



Town of The Blue Mountains

Water Section Operations Update January 1, 2021 to April 30, 2021

Introduction

Ensuring the safety and quality of the Town's drinking water system is not only the responsibility of the Water Operators who operate and maintain the system but also the Members of Municipal Council and Municipal Officials who exercise decision-making authority regarding the system.

The Safe Drinking Water Act, 2002 (SDWA) includes a statutory standard of care for individuals who have oversight responsibilities for municipal drinking water systems. The SDWA does not require Municipal Officials and Councillors to be experts in drinking water but does require officials to be informed.

The purpose of this report is to provide Council with a brief overview of the Town's drinking water system and to report on water quality issues for the period of January 1, 2021 to April 30, 2021.

This report will address the following:

- System Information
- Overview of the Town's Drinking Water System
- Raw, Treated and Distribution Water Quality Data
- Staff Training
- Ministry of the Environment, Conservation and Parks (MECP) Inspection Results
- Water Treatment Plant and Water Booster Station Maintenance Summary
- Distribution System Summary
- Summary of Plant Flows
- Watermain Break Summary
- Incidents of Adverse Water Quality
- Water Quality Concerns / Resident Complaints

System Information

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
Water Treatment Subsystem Class:	Class 2 Certificate No. 1758
Water Distribution Subsystem Class:	Class 3 Certificate No. 1759
Municipal Drinking Water License:	111-101
Municipal Drinking Water Permit:	111-201

Overview of the Town's Drinking Water System

Georgian Bay is the raw water source for the Blue Mountains' Thornbury Water Treatment Plant (WTP). The WTP has the following components: intake; low lift pumping facilities; strainers; three membrane trains; clearwell for storage; high lift pumps; ultraviolet disinfection; gas chlorination; a backwash wastewater system; and, dechlorination of wastewater to the Little Beaver River.

A supplemental water supply is received from the Town of Collingwood through the Mountain Road Booster Station.

The distribution system consists of approximately 150 kilometers of water main ranging in sizes up to 400mm. Distribution facilities include an elevated tank, six booster stations, three reservoirs and one standpipe.

Raw, Treated and Distribution Water Quality Data

Ontario Regulation 170/03 specifies guidelines for the number of samples to be taken, the frequency of sampling and the actions to be taken if any of the sample results indicate adverse water quality.

Schedule 10 of Ontario Regulation 170/03 requires weekly sampling and testing for E. Coli, Total Coliform and Heterotrophic Plate Count (HPC).

Weekly samples are collected for raw and treated water from the WTP and analyzed by an accredited laboratory.

Overviews of the raw and treated sampling data for the period of January 1, 2021 to April 30, 2021 are presented in Tables 1 and 2 respectively.

Table 1 – Raw Water

Parameter	Result Range (Min-Max)	Parameter Limit
E. Coli	0 to 3	N/A
Total Coliform	0 to 98	N/A

Table 2 – Treated Water

Parameter	Result Range (Min-Max)	Parameter Limit
E. Coli	0	0
Total Coliform	0	0
HPC	0	N/A

Drinking water quality is further monitored throughout the distribution system by a comprehensive sampling and analysis program involving weekly sampling at designated sampling stations as well as reservoirs and booster stations.

An overview of the distribution sampling data for the period of January 1, 2021 to April 30, 2021 is presented in Table 3:

Table 3 – Distribution

Parameter	Number of Samples	Result Range (Min – Max)	Parameter Limit
E. Coli	172	0	0 cfu/100 mg/l
Total Coliform	172	0	0 cfu/100 mg/l
HPC	152	0 to 7	N/A

Staff Training

In accordance with Ontario Regulation 128/04, all water treatment and distribution Operators possess operating licenses appropriate to the class of the facility where they are employed. As the Town's distribution system is a Class 3 subsystem, Operators are required to complete a minimum of 26 hours of on the job practical training and 14 hours of formal Continuing Education Units (CEU) training per year.

A summary of the courses attended from January 1, 2021 to April 30, 2021 by Operators is provided in Table 4:

Table 4 – Operator Training

Operator Name	Training Course Completed
Mike Boyd	<ul style="list-style-type: none"> • Mandatory Certificate Renewal Course (2021-2023) • Water Treatment Plant Operation, Volume 1
Stephanie Cole	<ul style="list-style-type: none"> • Mandatory Certificate Renewal Course (2021-2023)
Rob Gilchrist	<ul style="list-style-type: none"> • Mandatory Certificate Renewal Course (2021-2023)
Scott Hill	<ul style="list-style-type: none"> • Mandatory Certificate Renewal Course (2021-2023)
Scott Marritt	<ul style="list-style-type: none"> • Mandatory Certificate Renewal Course (2021-2023) • Water Treatment Plant Operation, Volume 2
Don McArthur	<ul style="list-style-type: none"> • Mandatory Certificate Renewal Course (2021-2023)
Kevin McGuire	<ul style="list-style-type: none"> • Mandatory Certificate Renewal Course (2021-2023)

Ministry of the Environment, Conservation and Parks Inspection Results

A detailed inspection of the Town's drinking water system commenced on February 3, 2021 with a data request for sampling results, calibration reports, flow data, operational logs, watermain commissioning plans and other documentation . This was followed by a compliance review of the information provided.

Additional components of the inspection were completed over a two-day on-site inspection at the water treatment plant and remote stations which consisted of a review of:

- Physical inspections of the low and high-lift pumping and treatment equipment including chemical metering systems, controls and instrumentation;
- Staff interviews, and
- Audit sampling of the treated water and various booster locations

The inspection was conducted to confirm compliance with MECP legislation as well as evaluate conformance with MECP drinking water related policies and guidelines. The inspection concluded on March 18, 2021.

To measure individual drinking water system inspection results, the MECP established an inspection compliance risk framework based on the principles of the inspection.

There were two (2) non-compliances identified in the 2020-21 MECP Inspection as summarized below.

Findings:

Non-Compliance with Regulatory Requirements & Actions Required	Action(s) Required
The process wastewater discharge monitoring program and discharge quality did not comply with requirements established in the	Actions subsequently taken and procedure implemented have satisfactorily corrected the issue. No further action is required.

Municipal Drinking Water License issued under Part V of the SDWA.	
Log books were not properly maintained and/or did contain the required information.	By April 30, 2021, submit a report to the issuing officer regarding any format and procedural changes to address the log book requirements, including copies of any new log sheets adopted.

In response to the Non-Compliance with Regulatory Requirements and Actions Required, Staff initiated form formatting changes to better prompt Operators to complete all forms in full. This change was discussed at the weekly Water team meeting, reminding Staff of the importance of ensuring their initials are easily identified on all log sheets. The response was filed and accepted by MECP prior to the April 30, 2021 deadline.

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 MECP established rating methodology, The Blue Mountains' Drinking Water System received a 97.95% rating for the 2020-21 reporting period.

Water Treatment Plant and Water Booster Station Maintenance Summary

The following table provides a breakdown of the maintenance performed at the Water Treatment Plant from January 1, 2021 to April 30, 2021.

Table 5 – Water Treatment Plant and Booster Station Maintenance Summary

Maintenance Performed	Number Completed
Prepare and paint piping	1
SCADA Integrator added Clean in Place batch tanks high alarm for Citric Acid and Sodium Hydroxide	1
SCADA Integrator added compressors to SCADA trending	1
UV Reference Sensor sent to Third Party for Calibration	1
SCADA Integrator changed programming to enable raw temperature trending to retrieve from Pall system	1
Oil changed on underflow pumps # 1 and # 2	1
Third party completed repairs and annual inspection of boiler system	1
Annual inspection of fire extinguishers and emergency lighting completed by Third party	1
Lighting inventory completed for LAS Facility project	1

Maintenance Performed	Number Completed
Vibration tests completed by third party on low lift, high lift and RF pumps	1
Biannual inspection of UV units completed by third party	1
UV # 3 duty sensor sent to third party for calibration	1
Annual calibration of Hach equipment completed by third party	1
Annual calibration of chlorine analyzers completed by third party	1
Annual calibration of flow meters completed by third party	1
TSSA inspection of boiler and plumbing for new air vessel	1
Information Technology (IT) installed new servers in Pall rack to be commissioned at later date	1
SCADA Integrator completed enhancements to daily reports	1
Vibration tests completed on low and high lift pumps	1
Updated Process and Instrumentation Diagram for WTP	1
Clean in Place completed	1
Repaired module on Rack # 2 due to leak	1
Annual service completed on air compressors by third party	1
Pre-chlorinator repaired due to faulty orifice	1
Painting of pipes and floors commenced	1
Monthly Maintenance	4

Distribution System Summary

The following table provides a breakdown of the Water Meter Field Service calls for January 2021 to April 30, 2021:

Table 6 – Water Meter Field Services Summary

Nature of Call	Number of Calls
Frozen Water Meter Repairs	2

Nature of Call	Number of Calls
Replace/Repair Remote Touchpads	2
Repair Meter Other (leaks, reversed, etc.)	9
Water Meter Inspections (re-inspections, renovations, new construction)	64
Billing Verification, Hand Deliveries (notices, bills)	102
Install/Repair Radio Units	4
Customer Meetings (usage, pressure, complaints, etc.)	4
Closing Readings	215
Water Turn On	4
Plumbing Inspections	6
Meetings with Contractors, Business Owners, Site Management (Backflow requirements, unauthorized connections, losses etc.)	16

The following table provides a breakdown of the Water Distribution Work Orders completed for January 1, 2021 to April 30, 2021.

Table 7 – Distribution Work Orders

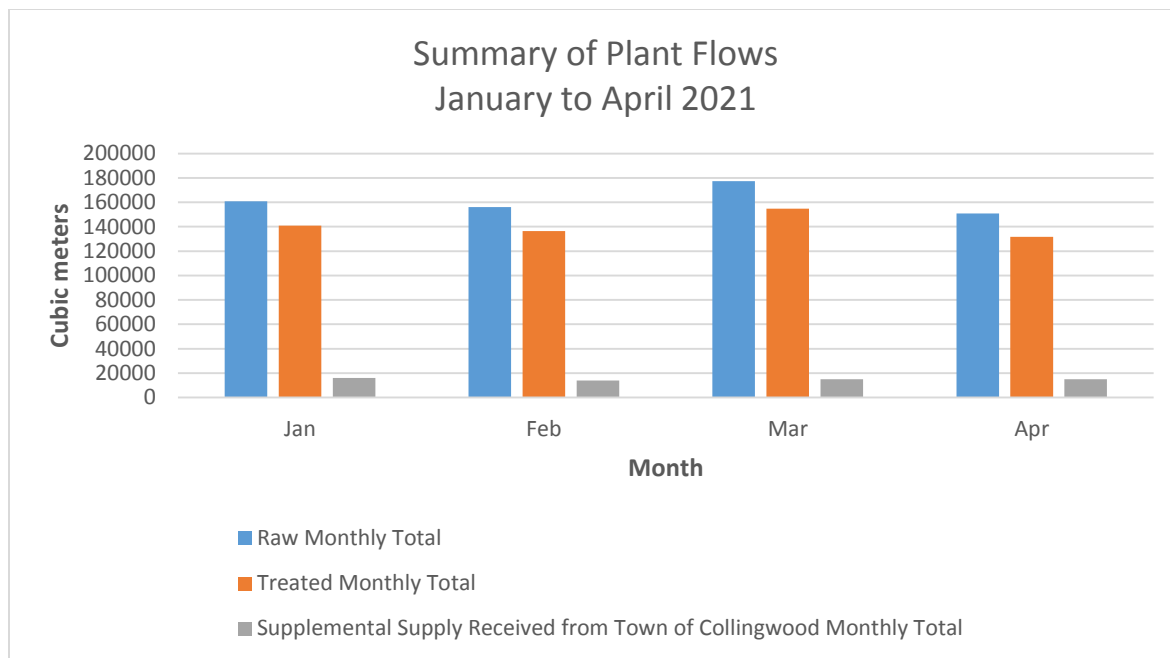
Work Order Description	Number Completed
Watermain Dig Site Clean up	4
Watermain Repairs	1
Service Connection Curb Stop Repairs – Vacuum Unit	4
Service Connection Curb Stops Repairs – Dig	2
Service Connection Repairs	5
Service Connection New Installations	2
Valves operated (Curb Stop Valves, Main Valves and Hydrant Valves)	109
Valves Repaired	1
Annual Flushing Program	111

Work Order Description	Number Completed
Dead End Flushing – Number of Hydrants Flushed	65
Automatic Flushing Stations – Weekly checks	273
Automatic Flushing Stations – Winterizing or repairs	7
Fire Hydrant Repairs from Inspections / Winterized	12
Snow Removal from Hydrants – Number of Days	10.5 days
GPS Unit – Number of Curb Stops Located	547
Water and Sewer locates completed	628
Pressure Reducing Valve Inspections or Repairs	45
Air Relief Inspections or Repairs	75
Meter and Valve Chamber Inspections or Repairs	30
Confined Space Entries	6
Locating Curb Stops for Leak Detection Survey	223

Summary of Plant Flows

A summary of the WTP Raw, Treated and supplemental flow supply received from the Town of Collingwood is presented in Graph 1:

Graph 1:



Watermain Break Summary

Watermain breaks are typically reported by the public, Town Staff or discovered during visual inspections by Operators. In most instances, watermain breaks are repaired by Operators and, at times, with the assistance of outside contractors or Staff from the Town's Roads Department.

For the period of January 1, 2021 to April 30, 2021, there was (1) one watermain break as summarized below:

On January 23, 2021 a resident reported a watermain break on Cameron Street. The cause of the break was determined to be improper bedding between a 10" drain over top of the watermain as well as large rocks. Affected residents were notified and the watermain repair was completed January 26, 2021.

Incidents of Adverse Water Quality

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

The Town's drinking water system is operated in accordance with Ontario Regulation 170/03 and Operators follow the direction of this regulation when dealing with incidents of adverse drinking water. There were no adverse water quality incidents for the period of January 1, 2021 to April 30, 2021.

Water Quality Concerns / Resident Complaints

Staff record information relating to the water quality issues on the Resident Water Quality Concern Form. If required, Operators attend the location of concern to collect samples or assess the nature of the concern.

The ongoing analysis of the water quality data is useful in determining if the water quality is changing throughout the distribution system over time. As an example, taste and odor complaints may indicate that the watermain in an area is deteriorating.

A summary of the water quality concerns from residents received during the period of January 1, 2021 to April 30, 2021 is included in Table 8 below:

Table 8 – Water Quality Concerns

Water Quality Concern	Date(s)	Number of Occurrences	Resolution / Comment
Low Pressure	January 7, 2021 April 3, 2021	2	Low pressure coincided with bulk water filling at 10 th Line Booster Station Internal plumbing
Pink Water	February 8, 2021	1	Bacteriological sample collected and returned with 0 EC/TC Pink water in toilet bowl likely resulting from serratia marcescens
Odour	January 27, 2021	1	Internal plumbing
Taste / Overall Water Quality	April 14, 2021	1	Bacteriological sample collected and returned with 0 EC/TC/HPC