



Staff Report

Infrastructure & Public Works

Report To: Committee of The Whole
Meeting Date: February 21, 2018
Report Number: CSPW.18.012
Subject: 2017 Water Summary Report
Prepared by: Meg Boyd, Compliance & Efficiency Coordinator

A. Recommendations

THAT Council receive Staff Report CSPW.18.012 entitled "2017 Water Summary Report" for their information.

B. Overview

This report provides an overview of the Town's drinking water system activities in 2017. The Town continues to operate its Water System in accordance with all Provincial Legislative requirements.

C. Background

The delivery of potable water in Ontario is regulated by the Ministry of the Environment and Climate Change (MOECC) under the *Safe Drinking Water Act*.

Ontario Regulation 170/03 Schedule 22 requires the Owner of a drinking water system to prepare a Summary Report no later than March 31st of each calendar year that summarizes the following:

a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license, and any orders applicable to the system that were not met at any time during the period covered by the report; and

b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

The report must also include a summary of the quantities and flow rates of the water supplied during the 2017 period, including monthly average and maximum daily flows as well as daily instantaneous peak flow rates. A comparison of the summary to the rated capacity and flow rates approved in the system's approval must also be documented.

D. Analysis

The Town of The Blue Mountains (TOBM) continues to successfully operate its Water System in accordance with all Provincial Legislative requirements.

A copy of the 2017 Water Summary Report (Attachment # 1) is required to be presented and accepted by Municipal Council no later than March 31st of each calendar year.

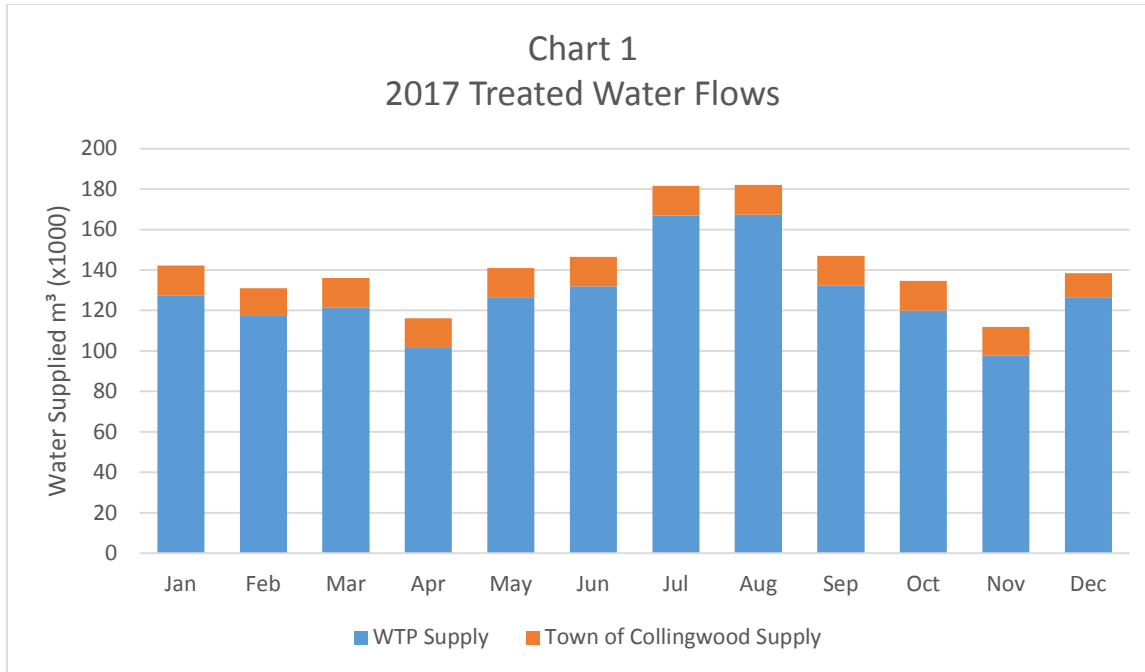
This Report is specific to the Thornbury Water Treatment Plant (WTP) located at 230 Peel Street, its associated distribution system in the Lora Bay, Clarksburg, Thornbury, Camperdown, Swiss Meadows and Craigleith Service Areas and the supplemental supply received from the Town of Collingwood.

Through the implementation of the Municipal Drinking Water Licensing Program, the authority to establish or alter a water system is provided through a Drinking Water Works Permit and the authority to use or operate the water system is provided through a Drinking Water License. On October 23, 2015 the Town was issued Permit Number 111-201, Issue Number 2 and License Number 111-101, Issue Number 2.

The TOBM also receives a supplemental supply of water from the Town of Collingwood to assist with meeting water demands and providing redundancy. The water purchase agreement signed by the TOBM equal to a firm capacity of 1,250 cubic meters per day at the Mountain Road Booster Pumping Station.

The following graph reflects the total treated water maximum daily demands (MDD) and average daily demands (ADD) flows from the Thornbury Water Treatment Plant. Presently, the TOBM has an adequate supply to meet maximum daily demands throughout the year.

Chart 1 below summarizes the monthly totals of Treated Water Flows for the Thornbury Water Treatment Plant as well as the additional supply received from the Town of Collingwood.



All of the requirements listed in Schedule 22 have been met and are detailed in the appending Summary Report.

E. The Blue Mountains Strategic Plan

Goal #5: Ensure Our Infrastructure is Sustainable

F. Environmental Impacts

None

G. Financial Impact

None

H. In consultation with

None

I. Attached

1. 2017 Water Summary Report

Respectfully submitted,

Meg Boyd
Compliance & Efficiency Coordinator

Reg Russwurm, MBA, P.Eng
Director of Infrastructure and Public Works

For more information, please contact:
Meg Boyd
ipwinfo@thebluemountains.ca
519-599-3131 extension 285



2017 Water Summary Report

The Blue Mountains' Water Section

Waterworks Number: 220001762

Reporting Period: January 1, 2017 to December 31, 2017

Table of Contents

2017 Water Summary Report.....	1
Appendices.....	3
Executive Summary.....	4
Waterworks Description	5
Compliance	5
Municipal Drinking Water Licensing Program	5
Compliance with Permit Number 111-201 and License Number 111-101 issued for the Town of The Blue Mountains Drinking Water System	6
Schedule C: System-Specific Conditions	7
Section 1.0 – Rated Capacity – The maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed 15,140 m ³	7
Section 1.5 – Residue Management – The annual average concentration of Suspended Solids shall not exceed 25 mg/L.....	7
Section 1.6 – UV Disinfection Equipment Performance	7
Section 2.1 – Flow Measurement and Recording Requirements	7
Section 4.0 – Additional Sampling, Testing and Monitoring	7
Schedule D: Conditions for Relief from Regulatory Requirements	8
Non-Compliance with the Drinking Water Works Permit and Drinking Water License.....	8
Non-Compliance with Regulatory Requirements and Actions Required Resulting from MOECC Inspection	8
Notifications of Adverse Water Quality Events	8
Summary of the Quality of Water Supplied During the Reporting Period	9
Raw Water Flows for the Thornbury Water Treatment Plant.....	11
Raw Water Flows Versus Capacity.....	11
Operational Overview.....	11
Conclusion.....	11

Appendices

Appendix A	Weekly Sample Locations
Appendix A-1	Winter Sampling Locations
Appendix B	2017 Compliance Treated Water Flows
Appendix C	2017 Supplemental Supply Flows from Town of Collingwood
Appendix D	2017 Raw water Flows
Appendix E	2017 Raw Water Flows Expressed as a Percentage
Appendix F	2017 Annual Water Report
Appendix G	Permit to Take Water

Executive Summary

This report has been prepared as required by Ontario Regulation 170/03 – Schedule 22 of the Safe Drinking Water Act (SDWA) which states the report must,

- a) list the requirements of the Act, the regulations, the system's approval, drinking water works permit, municipal drinking water license, and any orders applicable to the system that were not met at any time during the period covered by the report; and
- b) for each requirement referred to in clause (a) that was not met, specify the duration of the failure and the measures that were taken to correct the failure.

The report must also include the following information for enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system:

- 1) A summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows;
- 2) A comparison of the summary referred to in paragraph 1 to the rated capacity and flow rates approved in the system's approval, drinking water works permit or municipal drinking water license, or if the system is receiving all of its water from another system under an agreement, to the flow rates specified in the written agreement.

All the above requirements have been met and will be further explored throughout the report.

A copy of this report is required to be presented and accepted by Municipal Council no later than March 31 of each calendar year.

This report is specific to the Thornbury Water Treatment Plant (WTP) located at 230 Peel Street and its associated distribution system in the Lora Bay, Clarksburg, Thornbury, Camperdown, Craigeith and Swiss Meadows Service Areas. Through the implementation of the Municipal Drinking Water Licensing Program, the authority to establish or alter a system is provided through a Drinking Water Works Permit and the authority to use or operate the system is provided through a Municipal Drinking Water License. On October 20, 2015, the Town's License Number 111-101 and Permit Number 111-201 was renewed for another five years.

Waterworks Description

The Water Treatment System is classified as a Large Municipal Residential System. The Water Treatment Plant Subclass System is Class 2 and the Water Distribution Subclass System is Class 3. The raw water source is surface water supplied by Georgian Bay.

The distribution system consists of approximately 120 kilometers of watermain owned and operated by the Town of The Blue Mountains (Town). Watermains range in size up to 400mm, consisting of PRV, ductile iron, cast iron, asbestos cement and high density polyethylene.

The Town also receives a supplemental supply from the Town of Collingwood to assist with meeting water demands and providing redundancy. The water purchase agreement signed by the Town and the Town of Collingwood states the Collingwood Public Utilities Board (CPUB) agrees to supply quantities of water to Town of The Blue Mountains (TOBM) equal to a firm capacity of 1,250 cubic meters per day at the Mountain Road Booster Station.

Compliance

Municipal Drinking Water Licensing Program

The Municipal Water Licensing Program was introduced in response to recommendations made by Justice O'Connor during the Walkerton inquiry. Under the Licensing Program, the Town was required to obtain a license to operate the drinking water system.

The License is comprised of five components; the Drinking Water Works Permit, Implementation of a Drinking Water Quality Management System, Accreditation of the Quality Management System, preparation of a Financial Plan and obtaining a Permit to Take Water.

1. Drinking Water Works Permit provides a description of the system, an authorization for alterations to the system and contains conditions relating to the physical works;
2. Drinking Water Quality Management System (DWQMS) is comprised of twenty-one elements that address all aspects of the water system. The overall goal of the DWQMS is continuous improvement with respect to planning, operating and reviewing the drinking water system;
3. Accreditation of the Operating Authority consisting of a third-party audit of the Operating Authorities compliance with the Quality Management System criteria. The accreditation of operating authorities is a mandatory requirement under the Safe Drinking Water Act, 2002 (SDWA). The accreditation body performing third-party audits for the Town is NSF International Strategic Registrations (NSF-ISR);
4. Ontario Regulation 453/07 requires that before a Municipality can renew its drinking water license, Staff must prepare and approve a financial plan. The plan must be approved by a resolution of Council and must apply for a six-year period. The Plan must include details of the proposed or projected financial operations of the drinking-water system itemized by:
 - total revenues, water rates, user charges, and other revenues;
 - total expenses, amortization expenses, interest expenses, and other expenses;
 - annual surplus or deficit;
 - accumulated surplus or deficit;

5. Permit to Take Water is required for systems that take 50,000 litres or more of source water per day. These permits help to ensure the conservation, protection, management and sustainable use of Ontario's water.

The Town's updated Water Financial Plan was approved by Council on April 20, 2015 and a copy was submitted to the Ministry of Municipal Affairs and Housing as required by legislation. As the needs of the system change and evolve, so too, will the Financial Plan. The Plan will be updated at minimum every five years.

On January 22, 2013, the Town received Full Scope – Entire DWQMS accreditation which is based on the documentation and implementation of all twenty-one elements of the DWQMS. The Town has received its renewed accreditation, expiring January 11, 2019.

On October 23, 2017, a systems surveillance audit was completed by NSF International Strategic Registrations (NSF-ISR), the third-party Accreditation Body. Audits are essential tools for measuring the effectiveness of the QMS and audit findings indicate areas where the QMS met (conformance) or did not meet (non-conformance) the requirements of the QMS. The role of the Auditor is to assess whether the Town's documented QMS met the "DO" requirements of the DWQMS.

The final audit report identified two (2) Minor non-conformances. A non-conformance indicates that the QMS needs to be improved to meet an element of the DWQMS and the specific details are outlined by the Auditor in the form of a Corrective Action Request (CAR).

Staff prepared responses to the CARs identified and all documentation was filed with NSF-ISR by the deadline of December 22, 2017. The CAR responses were accepted by NSF-ISR.

Compliance with Permit Number 111-201 and License Number 111-101 issued for the Town of The Blue Mountains Drinking Water System

The Thornbury Water Treatment Plant is owned by the Corporation of the Town of The Blue Mountains and is operated by employees of the Town's Water Section. Water Operators maintain the associated distribution system, reservoirs and booster pumping facilities. Staffing levels are maintained to ensure adequate numbers of trained and licensed personnel are available for proper operations during emergency or upset conditions or to deal with equipment breakdown. Operator meetings are conducted to allow Staff to review existing regulations and any associated amendments made. Staff training requirements are frequently reviewed to ensure all Operations Staff have met the training requirements set out in Ontario Regulation 128/04 of the Safe Drinking Water Act.

Contingency plans and operations manuals are established and located at the Thornbury Water Treatment Plant and Water Operations Centre. Operations manuals include information necessary for the day to day operations and maintenance of the Water Treatment Plant and Distribution System. Contingency plans include information that may be required for proper operation of the Water Treatment Plant and Distribution system. Contingency plans provide Operations Staff with procedures to ensure work is being performed in a consistent manner and contain such items as emergency plans and contacts, supplier contact lists, and a key list of equipment.

Schedule C: System-Specific Conditions

Section 1.0 – Rated Capacity – The maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed 15,140 m³

There were no instances during this reporting period where the flow rate exceeded the rated capacity.

Section 1.5 – Residue Management – The annual average concentration of Suspended Solids shall not exceed 25 mg/L.

Samples requiring analysis for suspended solids are typically collected during the first week of every month and analyzed by an accredited laboratory. Twelve samples were collected resulting in annual average of 5.0 mg/L. down from 5.6 mg/L in 2016.

Section 1.6 – UV Disinfection Equipment Performance

Ultra Violet (UV) disinfection is the method of disinfection in which ultraviolet irradiation is used to inactivate target organisms in the water source and is the primary disinfection used at the Thornbury WTP. Ultra violet disinfection equipment is installed and operated such that a UV dosage of at least 40 mJ/cm² is maintained. A dosage of less than 40 mJ/cm² triggers a shutdown of the UV and high lift pumps. A UV transmittance meter measures the waters ability to transmit light and is expressed as a percentage to show what measure of disinfection is achieved.

Section 2.1 – Flow Measurement and Recording Requirements

Flow measuring devices for measuring the amount of raw water taken from Georgian Bay and the amount of water supplied to the distribution system are calibrated annually as per manufacturer's instructions. The flow rate and daily volume of water conveyed from the treatment system to the distribution system is accomplished through the treated water flow meter and recorded on Supervisory Control And Data Acquisition (SCADA) trending printouts.

Section 4.0 – Additional Sampling, Testing and Monitoring

Water sampling is conducted as per the requirements outlined in Schedule 10 and 13 of Ontario Regulation 170/03. Water samples are collected throughout the distribution system at designated sampling stations as well as at Reservoirs and Booster Stations. Raw water sampling provides Operators with the necessary information to determine the appropriate level of treatment required to make the water potable while treated water and distribution samples are vital for ensuring the quality of water provided to residents is in accordance with Ministry of the Environment and Climate Change (MOECC) Standards.

A weekly sampling plan¹ dictates the weekly sampling locations and is reviewed and revised as necessary. During the winter months, a winter sampling plan² is used. Samples requiring annual analysis are typically collected during the first week of April and are analyzed by an accredited laboratory.

¹ Refer to Appendix A – Sampling Locations

² Refer to Appendix A-1 – Winter Sampling Locations

Trihalomethane sampling is conducted at the extremities in the distribution system. All sampling is conducted in accordance with MOECC Regulations and is monitored on a regular basis.

As of January 1, 2017, drinking water system owners/operating authorities are required to take samples quarterly and have them tested for Haloacetic Acids (HAAs) as outlined in O. Reg 170/03. Operators collected samples in each quarter and the Running Annual Average (RAA) for 2017 was 10.8. Effective January 1, 2020, a standard for HAAs will be introduced. The standard will be 80 µg/L and will be expressed as a RAA.

Chemicals used in the operation of the drinking-water system that are in contact with water within the system meet all applicable standards as established by AWWA, ANSI, NSF 60, NSF 61 and NSF/372 safety criteria standards. The requirement to comply with NSF/372 came into force on November 12, 2017. Material Safety Data Sheets are available for all chemicals and materials used.

Schedule D: Conditions for Relief from Regulatory Requirements

The Town is sampling for lead under the reduced sampling protocol. The testing frequency is reduced to two consecutive periods of semi-annual testing once every three years and the number of locations is also reduced. The Town collected samples for lead testing in 2014 again in 2017 under the reduced sampling program.

Non-Compliance with the Drinking Water Works Permit and Drinking Water License

There were no issues of non-compliance with the Permit and License.

Non-Compliance with Regulatory Requirements and Actions Required Resulting from MOECC Inspection

An inspection of the Blue Mountains' Drinking Water System was initiated on February 1, 2017 by the MOECC. The inspection found no issues of Non-Compliance with Regulatory Requirements and Actions Required and no Summary of Best Practices Issued and Recommendations.

The inspection report includes an Inspection Summary Rating Record which is designed to encourage drinking water systems to strive for continuous improvement. Based on the Ministry established rating methodology, The Blue Mountains' Drinking Water System received a 100 % rating for the 2016-2017 reporting period.

Notifications of Adverse Water Quality Events

This section describes all Adverse Water Quality Incidents (AWQI). This term refers to any unusual test result from treated water that does not meet a provincial water quality standard or situation where disinfection of the water may be compromised. A single adverse water quality incident does not necessarily mean that drinking water from the system is unsafe – it indicates that, on at least one occasion, a water quality standard was not met.

Ontario Regulation 170/03 outlines the instances in which notifications are required when a parameter used to measure water quality exceeds a Maximum Acceptable Concentration (MAC). Once notification is received from the laboratory or Operations staff, Operators are to follow the steps as outlined in the Adverse Sample Result Received from Laboratory Procedure.

There was one incident where the Town issued a precautionary boil water advisory and two incidents of adverse drinking water quality in 2017.

On August 15, 2017, the Town issued a precautionary boil water advisory for two homes on Arlberg Crescent. During the installation of a new watermain, the existing watermain on Arlberg Crescent was damaged. There was a period where there was negative pressure on the main feeding two homes on Arlberg Crescent. The main break was repaired same day. Notification was provided to both homes.

The Grey Bruce Owen Sound Public Health Unit and Spills Action Centre (MOECC) were notified. Two consecutive sets of samples were collected and both returned with 0 E. coli and 0 Total Coliform. The precautionary boil water advisory was lifted on August 21, 2017.

On August 23, 2017, we received notification from our lab that the drinking water microbiological sample taken from the George McRae Road Sample Station failed for total coliform. The lab result was 320 cfu/100 ml total coliform. The E. coli was 0 cfu/100ml. The free chlorine when this sample was taken was 0.66 mg/L. In accordance with the Regulations, Operators collected two sets of samples, each set consisting of three samples, one upstream, one downstream and one at the site, 24 hours apart.

On August 25, 2017, both sets of resamples came back clear from the lab and Water Operators completed the Notice of Issue Resolution and submitted to the Grey Bruce Owen Sound Health Unit and the Spills Action Centre of the Ministry of Environment and Climate Change.

On October 10, 2017, a low free chlorine residual was noted at the Georgian Bay Clubhouse PRV Chamber Sample Station. The minimum allowable free chlorine residual in the distribution system is 0.05mg/L. The free chlorine residual at this location was 0.03mg/L.

The drinking water system in this area was flushed. As of 10:04, the free chlorine residual at the hydrant used for flushing was 0.69mg/L. At 10:08, the free chlorine residual at the Georgian Bay Clubhouse PRV Chamber Sample Station was 0.61mg/L. A bacteriological sample was taken from the sample station at 10:19am, and the free chlorine of that sample was 0.96mg/L. The bacteriological samples from the area of low chlorine were returned 0 E. coli and 0 Total Coliform.

The required corrective actions for a low chlorine event include flushing the system in the area of the adverse result until the free chlorine residual is restored to at least 0.05mg/L.

The Grey Bruce Owen Sound Public Health Unit and Spills Action Centre (MOECC) were notified. Water Operators completed the Notice of Issue Resolution and submitted to the Grey Bruce Owen Sound Health Unit and the Spills Action Centre of the Ministry of Environment and Climate Change. No further actions were required by the Town.

Summary of the Quality of Water Supplied During the Reporting Period

Appended to this report (Appendix B) are the treated water flows for the Thornbury Water Treatment Plant for the 2017 reporting period. The Thornbury Water Treatment Plant services a population of approximately 17,198 residents, including commercial, industrial and resort facilities. As noted in Chart 1 below, there is a significant increase in water demand during the

peak periods of July and August. The increase in water demands during the “peak” recreational periods is attributed to the seasonal tourist influx. Appended to this report (Appendix C) are the supplemental flows received from the Town of Collingwood for the 2017 reporting period.

Chart 1 below summarizes the monthly totals of Treated Water Flows for the Thornbury Water Treatment Plant as well as the additional supply received from the Town of Collingwood.

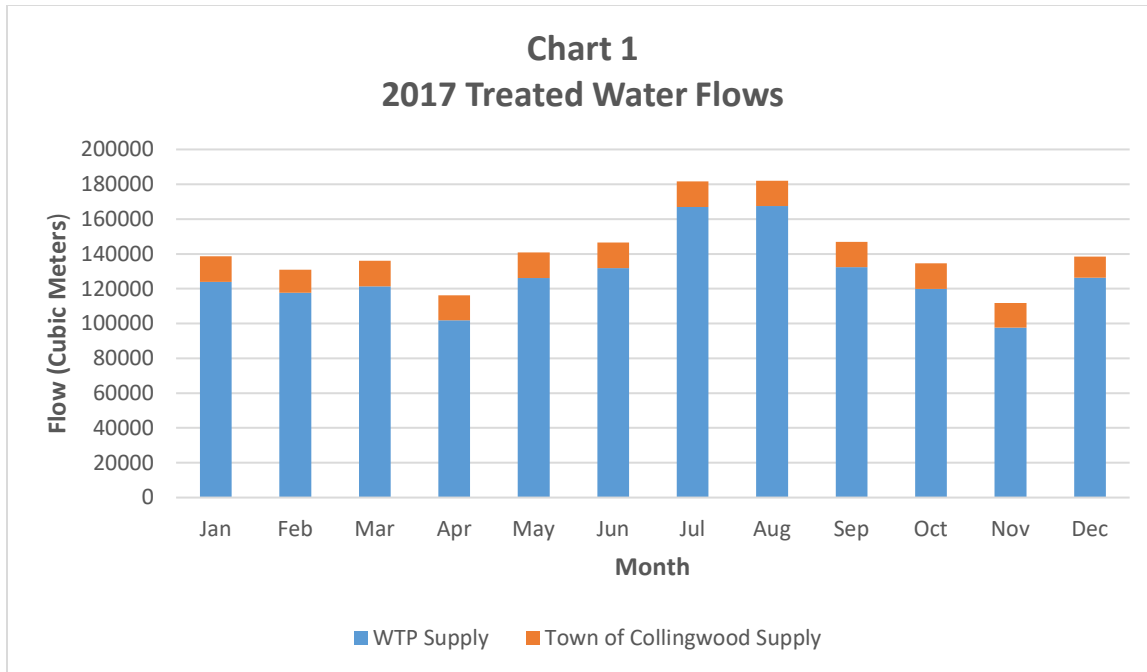
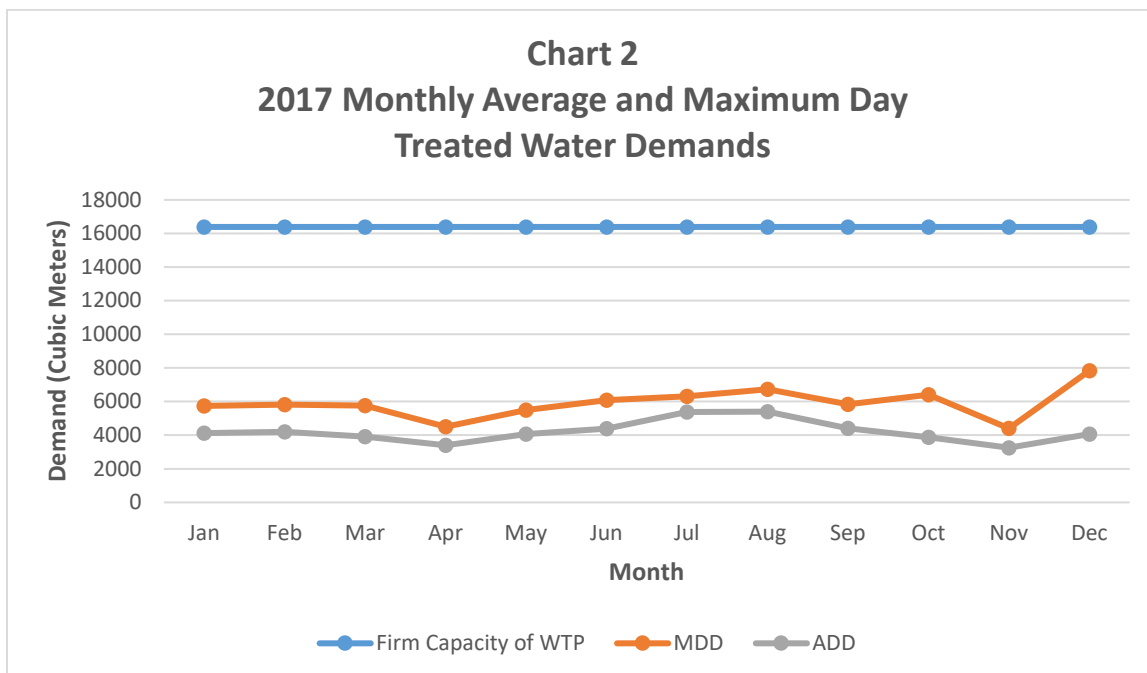


Chart 2 reflects the monthly average daily demands (ADD) and monthly maximum daily demands (MDD) for the treated water at the Thornbury Water Treatment as well as the supplemental supply received from the Town of Collingwood.

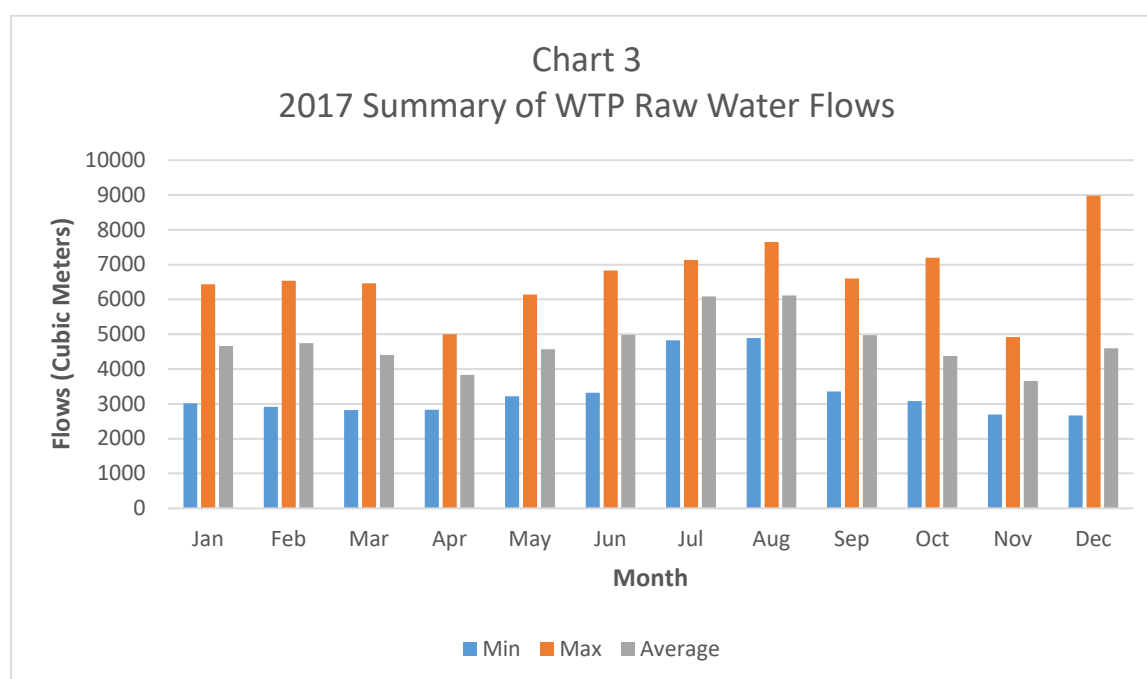


*Firm Capacity includes the supplemental Collingwood Supply of up to 1,250 m³/day

From June 1 through to and including September 1, the Town imposes restrictions on external water use. The restrictions are in force to encourage water conservation efforts as well as control maximum day demands. During 2017, the Town imposed Stage 1 water restrictions which restricts residents' external water use to between the hours of 7:00am and 9:00am and 7:00pm and 9:00pm on specified calendar days. Properties with odd numbered addresses can water on odd numbered calendar days. Properties with even numbered addresses can water on even numbered calendar days.

Raw Water Flows for the Thornbury Water Treatment Plant

Appended to this report (Appendix D) and included below in Chart 3 are the raw water flows into the Thornbury Water Treatment Plant for the 2017 reporting period. Minimum, maximum and average values are based on daily flows for the month.



Raw Water Flows Versus Capacity

A daily summary of the maximum daily flow rates expressed as a percentage of capacity is included in Appendix E.

Operational Overview

There were three watermain breaks in the 2017 reporting period. All breaks were repaired with minimal water service interruption to consumers.

Conclusion

The Blue Mountains Water Section continues to successfully operate its Water System in accordance with all Provincial Legislative requirements.



Sampling Locations

Week # 1	Week # 2	Week # 3	Week # 4	Week # 5
Sunset Blvd DE SS (030)	Lora Bay SS (031)	West Ridge DE Phase 1 SS (032)	Lora Bay East Ridge SS (002)	West Ridge SS (032)
Carmichael Crescent SS (035)	Cameron Street SS (004)	Louisa Street East SS (008)	Sunset Blvd. DE SS (030)	Lora Bay Drive SS (031)
Duncan Street SS (005)	Far Hills Club - Alfred Street SS (024)	Geo. Ridge Estates - George McRae Road SS (033)	Edward Street SS (006)	Louisa / Hester SS (007)
Camperdown Court SS (012)	Geo. Bay Clubhouse PRV Chamber (009)	Aspen Way / Old Lakeshore SS (015)	Geo. Bay Clubhouse PRV Chamber (009)	Carmichael Crescent SS (035)
Blueski George Crescent SS (026)	Barclay Blvd SS (029)	Orchard - National Drive SS (025)	Camperdown - Stone Zack Lane SS (011)	Barclay Blvd. SS (029)
Drakes Path SS (018)	Oak Court SS (014)	Arlberg Crescent SS (017)	Teskey Drive SS (028)	Arlberg Crescent SS (017)
Patricia Drive SS (020)	Brophy's Lane SS (016)	Timmons Street SS (027)	Wards Road Booster Station	Monterra/Grand Cypress SS (019)
Mountain Road Booster Station	Monterra/ Grand Cypress SS (019)	Patricia Drive SS (020)	Mountain Road Booster Station	Mountain Road Booster Station
Swiss Meadows Standpipe	Mountain Road Booster Station	Mountain Road Booster Station	Mountain Road SS (021)	Patricia Drive SS (020)
Louisa / Hester SS (007)	Swiss Meadows Scandia SS (022)	Swiss Meadows Maple SS (023)	Swiss Meadows Scandia SS (022)	Swiss Meadows Maple SS (023)



Winter Sampling Locations

Week # 1	Week # 2	Week # 3	Week # 4	Week # 5
10th Line Booster Station	10th Line Booster Station	10th Line Booster Station	10th Line Booster Station	10th Line Booster Station
Water Operations Center	Water Operations Center	Water Operations Center	Water Operations Center	Water Operations Center
Beaver Valley Community School	Town Hall	Town Hall	Town Hall	Town Hall
Thornbury Reservoir	Thornbury Reservoir	Thornbury Reservoir	Thornbury Reservoir	Thornbury Reservoir
Camperdown Reservoir	Camperdown Reservoir	Camperdown Reservoir	Camperdown Reservoir	Camperdown Reservoir
Arrowhead Road Booster Station	Arrowhead Road Booster Station	Arrowhead Road Booster Station	Arrowhead Road Booster Station	Arrowhead Road Booster Station
Happy Valley Booster Station	Happy Valley Booster Station	Happy Valley Booster Station	Happy Valley Booster Station	Happy Valley Booster Station
Mountain Road Booster Station	Mountain Road Booster Station	Mountain Road Booster Station	Mountain Road Booster Station	Mountain Road Booster Station
Swiss Meadows Standpipe	Swiss Meadows Standpipe	Swiss Meadows Standpipe	Swiss Meadows Standpipe	Swiss Meadows Standpipe
Wards Road Booster Station	Wards Road Booster Station	Wards Road Booster Station	Wards Road Booster Station	Wards Road Booster Station

Compliance Report - 2017 Summary of Treated Water Flows
THORNBURY WATER TREATMENT PLANT

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1st	5740	3256	3213	4340	3465	4709	5579	5631	4796	3806	2361.5	3804.5
2nd	4462	3496	3286	2535	3447	4205	4887	5876	5832.5	4071	3736.5	3125
3rd	5098	4349	5110	3384	3382	4960	5798	5064	5659.5	5125.5	2539	3056
4th	4596	5301	5001	3314	3497	3787	4987	5766	4384	3340.5	3984.5	3292.5
5th	5003	4692	3798	3185	4010	3306	5159	5910	3563	4357.5	3131	2915
6th	4504	3200	3561	2926	3867	3578	5159	5285	3805.5	4589	3311.5	2409.5
7th	5161	3386	3327	4278	3476	3832	6169	5243	3573.5	4257.5	3058	3178
8th	3381	3297	4113	3246	3098	4589	5131	6373	4273	5104.5	3288	3264.5
9th	3994	3558	3141	3500	4012	5416	4998	4628	4266.5	5130.5	3107	3610.5
10th	3354	4563	4204	3211	4484	4509	5639	6526	3989.5	3323	3588	3153
11th	2734	4972	4650	2989	4033	5033	5449	5360	4172.5	3957	3258.5	2671.5
12th	3825	3820	4504	3569	4244	6080	5714	5062	4413	3570.5	3366.5	3007.5
13th	4593	5816	4695	3325	4476	3956	4349	5567	4748.5	4372.5	3966.5	2589.5
14th	4128	2538	4047	3546	2878	3771	4185	5940	4514.5	4027	2782	3415
15th	4994	4025	5353	4383	4721	5220	4852	5538	4855.5	3435.5	3364.5	2684
16th	3457	3779	2818	4027	3542	4452	5673	5714	4178.5	3183	3404.5	4230.5
17th	4002	4836	5526	2779	5500	5541	5763	5107	5149	3194	3450.5	3270.5
18th	2673	5633	5761	3480	4018	3311	5398	5194	3683.5	4146	3049.5	3712.5
19th	3207	5781	2531	3008	4683	4408	4867	5464	3860.5	3117.5	4404.5	3330.5
20th	4489	5005	3477	3359	5149	2931	4354	5763	3441.5	4385	3134.5	4155.5
21st	5343	3241	3227	2792	4990	4662	6277	6735	3959.5	4069	3347	3283.5
22nd	4143	3988	5260	4498	3774	3814	6310	5088	5622.5	6405	2483	4689
23rd	3072	4710	2640	3027	4571	5019	5136	4353	5224.5	3626	2899	4824
24th	3692	4269	3709	3974	4686	4864	5129	4911	4730	2938	3763	4984.5
25th	3541	3501	4376	2429	3475	4112	6038	4702	5519	3542	3044.5	5042
26th	3456	4999	3285	3074	3763	4404	4536	5853	3019.5	2521.5	2990.5	5236
27th	4554	3901	3284	2868	5361	3567	5088	5536	4085.5	3678.5	3696.5	7344.5
28th	4251	3817	2691	4464	3763	3982	6215	4941	4500	3471	2950	6172.5
29th	5210		3951	3774	4579	4747	5886	5051	4418.5	3454.5	3324	4814.5
30th	3245		3821	2668	4256	5145	6105	4894	4095.5	2797.5	2892.5	7837.5
31st	3576		2996		3012		6063	4340		2879		7215
Total	127473	117725	121354	101948	126204	131903	166884	167410	132335	119875	97677	126319
Average	4112	4204	3915	3398	4071	4397	5383	5400	4411	3867	3256	4075
Max	5740	5816	5761.3	4497.5	5500	6079.5	6309.5	6734.5	5832.5	6405	4404.5	7837.5
Min	2673	2537.5	2530.8	2429	2877.5	2930.5	4185	4339.5	3019.5	2521.5	2361.5	2409.5

All flows are in cubic meters

Compliance Report - 2017 Summary of Supplemental Flows from Town of Collingwood

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1st	474	473	475	474	475	471	457	474	472	475	475	473
2nd	475	475	475	474	478	476	490	476	474	475	444	477
3rd	475	474	476	475	476	476	493	473	476	476	481	477
4th	474	475	476	477	474	474	470	469	503	475	476	479
5th	475	475	474	465	472	475	473	475	474	471	476	472
6th	474	475	474	474	477	473	475	473	475	477	478	480
7th	474	475	472	473	475	473	469	473	473	473	474	475
8th	477	474	476	474	476	476	474	475	465	476	479	479
9th	475	475	474	475	476	474	474	474	473	475	346	476
10th	474	474	478	476	475	476	471	475	473	475	477	479
11th	476	475	474	477	475	476	474	474	473	459	475	475
12th	474	474	454	474	477	474	473	474	477	473	477	477
13th	473	473	476	475	473	473	474	473	475	475	478	479
14th	475	475	475	475	473	474	475	474	475	475	478	474
15th	474	476	474	475	476	474	475	472	470	474	474	477
16th	475	476	475	473	476	477	474	474	475	476	479	475
17th	474	474	476	474	475	474	472	474	476	476	479	473
18th	477	474	474	476	476	475	474	473	475	463	478	475
19th	475	475	477	476	467	569	475	475	473	473	476	475
20th	475	473	467	475	472	1201	475	476	474	476	477	477
21st	475	474	475	476	477	431	474	465	475	475	479	478
22nd	474	388	478	475	475	430	474	472	475	475	477	473
23rd	476	474	473	476	475	431	475	471	474	474	475	476
24th	473	475	475	478	473	433	474	476	475	476	475	477
25th	475	475	474	474	475	429	468	433	576	475	477	474
26th	477	474	475	476	474	430	475	474	701	478	477	190
27th	474	474	475	476	475	418	476	475	475	478	476	0
28th	475	476	474	469	475	431	474	468	474	475	477	0
29th	475		473	474	475	430	475	476	466	475	475	0
30th	474		477	473	474	481	474	472	475	478	470	0
31st	475		474		475		468	474		478		0
Total	14718	13200	14695	14234	14717	14655	14694	14632	14567	14705	14135	12092
Average	475	471	474	474	475	489	474	472	486	474	471	390
Max	477	476	478	478	478	1201	493	476	701	478	481	480
Min	473	388	454	465	467	418	457	433	465	459	346	0

All flows are in cubic meters

Compliance Report - 2017 Summary of Raw Water Flows

THORNBURY WATER TREATMENT PLANT

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1st	6435.1	3732.5	3637.8	4850.5	3838.3	5341.8	6218.5	6341.5	5436.5	4327.5	2691.5	4232.5
2nd	5237	3897.4	3780.8	2834.8	3933.8	4751.3	5490.5	6602.3	6604	4616	4235.5	3505.5
3rd	5674	4868.6	5677.3	4000.5	3778	5633.3	6483.3	5771.5	6402.5	5800	2815	3394
4th	5238.8	5919.3	5597.5	4054.3	3990.8	4218	5474.5	6507	4945	3855.5	4432	3684
5th	5606.1	5232	4245.3	3736.5	4474.8	3858.5	5822.5	6661.5	3963.5	4937.5	3488	3239
6th	5118.6	3580.4	3985.5	3278	4300.3	4110	5756.8	5913.5	4243.8	5185.5	3674.5	2671.5
7th	5867.5	3814.8	3801.5	4775	3865.8	4303.5	6927	5926.8	4056	4866	3424.5	3655.5
8th	3758.8	3764.6	4600.3	3603.5	3457.3	5162.5	5707.3	7256.3	4764.8	5784	3718.5	3629.5
9th	4445.3	3942.4	3595.8	4008.8	4538.8	6094.8	5483.3	5276.8	4763	5866.5	3645.5	4027.5
10th	3866.5	5078.3	4665.8	3564.8	5020.8	5072.5	6513.5	7309.5	4437.5	3701	3999	3508.5
11th	3020.6	5553.3	5282.5	3324.5	4502	5733.5	6096	6143.8	4660.5	4420.5	3631	2991.5
12th	4364.9	4264	5029.3	3999	4884.8	6828.5	6619.8	5831.3	4931.3	3997.5	3740.5	3585.5
13th	5110.3	6484.5	5324.5	3784.8	5053.8	4542.8	5280	6337.3	5296.8	4888	4431.5	2883
14th	4761.5	2914.8	4522.8	3954.3	3217.5	4270.8	4824.3	6731.3	5125	4495	3085.5	3904.5
15th	5640.6	4692.3	5967.3	4916.3	5278.8	5850.5	5481.5	6288.5	5471.8	3849	3768.5	3104
16th	3944.6	4321.3	3318.8	4509.5	4216.3	5016.8	6419.3	6634.8	4650	3543.5	3804	4702
17th	4679.8	5392.8	6246.8	3077.3	6141.5	6170.5	6739.3	5794.8	5740.5	3566.5	3961.5	3650
18th	3186.9	6330.3	6460.8	3902.3	4472.3	3701.8	6132.8	5889.8	4132	4630	3398	4144
19th	3811.4	6542.3	2828.3	3333.5	5215.5	5724.3	5455	6203.5	4319	3492	4921.5	3746.5
20th	4976.1	5622.5	3880.5	3846	5831	3318.8	4919	6584.8	4064	4897.5	3699.5	4644
21st	5951.9	3604.3	3619	3104.3	5631	5283.8	7110	7654.3	4582.5	4615	3734.5	3785
22nd	4613	4455.5	5880.5	5002.3	4210	4273.8	7137.8	5687.8	6483	7197	2764	5220.5
23rd	3396.4	5358.3	3005.8	3357.5	5087.5	5603.8	5878.3	4892.5	5895.5	4053.5	3238.5	5415
24th	4184.3	4749.3	4249	4417.5	5248.3	5512.3	5816.3	5611.3	5279	3270.5	4211	5658
25th	3958.8	3901.8	4890.3	2966	3884.5	4599	6833.8	5307.5	6307	4213.5	3407.5	5632.5
26th	3780.5	5753.5	3670	3487.5	4194.8	4893	5059.3	6515.3	3360	3079	3344.5	5841
27th	5107.6	4459.8	3679.3	3267.5	5939.3	4082.3	5761.5	6267.3	4632	4384.5	4226	8357.5
28th	4772.3	4505.3	2985	4998.8	4219.5	4494.3	6977	5550.3	5119	3889	3272	7061.5
29th	5842.9		4506.8	4211.3	5045	5314.3	6575.8	5703.8	5026	3852	3721.5	5393.5
30th	3610.9		4281	2994.5	4913.5	5763.3	6849.5	5526	4606.5	3121	3319.5	8984.5
31st	3985		3331.3		3360.3		6799.3	4976.3		3239.5		8256
Total	143948	132736.2	136547.2	115161.4	141745.9	149524.4	188642.8	189699	149298	135633.5	109804.5	142507.5

Avg	4643	4741	4405	3839	4572	4984	6085	6119	4977	4375	3660	4597
High	6435.1	6542.3	6460.8	5002.3	6141.5	6828.5	7137.8	7654.3	6604	7197	4921.5	8984.5
Low	3020.6	2914.8	2828.3	2834.8	3217.5	3318.8	4824.3	4892.5	3360	3079	2691.5	2671.5

All flows are in cubic meters

2017 Maximum Raw Daily Flow Rates Expressed as a Percentage of Capacity (15,140 m³ per day)

	Jan	% of Flow	Feb	% of Flow	Mar	% of Flow	Apr	% of Flow	May	% of Flow	Jun	% of Flow	Jul	% of Flow	Aug	% of Flow	Sep	% of Flow	Oct	% of Flow	Nov	% of Flow	Dec	% of Flow
1st	6435.1	42.50	3732.5	24.65	3637.8	24.03	4850.5	32.04	3838.3	25.35	5341.8	35.28	6218.5	41.07	6341.5	41.89	5436.5	35.91	4328	28.58	2692	17.78	4233	27.96
2nd	5237	34.59	3897.4	25.74	3780.8	24.97	2834.8	18.72	3933.8	25.98	4751.3	31.38	5490.5	36.26	6602.3	43.61	6604	43.62	4616	30.49	4236	27.98	3506	23.15
3rd	5674	37.48	4868.6	32.16	5677.3	37.50	4000.5	26.42	3778	24.95	5633.3	37.21	6483.3	42.82	5771.5	38.12	6402	42.29	5800	38.31	2815	18.59	3394	22.42
4th	5238.8	34.60	5919.3	39.10	5597.5	36.97	4054.3	26.78	3990.8	26.36	4218	27.86	5474.5	36.16	6507	42.98	4945	32.66	3856	25.47	4432	29.27	3684	24.33
5th	5606.1	37.03	5232	34.56	4245.3	28.04	3736.5	24.68	4474.8	29.56	3858.5	25.49	5822.5	38.46	6661.5	44.00	3963.5	26.18	4938	32.61	3488	23.04	3239	21.39
6th	5118.6	33.81	3580.4	23.65	3985.5	26.32	3278	21.65	4300.3	28.40	4110	27.15	5756.8	38.02	5913.5	39.06	4243.8	28.03	5186	34.25	3675	24.27	2672	17.65
7th	5867.5	38.75	3814.8	25.20	3801.5	25.11	4775	31.54	3865.8	25.53	4303.5	28.42	6927	45.75	5926.8	39.15	4056	26.79	4866	32.14	3425	22.62	3656	24.14
8th	3758.8	24.83	3764.6	24.87	4600.3	30.39	3603.5	23.80	3457.3	22.84	5162.5	34.10	5707.3	37.70	7256.3	47.93	4764.8	31.47	5784	38.20	3719	24.56	3630	23.97
9th	4445.3	29.36	3942.4	26.04	3595.8	23.75	4008.8	26.48	4538.8	29.98	6094.8	40.26	5483.3	36.22	5276.8	34.85	4763	31.46	5867	38.75	3646	24.08	4028	26.60
10th	3866.5	25.54	5078.3	33.54	4665.8	30.82	3564.8	23.55	5020.8	33.16	5072.5	33.50	6513.5	43.02	7309.5	48.28	4437.5	29.31	3701	24.45	3999	26.41	3509	23.17
11th	3020.6	19.95	5553.3	36.68	5282.5	34.89	3324.5	21.96	4502	29.74	5733.5	37.87	6096	40.26	6143.8	40.58	4660.5	30.78	4421	29.20	3631	23.98	2992	19.76
12th	4364.9	28.83	4264	28.16	5029.3	33.22	3999	26.41	4884.8	32.26	6828.5	45.10	6619.8	43.72	5831.3	38.52	4931.3	32.57	3998	26.40	3741	24.71	3586	23.68
13th	5110.3	33.75	6484.5	42.83	5324.5	35.17	3784.8	25.00	5053.8	33.38	4542.8	30.01	5280	34.87	6337.3	41.86	5296.8	34.99	4888	32.29	4432	29.27	2883	19.04
14th	4761.5	31.45	2914.8	19.25	4522.8	29.87	3954.3	26.12	3217.5	21.25	4270.8	28.21	4824.3	31.86	6731.3	44.46	5125	33.85	4495	29.69	3086	20.38	3905	25.79
15th	5640.6	37.26	4692.3	30.99	5967.3	39.41	4916.3	32.47	5278.8	34.87	5850.5	38.64	5481.5	36.21	6288.5	41.54	5471.8	36.14	3849	25.42	3769	24.89	3104	20.50
16th	3944.6	26.05	4321.3	28.54	3318.8	21.92	4509.5	29.79	4216.3	27.85	5016.8	33.14	6419.3	42.40	6634.8	43.82	4650	30.71	3544	23.40	3804	25.13	4702	31.06
17th	4679.8	30.91	5392.8	35.62	6246.8	41.26	3077.3	20.33	6141.5	40.56	6170.5	40.76	6739.3	44.51	5794.8	38.27	5740.5	37.92	3567	23.56	3962	26.17	3650	24.11
18th	3186.9	21.05	6330.3	41.81	6460.8	42.67	3902.3	25.77	4472.3	29.54	3701.8	24.45	6132.8	40.51	5889.8	38.90	4132	27.29	4630	30.58	3398	22.44	4144	27.37
19th	3811.4	25.17	6542.3	43.21	2828.3	18.68	3333.5	22.02	5215.5	34.45	5724.3	37.81	5455	36.03	6203.5	40.97	4319	28.53	3492	23.06	4922	32.51	3747	24.75
20th	4976.1	32.87	5622.5	37.14	3880.5	25.63	3846	25.40	5831	38.51	3318.8	21.92	4919	32.49	6584.8	43.49	4064	26.84	4898	32.35	3700	24.44	4644	30.67
21st	5951.9	39.31	3604.3	23.81	3619	23.90	3104.3	20.50	5631	37.19	5283.8	34.90	7110	46.96	7654.3	50.56	4582.5	30.27	4615	30.48	3735	24.67	3785	25.00
22nd	4613	30.47	4455.5	29.43	5880.5	38.84	5002.3	33.04	4210	27.81	4273.8	28.23	7137.8	47.15	5687.8	37.57	6483	42.82	7197	47.54	2764	18.26	5221	34.48
23rd	3396.4	22.43	5358.3	35.39	3005.8	19.85	3357.5	22.18	5087.5	33.60	5603.8	37.01	5878.3	38.83	4892.5	32.32	5895.5	38.94	4054	26.77	3239	21.39	5415	35.77
24th	4184.3	27.64	4749.3	31.37	4249	28.06	4417.5	29.18	5248.3	34.67	5512.3	36.41	5816.3	38.42	5611.3	37.06	5279	34.87	3271	21.60	4211	27.81	5658	37.37
25th	3958.8	26.15	3901.8	25.77	4890.3	32.30	2966	19.59	3884.5	25.66	4599	30.38	6833.8	45.14	5307.5	35.06	6307	41.66	4214	27.83	3408	22.51	5633	37.20
26th	3780.5	24.97	5753.5	38.00	3670	24.24	3487.5	23.04	4194.8	27.71	4893	32.32	5059.3	33.42	6515.3	43.03	3360	22.19	3079	20.34	3345	22.09	5841	38.58
27th	5107.6	33.74	4459.8	29.46	3679.3	24.30	3267.5	21.58	5939.3	39.23	4082.3	26.96	5761.5	38.05	6267.3	41.40	4632	30.59	4385	28.96	4226	27.91	8358	55.20
28th	4772.3	31.52	4505.3	29.76	2985	19.72	4998.8	33.02	4219.5	27.87	4494.3	29.68	6977	46.08	5550.3	36.66	5119	33.81	3889	25.69	3272	21.61	7062	46.64
29th	5842.9	38.59		0.00	4506.8	29.77	4211.3	27.82	5045	33.32	5314.3	35.10	6575.8	43.43	5703.8	37.67	5026	33.20	3852	25.44	3722	24.58	5394	35.62
30th	3610.9	23.85			4281	28.28	2994.5	19.78	4913.5	32.45	5763.3	38.07	6849.5	45.24	5526	36.50	4606.5	30.43	3121	20.61	3320	21.93	8985	59.34
31st	3985	26.32			3331.3	22.00			3360.3	22.19			6799.3	44.91	4976.3	32.87			3240	21.40			8256	54.53

Avg	4643		4741		4405		3839		4572		4984		6085		6119		4977		4375		3660		4597
High	6435		6542		6461		5002		6142		6829		7138		7654		6604		7197		4922		8985
Low	3021		2915		2828		2835		3218		3319		4824		4893		3360		3079		2692		2672

All flows are in cubic metres



ANNUAL REPORT TEMPLATE

Drinking-Water System Number:	220001762
Drinking-Water System Name:	The Blue Mountains Drinking Water System
Drinking-Water System Owner:	Town of The Blue Mountains
Drinking-Water System Category:	Large Municipal Residential
Period being reported:	January 1, 2017 to December 31, 2017

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></p> <p>Does your Drinking-Water System serve more than 10,000 people? Yes [X] No []</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No []</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p>Town of The Blue Mountains 32 Mill Street, Thornbury, ON</p> <p>Town Website: www.thebluemountains.ca</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <input type="text"/></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No [X]</p> <p>Number of Interested Authorities you report to: <input type="text"/></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No [X]</p>
--	---

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Number

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?

Yes [] No [X]



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

- Public access/notice via the web
 Public access/notice via Government Office
 Public access/notice via a newspaper
 Public access/notice via Public Request
 Public access/notice via a Public Library
 Public access/notice via other method _____

Describe your Drinking-Water System

The Thornbury Water Treatment Plant is located at 230 Peel Street. The water source is Georgian Bay, part of the Great Lakes Water System.

A 569m long, 600mm diameter raw water intake pipe extends approximately 569m into Georgian Bay. A 38mm diameter chlorine feed line and a chlorine solution diffuser provides pre-chlorination and also zebra mussel control. Raw water sampling is accomplished by utilizing a 25mm diameter sampling line which extends out from the intake bell.

After entering the intake, three (3) low lift vertical turbine pumps (2 duty, 1 standby) deliver the raw water to two (2) 0.30mm strainers before it is directed to the microfiltration units.

The microfiltration units consist of three (3) trains of 240 microfiltration modules (80 modules per train) complete with three (3) valve racks and controls. The microfiltration units filter the raw water by forcing it through 0.1 micron sized membranes.

Two (2) reverse filtration pumps (1 duty, 1 standby) are used to backwash the microfiltration units into Modified Reverse Filtration Filter (MRFF). The MRFF (modified original mixed media filter) is isolated from the potable water system and is used to filter the reverse filtration water from the microfiltration units and the backflush discharge from the strainers. This waste filtrate water is monitored for chlorine residual and chemically de-chlorinated before being discharged into the Little Beaver River.

After being filtered, the treated water is discharged into a common header where it is chlorinated (post-chlorination) prior to being drawn by three (3) high lift vertical turbine pumps (2 duty, 1 standby) and pumped through the ultraviolet disinfection system. The ultraviolet system consists of three (3) Trojan UV Reactors (2 duty, 1 standby) which provide 100% treatment capacity prior to delivery to the Town's distribution system. Ultraviolet is the method of disinfection in which ultraviolet irradiation is used to inactivate target organisms in the water source and is the primary disinfection used at the Thornbury WTP.

Control of the high lift pumps is via level in the 747 m³ elevated storage tank located on Victoria Street in Thornbury.

The distribution system consists of approximately 120 kilometers of watermain ranging in size from 50mm to 400mm. Distribution facilities consist of an elevated tank, 6 booster



stations, 2 in-ground reservoirs complete with booster stations, 2 grade level reservoirs and 1 standpipe.

Thornbury Water Tower

An elevated storage tank is located on Victoria Street in Thornbury and is referred to as the Thornbury Water Tower. This Tower has a capacity of 747 m³. The Tower level supplies water pressure to the 10th Line Booster Station, Thornbury Reservoir, Camperdown Court Booster Station and Arrowhead Road Booster Station.

10th Line Booster Station

A booster station and re-chlorination facility is located at the 10th Concession and Highway No. 26 and is referred to as the 10th Line Booster Station. The water pressure at this station is boosted for higher distribution pressures and volume to provide fire flows throughout the Lora Bay Service Area. 100% standby power is available at this station. The firm capacity at this station is 66.67 l/s.

Thornbury Reservoir

A treated water reservoir, booster station and re-chlorination facility is located at 1 Grey Street South, Unit 1 in Thornbury and is referred to as the Thornbury Reservoir. The Thornbury Reservoir is equipped with three centrifugal pumps, re-chlorination equipment and 100% standby power. The firm capacity at this station is 150 l/s.

Camperdown Reservoir

A treated water reservoir, pumphouse and re-chlorination facility is located at 109 Camperdown Road and is referred to as the Camperdown Reservoir. This in-ground reservoir and booster station is equipped with two centrifugal operating pumps, one centrifugal fire pump, re-chlorination equipment and 100% standby power. The firm capacity to the upper zone is 12.3 l/s.

Camperdown Court Booster Station

A booster pumping station is located at 103 Camperdown Court and is referred to as the Camperdown Court Booster Station. This booster station is equipped with two centrifugal pumps with standby power supplied by the Camperdown Reservoir. The firm capacity at this station is 85 l/s.

Wards Road Booster Station

A booster station is located at 153 Wards Road and is referred to as the Wards Road Booster Station. This booster station is equipped with two centrifugal pumps. This station is equipped with 100% standby power. The firm capacity at this station is 16 l/s.



Arrowhead Road Booster Station

A booster station is located at 122 Arrowhead Road and is referred to as the Arrowhead Road Booster Station. This station is equipped with three vertical turbine pumps, re-chlorination equipment and 40% standby power. Provisions were made through piping and valving to reverse the flow of water from the Craigeith Service Area to the Camperdown and Thornbury Service Areas. The firm capacity at this station is 40 l/s.

Happy Valley Reservoirs

Two reservoirs are located at 136 Happy Valley Road and are referred to as the Happy Valley Road Reservoirs. These reservoirs have a combined capacity of 5,000 m³.

Happy Valley Road Booster Station

A booster pumping station is also located at 136 Happy Valley Road and is referred to as the Happy Valley Road Booster Station. This station is equipped with two pumps and re-chlorination equipment. The firm capacity of this station is 5.35 l/s.

Swiss Meadows Standpipe

A 536 m³ standpipe is located at 154 Scandia Lane above the Swiss Meadows subdivision.

Mountain Road Booster Station

A booster pumping station is located at 795930 at the intersection of Grey Road 19 and Grey Road 21 and is referred to as the Mountain Road Booster. This station is equipped with two in-line water booster pumps and re-chlorination equipment. This station has a firm capacity of 46 l/s. The water supply for this station is received from the Town of Collingwood.

List all water treatment chemicals used over this reporting period

Chlorine (liquefied gas)
Sodium Hypochlorite (12%)
Citric Acid
Sodium Hydroxide
Calcium Thiosulphate

Were any significant expenses incurred to?

- Install required equipment
- Repair required equipment
- Replace required equipment



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

Chlorine Pumps & Analyzers Replacement

Replacement of chlorine pumps and chlorine analyzers

Expended this year: \$52,931

Programmable Logic Control (PLC) Panel Replacement at Thornbury and Camperdown Reservoirs, Happy Valley Booster Station and Thornbury WTP

Replacement of PLC Panels at the Thornbury and Camperdown Reservoirs, the Happy Valley Booster Station and the Thornbury Water Treatment Plant that have reached the end of their useful lives.

Expended this year: \$66,136

Water System Pressure Readings

Installation of pressure monitors to provide information that will allow Operators to correct deficiencies with Pressure Reducing Valves (PRVs) in specific areas of Town

Expended this year: \$6,922

Water System Supervisory Control And Data Acquisition (SCADA) Improvements

To improve and expand the existing SCADA system, including new software and replacement hardware

Expended this year: \$6,094

Water Utility Dump Trailer Replacement

Replacement of a utility dump trailer that reached the end of its useful life

Expended this year: \$9,458.59

Water Vehicle Replacement

Replacement of existing vehicles that has reached the end of their useful life

Expended this year: \$57,850



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

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
August 23, 2017	Total Coliform	320	cfu/100 mL	Flushed and collected two consecutive sets of samples	August 25, 2017
October 10, 2017	Free Chlorine Residual	0.03	mg/L	Flushing and residual restored	October 10, 2017

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

	Number of Samples	Range of E.Coli Or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	52	0 to 83	0 to 1080		
Treated	52	0	0	52	0 to 1
Distribution	557	0	0 to 320	411	0 to >2000

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

	Number of Grab Samples	Range of Results (min #)-(max #)	Unit of Measure
Turbidity			
Treated	8760	0.025 to 0.574	NTU
Rack 1	8760	0.014 to 0.480	NTU
Rack 2	8760	0.016 to 0.352	NTU
Rack 3	8760	0.015 to 0.492	NTU
Chlorine			
Finish	8760	1.26 to 1.94	mg/L
Thornbury Reservoir	8760	1.063 to 2.00	mg/L
10 th Line Booster Station	8760	1.19 to 2.37	mg/L
Arrowhead Road Booster Station	8760	1.24 to 2.01	mg/L
Arrowhead Road Booster Station By-pass	8760	1.13 to 1.83	mg/L
Happy Valley Booster Station	8760	0.79 to 2.49	mg/L
Camperdown Reservoir Upper Zone	8760	1.07 to 2.39	mg/L

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



Camperdown Influent / Effluent	8760	1.23 to 2.50	mg/L
Mountain Road Booster Station	8760	1.13 to 1.48	mg/L
Distribution	6467	0.03 to 2.36	mg/L
Fluoride (If the DWS provides fluoridation)			

Summary of additional testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
Municipal Drinking Water License Number: 111-101 Issue Number: 2	Suspended Solids			

*** Please see attached additional sampling results for Trihalomethanes, Haloacetic Acids, Process Wastewater Suspended Solids, Nitrate, Nitrite, pH & Alkalinity and Microcystin**

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	March 20, 2017	0.08	ug/L	No
Arsenic	March 20, 2017	0.4	ug/L	No
Barium	March 20, 2017	13.7	ug/L	No
Boron	March 20, 2017	12	ug/L	No
Cadmium	March 20, 2017	0.003	ug/L	No
Chromium	March 20, 2017	0.62	ug/L	No
*Lead			ug/L	No
Mercury	March 20, 2017	0.01	ug/L	No
Sodium	March 21, 2016	5.10	mg/L	No
Uranium	March 20, 2017	0.184	ug/L	No
Fluoride	March 23, 2015	0.11	mg/L	No
Nitrite	December 4, 2017	0.003	mg/L	No
Nitrate	December 4, 2017	0.260	mg/L	No

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

Summary of lead testing under Schedule 15.1 during this reporting period

(applicable to the following drinking water systems; large municipal residential systems, small municipal residential systems, and non-municipal year-round residential systems)

Location Type	Number of Samples	Range of Lead Results (min#) – (max #)	Unit of Measure	Number of Exceedances
Plumbing	N/A			
Distribution	4	0.01 to 0.06	ug/L	0

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	March 20, 2017	0.02	ug/L	No
Atrazine + N-dealkylated metabolites	March 20, 2017	0.01	ug/L	No
Benzene	March 20, 2017	0.32	ug/L	No
Benzo(a)pyrene	March 20, 2017	0.004	ug/L	No
Bromoxynil	March 20, 2017	0.33	ug/L	No
Carbaryl	March 20, 2017	0.05	ug/L	No
Carbofuran	March 20, 2017	0.01	ug/L	No
Carbon Tetrachloride	March 20, 2017	0.16	ug/L	No
Chlorpyrifos	March 20, 2017	0.02	ug/L	No
Diazinon	March 20, 2017	0.02	ug/L	No
Dicamba	March 20, 2017	0.20	ug/L	No
1,2-Dichlorobenzene	March 20, 2017	0.41	ug/L	No
1,4-Dichlorobenzene	March 20, 2017	0.36	ug/L	No
1,2-Dichloroethane	March 20, 2017	0.35	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	March 20, 2017	0.33	ug/L	No
Dichloromethane	March 20, 2017	0.35	ug/L	No
2-4 Dichlorophenol	March 20, 2017	0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	March 20, 2017	0.19	ug/L	No
Diclofop-methyl	March 20, 2017	0.40	ug/L	No
Dimethoate	March 20, 2017	0.03	ug/L	No
Diquat	March 20, 2017	1	ug/L	No
Diuron	March 20, 2017	0.03	ug/L	No
Glyphosate	March 20, 2017	1	ug/L	No
Malathion	March 20, 2017	0.02	ug/L	No
Metolachlor	March 20, 2017	0.01	ug/L	No
Metribuzin	March 20, 2017	0.02	ug/L	No
Monochlorobenzene	March 20, 2017	0.3	ug/L	No
Paraquat	March 20, 2017	1	ug/L	No
Pentachlorophenol	March 20, 2017	0.15	ug/L	No
Phorate	March 20, 2017	0.01	ug/L	No
Picloram	March 20, 2017	1	ug/L	No



Polychlorinated Biphenyls(PCB)	March 20, 2017	0.04	ug/L	No
Prometryne	March 20, 2017	0.03	ug/L	No
Simazine	March 20, 2017	0.01	ug/L	No
THM (NOTE: show latest annual average)	October 2, 2017	40	ug/L	No
Terbufos	March 20, 2017	0.01	ug/L	No
Tetrachloroethylene	March 20, 2017	0.35	ug/L	No
2,3,4,6-Tetrachlorophenol	March 20, 2017	0.20	ug/L	No
Triallate	March 20, 2017	0.01	ug/L	No
Trichloroethylene	March 20, 2017	0.44	ug/L	No
2,4,6-Trichlorophenol	March 20, 2017	0.25	ug/L	No
Trifluralin	March 20, 2017	0.02	ug/L	No
Vinyl Chloride	March 20, 2017	0.17	ug/L	No

List any Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards.

Parameter	Result Value	Unit of Measure	Date of Sample
Trihalomethanes	53	ug/L	July 4, 2017
Trihalomethanes	52	ug/L	October 2, 2017
Trihalomethanes	50	ug/L	October 2, 2017

Water Quality Report 2017

Sample for: Trihalomethanes - Treated (ug/L)

Date	# of Samples	Location	Results / Range
03-Jan-17	1	Camperdown Reservoir	27
3-Jan-17	1	Swiss Meadows Standpipe	40
05-Apr-17	1	Camperdown Reservoir	28
05-Apr-17	1	Swiss Meadows Standpipe	33
04-Jul-17	1	Blueski George Crescent SS (026)	40
04-Jul-17	1	Swiss Meadows Standpipe	53
02-Oct-17	1	Blueski George Crescent SS (026)	52
02-Oct-17	1	Swiss Meadows Standpipe	50
		Annual Average	40

Calculating Trihalomethane Running Annual Average

Quarter	THM Sample Result # 1 ug/L	THM Sample Result # 2 ug/L	THM Sample Result # 3 ug/L	THM Sample Result # 4	Quarterly Average ug/L
October 1 - December 31, 2015	36	53			22.25
January 1 - March 31, 2016	28	44	26	35	33.25
April 1 - June 30, 2016	25	49			18.5
July 1 - September 30, 2016	50	70			30
RAA # 1 Calculated Average					26
October 1 - December 31, 2016	36	53			22.25
January 1 - March 31, 2017	27	40			16.75
April 1 - June 30, 2017	28	33			15.25
July 1 - September 30, 2017	40	53			23.25
RAA # 2 Calculated Average					19

Water Quality Report 2017

Sample for: Total Haloacetic Acids (ug/L)

Date	# of Samples	Location	Results / Range
06-Mar-17	1	Swiss Meadows Standpipe	25.5
03-Apr-17	1	Camperdown Reservoir	16.3
03-Apr-17	1	Swiss Meadows Standpipe	24.9
04-Jul-17	1	Blueski George Crescent SS (026)	16.5
04-Jul-17	1	Swiss Meadows Standpipe	29.8
02-Oct-17	1	Blueski George Crescent SS (026)	27.4
02-Oct-17	1	Swiss Meadows Standpipe	31.9

Calculating Haloacetic Acid Running Annual Average

Quarter	HAA Sample Result # 1 ug/L	HAA Sample Result # 2 ug/L	Quarterly Average
January 1 - March 31, 2017	25.5		6.375
April 1 - June 30, 2017	16.3	24.9	10.3
July 1 - September 30, 2017	16.5	29.8	11.575
October 1 - December 31, 2017	27.4	31.9	14.825

Water Quality Report 2017

Sample for: Process Waste Water Total Suspended Solids (mg/L)

Date	# of Samples	Location	Results / Range
January 3	1	SGS Lakefield Laboratory	7
February 6	1	SGS Lakefield Laboratory	6
March 6	1	SGS Lakefield Laboratory	7
April 3	1	SGS Lakefield Laboratory	<2
May 1	1	SGS Lakefield Laboratory	9
June 26	1	SGS Lakefield Laboratory	<2
July 4	1	SGS Lakefield Laboratory	3
August 8	1	SGS Lakefield Laboratory	6
September 5	1	SGS Lakefield Laboratory	7
October 2	1	SGS Lakefield Laboratory	5
November 6	1	SGS Lakefield Laboratory	8
December 4	1	SGS Lakefield Laboratory	4

Annual Average

5

Water Quality Report 2017

Sample for: Nitrate - Raw & Treated (mg/L)

Date	# of Samples	Location	Results / Range
03-Jan-17	1	Thornbury WTP - Raw	0.270
03-Jan-17	1	Little Beaver - Source Protection	1.850
03-Jan-17	1	Big Head River - Source Protection	1.730
03-Jan-17	1	Beaver River - Source Protection	1.140
03-Jan-17	1	Indian Brook	2.990
03-Jan-17	1	Thornbury WTP - Treated	0.292
06-Feb-17	1	Thornbury WTP - Raw	0.261
06-Feb-17	1	Thornbury WTP - Treated	0.275
06-Mar-17	1	Thornbury WTP - Raw	0.307
06-Mar-17	1	Little Beaver River - Source Protection	1.540
06-Mar-17	1	Big Head River - Source Protection	1.450
06-Mar-17	1	Beaver River - Source Protection	0.856
06-Mar-17	1	Indian Brook	2.550
06-Mar-17	1	Thornbury WTP - Treated	0.343
03-Apr-17	1	Thornbury WTP - Raw	0.286
03-Apr-17	1	Little Beaver River - Source Protection	0.898
03-Apr-17	1	Big Head River - Source Protection	0.998
03-Apr-17	1	Beaver River - Source Protection	0.689
03-Apr-17	1	Indian Brook	2.070
01-May-17	1	Thornbury WTP - Raw	0.342
01-May-17	1	Thornbury WTP - Treated	0.323
05-Jun-17	1	Thornbury WTP - Treated	0.259
26-Jun-17	1	Thornbury WTP - Raw	0.261
04-Jul-17	1	Thornbury WTP - Treated	0.261
04-Jul-17	1	Thornbury WTP - Raw	0.256
04-Jul-17	1	Little Beaver River - Source Protection	1.200
04-Jul-17	1	Big Head River - Source Protection	0.619
04-Jul-17	1	Beaver River - Source Protection	0.166
04-Jul-17	1	Indian Brook	1.380
08-Aug-17	1	Thornbury WTP - Treated	0.254
08-Aug-17	1	Thornbury WTP - Raw	0.252
05-Sep-17	1	Thornbury WTP - Treated	0.243
05-Sep-17	1	Thornbury WTP - Raw	0.236
02-Oct-17	1	Thornbury WTP - Treated	0.239
02-Oct-17	1	Thornbury WTP - Raw	0.230
2-Oct-17	1	Little Beaver River - Source Protection	0.207
2-Oct-17	1	Big Head River - Source Protection	0.589
2-Oct-17	1	Beaver River - Source Protection	0.233
2-Oct-17	1	Indian Brook	0.563
6-Nov-17	1	Thornbury WTP - Raw	0.244
6-Nov-17	1	Thornbury WTP - Treated	0.256
4-Dec-17	1	Thornbury WTP - Raw	0.254
4-Dec-17	1	Little Beaver River - Source Protection	1.180
4-Dec-17	1	Big Head River - Source Protection	1.150
4-Dec-17	1	Beaver River - Source Protection	0.668
4-Dec-17	1	Indian Brook	1.790
4-Dec-17	1	Thornbury WTP - Treated	0.260

Water Quality Report 2017

Sample for: Nitrite - Raw & Treated (mg/L)

Date	# of Samples	Location	Results / Range
03-Jan-17	1	Thornbury WTP - Raw	0.003
03-Jan-17	1	Little Beaver River - Source Protection	0.003
03-Jan-17	1	Big Head River - Source Protection	0.003
03-Jan-17	1	Beaver River - Source Protection	0.004
03-Jan-17	1	Indian Brook	0.003
03-Jan-17	1	Thornbury WTP - Treated	0.003
06-Feb-17	1	Thornbury WTP - Raw	0.003
06-Feb-17	1	Thornbury WTP - Treated	0.003
06-Mar-17	1	Thornbury WTP - Raw	0.003
06-Mar-17	1	Little Beaver River - Source Protection	0.003
06-Mar-17	1	Big Head River - Source Protection	0.003
06-Mar-17	1	Beaver River - Source Protection	0.003
06-Mar-17	1	Indian Brook	0.003
06-Mar-17	1	Thornbury WTP - Treated	0.003
03-Apr-17	1	Thornbury WTP - Raw	0.003
03-Apr-17	1	Little Beaver River - Source Protection	0.003
03-Apr-17	1	Big Head River - Source Protection	0.003
03-Apr-17	1	Beaver River - Source Protection	0.030
03-Apr-17	1	Indian Brook	0.004
01-May-17	1	Thornbury WTP - Raw	0.003
01-May-17	1	Thornbury WTP - Treated	0.003
05-Jun-17	1	Thornbury WTP - Treated	0.003
26-Jun-17	1	Thornbury WTP - Raw	0.003
04-Jul-17	1	Thornbury WTP - Treated	0.003
04-Jul-17	1	Thornbury WTP - Raw	0.003
04-Jul-17	1	Little Beaver River - Source Protection	0.012
04-Jul-17	1	Big Head River - Source Protection	0.003
04-Jul-17	1	Beaver River - Source Protection	0.003
04-Jul-17	1	Indian Brook	0.003
08-Aug-17	1	Thornbury WTP - Raw	0.003
08-Aug-17	1	Thornbury WTP - Treated	0.003
05-Sep-17	1	Thornbury WTP - Treated	0.003
05-Sep-17	1	Thornbury WTP - Raw	0.003
2-Oct-17	1	Thornbury WTP - Treated	0.003
2-Oct-17	1	Thornbury WTP - Raw	0.003
2-Oct-17	1	Little Beaver River - Source Protection	0.003
2-Oct-17	1	Big Head River - Source Protection	0.003
2-Oct-17	1	Beaver River - Source Protection	0.003
2-Oct-17	1	Indian Brook	0.003
6-Nov-17	1	Thornbury WTP - Raw	0.003
6-Nov-17	1	Thornbury WTP - Treated	0.003
4-Dec-17	1	Thornbury WTP - Raw	0.003
4-Dec-17	1	Little Beaver River - Source Protection	0.003
4-Dec-17	1	Big Head River - Source Protection	0.003
4-Dec-17	1	Beaver River - Source Protection	0.005
4-Dec-17	1	Indian Brook	0.003
4-Dec-17	1	Thornbury WTP - Treated	0.003

Water Quality Report 2017

Sample for: pH & Alkalinity

Date	# of Samples	Location	pH	Alkalinity
03-Jan-17	1	10th Line Water Booster Station	8.08	76
03-Jan-17	1	Camperdown Reservoir	8.03	71
03-Jan-17	1	Arrowhead Road Booster Station	8.09	70
05-Sep-17	1	Sunset Blvd. DE SS (030)	7.98	70
05-Sep-17	1	Blueski George Crescent SS (026)	8.08	71
05-Sep-17	1	Drakes Path SS (018)	8.06	75
05-Sep-17	1	Swiss Meadows Standpipe	8.16	74
18-Dec-17	1	10th Line Water Booster Station	7.91	74
18-Dec-17	1	Thornbury Reservoir	7.92	72
18-Dec-17	1	Arrowhead Road Booster Station	8.04	70
18-Dec-17	1	Swiss Meadows Standpipe	8.12	75

Water Quality Report 2017

Sample for: Microcystin

Date	# of Samples	Location	Results / Range
05-Jun-17	1	Thornbury WTP - Raw	0.1
05-Jun-17	1	Thornbury WTP - Treated	0.1
05-Jun-17	1	Swiss Meadows Standpipe	0.1
12-Jun-17	1	Thornbury WTP - Raw	0.1
12-Jun-17	1	Thornbury WTP - Treated	0.1
12-Jun-17	1	Swiss Meadows Standpipe	0.1
19-Jun-17	1	Thornbury WTP - Raw	0.1
19-Jun-17	1	Thornbury WTP - Treated	0.1
19-Jun-17	1	Swiss Meadows Standpipe	0.1
26-Jun-17	1	Thornbury WTP - Raw	0.1
26-Jun-17	1	Thornbury WTP - Treated	0.1
26-Jun-17	1	Swiss Meadows Standpipe	0.1

Ministry of the Environment

Southwestern Region
 Technical Support Section
 Water Resources
 733 Exeter Rd
 London ON N6E 1L3
 Fax: (519)873-5020
 Tel: (519) 873-5000

Ministère de l'Environnement

Direction régionale du Sud-Ouest
 Bureau du Directeur Adjoint
 733 Exeter Rd
 London ON N6E 1L3
 Télécopieur: (519)873-5020
 Tél:(519) 873-5000



July 31, 2012

John Casivell

The Corporation of the Town of The Blue Mountains
 32 Mill St P.O. Box 310, Thornbury
 The Blue Mountains, ON N0H 2P0

Dear Mr. Casivell,

RE: Permit to Take Water 2144-8WJJ5X
 230 Peel St N, Thornbury
 The Blue Mountains, County of Grey
 Reference Number 8461-8TWNPS

RECEIVED

AUG 09 2012

ENGINEERING & PUBLIC WORKS
 TOWN OF THE BLUE MOUNTAINS

Please find attached a Permit to Take Water which authorizes the withdrawal of water in accordance with the application for this Permit to Take Water, dated April 12, 2012 and signed by John Casivell.

This Permit to Take Water expires on August 31, 2022. Authorized rates and volumes of water taking are given in Table A.

Ontario Regulation 387/04 (Water Taking) requires all water takers to report daily water taking amounts to the Water Taking Reporting System (WTRS) electronic database:

<http://www.ene.gov.on.ca/envision/water/pttw.htm>. Daily water taking must be reported on a calendar year basis. If no water is taken, then a "no taking" report must be entered. Please consult the Regulation and Section 4 of this Permit for monitoring requirements.

If you have questions about reporting requirements, please call the WTRS Help Desk at 416-235-6322 (toll free: 1-877-344-2011) or by email, WTRSHelpdesk@ontario.ca. It is preferred that you submit your data directly and electronically to the WTRS. Where this is impracticable, please use the Water Taking Submission Form (included as Appendix C of the *Technical Bulletin: Permit To Take Water (PTTW) - Monitoring and Reporting of Water Takings*), which can be downloaded from the above web site, and fax your completed forms to 416-235-6549 or mail them to: Water User Reporting Section, 125 Resources Rd. Toronto, ON M9P 3V6.

Take notice that in issuing this Permit, terms and conditions pertaining to the taking of water and to the results of the taking have been imposed. The terms and conditions have been designed to allow for the development of water resources, while providing reasonable protection to existing water uses and users.

Yours truly,

Dan Dobrin
Supervisor, Water Resources
Southwestern Region

File Storage Number: SIGRBMC10.220

PERMIT TO TAKE WATER
Surface Water
NUMBER 2144-8WJJ5X

Pursuant to Section 34 of the Ontario Water Resources Act, R.S.O. 1990 this Permit To Take Water is hereby issued to:

The Corporation of the Town of The Blue Mountains
32 Mill St P.O. Box 310, Thornbury
The Blue Mountains, Ontario, N0H 2P0
Canada

For the water
taking from: Georgian Bay

Located at: 230 Peel St N Thornbury
The Blue Mountains, County of Grey

For the purposes of this Permit, and the terms and conditions specified below, the following definitions apply:

DEFINITIONS

- (a) "Director" means any person appointed in writing as a Director pursuant to section 5 of the OWRA for the purposes of section 34, OWRA.
- (b) "Provincial Officer" means any person designated in writing by the Minister as a Provincial Officer pursuant to section 5 of the OWRA.
- (c) "Ministry" means Ontario Ministry of the Environment.
- (d) "District Office" means the Owen Sound District Office.
- (e) "Permit" means this Permit to Take Water No. 2144-8WJJ5X including its Schedules, if any, issued in accordance with Section 34 of the OWRA.
- (f) "Permit Holder" means The Corporation of the Town of The Blue Mountains.
- (g) "OWRA " means the *Ontario Water Resources Act*, R.S.O. 1990, c. O. 40, as amended.

You are hereby notified that this Permit is issued subject to the terms and conditions outlined below:

TERMS AND CONDITIONS

1. Compliance with Permit

- 1.1 Except where modified by this Permit, the water taking shall be in accordance with the application for this Permit To Take Water, dated April 12, 2012 and signed by John Casivell, and all Schedules included in this Permit.
- 1.2 The Permit Holder shall ensure that any person authorized by the Permit Holder to take water under this Permit is provided with a copy of this Permit and shall take all reasonable measures to ensure that any such person complies with the conditions of this Permit.
- 1.3 Any person authorized by the Permit Holder to take water under this Permit shall comply with the conditions of this Permit.
- 1.4 This Permit is not transferable to another person.
- 1.5 This Permit provides the Permit Holder with permission to take water in accordance with the conditions of this Permit, up to the date of the expiry of this Permit. This Permit does not constitute a legal right, vested or otherwise, to a water allocation, and the issuance of this Permit does not guarantee that, upon its expiry, it will be renewed.
- 1.6 The Permit Holder shall keep this Permit available at all times at or near the site of the taking, and shall produce this Permit immediately for inspection by a Provincial Officer upon his or her request.
- 1.7 The Permit Holder shall report any changes of address to the Director within thirty days of any such change. The Permit Holder shall report any change of ownership of the property for which this Permit is issued within thirty days of any such change. A change in ownership in the property shall cause this Permit to be cancelled.

2. General Conditions and Interpretation

2.1 Inspections

The Permit Holder must forthwith, upon presentation of credentials, permit a Provincial Officer to carry out any and all inspections authorized by the OWRA, the *Environmental Protection Act*, R.S.O. 1990, the *Pesticides Act*, R.S.O. 1990, or the *Safe Drinking Water Act*, S. O. 2002.

2.2 Other Approvals

The issuance of, and compliance with this Permit, does not:

- (a) relieve the Permit Holder or any other person from any obligation to comply with any other applicable legal requirements, including the provisions of the *Ontario Water Resources Act*, and

the *Environmental Protection Act* , and any regulations made thereunder; or

(b) limit in any way any authority of the Ministry, a Director, or a Provincial Officer, including the authority to require certain steps be taken or to require the Permit Holder to furnish any further information related to this Permit.

2.3 Information

The receipt of any information by the Ministry, the failure of the Ministry to take any action or require any person to take any action in relation to the information, or the failure of a Provincial Officer to prosecute any person in relation to the information, shall not be construed as:

(a) an approval, waiver or justification by the Ministry of any act or omission of any person that contravenes this Permit or other legal requirement; or

(b) acceptance by the Ministry of the information's completeness or accuracy.

2.4 Rights of Action

The issuance of, and compliance with this Permit shall not be construed as precluding or limiting any legal claims or rights of action that any person, including the Crown in right of Ontario or any agency thereof, has or may have against the Permit Holder, its officers, employees, agents, and contractors.

2.5 Severability

The requirements of this Permit are severable. If any requirements of this Permit, or the application of any requirements of this Permit to any circumstance, is held invalid or unenforceable, the application of such requirements to other circumstances and the remainder of this Permit shall not be affected thereby.

2.6 Conflicts

Where there is a conflict between a provision of any submitted document referred to in this Permit, including its Schedules, and the conditions of this Permit, the conditions in this Permit shall take precedence.

3. Water Takings Authorized by This Permit

3.1 Expiry

This Permit expires on **August 31, 2022**. No water shall be taken under authority of this Permit after the expiry date.

3.2 Amounts of Taking Permitted

The Permit Holder shall only take water from the source, during the periods and at the rates and amounts of taking specified in Table A. Water takings are authorized only for the purposes specified in Table A.

Table A

	Source Name / Description:	Source: Type:	Taking Specific Purpose:	Taking Major Category:	Max. Taken per Minute (litres):	Max. Num. of Hrs Taken per Day:	Max. Taken per Day (litres):	Max. Num. of Days Taken per Year:	Zone/ Easting/ Northing:
1	Georgian Bay	Lake	Municipal	Water Supply	14,400	24	18,662,400	365	17 543003 4935254
						Total Taking:	18,662,400		

4. Monitoring

4.1 The Permit Holder shall maintain a record of all water takings. This record shall include the dates and times of water takings, and the total measured amounts of water pumped per day for each day that water is taken under the authorization of this Permit. The Permit Holder shall keep all required records up to date and available at or near the site of the taking and shall produce the records immediately for inspection by a Provincial Officer upon his or her request. The total amounts of water pumped shall be measured using a flow measuring device.

5. Impacts of the Water Taking

5.1 Notification

The Permit Holder shall immediately notify the local District Office of any complaint arising from the taking of water authorized under this Permit and shall report any action which has been taken or is proposed with regard to such complaint. The Permit Holder shall immediately notify the local District Office if the taking of water is observed to have any significant impact on the surrounding waters. After hours, calls shall be directed to the Ministry's Spills Action Centre at 1-800-268-6060.

5.2 For Surface-Water Takings

The taking of water (including the taking of water into storage and the subsequent or simultaneous withdrawal from storage) shall be carried out in such a manner that streamflow is not stopped and is not reduced to a rate that will cause interference with downstream uses of water or with the natural functions of the stream.

6. Director May Amend Permit

The Director may amend this Permit by letter requiring the Permit Holder to suspend or reduce the taking to an amount or threshold specified by the Director in the letter. The suspension or reduction in taking shall be effective immediately and may be revoked at any time upon notification by the Director. This condition does not affect your right to appeal the suspension or reduction in taking to the Environmental Review Tribunal under the *Ontario Water*

Resources Act , Section 100 (4).

The reasons for the imposition of these terms and conditions are as follows:

1. Condition 1 is included to ensure that the conditions in this Permit are complied with and can be enforced.
2. Condition 2 is included to clarify the legal interpretation of aspects of this Permit.
3. Conditions 3 through 6 are included to protect the quality of the natural environment so as to safeguard the ecosystem and human health and foster efficient use and conservation of waters. These conditions allow for the beneficial use of waters while ensuring the fair sharing, conservation and sustainable use of the waters of Ontario. The conditions also specify the water takings that are authorized by this Permit and the scope of this Permit.

In accordance with Section 100 of the Ontario Water Resources Act, R.S.O. 1990, you may by written Notice served upon me and the Environmental Review Tribunal within 15 days after receipt of this Notice, require a hearing by the Tribunal. Section 101 of the Ontario Water Resources Act, R.S.O. 1990, as amended, provides that the Notice requiring the hearing shall state:

1. The portions of the Permit or each term or condition in the Permit in respect of which the hearing is required, and;
2. The grounds on which you intend to rely at the hearing in relation to each portion appealed.

In addition to these legal requirements, the Notice should also include:

3. The name of the appellant;
4. The address of the appellant;
5. The Permit to Take Water number;
6. The date of the Permit to Take Water;
7. The name of the Director;
8. The municipality within which the works are located;

This notice must be served upon:

*The Secretary
Environmental Review Tribunal
655 Bay Street, 15th Floor
Toronto ON
M5G 1E5
Fax: (416) 314-4506
Email: ERTTribunalsecretary@ontario.ca*

AND

*The Director, Section 34
Ministry of the Environment
733 Exeter Rd
London ON N6E 1L3
Fax: (519)873-5020*

Further information on the Environmental Review Tribunal's requirements for an appeal can be obtained directly from the Tribunal:

by telephone at (416) 314-4600

by fax at (416) 314-4506

by e-mail at www.ert.gov.on.ca

This Permit cancels and replaces Permit Number 4176-7DJJZG, issued on 2008/04/28 12:00:00 AM.

Dated at London this 31st day of July, 2012.

**Dan Dobrin
Director, Section 34
Ontario Water Resources Act , R.S.O. 1990**

Schedule A

This Schedule "A" forms part of Permit To Take Water 2144-8WJJ5X, dated July 31, 2012.