-	-	<0.20
Methyl Ethyl Ketone	µg/L	20		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<5	-	<1.0
Methyl Iso-Butyl Ketone	µg/L	20		<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	-	<1.0	<1.0	<1.0	<5	-	<1.0
Methyl tert-butyl ether	µg/L	2		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	-	<0.20	<0.20	<0.20	<0.2	-	<0.20
Styrene	µg/L	0.5		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10
Tetrachloroethene	µg/L	0.5	**10**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20
Tetrachloroethane, 1,1,1,2-	µg/L	0.5		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.1	-	<0.10
Tetrachloroethane, 1,1,2,2-	µg/L	0.5		<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10
Trichlorobenzene, 1,2,3-	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene, 1,2,4-	µg/L			<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30	-	-	<0.30
Trichloroethene	µg/L	0.5	**5**	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20
Trichloroethane, 1,1,1-	µg/L	0.5		<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.5	<0.30	<0.30	<0.30	<0.1	-	<0.30
Trichloroethane, 1,1,2-	µg/L	0.5		<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.5	<0.20	<0.20	<0.20	<0.2	-	<0.20
Trichlorofluoromethane	µg/L	5		<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<0.40	<5	<0.40	<0.40	<0.40	-	-	<0.40
Trimethylbenzene, 1,3,5-	µg/L	0.1		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vinyl chloride	µg/L	0.2	**1**	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.17	<0.2	<0.17	<0.17	<0.17	<0.2	<0.17	<0.17
Trichloropropane, 1,2,3-	µg/L			-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Table 7 - Groundwater Quality, VOCs

			Location Code	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-L	98-2-M	98-2-M	98-2-M	98-2-U	98-2-U	98-2-U	98-2-U
			Date	27 Oct 2014	27 Oct 2015	01 Oct 2016	04 Oct 2017	15 Nov 2018	11 Nov 2019	09 Nov 2020	02 Nov 2021	07 Nov 2022	04 Jun 2013	05 Dec 2013	27 Oct 2014	20 Oct 2010	01 Nov 2012	05 Dec 2013	27 Oct 2015
	Unit	EQL	ODWQS																
Benzene	µg/L	0.5	**1**	<0.20	<0.20	<0.20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.1	<0.20	<0.20	<0.20
Toluene	µg/L	0.5	**60**	<0.20	<0.20	0.29	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.2	<0.20	<0.20	<0.20
Ethylbenzene	µg/L	0.5	**140**	<0.10	<0.10	<0.10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10	<0.1	-	<0.10	<0.10
Xylene (m & p)	µg/L	0.5		-	-	-	-	-	-	<1	<1	<0.5	-	-	-	-	-	-	-
Xylene (o)	µg/L	0.5		<0.10	<0.10	<0.10	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10	<0.1	-	<0.10	<0.10
Xylene Total	µg/L	0.5	**90**	-	-	-	-	<1.1	<1.1	<1.1	<1.1	<0.5	-	-	-	-	-	-	-
Acetone	µg/L	30		<1.0	<1.0	<1.0	<2	<30	<30	<30	<30	-	<1.0	<1.0	<1.0	<10	-	<1.0	<1.0
Bromoform	µg/L	0.5		<0.10	<0.10	<0.10	<0.1	<5	<5	<5	<5	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10	<0.10
Bromomethane	µg/L	0.5		<0.20	<0.20	<0.20	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.5	-	<0.20	<0.20
Bromodichloromethane	µg/L	0.5		<0.20	<0.20	<0.20	<0.1	<2	<2	<2	<2	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20	<0.20
Carbon tetrachloride	µg/L	0.2	**2**	<0.20	<0.20	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20	<0.1	-	<0.20	<0.20
Chlorobenzene	µg/L	0.5	**80**	<0.10	<0.10	<0.10	<0.2	<0.5	<0.5	-	-	<0.5	<0.10	<0.10	<0.10	<0.1	-	<0.10	<0.10
Chloroethane	µg/L	3		<0.20	<0.20	<0.20	<0.1	<0.08	<3	<3	<3	<5	<0.20	<0.20	<0.20	-	-	<0.20	<0.20
Chloroform	µg/L	0.5		<0.20	<0.20	<0.20	<0.3	<1	<1	<1	<1	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20	<0.20
Chloromethane	µg/L	2		<0.40	<0.40	<0.40	<0.3	<0.06	<2	<2	<2	<5	<0.40	<0.40	<0.40	-	-	<0.40	<0.40
Dibromochloromethane	µg/L	0.5		<0.10	<0.10	<0.10	<0.1	<2	<2	<2	<2	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10	<0.10
Dibromomethane	µg/L			-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
Dibromoethane,1,2-	µg/L	0.2		<0.10	<0.10	<0.10	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.10	<0.10	<0.10	<0.2	-	<0.10	<0.10
Dibromo-3-chloropropane, 1, 2-	µg/L			-	-	-	<1	-	-	-	-	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,2-	µg/L	0.5	**200**	<0.10	<0.10	<0.10	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10	<0.10
Dichlorobenzene, 1,3-	µg/L	0.5		<0.10	<0.10	<0.10	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10	<0.10
Dichlorobenzene, 1,4-	µg/L	0.5	**5**	<0.10	<0.10	<0.10	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10	<0.2	<0.10	<0.10	<0.10
Dichlorodifluoromethane	µg/L	2		<0.20	<0.20	<0.20	<1	<2	<2	<2	<2	-	<0.20	<0.20	<0.20	-	-	0.41	<0.20
Dibromoethene, 1,2-trans-	ug/L			<0.20	<0.20	<0.20	<0.1	<0.5	<0.5	-	-	-	<0.20	<0.20	<0.20	-	-	<0.20	<0.20
Dichloroethane, 1,1-	µg/L	0.5		<0.30	<0.30	<0.30	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.30	<0.30	<0.30	<0.1	-	<0.30	<0.30
Dichloroethane, 1,2-	µg/L	0.5	**5**	<0.20	<0.20	<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.2	-	<0.20	<0.20
Dichloroethene, 1,1-	µg/L	0.5	**14**	<0.30	<0.30	<0.30	<0.1	-	-	<0.5	<0.5	<0.5	<0.30	<0.30	<0.30	<0.1	-	<0.30	<0.30
Dichloroethene, 1,2-cis-	µg/L	0.5		<0.20	<0.20	<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20	<0.20
Dichloroethene, 1,2-trans-	µg/L	0.5		-	-	-	-	-	-	<0.5	<0.5	<0.5	-	-	-	-	-	-	-
Dichloromethane	µg/L	0.5	**50**	<0.30	<0.30	<0.30	<0.3	<0.3	<5	<5	<5	<0.5	<0.30	<0.30	<0.30	-	<0.30	<0.30	<0.30
Dichloropropane, 1,2-	µg/L	0.5		<0.20	<0.20	<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20	<0.20
Dichloropropene, 1,1-	µg/L			-	-	-	-	<0.1	<0.2	-	-	-	-	-	-	-	-	-	-
Dichloropropane, 1,3-	µg/L			-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropane, 2,2-	µg/L			-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-
Dichloropropene, 1,3-	µg/L	0.5		<0.30	<0.30	<0.30	<0.2	<0.5	<0.5	<0.5	<0.5	-	<0.30	<0.30	<0.30	-	-	<0.30	<0.30
Dichloropropene, 1,3- cis	µg/L	0.5		<0.20	<0.20	<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.2	-	<0.20	<0.20
Dichloropropene, 1,3- trans	µg/L	0.5		<0.30	<0.30	<0.30	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.30	<0.30	<0.30	-	-	<0.30	<0.30
Hexane	µg/L	5		<0.20	<0.20	<0.20	<1	<5	<5	<5	<5	-	<0.20	<0.20	<0.20	-	-	<0.20	<0.20
Methyl Butyl Ketone	µg/L			<0.30	<0.30	<1.0	<10	-	-	-	-	-	<0.30	<0.30	<0.30	-	-	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	20		<1.0	<1.0	<1.0	<1	<20	<20	<20	<20	-	<1.0	<1.0	<1.0	<5	-	<1.0	<1.0
Methyl Iso-Butyl Ketone	µg/L	20		<1.0	<1.0	<1.0	<1	<20	<20	<20	<20	-	<1.0	<1.0	<1.0	<5	-	<1.0	<1.0
Methyl tert-butyl ether	µg/L	2		<0.20	<0.20	<0.20	<1	<2	<2	<2	<2	-	<0.20	<0.20	<0.20	<0.2	-	<0.20	<0.20
Styrene	µg/L	0.5		<0.10	<0.10	<0.10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10	<0.10
Tetrachloroethene	µg/L	0.5	**10**	<0.20	<0.20	<0.20	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20	<0.20
Tetrachloroethane, 1,1,1,2-	µg/L	0.5		<0.10	<0.10	<0.10	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10	<0.1	-	<0.10	<0.10
Tetrachloroethane, 1,1,2,2-	µg/L	0.5		<0.10	<0.10	<0.10	<0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10	<0.2	-	<0.10	<0.10
Trichlorobenzene, 1,2,3-	µg/L			-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-
Trichlorobenzene, 1,2,4-	µg/L			<0.30	<0.30	<0.30	<0.2	-	-	-	-	-	<0.30	<0.30	<0.30	-	-	<0.30	<0.30
Trichloroethene	µg/L	0.5	**5**	<0.20	<0.20	<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.1	-	<0.20	<0.20
Trichloroethane, 1,1,1-	µg/L	0.5		<0.30	<0.30	<0.30	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.30	<0.30	<0.30	<0.1	-	<0.30	<0.30
Trichloroethane, 1,1,2-	µg/L	0.5		<0.20	<0.20	<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20	<0.2	-	<0.20	<0.20
Trichlorofluoromethane	µg/L	5		<0.40	<0.40	<0.40	<0.1	<5	<5	<5	<5	<5	<0.40	<0.40	<0.40	-	-	<0.40	<0.40
Trimethylbenzene, 1,3,5-	µg/L	0.1		-	-	-	<0.6	<0.06	<0.1	<0.1	<0.1	-	-	-	-	-	-	-	-
Vinyl chloride	µg/L	0.2	**1**	<0.17	<0.17	<0.17	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.17	<0.17	<0.17	<0.2	<0.17	<0.17	<0.17
Trichloropropane, 1,2,3-	µg/L			-	-	-	<0.2	-	-	-	-	-	-	-	-	-	-	-	-

Table 7 - Groundwater Quality, VOCs

			Location Code	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-2-U	98-3-L	98-3-M	98-3-U
			Date	01 Oct 2016	04 Oct 2017	15 Nov 2018	11 Nov 2019	09 Nov 2020	02 Nov 2021	07 Nov 2022	04 Jun 2013	04 Jun 2013	04 Jun 2013
	Unit	EQL	ODWQS										
Benzene	µg/L	0.5	**1**	<0.20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Toluene	µg/L	0.5	**60**	<0.20	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	0.52
Ethylbenzene	µg/L	0.5	**140**	<0.10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10
Xylene (m & p)	µg/L	0.5		-	-	-	-	<1	<1	<0.5	-	-	-
Xylene (o)	µg/L	0.5		<0.10	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10
Xylene Total	µg/L	0.5	**90**	-	-	<1.1	<1.1	<1.1	<1.1	<0.5	-	-	-
Acetone	µg/L	30		<1.0	<2	<30	<30	<30	<30	-	<1.0	<1.0	<1.0
Bromoform	µg/L	0.5		<0.10	<0.1	<5	<5	<5	<5	<0.5	<0.10	<0.10	<0.10
Bromomethane	µg/L	0.5		<0.20	<0.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Bromodichloromethane	µg/L	0.5		<0.20	<0.1	<2	<2	<2	<2	<0.5	<0.20	<0.20	<0.20
Carbon tetrachloride	µg/L	0.2	**2**	<0.20	<0.2	<0.2	<0.2	<0.2	<0.2	<0.2	<0.20	<0.20	<0.20
Chlorobenzene	µg/L	0.5	**80**	<0.10	<0.2	<0.5	<0.5	-	-	<0.5	<0.10	<0.10	<0.10
Chloroethane	µg/L	3		<0.20	<0.1	<0.08	<3	<3	<3	<5	<0.20	<0.20	<0.20
Chloroform	µg/L	0.5		<0.20	<0.3	<1	<1	<1	<1	<0.5	<0.20	<0.20	<0.20
Chloromethane	µg/L	2		<0.40	<0.3	<0.06	<2	<2	<2	<5	<0.40	<0.40	<0.40
Dibromochloromethane	µg/L	0.5		<0.10	<0.1	<2	<2	<2	<2	<0.5	<0.10	<0.10	<0.10
Dibromomethane	µg/L			-	<1	-	-	-	-	-	-	-	-
Dibromoethane,1,2-	µg/L	0.2		<0.10	<0.1	<0.2	<0.2	<0.2	<0.2	<0.2	<0.10	<0.10	<0.10
Dibromo-3-chloropropane, 1, 2-	µg/L			-	<1	-	-	-	-	-	-	-	-
Dichlorobenzene, 1,2-	µg/L	0.5	**200**	<0.10	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10
Dichlorobenzene, 1,3-	µg/L	0.5		<0.10	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10
Dichlorobenzene, 1,4-	µg/L	0.5	**5**	<0.10	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10
Dichlorodifluoromethane	µg/L	2		<0.20	<1	<2	<2	<2	<2	-	<0.20	<0.20	<0.20
Dibromoethene, 1,2-trans-	ug/L			<0.20	<0.1	<0.5	<0.5	-	-	-	<0.20	<0.20	<0.20
Dichloroethane, 1,1-	µg/L	0.5		<0.30	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.30	<0.30	<0.30
Dichloroethane, 1,2-	µg/L	0.5	**5**	<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Dichloroethene, 1,1-	µg/L	0.5	**14**	<0.30	<0.1	-	-	<0.5	<0.5	<0.5	<0.30	<0.30	<0.30
Dichloroethene, 1,2-cis-	µg/L	0.5		<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Dichloroethene, 1,2-trans-	µg/L	0.5		-	-	-	-	<0.5	<0.5	<0.5	-	-	-
Dichloromethane	µg/L	0.5	**50**	<0.30	<0.3	<0.3	<5	<5	<5	<0.5	<0.30	<0.30	<0.30
Dichloropropane, 1,2-	µg/L	0.5		<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Dichloropropene, 1,1-	µg/L			-	-	<0.1	<0.2	-	-	-	-	-	-
Dichloropropane, 1,3-	µg/L			-	<0.2	-	-	-	-	-	-	-	-
Dichloropropane, 2,2-	µg/L			-	<0.2	-	-	-	-	-	-	-	-
Dichloropropene, 1,3-	µg/L	0.5		<0.30	<0.2	<0.5	<0.5	<0.5	<0.5	-	<0.30	<0.30	<0.30
Dichloropropene, 1,3- cis	µg/L	0.5		<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Dichloropropene, 1,3- trans	µg/L	0.5		<0.30	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.30	<0.30	<0.30
Hexane	µg/L	5		<0.20	<1	<5	<5	<5	<5	-	<0.20	<0.20	<0.20
Methyl Butyl Ketone	µg/L			<1.0	<10	-	-	-	-	-	<0.30	<0.30	<0.30
Methyl Ethyl Ketone	µg/L	20		<1.0	<1	<20	<20	<20	<20	-	<1.0	<1.0	<1.0
Methyl Iso-Butyl Ketone	µg/L	20		<1.0	<1	<20	<20	<20	<20	-	<1.0	<1.0	<1.0
Methyl tert-butyl ether	µg/L	2		<0.20	<1	<2	<2	<2	<2	-	<0.20	<0.20	<0.20
Styrene	µg/L	0.5		<0.10	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10
Tetrachloroethene	µg/L	0.5	**10**	<0.20	<0.2	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Tetrachloroethane, 1,1,1,2-	µg/L	0.5		<0.10	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10
Tetrachloroethane, 1,1,2,2-	µg/L	0.5		<0.10	<0.4	<0.5	<0.5	<0.5	<0.5	<0.5	<0.10	<0.10	<0.10
Trichlorobenzene, 1,2,3-	µg/L			-	<0.2	-	-	-	-	-	-	-	-
Trichlorobenzene, 1,2,4-	µg/L			<0.30	<0.2	-	-	-	-	-	<0.30	<0.30	<0.30
Trichloroethene	µg/L	0.5	**5**	<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Trichloroethane, 1,1,1-	µg/L	0.5		<0.30	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.30	<0.30	<0.30
Trichloroethane, 1,1,2-	µg/L	0.5		<0.20	<0.1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.20	<0.20	<0.20
Trichlorofluoromethane	µg/L	5		<0.40	<0.1	<5	<5	<5	<5	<5	<0.40	<0.40	<0.40
Trimethylbenzene, 1,3,5-	µg/L	0.1		-	<0.6	<0.06	<0.1	<0.1	<0.1	-	-	-	-
Vinyl chloride	µg/L	0.2	**1**	<0.17	<0.2	<0.5	<0.2	<0.2	<0.2	<0.2	<0.17	<0.17	<0.17
Trichloropropane, 1,2,3-	µg/L			-	<0.2	-	-	-	-	-	-	-	-

Table 8 - Residential Well Water Quality

			Location Code	68 Country Road 36	68 Country Road 36	68 Country Road 36	68 Country Road 36	68 Country Road 36	68 Country Road 36	68 Country Road 36	68 Country Road 36	68 Country Road 36
			Date	14 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	14 Apr 2021	02 Nov 2021	13 Jun 2022
	Unit	EQL	ODWQS									
Barium	µg/L	0.08	**1,000**	88	104	83	150	103	139	126	121	128
Boron	µg/L	2	**5,000**	6	23	10	14	12	7	13	21	31
Calcium	µg/L	10		116,000	133,000	111,000	152,000	113,000	135,000	138,000	147,000	144,000
Chloride	µg/L	500	**250,000**	41,500	40,400	48,300	146,000	138,000	170,000	142,000	77,700	170,000
Iron	µg/L	5	**300**	26	23	7	8	5	6	15	7	39
Magnesium	µg/L	1		3,770	4,110	3,190	4,160	3,330	4,020	4,290	4,110	4,210
Manganese	µg/L	0.01	**50**	<1	1	1	<1	<1	1	2	1	1.24
Sodium	µg/L	10	**200,000**	41,700	34,100	35,200	100,000	67,500	125,000	76,100	56,400	62,000
Alkalinity (total) as CaCO3	mg/L	2	**500**	282	341	264	330	239	347	270	329	303
Total Dissolved Solids	mg/L	3	**500**	397	446	333	**613**	**509**	**659**	**514**	445	**637**
Hardness as CaCO3	mg/L	0.05	**500**	304	349	291	397	296	354	363	384	376
Chemical Oxygen Demand	mg/L	5		<5	<5	<5	<5	<5	<5	<5	<5	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	**5**	1.4	2.4	1.2	2.3	1.6	1.3	1.8	3	1
Sulphate	mg/L	1	**500**	10	10	9	18	14	16	13	15	17
Sulphate (filtered)	mg/L	1	**500**	-	-	-	-	-	-	-	-	-
Ammonia as N	mg/L	0.01		<0.01	0.02	0.01	0.02	0.04	0.02	<0.01	<0.01	<0.1
Nitrate (as N)	mg/L	0.05	**10**	0.81	0.83	0.41	1.7	1.52	2.3	1.13	0.63	1.02
Electrical Conductivity (Lab)	µS/cm	1		721	810	642	1,140	956	1,220	965	844	1,020
pH (Lab)	-	0.05	**6.5-8.5**	7.53	7.59	7.9	7.94	7.96	7.74	7.83	8.2	7.76
DO (Field)	mg/L			6.93	6.76	9.17	7.87	10.31	4.86	10.78	9.81	7.53
Redox (Field)	mV			57	101	55	140	-	114	377	83	347
Temperature (Field)	°C			13.1	14.6	12.5	8.4	7	14.3	9.2	10.5	15.5
Conductivity (field)	µS/cm			810	800	690	1,030	-	1,100	697	817	1,131
pH (Field)	-		**6.5-8.5**	6.86	7.04	7.26	7.47	-	7.02	7.14	7.31	7.1

Table 8 - Residential Well Water Quality

			Location Code	68 Country Road 36	68 Country Road 36	68 Country Road 36	68 Country Road 36	68 Country Road 36	95 Country Road 36	95 Country Road 36	95 Country Road 36	103 Moon Line Road
			Date	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	14 May 2015	16 May 2016	21 Oct 2016	14 May 2015
	Unit	EQL	ODWQS									
Barium	µg/L	0.08	**1,000**	<0.08	102	125	86.1	100	89	81	129	33
Boron	µg/L	2	**5,000**	9	7	40	12	23	13	15	22	95
Calcium	µg/L	10		<10	110,000	152,000	120,000	142,000	115,000	94,900	141,000	105,000
Chloride	µg/L	500	**250,000**	77,000	84,000	190,000	68,000	82,000	105,000	65,800	109,000	28,000
Iron	µg/L	5	**300**	<7	7	37	102	<7	<10	<10	<10	10
Magnesium	µg/L	1		<1	2,760	5,510	3,430	5,750	3,580	3,390	3,900	8,530
Manganese	µg/L	0.01	**50**	0.14	1.16	1.73	4.35	1.19	<2	<2	<2	<2
Sodium	µg/L	10	**200,000**	20	65,400	63,000	44,800	53,000	53,000	30,100	84,200	17,500
Alkalinity (total) as CaCO3	mg/L	2	**500**	335	276	330	285	355	270	234	408	372
Total Dissolved Solids	mg/L	3	**500**	63	440	**557**	460	471	470	386	**588**	354
Hardness as CaCO3	mg/L	0.05	**500**	<0.05	286	402	313	377	302	251	368	297
Chemical Oxygen Demand	mg/L	5		<8	<8	<8	<8	<8	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	**5**	2	2	1	1	1	1.2	1.2	1.4	0.9
Sulphate	mg/L	1	**500**	18	14	21	-	-	13.2	12.3	18.4	21.3
Sulphate (filtered)	mg/L	1	**500**	-	-	-	11	12	-	-	-	-
Ammonia as N	mg/L	0.01		<0.1	<0.1	<0.1	<0.1	<0.1	0.05	<0.02	<0.02	<0.02
Nitrate (as N)	mg/L	0.05	**10**	0.52	1.63	1.05	0.58	0.70	0.62	0.63	2.3	1.02
Electrical Conductivity (Lab)	µS/cm	1		888	809	989	781	934	861	628	1,080	661
pH (Lab)	-	0.05	**6.5-8.5**	7.66	8.12	7.43	8.18	7.97	8.14	8.1	7.06	8.18
DO (Field)	mg/L			8.77	11.26	8.58	6.19	8.1	-	8.3	8.7	-
Redox (Field)	mV			268	-176	198	154	115	-	-	-	-
Temperature (Field)	°C			11.1	9.8	11.6	-	13.7	-	9	11.3	-
Conductivity (field)	µS/cm			734	670	896	764	850	-	726	935	-
pH (Field)	-		**6.5-8.5**	6.95	7.42	6.9	7.23	6.88	-	7.9	7	-

Table 8 - Residential Well Water Quality

				Location Code	103 Moon Line Road	103 Moon Line Road	130 Country Road 36	130 Country Road 36	130 Country Road 36	130 Country Road 36	151 Country Road 36	314 Riverside Drive	320 Riverside Drive
				Date	27 Oct 2015	16 May 2016	28 Apr 2016	28 May 2018	20 Nov 2018	15 Apr 2019	14 May 2015	04 Oct 2017	04 Oct 2017
	Unit	EQL	ODWQS										
Barium	µg/L	0.08	**1,000**		61	31	86	<1	94	94	3	129	1
Boron	µg/L	2	**5,000**		85	166	104	229	194	92	170	44	31
Calcium	µg/L	10			134,000	92,700	122,000	650	135,000	120,000	890	135,000	1,550
Chloride	µg/L	500	**250,000**		28,500	27,400	23,000	19,100	38,800	28,400	29,500	26,000	21,600
Iron	µg/L	5	**300**		<10	248	**461**	17	**326**	35	<10	146	<5
Magnesium	µg/L	1			8,670	13,400	6,220	20	6,620	5,370	<50	8,000	90
Manganese	µg/L	0.01	**50**		<2	4	9	<1	3	5	<2	5	<1
Sodium	µg/L	10	**200,000**		18,900	13,000	-	-	-	-	180,000	9,800	160,000
Alkalinity (total) as CaCO3	mg/L	2	**500**		335	289	325	316	320	304	315	320	304
Total Dissolved Solids	mg/L	3	**500**		410	368	378	335	412	362	382	405	385
Hardness as CaCO3	mg/L	0.05	**500**		370	287	330	2	365	322	2.2	370	4
Chemical Oxygen Demand	mg/L	5			<5	<5	<5	5	<5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	**5**		0.8	0.9	1	0.9	2.9	1.9	0.9	2.5	2.2
Sulphate	mg/L	1	**500**		26	38.5	-	-	-	-	32	21	16
Sulphate (filtered)	mg/L	1	**500**		-	-	30.4	28	32	28	-	-	-
Ammonia as N	mg/L	0.01			0.02	0.04	<0.02	0.02	0.11	0.06	<0.02	<0.01	<0.01
Nitrate (as N)	mg/L	0.05	**10**		1.59	0.25	<0.25	<0.05	0.2	0.06	<0.10	0.06	0.18
Electrical Conductivity (Lab)	µS/cm	1			762	675	713	646	786	697	746	737	700
pH (Lab)	-	0.05	**6.5-8.5**		8.03	8.25	8.01	7.84	7.59	7.86	8.16	7.76	7.87
DO (Field)	mg/L				-	8.3	-	2.72	-	2.75	-	3.06	4.87
Redox (Field)	mV				-	-	-	62	-	-	-	123	151
Temperature (Field)	°C				-	12.3	-	14.6	-	4	-	19	17.9
Conductivity (field)	µS/cm				-	671	-	720	-	-	-	690	660
pH (Field)	-		**6.5-8.5**		-	7.1	-	7.17	-	-	-	7.1	7.39

Table 8 - Residential Well Water Quality

			Location Code	320 Riverside Drive	320 Riverside Drive	320 Riverside Drive	320 Riverside Drive	320 Riverside Drive	320 Riverside Drive	320 Riverside Drive	320 Riverside Drive	320 Riverside Drive	396 Riverside Drive
			Date	15 Nov 2018	15 Apr 2019	11 Nov 2019	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024	04 Oct 2017
	Unit	EQL	ODWQS										
Barium	µg/L	0.08	**1,000**	<1	1	1	2.1	<0.08	1.88	2.33	1.68	1.94	111
Boron	µg/L	2	**5,000**	27	25	26	19	5	14	33	23	34	14
Calcium	µg/L	10		1,050	1,570	2,080	2,250	<10	2,100	2,670	2,280	2,310	102,000
Chloride	µg/L	500	**250,000**	27,900	10,500	38,700	24,000	36,000	17,000	34,000	21,000	33,000	20,300
Iron	µg/L	5	**300**	<5	<5	<5	<7	<7	11	<7	<7	<7	6
Magnesium	µg/L	1		90	100	220	103	<1	93	138	113	139	3,590
Manganese	µg/L	0.01	**50**	<1	<1	<1	0.33	0.05	0.32	1.50	0.04	0.04	<1
Sodium	µg/L	10	**200,000**	185,000	131,000	192,000	132,000	20	137,000	177,000	161,000	178,000	18,100
Alkalinity (total) as CaCO3	mg/L	2	**500**	297	259	314	300	330	268	305	310	332	261
Total Dissolved Solids	mg/L	3	**500**	375	306	404	383	491	329	400	411	434	326
Hardness as CaCO3	mg/L	0.05	**500**	3	4	6	6.0	<0.05	5.6	7.2	6.2	6.3	270
Chemical Oxygen Demand	mg/L	5		<5	9	11	<8	<8	<8	18	<8	<8	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	**5**	2.8	2.8	3	2	2	2	1	2	1	1.8
Sulphate	mg/L	1	**500**	24	18	17	18	24	15	22	-	-	8
Sulphate (filtered)	mg/L	1	**500**	-	-	-	-	-	-	-	22	25	-
Ammonia as N	mg/L	0.01		0.03	0.03	0.02	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.01
Nitrate (as N)	mg/L	0.05	**10**	0.73	0.43	0.87	0.31	0.65	0.80	0.10	0.45	0.55	0.63
Electrical Conductivity (Lab)	µS/cm	1		720	590	772	607	750	557	720	644	747	593
pH (Lab)	-	0.05	**6.5-8.5**	7.78	7.92	7.85	7.71	7.88	8.27	7.86	8.24	8.09	7.81
DO (Field)	mg/L			3.38	6.09	2.86	6.25	6.78	8.96	6.55	5.98	9.5	7.98
Redox (Field)	mV			153	-	119	349	244	-175	166	168	90	111
Temperature (Field)	°C			13	14	10	17	17.9	11.8	17.4	15.6	17.6	13.7
Conductivity (field)	µS/cm			730	-	830	7	605	474	665	627	746	580
pH (Field)	-		**6.5-8.5**	8.14	-	7.61	7.21	7.05	7.6	7.18	7.2	7.46	7.48

Table 8 - Residential Well Water Quality

			Location Code	396 Riverside Drive	396 Riverside Drive	396 Riverside Drive	396 Riverside Drive	396 Riverside Drive	396 Riverside Drive	396 Riverside Drive	396 Riverside Drive	396 Riverside Drive	396 Riverside Drive
			Date	15 Nov 2018	15 Apr 2019	11 Nov 2019	14 Apr 2021	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024
	Unit	EQL	ODWQS										
Barium	µg/L	0.08	**1,000**	122	78	109	101	106	<0.08	84.0	145	119	144
Boron	µg/L	2	**5,000**	12	11	6	12	15	6	10	20	12	15
Calcium	µg/L	10		101,000	94,300	90,600	110,000	113,000	1,500	103,000	108,000	105,000	113,000
Chloride	µg/L	500	**250,000**	24,500	27,400	27,400	28,300	39,000	31,000	30,000	30,000	29,000	30,000
Iron	µg/L	5	**300**	<5	<5	<5	5	<7	**1,460**	<7	<7	<7	<7
Magnesium	µg/L	1		3,900	2,900	3,820	3,370	3,310	1,580	3,040	4,470	3,320	4,060
Manganese	µg/L	0.01	**50**	<1	<1	<1	<1	0.37	0.15	0.12	0.37	0.22	0.04
Sodium	µg/L	10	**200,000**	17,200	14,200	18,800	21,000	17,000	1,620	16,200	16,900	17,200	19,100
Alkalinity (total) as CaCO3	mg/L	2	**500**	232	221	229	246	284	263	243	253	261	286
Total Dissolved Solids	mg/L	3	**500**	292	291	287	297	337	366	303	323	351	343
Hardness as CaCO3	mg/L	0.05	**500**	269	248	242	289	295	10.2	270	288	276	298
Chemical Oxygen Demand	mg/L	5		<5	5	<5	<5	<8	<8	<8	9	<8	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	**5**	2	1.9	1.5	2.6	2	1	2	<1	2	1
Sulphate	mg/L	1	**500**	9	8	6	11	9	8	9	9	-	-
Sulphate (filtered)	mg/L	1	**500**	-	-	-	-	-	-	-	-	7	8
Ammonia as N	mg/L	0.01		0.04	0.03	0.02	<0.01	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	0.05	**10**	0.92	0.21	0.86	0.41	0.34	0.58	0.19	0.65	0.25	0.62
Electrical Conductivity (Lab)	µS/cm	1		563	562	554	573	602	587	543	592	582	623
pH (Lab)	-	0.05	**6.5-8.5**	7.93	8.01	7.86	7.9	7.67	7.80	8.12	7.43	8.28	8.02
DO (Field)	mg/L			7.74	8.66	9.31	8.49	7.33	10.03	9.75	9.5	8.36	12.63
Redox (Field)	mV			103	-	96	371	366	255	-175	176	177	95
Temperature (Field)	°C			21.1	11	8.6	13.2	13.2	9.4	13.6	10.6	16.9	9.6
Conductivity (field)	µS/cm			570	-	600	455	678	488	461	539	572	515
pH (Field)	-		**6.5-8.5**	7.72	-	7.59	7.02	7.1	7.19	7.41	7.02	7.51	7.39

Table 8 - Residential Well Water Quality

			Location Code	515 Riverside Drive	515 Riverside Drive	515 Riverside Drive	515 Riverside Drive	515 Riverside Drive	515 Riverside Drive	515 Riverside Drive	515 Riverside Drive	515 Riverside Drive	Empire	Empire
			Date	14 May 2015	16 May 2016	04 Oct 2017	28 May 2018	15 Apr 2019	14 Apr 2021	13 Jun 2022	07 Nov 2022	29 May 2024	01 May 2011	01 May 2012
	Unit	EQL	ODWQS											
Barium	µg/L	0.08	**1,000**	144	147	175	163	170	242	191	7.11	153	23	21
Boron	µg/L	2	**5,000**	11	16	18	13	10	11	23	8	25	450	349
Calcium	µg/L	10		106,000	96,100	109,000	104,000	114,000	142,000	130,000	20	106,000	100,000	90,500
Chloride	µg/L	500	**250,000**	60,800	50,000	24,700	36,100	93,200	137,000	38,000	42,000	33,000	30,000	29,300
Iron	µg/L	5	**300**	<10	<10	32	21	23	37	70	<7	56	<100	<10
Magnesium	µg/L	1		4,070	3,870	4,280	4,220	4,470	5,470	4,110	7	4,080	34,000	31,300
Manganese	µg/L	0.01	**50**	<2	<2	1	1	<1	1	6.46	6.93	1.50	-	19
Sodium	µg/L	10	**200,000**	37,600	26,900	20,500	27,700	37,900	68,400	26,800	40	23,200	30,000	25,600
Alkalinity (total) as CaCO3	mg/L	2	**500**	264	265	280	257	233	269	331	293	269	246	267
Total Dissolved Solids	mg/L	3	**500**	394	334	350	313	432	**511**	460	417	346	**516**	498
Hardness as CaCO3	mg/L	0.05	**500**	281	256	290	277	303	377	341	0.08	281	-	355
Chemical Oxygen Demand	mg/L	5		<5	<5	<5	<5	<5	<5	<8	<8	<8	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	**5**	1.4	1.6	2.3	1.5	2.2	1.9	3	2	2	0.7	0.8
Sulphate	mg/L	1	**500**	11.2	11	6	8	9	12	11	9	-	-	-
Sulphate (filtered)	mg/L	1	**500**	-	-	-	-	-	-	-	-	8	140	146
Ammonia as N	mg/L	0.01		<0.02	<0.02	0.01	<0.01	0.03	0.02	<0.1	<0.1	<0.1	0.13	0.07
Nitrate (as N)	mg/L	0.05	**10**	2.59	1.6	0.97	1.07	4.66	4.43	1.38	1.35	0.48	<0.1	<0.05
Electrical Conductivity (Lab)	µS/cm	1		729	654	637	604	820	961	716	685	609	843	785
pH (Lab)	-	0.05	**6.5-8.5**	8.21	8	7.67	7.82	7.89	7.93	7.50	7.91	8.19	7.98	8.1
DO (Field)	mg/L			-	7.9	4.38	6.05	6.12	10.35	3.4	8.92	7.49	-	-
Redox (Field)	mV			-	-	120	78	-	379	364	253	177	-	-
Temperature (Field)	°C			-	8.6	15.1	11.1	9	8.2	12.5	12.4	13.3	-	-
Conductivity (field)	µS/cm			-	652	650	670	-	677	18	553	6.04	-	-
pH (Field)	-		**6.5-8.5**	-	7.8	7.14	7.17	-	7.2	6.9	7.15	7.49	-	-

Table 8 - Residential Well Water Quality

			Location Code	Empire	Empire	Empire	Empire	Empire	Empire	Empire	Empire	Empire	Empire	Empire	Empire	Empire	Empire	Empire	Empire
			Date	01 Nov 2012	04 Jun 2013	05 Dec 2013	12 May 2014	27 Oct 2014	07 Apr 2015	27 Oct 2015	28 Apr 2016	21 Oct 2016	07 Jun 2017	04 Oct 2017	28 May 2018	15 Nov 2018	15 Apr 2019	11 Nov 2019	02 Nov 2021
	Unit	EQL	ODWQS																
Barium	µg/L	0.08	**1,000**	20	20	20	44	24	<2	22	36	20	21	22	32	20	23	24	9
Boron	µg/L	2	**5,000**	380	387	343	152	389	409	390	245	380	369	396	397	432	135	442	458
Calcium	µg/L	10		91,000	104,000	87,800	96,000	97,900	4,210	98,000	100,000	98,400	97,100	98,500	97,700	98,400	94,400	94,700	92,000
Chloride	µg/L	500	**250,000**	29,900	28,200	26,900	21,500	28,000	31,400	25,900	25,200	29,200	24,900	26,500	24,800	26,900	24,200	26,100	24,700
Iron	µg/L	5	**300**	30	<10	<10	<10	<10	<10	<10	<10	<10	<5	6	<5	15	39	10	48
Magnesium	µg/L	1		31,200	36,400	31,100	14,500	30,100	1,340	31,600	24,400	30,800	34,100	36,500	31,500	35,600	13,500	34,700	44,200
Manganese	µg/L	0.01	**50**	23	21	26	17	23	<2	26	21	22	21	26	28	20	4	20	20
Sodium	µg/L	10	**200,000**	25,000	75,600	28,400	15,500	27,900	**202,000**	27,700	21,900	28,300	27,600	25,100	29,600	32,200	15,700	30,400	33,000
Alkalinity (total) as CaCO3	mg/L	2	**500**	255	250	251	225	243	257	263	260	274	258	258	239	239	233	233	240
Total Dissolved Solids	mg/L	3	**500**	488	**556**	**510**	376	**508**	**516**	494	412	**534**	467	457	395	443	338	433	426
Hardness as CaCO3	mg/L	0.05	**500**	356	410	347	299	368	16	375	350	373	383	396	374	392	291	379	412
Chemical Oxygen Demand	mg/L	5		<5	<5	<5	<5	5	<5	<5	<5	<5	9	<5	<5	<5	<5	<5	<5
Dissolved Organic Carbon (filtered)	mg/L	0.2	**5**	0.7	<1	0.9	1.8	0.9	0.7	0.6	1.1	0.8	0.9	1.4	0.9	1.8	2	1.2	0.6
Sulphate	mg/L	1	**500**	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Sulphate (filtered)	mg/L	1	**500**	147	160	161	75.2	148	151	142	109	171	122	119	142	163	56	164	182
Ammonia as N	mg/L	0.01		0.1	0.11	0.13	0.03	0.07	<0.02	0.06	<0.02	0.06	0.04	0.08	0.06	0.1	0.03	0.08	0.08
Nitrate (as N)	mg/L	0.05	**10**	<0.05	<0.25	<0.25	<0.10	<0.10	<0.25	<0.25	<0.25	<0.25	<0.05	<0.05	<0.05	<0.05	0.28	<0.05	<0.05
Electrical Conductivity (Lab)	µS/cm	1		803	875	811	650	859	903	824	738	840	849	830	755	840	651	822	810
pH (Lab)	-	0.05	**6.5-8.5**	8.19	7.95	7.97	8.11	8.04	8.3	7.94	8.13	7.39	7.84	7.81	7.95	7.95	7.99	7.87	8.29
DO (Field)	mg/L			-	-	-	-	-	-	-	4.8	4.6	1.39	2.31	4.08	3.04	6.81	2.94	1.87
Redox (Field)	mV			-	-	-	-	-	-	-	-	-	-1	100	34	122	-	98	76
Temperature (Field)	°C			-	-	-	-	-	-	-	9.1	11.5	13.4	15.3	11.6	13.7	10	13.8	13.5
Conductivity (field)	µS/cm			-	-	-	-	-	-	-	758	747	1,020	850	810	790	-	830	796
pH (Field)	-		**6.5-8.5**	-	-	-	-	-	-	-	7.7	7.2	7.1	7.32	7.35	7.76	-	7.45	7.33

Table 8 - Residential Well Water Quality

			Location Code	Empire	Empire	Empire	Empire	Empire	Empire
			Date	13 Jun 2022	07 Nov 2022	19 Apr 2023	20 Nov 2023	29 May 2024	14 Nov 2024
	Unit	EQL	**ODWQS**						
Barium	µg/L	0.08	**1,000**	17.2	<0.08	10.4	<0.08	<0.08	<0.08
Boron	µg/L	2	**5,000**	365	13	97	479	435	435
Calcium	µg/L	10		96,800	<10	97,100	60	430	320
Chloride	µg/L	500	**250,000**	32,000	31,000	25,000	29,000	28,000	28,000
Iron	µg/L	5	**300**	7	<7	<7	<7	<7	<7
Magnesium	µg/L	1		25,300	1	17,400	8	196	111
Manganese	µg/L	0.01	**50**	16.2	0.05	9.75	<0.01	0.30	0.16
Sodium	µg/L	10	**200,000**	55,700	50	14,200	60	**227,000**	**207,000**
Alkalinity (total) as CaCO3	mg/L	2	**500**	266	247	237	234	254	258
Total Dissolved Solids	mg/L	3	**500**	**597**	**591**	345	**557**	**586**	**560**
Hardness as CaCO3	mg/L	0.05	**500**	346	<0.05	314	0.19	1.9	1.3
Chemical Oxygen Demand	mg/L	5		<8	<8	<8	<8	<8	<8
Dissolved Organic Carbon (filtered)	mg/L	0.2	**5**	<1	<1	2	<1	<1	<1
Sulphate	mg/L	1	**500**	-	-	-	-	-	-
Sulphate (filtered)	mg/L	1	**500**	180	180	60	210	180	180
Ammonia as N	mg/L	0.01		<0.1	0.1	<0.1	<0.1	<0.1	<0.1
Nitrate (as N)	mg/L	0.05	**10**	<0.06	<0.06	<0.06	<0.06	4.57	<0.06
Electrical Conductivity (Lab)	µS/cm	1		819	833	588	954	943	961
pH (Lab)	-	0.05	**6.5-8.5**	7.76	7.77	8.13	7.88	8.31	8.18
DO (Field)	mg/L			2.86	2.83	3.5	2.65	3.6	6.84
Redox (Field)	mV			356	256	-172	165	124	55
Temperature (Field)	°C			22.3	17.5	14.9	17.1	14.5	12.3
Conductivity (field)	µS/cm			940	667	493	816	914	328
pH (Field)	-		**6.5-8.5**	7.19	7.07	7.26	7.46	7.4	7.87

Table 9 - Landfill Gas Monitoring

Well ID	Top of Screen Elevation (m)[1]	Water Elevation (mASL)[2]	Screen Saturated	Percent Methane by Volume															
				7-Jun-17	4-Oct-17	28-May-18	15-Nov-18	15-Apr-19	11-Nov-19	20-Apr-20	9-Nov-20	14-Apr-21	2-Nov-21	13-Jun-22	2-Nov-22	19-Apr-23	20-Nov-23	29-May-24	14-Nov-24
97-1-U	254.9	255.4	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-1-M	250.6	253.5	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-1-L	244.4	253.4	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-2-U	258.8	258.3	no	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-2-L	254.0	254.0	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
97-3	259.4	259.3	no	>2.5	0.27	1.18	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	0.07	1.40	<0.05	<0.05	<0.05	2	<0.05
98-1-U	256.7	256.7	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
98-1-M	252.5	255.5	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
98-1-L	248.2	254.9	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
98-2-U	252.2	256.0	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
98-2-M	247.8	253.4	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
98-2-L	240.3	254.5	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
98-3-U	253.4	255.1	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
98-3-M	248.4	253.2	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
98-3-L	243.9	252.6	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
00-1-U	264.0	261.7	no	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
00-1-M	254.4	260.4	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
00-1-L	248.3	256.3	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BH16-1S	256.0	257.5	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
BH16-1D	249.4	254.7	yes	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05

Notes:

1. Screen length is 1.5 m for all monitors except BH16-1D.
2. Average water elevation since May 2014.

Table 10 - Materials Accepted and Transferred (Monthly)

Quantity accepted at the Site, as recorded on daily incoming waste forms							
Month	**Vehicles**	**Total Garbage Bags**	**Reuse Centre Bins (40 yd³ bin)[11]**	**Brush (yd³)**	**Tires[1] (quantity)**	**Alcohol Containers[2] (quantity)**	**Mattresses[10] (Quantity)**
January	1,985	2,541	-	-	-	-	-
February	1,791	2,430	-	-	-	-	-
March	2,270	2,860	-	-	-	-	-
April	2,463	2,689	-	-	-	-	-
May	3,042	3,187	-	-	-	-	-
June	3,294	3,522	-	-	-	-	-
July	3,834	4,406	-	-	-	-	-
August	4,061	5,133	-	-	-	-	-
September	3,078	3,360	-	-	-	-	-
October	2,995	3,250	-	-	-	-	-
November	2,468	2,703	-	-	-	-	-
December	2,180	2,610	-	-	-	-	-
Annual Total	**33,461**	**38,691**	**4**	**700**	**262**	**37,575**	**98**

Quantity reported to be removed from the Site, transported/processed as noted										
Month	**Waste[3] (tonnes)**	**Loads[3]**	**C&D Materials[4] (tonnes)**	**Containers[5] (tonnes)**	**Fibres[5] (tonnes)**	**Scrap Metals & White Goods[6] (tonnes)**	**WEEE[7] (tonnes)**	**Fluorescent Tubes [8, 11] (m)**	**Empty Oil/Antifreeze Container[9] (tonnes)**	**Textiles[12] (tonnes)**
January	31.46	-	-	7.51	6.35	-	3.76	-	-	-
February	22.03	-	-	3.88	8.26	-	-	-	-	-
March	26.93	-	-	4.20	5.40	-	-	-	-	-
April	35.49	-	-	4.92	5.65	-	-	-	-	-
May	32.22	-	-	8.35	5.02	-	4.60	-	-	-
June	39.72	-	-	5.10	6.37	-	-	-	-	-
July	46.16	-	-	7.70	7.72	-	3.48	-	-	-
August	54.88	-	-	4.93	10.08	-	-	-	-	-
September	34.17	-	-	5.80	6.78	-	-	-	-	-
October	57.74	-	-	6.73	7.09	-	4.34	-	-	-
November	31.45	-	-	5.52	4.60	-	-	-	-	-
December	26.53	-	-	6.95	5.69	-	-	-	-	-
Annual Total	**438.78**	**-**	**95.98**	**71.59**	**79.01**	**40.33**	**16.59**	**238.00**	**0.10**	**3.33**

Notes:

1. Transferred off-site by eTRACK
2. Transferred off-site by Cavendish Community Centre
3. Transported by Kawartha Disposal. Scaled weights from the Bensfort Road Waste Disposal Site. Load count not recorded.
4. Transported by Kawartha Disposal to Waste Connections for processing
5. Transported by Emterra to Peterborough Materials Recovery Facility for processing by HGC
6. Transported and recycled by AIMS Recycling
7. Transported and processed by Quantum Life Cycle LPP on contract with the County of Peterborough
8. Transported to Photech Environmental Solutions for processing
9. Transported and Processed by Pnewko on contract with the County of Peterborough
10. Transferred by RMI
11. Municipality Total
12. Transferred by Recycling Rewards.
13. Transferred by GFL
14. Seasonally operated Municipal program. Tonnages collected from all Municipal waste disposal sites.

Appendices

Appendices

The following appendices are available in Part II – Appendices.

Appendix A **Monitoring and Screening Checklist**

Appendix B **Environmental Compliance Approval A341307**

Appendix C **Field and Precipitation Data**

Appendix D **Laboratory Certificates of Analysis**

Appendix E **Photographs**

Appendix F **Borehole Logs**