



**Ontario Clean Water Agency**  
**Agence Ontarienne Des Eaux**

Haileybury Drinking Water System

# 2022 ANNUAL/SUMMARY REPORT

Prepared by the Ontario Clean Water Agency  
on behalf of the City of Temiskaming Shores



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## INTRODUCTION

Municipalities throughout Ontario are required to comply with Ontario Regulation 170/03 made under the *Safe Drinking Water Act* (SDWA) since June 2003. The Act was passed following recommendations made by Commissioner O'Conner after the Walkerton Inquiry. The Act's purpose is to protect human health through the control and regulation of drinking-water systems. O. Reg. 170/03 regulates drinking water testing, use of licensed laboratories, treatment requirements and reporting requirements.

O. Reg. 170/03 requires the owner to produce an Annual Report, under Section 11. This report must include the following:

1. Description of system and chemical(s) used
2. Summary of any adverse water quality reports and corrective actions
3. Summary of all required testing
4. Description of any major expenses incurred to install, repair or replace equipment

This Annual Report must be completed by February 28 of each year.

The regulation also requires a Summary Report which must be presented and accepted by Council by March 31 of each year for the preceding calendar year reporting period.

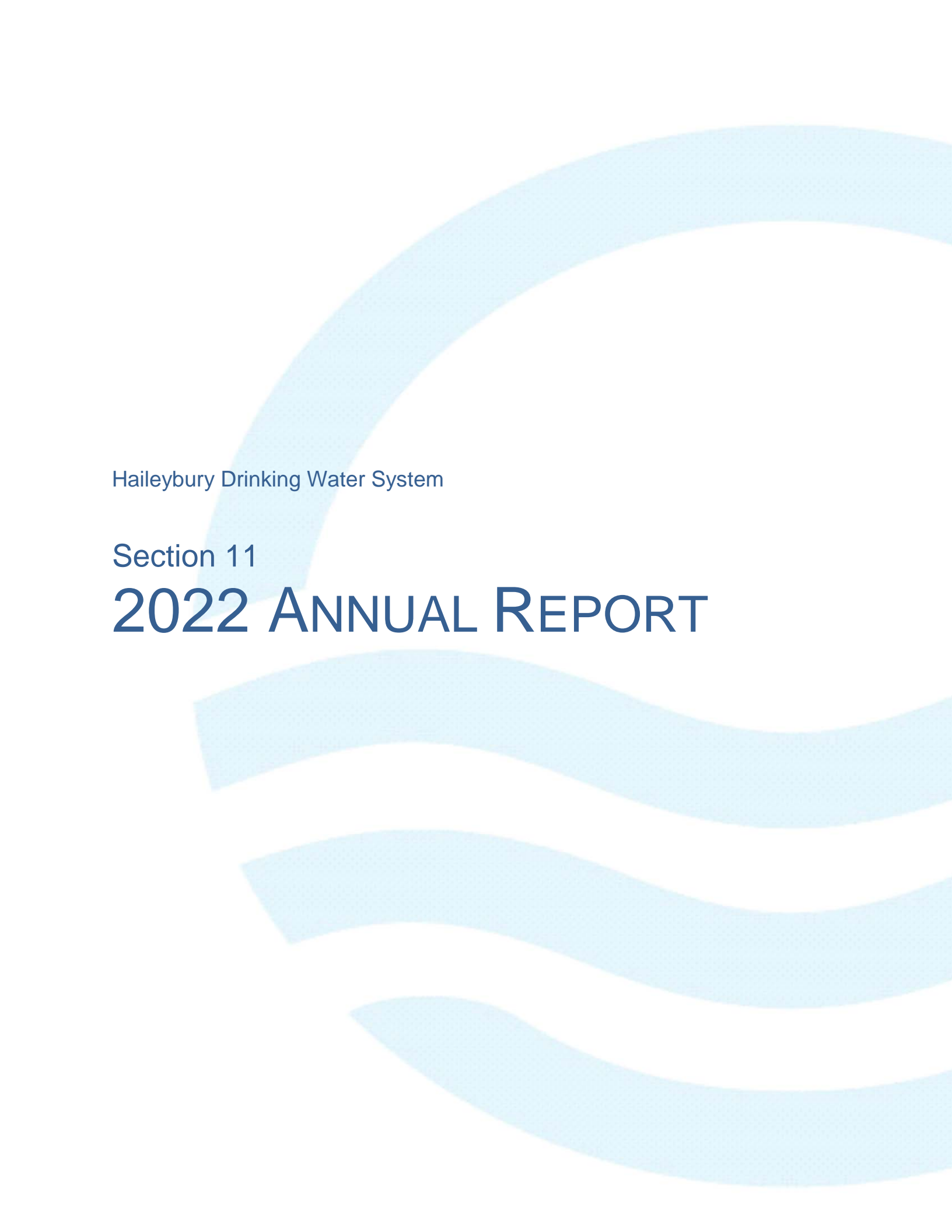
The report must list the requirements of the Act, its regulations, the system's Drinking Water Works Permit (DWWP), Municipal Drinking Water Licence (MDWL), Certificate of Approval (if applicable), and any regulatory requirement the system failed to meet during the reporting period. The report must also specify the duration of the failure, and for each failure referred to, describe the measures that were taken to correct the failure.

The *Safe Drinking Water Act*, 2002 and the drinking water regulations can be viewed at the following website: <http://www.e-laws.gov.on.ca>.

To enable the Owner to assess the rated capacity of their system to meet existing and future planned water uses, the following information is also required in the report.

1. A summary of the quantities and flow rates of water supplied during the reporting period, including the monthly average and the maximum daily flows.
2. A comparison of the summary to the rated capacity and flow rates approved in the systems approval, drinking water works permit or municipal drinking water licence or a written agreement if the system is receiving all its water from another system under an agreement.

The reports have been prepared by the Ontario Clean Water Agency (OCWA) on behalf of the Owner and presented to council as the 2022 Annual/Summary Report.



Haileybury Drinking Water System

Section 11

# 2022 ANNUAL REPORT



## Section 11 - ANNUAL REPORT

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### 1.0 INTRODUCTION

<b>Drinking-Water System Name</b>	<b>Haileybury Drinking Water System</b>
<b>Drinking-Water System Number</b>	210000309
<b>Drinking-Water System Owner</b>	The Corporation of the City of Temiskaming Shores
<b>Drinking-Water System Category</b>	Large Municipal, Residential System
<b>Reporting Period</b>	January 1, 2022 to December 31, 2022

**Does your Drinking-Water System serve more than 10,000 people?** No

**Is your annual report available to the public at no charge on a web site on the Internet?**

Yes at: <http://www.temiskamingshores.ca/en/index.asp>

**Location where Report required under O. Reg. 170/03 Schedule 22 will be available for inspection:**

City of Temiskaming Shores  
325 Farr Drive, P.O. Box 2050  
Haileybury, ON P0J 1K0

### ***Drinking-Water Systems that receive drinking water from the Haileybury Drinking Water System***

The Haileybury Drinking Water System provides all of its drinking water to the communities of Haileybury and North Cobalt within the City of Temiskaming Shores.

### ***The Annual Report was not provided to any other Drinking Water System Owners***

The Ontario Clean Water Agency prepared the 2022 Annual/Summary Report for the Haileybury Drinking Water System and provided a copy to the system owner; the City of Temiskaming Shores. The Haileybury Drinking Water System is a stand-alone system that does not receive water from or send water to another system.

### ***Notification to system users that the Annual Report is available for viewing is accomplished through:***

- Notice on the city’s Facebook page
- Notice in the local newspaper



## **2.0 HAILEYBURY DRINKING WATER SYSTEM (DWS No. 210000309)**

The Haileybury Drinking Water System is owned by the Corporation of the City of Temiskaming Shores and consists of a Class 3 water treatment subsystem and a Class 2 water distribution subsystem. It is a surface water system that services the communities of Haileybury and North Cobalt. The Ontario Clean Water Agency is the accredited operating authority and is designated as the Overall Responsible Operator for both the water treatment and water distribution facilities.

### ***Raw Water Supply***

The water treatment plant, located at 322 Browning Street obtains its raw water from Lake Temiskaming. A 197 m long, 450 mm diameter raw water intake pipe extends 168 m into the lake. The intake structure is an upturned bell inside a cribbed structure. The intake is approximately 12.5 m below the low recorded water level and 2 m above the lake bottom.

Water flows into the intake structure by gravity, through two removable inlet screens and is stored in the raw water wet well. The wet well contains a heated superstructure and has a storage volume of 37.2 m<sup>3</sup>. The low lift pumping station is equipped with three low lift duty pumps; all are vertical turbine pumps which operate on an alternating basis. A magnetic flow meter is located in the water treatment plant to monitor raw water flows. The raw water is also continuously monitored for pH, turbidity and temperature.

### ***Water Treatment***

Raw water is pumped to the water treatment building where it is injected with sodium carbonate (soda ash) for pH and alkalinity adjustment and aluminum sulphate for the coagulation/flocculation process. The process water undergoes rapid mixing, flows into two flocculation basins, where polymer is added as a coagulant aid and pH is continuously monitored. It is then directed to a settling tank for clarification. The process water flows through three dual media filters consisting of anthracite and silica sand. The filter system is equipped with an automated backwash sequence, filter-to-waste capabilities, air blower and an underdrain system. The backwash wastewater and the settled solids from the settling tank are discharged to the municipal sanitary system. On-line turbidity analyzers are used to monitor the turbidity off each filter.

After filtration, the process water is chlorinated and pH adjusted with soda ash before entering the dual celled clearwell. Three high lift pumps equipped with variable frequency drives (VFDs) are located at the end of the clearwell, where a magnetic flow meter is used to measure flow on the discharge main. In a separate room, with outside access only, a gas chlorine system equipped with automatic switchover is used for post-filtration chlorination in the clearwell. The water leaving the clearwell is continuously monitored for flow, pH, turbidity and free chlorine residual as it is directed to an off-site reservoir.



### ***Water Storage***

The Niven Street reservoir is a baffled contact tank consisting of two reservoirs and one pumping chamber that provide sufficient chlorine contact time to meet CT requirements. The water in the reservoir is monitored for free chlorine residual and level to ensure primary disinfection is achieved. An ammonium sulphate dosing system is used to chloramine the treated water before being gravity fed or pumped to the distribution system by four high lift pumps equipped VFDs. The water directed to the pressure zones are continuously monitored for pH, turbidity, pressure and total chlorine residual. The gravity fed zone is continuously monitored for flow.

### ***Control System***

The Haileybury Water Treatment System is controlled by a dedicated Programmable Logic Controller (PLC) and monitored through a Control System Supervisory Control and Data Acquisition (SCADA) system. All analyzing, monitoring and control module equipment information is routed through the SCADA system for operator monitoring and control. Control of equipment can be accomplished locally using the SCADA computer located at the Haileybury water treatment plant or remotely using operator computers and cell phones. Alarm capability and set point adjustment along with trend monitoring are also available through SCADA system controls.

### ***Emergency Power***

A 250 kW diesel generator with a 2000 L fuel tank is available outside of the main water treatment plant and is capable of supplying power to the facility during power failures.

A 200 kW diesel engine generator with a 1000 L fuel tanks is located outside of the Niven Street Reservoir to provide emergency power during emergencies.

### ***Distribution System***

The Haileybury drinking water system is classified as a Large Municipal Residential Drinking Water System that provides water to a population of approximately 4,200 residents. The distribution system has approximately 1940 service connections and is comprised of various pipe materials including 4" - 12" cast iron with lead joints or ductile iron, 10" and 12" asbestos cement, and PVC with mechanical joints. There are several isolation valves to allow for the repair and maintenance of selected sections of the distribution system, one air relief valve and four pressure reducing valves. Approximately 174 fire hydrants are connected to the system to aid in fire protection.

The system consists of four pressure zones. Zone 1 is a gravity fed area in downtown Haileybury, Zone 2 is an intermediate pressure region located at higher elevations along the west side of Haileybury, Zone 3 is an controlled pressure system which is fed off of the high pressure system and is located in the central part of Haileybury and North Cobalt and Zone 4 is a



high pressure zone in North Cobalt. The water distribution piping system is continuous between the four identified pressure zones; however the various zones are isolated from each other via closed valves.

### **3.0 LIST OF WATER TREATMENT CHEMICALS USED OVER THE REPORTING PERIOD**

The following chemicals were used in the Haileybury Drinking Water System treatment process:

- Aluminum Sulphate (Alum) – Coagulation/Flocculation
- Ammonium Sulfate – Secondary Disinfection
- Chlorine Gas – Primary Disinfection
- Polyelectrolyte (Polymer) - Coagulant Aid
- Soda Ash – pH and Alkalinity Adjustment

All treatment chemicals meet AWWA and NSF/ANSI standards.

### **4.0 SIGNIFICANT EXPENSES INCURRED TO THE DRINKING WATER SYSTEM**

OCWA is committed to maintaining the assets of the drinking water system and sustains a program of scheduled inspection and maintenance activities using a computerized Work Management System (WMS).

Significant expenses incurred in the drinking water system include the following:

- Removed two Depolox 3 total chlorine residual analyzers located at the Niven Street Reservoir that monitors water entering the gravity zone and pressure zones 2/3. The analyzers were replaced with one new Hach CL17Sc with Sc4500 controller.
- Replaced pH analyzer that monitors clearwell pH,
- Replaced actuators for filters,
- Replaced faulty security key pads,
- Replaced ammonia level transmitter (reservoir),
- Replaced water feed pump head for treated chlorine analyzer,
- SAI Global Quality and Environmental Management System (QEM) surveillance and re-accreditation audits. Accreditation achieved on November 28, 2022.
- Filter 1 rehabilitation started in October 2022 and continues in 2023 (removal of false floor and replace with pour in place concrete floor, sandblast and coat filter walls, installation of a new aeration and underdrain system, installation of new filter media).

### **5.0 DETAILS ON NOTICES OF ADVERSE TEST RESULTS AND OTHER PROBLEMS REPORTED TO & SUBMITTED TO THE SPILLS ACTION CENTER**





Based on information kept on record by OCWA, sixteen (16) adverse water quality incidents were reported to the Ministry’s Spills Action Centre in 2022.

<b>Date</b>	<b>AWQI No.</b>	<b>Details</b>
February 28, 2022	157897	<p>Watermain break/repair (Category 2) occurred on 60 Cross Lake Road. in North Cobalt. Improperly disinfected water entered the main. The local Health Unit was notified and a precautionary boil water advisory (BWA) was issued for the affected area (6 houses).</p> <p>All materials were disinfected and the area flushed until an acceptable disinfection concentration was achieved (CCR = 1.23 mg/L). Repair was completed and the pressure was restored on February 28<sup>th</sup> at 1845 hours. SAC and the local MECP inspector were notified of the incident and the notification report was emailed to SAC, MOH and Owner on March 1<sup>st</sup>.</p> <p>After the repair was complete and the area was flushed, 2 sets of 3 bacti samples were collected (upstream, downstream and at the site of the break) on February 28<sup>th</sup> and March 1<sup>st</sup>. Sample results indicated no total coliforms or <i>E.coli</i>. BWA was lifted on March 3<sup>rd</sup> at approximately 0930 hours.</p> <p>Incident resolved on March 3, 2022.</p>
March 18, 2022	158023	<p>Category 2 watermain break on the corner of Morrisette Drive and Georgina Avenue in the community of Haileybury. Suspected contamination occurred when dirty water entered the main during the repair. Five (5) homes were isolated to conduct the repair. A precautionary BWA was issued by the local Health Unit for the affected homes on March 18<sup>th</sup>.</p> <p>After the repair was complete, the pressure was restored and the area was flushed as per the Ministry's Watermain Disinfection procedure. Two sets of 3 bacteriological samples were collected 24 hours apart and tested for total coliforms and <i>E.coli</i>. One sample was collected at the site of the break and two samples were collected upstream. There was no sample point downstream of the break. Samples were collected on March 18<sup>th</sup> and 19<sup>th</sup> and results indicated no total coliforms or <i>E.coli</i>. The BWA was lifted on March 21, 2022 at approximately 11:30 hours.</p> <p>Incident resolved on March 22, 2022.</p>
April 27, 2022	158263	<p>Category 2 watermain break on Albert Street in the community of Haileybury caused by a frozen pipe. Approximately 70 feet of pipe had to be replaced. Seventeen (17) homes were isolated to conduct the repair. A precautionary BWA was issued by the local Health Unit for the affected homes.</p> <p>After the repair was complete, the pressure was restored and the area was flushed as per the Ministry's Watermain Disinfection procedure. Two sets of 3 bacteriological samples were collected 24 hours apart and tested for total coliforms and <i>E.coli</i>. One sample was collected at the site of the break and</p>



Date	AWQI No.	Details
		<p>two samples were collected upstream. There was no sample point downstream of the break. Samples were collected on April 27<sup>th</sup> and 28<sup>th</sup> and results indicated no total coliforms or <i>E.coli</i>. The BWA was lifted on April 30, 2022 at approximately 1145 hours.</p> <p>Incident resolved on May 2, 2022.</p>
May 5, 2022	158330	<p>Category 2 watermain break on the corner of Rorke and View Streets in the community of Haileybury. Longitudinal break caused by water hammer and deterioration. Approximately 10 blocks (approx. 300 homes) were isolated to conduct the repair. A precautionary BWA was issued by the local Health Unit for the affected homes on May 6<sup>th</sup>.</p> <p>After the repair was complete, the pressure was restored and the area was flushed until an acceptable disinfection concentration was achieved. Two sets of 3 bacteriological samples were collected 24 hours apart and tested for total coliforms and <i>E.coli</i>. Samples were collected at the break site, upstream and downstream on May 6<sup>th</sup> and 7<sup>th</sup>. Results indicated no total coliforms or <i>E.coli</i>. The BWA was lifted on May 8, 2022 at approximately 1530 hours.</p> <p>Incident resolved on May 9, 2022.</p>
May 27, 2022	158496	<p>Category 2 watermain break at the intersection of Rorke and Elliott Streets in the community of Haileybury. Longitudinal break on a 4" main caused by water hammer and potential deterioration. Approximately 25 residents (8 homes and 1 apartment) were isolated to conduct the repair. A precautionary BWA was issued by the local Health Unit for the affected homes on May 27<sup>th</sup>.</p> <p>After the repair was complete, the pressure was restored and the area was flushed until an acceptable disinfection concentration was achieved. Two sets of 3 bacteriological samples were collected 24 hours apart and tested for total coliforms and <i>E.coli</i>. Samples were collected at the break site, upstream and downstream on May 27<sup>th</sup> and 28<sup>th</sup>. One (1) total coliform was detected in a sample collected on May 28<sup>th</sup> at 360 Rorke Ave. The adverse result was reported to MOH, SAC and the Owner (AWQI 158511).</p> <p>The BWA remained in place until 2 consecutive sets of 2 bacti samples had acceptable results.</p> <p>BWA lifted on June 6th at 10:30 AM</p>
May 29, 2022	158511	<p>May 29 - One (1) total coliform was detected in a sample collected at 260 Rorke Avenue on May 28<sup>th</sup>.</p> <p>The sample was collected in response to a category 2 watermain break</p>



Date	AWQI No.	Details
		<p>which occurred on Rorke Avenue on May 27<sup>th</sup>. Two (2) sets of 3 bacteriological samples were collected on May 29<sup>th</sup> and 31<sup>st</sup>. All results from May 29<sup>th</sup> were acceptable having zero total coliforms and <i>E. coli</i>. The second set of resamples collected on May 31<sup>st</sup> resulted in a 5 total coliforms detected at 260 Rorke Avenue.</p> <p>BWA was issued on May 27<sup>th</sup> for 8 homes and 1 apartment building and will remain in place until 2 consecutive sets of 3 bacti samples show no detectable coliforms.</p>
June 3, 2022	158577	<p>Five (5) total coliforms were detected in a sample collected at 260 Rorke Avenue on May 31<sup>st</sup>.</p> <p>The sample was a resample for AWQIs 158511 and 158496. Two (2) sets of 3 bacteriological samples were collected on May 29<sup>th</sup> and 31<sup>st</sup>. All results from May 29<sup>th</sup> were acceptable having zero total coliforms and <i>E. coli</i>. The second set of resamples collected on May 31<sup>st</sup> resulted in a 5 total coliforms at 260 Rorke Avenue. Samples were collected from an outside tap.</p> <p>BWA was issued on May 27<sup>th</sup> for 8 homes and 1 apartment building and will remain in place until 2 consecutive sets of 3 bacti samples show no detectable coliforms. Resample results collected on June 2<sup>nd</sup> and 3<sup>rd</sup> were acceptable having no total coliforms or <i>E. coli</i>.</p> <p>The BWA was lifted on June 6<sup>th</sup> at approximately 10:30 AM.</p>
July 4, 2022	158998	<p>Category 2 watermain break between 255 Rorke Avenue and 279 Rorke Avenue in the community of Haileybury. The main was isolated to replace 6 feet of pipe. The local Health Unit was notified and a precautionary BWA was issued for 30 residents on Rorke Avenue and upper Elliot Street.</p> <p>After the repair was complete the pressure was restored and the area was flushed and tested. Two sets of 3 bacteriological samples were collected (upstream, downstream and the site of the break) on July 4<sup>th</sup> and 5<sup>th</sup>. Sample results indicated no total coliforms or <i>E.coli</i> BWA was lifted on July 8, 2022 at approximately 9:30 AM.</p> <p>Resolution submitted on July 8, 2022.</p>
July 4, 2022	158997	<p>Category 2 watermain break at 408 Lakeview Ave. in the community of North Cobalt. Rock and debris entered the break site. The local Health Unit was notified and a precautionary BWA was issued for affected residents on Lakeview and Station Street. Two sets of 3 samples were collected on July 4<sup>th</sup> and 5<sup>th</sup> (upstream, downstream and near the site of the break). All results were acceptable having zero total coliforms and <i>E.coli</i>. Before lab results were received, the BWA was extended on July 7<sup>th</sup> for all residents in North Cobalt when several more category 2 waterman breaks occurred.</p>



Date	AWQI No.	Details
		<p>The BWA remained in place until July 15<sup>th</sup> at 9:45 AM. Resolution Report submitted on July 18, 2022.</p>
July 5, 2022	159012	<p>Category 2 watermain break at 144 Station Street in the community of North Cobalt. Section of Station Street was isolated and lost pressure. The local Health Unit was notified and a precautionary BWA was issued for affected residents on Station Street. Two sets of 3 samples were collected on July 5<sup>th</sup> and 6<sup>th</sup> (upstream, downstream and near the site of the break). All results were acceptable having zero total coliforms and <i>E.coli</i>. Before lab results were received, the BWA was extended on July 7<sup>th</sup> for all residents in North Cobalt when several more category 2 waterman breaks occurred.</p> <p>The BWA remained in place until July 15<sup>th</sup> at 9:45 AM. Resolution Report submitted on July 18, 2022.</p>
July 7, 2022	159062	<p>Three Category 2 watermain breaks at 390 Lakeview Avenue, on the corner of Silver Street and Cross Lake Road and the corner of Cross lake Road and Groom Drive in the community of North Cobalt (3 separate breaks occurring around the same time). Loss of pressure and rock and debris entered the break sites; suspected contamination for all events. The local Health Unit was notified and a precautionary BWA was issued for all residents in North Cobalt.</p> <p>The local Health Unit instructed that 5 samples - one upstream sample to capture all of the BWA area, 1 downstream to capture all of BWA area and 1 at each break site for a total of 5 samples. Samples were collected on July 11<sup>th</sup> and 12<sup>th</sup>.</p> <p>The sample collected at Cross Lake and Groom Dr. on July 11<sup>th</sup> at 1127 hours (CCR = 1.18 mg/L) had a result of NDOGN - no data, overgrown with non-target (AWQI 159120). The samples collected on July 12<sup>th</sup> were acceptable having zero total coliforms and <i>E.coli</i>. (Refer to AWQI No. 159120).</p> <p>The BWA remained in place until July 15<sup>th</sup> at 9:45 AM. Resolution Report submitted on July 18, 2022.</p>
July 8, 2022	159072	<p>Category 2 watermain break between at 125 Rorke Avenue in the community of Haileybury. The main was isolated to replace 3 feet of pipe. The local Health Unit was notified and a precautionary BWA was issued for 3 residents on Rorke Avenue.</p> <p>SAC phone lines were down (Roger communications outage). Called local MECP inspector. Emailed notification report to SAC asking for AWQI Number.</p> <p>After the repair was complete and the area was flushed and an acceptable disinfection concentration was achieved, two sets of 3 bacteriological samples were collected (upstream, downstream and the site of the break)</p>



Date	AWQI No.	Details
		<p>on July 11<sup>th</sup> and 12<sup>th</sup>. Sample results indicated no detectable total coliforms or <i>E.coli</i>. BWA was lifted on July 15, 2022 at approximately 9:45 AM.</p> <p>Incident resolved on July 15, 2022</p>
July 15, 2022	159120	<p>A drinking water sample collected from a hydrant at Cross Lake and Groom Drive in the community of North Cobalt in the Haileybury distribution system was reported as having a result of NDOGN - no data, overgrown with non-target. The sample was collected on July 11<sup>th</sup> at 1127 hours (CCR = 1.18 mg/L) after a watermain repair.</p> <p>A BWA was issued on July 7<sup>th</sup> for the entire community of North Cobalt after several watermain breaks occurred from July 4<sup>th</sup> to July 7<sup>th</sup>. The BWA remained in place until all samples collected in response to the breaks and an additional 2 consecutive sets of 3 bacti samples (up, down and at the site of the adverse result) had no detectable total coliforms or <i>E.coli</i>.</p> <p>A sample collected on July 13<sup>th</sup> at 1455 hours (CCR = 1.25 mg/L) from hydrant No. 128 had a result of one (1) total coliform (AWQI No. 159149). The samples collected on July 14<sup>th</sup> were acceptable having zero total coliforms and <i>E.coli</i>. (See AWQI No. 159149).</p> <p>The BWA remained in place until July 15<sup>th</sup> at 9:45 AM. Resolution Report submitted on July 18, 2022.</p>
July 15, 2022	159149	<p>A drinking water sample collected from hydrant No. 128 in the community of North Cobalt in the Haileybury distribution system was reported as having a result of one (1) total coliform. The sample was collected on July 13<sup>th</sup> at 1455 hours (CCR = 1.25 mg/L). This is a re-sample collected in response to an adverse result of NDOGN (AWQI 159120)</p> <p>A BWA was issued on July 7<sup>th</sup> for the entire community of North Cobalt after several watermain breaks occurred from July 4<sup>th</sup> to July 7<sup>th</sup>. The BWA remained in place until 2 consecutive sets of 3 bacteriological samples had no detectable coliforms. Samples collected on July 14<sup>th</sup> and 15<sup>th</sup> had no detectable total coliforms or <i>E. coli</i>.</p> <p>The Public Health Inspector (Cameron Clark) was notified of the results on Monday, July 18th at 9:26 AM. The BWA was lifted at approximately 9:45 AM on July 18th. Resolution Report for AWQI Nos. 15912, 159062, 15912, 158997 was submitted on July 18, 2022.</p>
October 17, 2022	160432	<p>Sodium adverse result of 21.3 mg/L (limit = 20 mg/L) collected from the treated water at the plant on October 17<sup>th</sup>.</p> <p>The Ministry’s Spill’s Action Center (SAC) and the local Health Unit were notified. A re-sample was collected on October 25<sup>th</sup> (re-sample result = 24.8 mg/L). The Health Unit was notified of the result and the incident resolved</p>

<b>Date</b>	<b>AWQI No.</b>	<b>Details</b>
		on November 2 <sup>nd</sup> .
December 12, 2022	160952	<p>Category 2 watermain break - the isolation of a watermain break on Niven Street across from the Haileybury Reservoir at 400 Niven Street resulted in a low or loss of pressure to a large section of the community. A precautionary BWA was issued by the local Health Unit for the affected area on December 12, 2022.</p> <p>A decision made by the Health Unit on December 13<sup>th</sup> at 9:00 AM to re-issue the BWA for the entire community of Haileybury including North Cobalt.</p> <p>After the repair was complete the pressure was restored and the area was flushed until acceptable chlorine residuals were achieved. Two sets of 10 bacteriological samples were collected as per the Public Health Inspectors instructions (one at the site, one upstream and 8 downstream) were collected on December 13<sup>th</sup> and 14<sup>th</sup>. Sample results indicated no detectable total coliforms or <i>E.coli</i>. The BWA was lifted on December 16, 2022 at approximately 10:30 AM.</p>

## 6.0 MICROBIOLOGICAL TESTING PERFORMED DURING THE REPORTING PERIOD

### *Summary of Microbiological Data*

<b>Sample Type</b>	<b># of Samples</b> <i>(see Note 2)</i>	<b>Range of <i>E.coli</i> Results</b> <i>(min to max)</i>	<b>Range of Total Coliform Results</b> <i>(min to max)</i>	<b># of HPC Samples</b>	<b>Range of HPC Results</b> <i>(min to max)</i>
<b>Raw</b>	52	< 2 to 20	2 to > 1000/NDOGT	N/A	N/A
<b>Treated</b>	52	0 to 0	0 to 0	52	< 10 to 170
<b>Distribution</b>	156	0 to 0	0 to 0	52	< 10 to 30

Maximum Acceptable Concentration (MAC) for *E. coli* = 0 CFUs/100 mL

MAC for Total Coliforms = 0 CFUs/100 mL

NDOGT = No Data, Overgrown with Target

"<" denotes less than the laboratory's method detection limit

">" denotes greater than the laboratory's method detection limit

#### Notes:

1. One microbiological sample is collected and tested each week from the raw and treated water supply. A total of three microbiological samples are collected and tested each week from the Haileybury distribution system. At least 25% of the distribution samples must be tested for HPC bacteria.

## 7.0 OPERATIONAL TESTING PERFORMED DURING THE REPORTING PERIOD

### *Continuous Monitoring in the Treatment Process*

Parameter	# of Samples	Range of Results (min to max)	Unit of Measure	Standard
<b>Turbidity</b> (Filter 1)	8760	0.001 to 0.895	NTU	≤ 1.0
<b>Turbidity</b> (Filter 2)	8760	0.000 to 0.750	NTU	
<b>Turbidity</b> (Filter 3)	8760	0.000 to 0.957	NTU	
<b>Free Chlorine</b> (Reservoir)	8760	0.91 to 2.46	mg/L	CT**

**Notes:**

1. For continuous monitors 8760 is used as the number of samples.
2. \* Effective backwash procedures, including filter to waste and automatic filter shut down features (callout and filter to waste) are in place to ensure that the effluent turbidity requirements as described in the Filter Performance Criteria are met all times. Turbidity exceedances occur when two (2) readings are above 1 NTU for 15 minutes or more in a 24 hour period. Filters will backwash if turbidity reaches 0.7 NTU and will shut down and filter to waste at 1.0 NTU. The system performed as programmed and no high turbidity water was directed to the next phase of the process.
3. \*\* CT is the concentration of chlorine in the water times the time of contact that the chlorine has with the water. It is used to demonstrate the level of disinfection treatment in the water. CT calculations are performed for the Haileybury water plant if the free chlorine residual level drops below 0.30 mg/L to ensure primary disinfection is achieved.

### *Summary of Chlorine Residual Data in the Distribution System*

Parameter	No. of Samples	Range of Results (min to max)	Unit of Measure	Standard
<b>Combined Chlorine Residual</b>	404	0.25 to 2.05	mg/L	≥ 0.25 and < 3.0

**Notes:**

1. A total of seven operational checks for chlorine residual in the distribution system are collected each week. Four (4) samples are tested one day and three (3) on a second day. The sample sets are collected at least 48-hours apart and samples collected on the same day are from different locations.

Additional residuals were collected in response to complaints, water main breaks or adverse water quality incidents.

Refer to *Appendix B* for a monthly summary of the above operational data.

### *Summary of Nitrate & Nitrite Data (sampled at the plant's point of entry into the distribution every quarter)*

Date of Sample	Nitrate Result	Nitrite Result	Unit of Measure	Exceedance
January 10	0.3	< 0.01	mg/L	No
April 11	0.3	< 0.01	mg/L	No
July 11	0.3	< 0.01	mg/L	No
October 25	0.4	< 0.01	mg/L	No

Maximum Allowable Concentration (MAC) for Nitrate = 10 mg/L  
 MAC for Nitrite = 1 mg/L

**Summary of Total Trihalomethane Data** (sampled in the distribution system every quarter)

Date of Sample	THM Result	Unit of Measure	Running Average	Exceedance
January 10	48	ug/L		
April 11	39.9	ug/L		
July 11	42.2	ug/L	43.3	No
October 17	43	ug/L		

Maximum Allowable Concentration (MAC) for Total Trihalomethanes = 100 ug/L (Four Quarter Running Average)

**Summary of Total Haloacetic Acid Data** (sampled in the distribution system every quarter)

Date of Sample	Result Value	Unit of Measure	Running Average	Exceedance
January 10	47	ug/L		
April 11	28	ug/L		
July 11	94	ug/L	61.8	No
October 17	78	ug/L		

Maximum Allowable Concentration (MAC) for Total Haloacetic Acid = 80 ug/L (Four Quarter Running Average)

**Summary of Most Recent Lead Data under Schedule 15.1**

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

The Haileybury Drinking Water System qualified for the ‘Exemption from Plumbing Sampling’ as described in section 15.1-5 (9-10) of Ontario Regulation 170/03. The exemption applies to a drinking water system if; in two consecutive periods at reduced sampling, not more than 10% of all samples from plumbing exceed the maximum allowable concentration of 10 ug/L for lead. As such, the system was required to test for total alkalinity and pH in three distribution samples collected during the periods of December 15 to April 15 (winter period) and June 15 to October 15 (summer period). This testing is required in every 12-month period with lead testing in every third 12-month period.

Lead samples were last collected in 2021 and results were well below the MAC. Two rounds of alkalinity and pH testing were carried out on March 15<sup>th</sup> and September 13<sup>th</sup> of 2022. Results are summarized in the table below.

**Summary of Lead Data** (sampled in the distribution system)

Date of Sample	# of Samples	Field pH (min to max)	Field Temperature (°C) (min to max)	Alkalinity (mg/L) (min to max)	Lead (ug/L) (min to max)
March 15	3	6.9 to 7.3	1.4 to 2.5	33 to 40	N/A
September 13	3	7.14 to 7.25	17.2 to 18.1	34 to 35	N/A

**Note:** Next lead sampling scheduled for 2024





**Most Recent Schedule 23 Inorganic Data Tested at the Water Treatment Plant**

Parameter	Result Value	Unit of Measure	MAC	MAC Exceedance	½ MAC Exceedance
Antimony	< 0.5	ug/L	6	No	No
Arsenic	< 1.0	ug/L	10	No	No
Barium	8.0	ug/L	1000	No	No
Boron	< 2.0	ug/L	5000	No	No
Cadmium	< 0.1	ug/L	5	No	No
Chromium	< 1.0	ug/L	50	No	No
Mercury	< 0.1	ug/L	1	No	No
Selenium	< 0.2	ug/L	50	No	No
Uranium	< 1.0	ug/L	20	No	No

Note: Sample required every 12 months (sample date = October 17, 2022)

**Most Recent Schedule 24 Organic Data Tested at the Water Treatment Plant**

Parameter	Result Value	Unit of Measure	Standard	MAC Exceedance	½ MAC Exceedance
Alachlor	< 0.236	ug/L	5	No	No
Atrazine + N-dealkylated metabolites	< 0.5	ug/L	5	No	No
Azinphos-methyl	< 0.177	ug/L	20	No	No
Benzene	< 0.1	ug/L	1	No	No
Benzo(a)pyrene	< 0.01	ug/L	0.01	No	No
Bromoxynil	< 0.107	ug/L	5	No	No
Carbaryl	< 2	ug/L	90	No	No
Carbofuran	< 3	ug/L	90	No	No
Carbon Tetrachloride	< 0.2	ug/L	2	No	No
Chlorpyrifos	< 0.177	ug/L	90	No	No
Diazinon	< 0.177	ug/L	20	No	No
Dicamba	< 0.0934	ug/L	120	No	No
1,2-Dichlorobenzene	< 0.2	ug/L	200	No	No
1,4-Dichlorobenzene	< 0.3	ug/L	5	No	No
1,2-Dichloroethane	< 0.2	ug/L	5	No	No
1,1-Dichloroethylene (vinylidene chloride)	< 0.3	ug/L	14	No	No
Dichloromethane	< 1	ug/L	50	No	No
2,4-Dichlorophenol	< 0.2	ug/L	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	< 0.4	ug/L	100	No	No
Diclofop-methyl	< 0.133	ug/L	9	No	No
Dimethoate	< 0.177	ug/L	20	No	No
Diquat	< 0.2	ug/L	70	No	No
Diuron	< 10	ug/L	150	No	No
Glyphosate	< 20	ug/L	280	No	No
Malathion	< 0.177	ug/L	190	No	No
Metolachlor	< 0.118	ug/L	50	No	No



**Most Recent Schedule 24 Organic Data Tested at the Water Treatment Plant**

Parameter	Result Value	Unit of Measure	Standard	MAC Exceedance	½ MAC Exceedance
Metribuzin	< 0.118	ug/L	80	No	No
Monochlorobenzene	< 0.5	ug/L	80	No	No
Paraquat	< 0.2	ug/L	10	No	No
Polychlorinated Biphenyls (PCBs)	< 0.06	ug/L	3	No	No
Pentachlorophenol	< 0.3	ug/L	60	No	No
Phorate	< 0.118	ug/L	2	No	No
Picloram	< 0.0934	ug/L	190	No	No
Prometryne	< 0.0591	ug/L	1	No	No
Simazine	< 0.177	ug/L	10	No	No
Terbufos	< 0.118	ug/L	1	No	No
Tetrachloroethylene	< 0.3	ug/L	10	No	No
2,3,4,6-Tetrachlorophenol	< 0.3	ug/L	100	No	No
Triallate	< 0.118	ug/L	230	No	No
Trichloroethylene	< 0.2	ug/L	5	No	No
2,4,6-Trichlorophenol	< 0.2	ug/L	5	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA)	< 6.67	ug/L	100	No	No
Trifluralin	< 0.118	ug/L	45	No	No
Vinyl Chloride	< 0.1	ug/L	1	No	No

**Note:** Sample required every 12 months (sample date = October 17, 2022)

**Inorganic or Organic Parameter(s) that Exceeded Half the Standard Prescribed in Schedule 2 of Ontario Drinking Water Quality Standards**

No inorganic or organic parameter(s) listed in Schedule 23 and 24 of Ontario Regulation 170/03 exceeded half the standard found in Schedule 2 of the Ontario Drinking Water Standard (O. Reg.169/03) during the reporting period.

**Most Recent Sodium Data Sampled at the Water Treatment Plant**

Date of Sample	Number of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 17, 2022	1	21.3	mg/L	20	Yes
October 25, 2022 (resample)	1	24.8	mg/L	20	Yes

**Note:** Sample required every 60 months. Next sampling scheduled for October 2027.

The aesthetic objective for sodium in drinking water is 200 mg/L at which it can be detected by a salty taste. It is required that the local Medical Officer of Health be notified when the concentration exceeds 20 mg/L so that persons on sodium restricted diets can be notified by their physicians. The adverse sodium result was reported to the Ministry’s SAC and the Timiskaming Health Unit on October 25, 2022 as required under Schedule 16 of O. Reg. 170/03 (AWQI# 160432).

***Most Recent Fluoride Data Sampled at the Water Treatment Plant***

Date of Sample	Number of Samples	Result Value	Unit of Measure	MAC	Exceedance
October 25, 2022	1	< 0.05	mg/L	1.5	No

**Note:** Sample required every 60 months. Next sampling scheduled for October 2027.

***Additional Testing Performed in Accordance with a Legal Instrument.***

**Nitrosodimethylamine (NDMA)**

Condition 5.0 (5.1) of Schedule C to Municipal Drinking Water Licence (MDWL) #218-102 issued on July 23, 2021 requires sampling, testing and monitoring of Nitrosodimethylamine (NDMA). The sample is to be collected each quarter from the farthest point in the distribution system and not exceed the maximum allowable concentration (MAC) of 0.009 ug/L.

***Summary of NDMA Data (sampled in the distribution system every quarter)***

Date of Sample	NDMA Result	Unit of Measure	Exceedance
January 11	< 0.0008	ug/L	No
May 2	< 0.0008	ug/L	No
July 11	< 0.0009	ug/L	No
October 17	< 0.0009	ug/L	No

Maximum Allowable Concentration (MAC) for NDMA = 0.009 ug/L

**Microcystins**

Condition 6.0 (6.1) of Schedule C to Municipal Drinking Water License (MDWL) #218-102 issued on July 23, 2021 requires the development of a Harmful Algae Bloom (HAB) monitoring, reporting and sampling plan by January 31, 2022. The plan must be implemented during the harmful algae bloom season, during but not limited to the warm seasonal period between June 1<sup>st</sup> and October 31<sup>st</sup> of each year, or as otherwise directed by the Medical Officer of Health. A Plan was developed for the Haileybury Drinking Water System in May 2021 and is implemented during the summer season. The Plan includes visual inspection of the HAB monitoring area at least once per week. Sampling for microcystins on the raw and treated water each week with testing done on the raw water sample only unless microcystins are detected, then the treated sample is also tested. Reporting to the Health Unit and the Ministry’s Spills Actions Center if microcystins are detected in either the raw or treated water samples or if a suspected bloom is observed.

The table below summarizes the microcystin results for the season.

***Summary of Microcystin Data***

Sample Type	# of Samples	Range of Microcystin Results (min to max)	Unit of Measure	Exceedance
Raw	24	<0.15 to 0.17	ug/L	No
Treated	13	<0.15 to 0.22	ug/L	No

Maximum Allowable Concentration (MAC) for Microcystin-LR = 1.5 ug/L



Four (4) incidents of suspected and/or confirmed blue green algae blooms were reported to the Medical Officer of Health and the Ministry’s Spills Action Center.

Note: A suspected blue-green algae bloom was observed on August 15<sup>th</sup> and 16<sup>th</sup> but not reported to the appropriate authorities as required in the system’s HAB monitoring, reporting and sampling plan.

**Incidents of Suspected or Confirmed HABs**

Date	Ref. No.	Details
July 18, 2022	1-1Z7UXZ	<p>Total microcystins were detected in a raw water sample collected on July 18, 2022 at 10:20 AM from the Haileybury WTP (&lt;0.15 ug/L). The sample was analyzed in duplicate and the replicate result was 0.18 ug/L. A total microcystins result of 0.22 ug/L was detected in the treated water sample collected on the same day at 11:30 AM .</p> <p>No blooms were observed in the HAB monitoring area. Filtration and disinfection processes were optimized and closely monitored.</p> <ul style="list-style-type: none"> <li>- Weekly sampling of the raw and treated water continued weekly,</li> <li>- Visual monitoring continued to be done daily during the work week,</li> <li>- Incident was resolved when until 3 sets of consecutive results were non-detectable for microcystins.</li> </ul> <p>MOH, SAC, MECP Inspector &amp; Owner notified and notification report submitted on July 25<sup>th</sup> after results were received.</p> <p>Three consecutive sets of samples collected on July 25<sup>th</sup>, August 15<sup>th</sup> and August 15<sup>th</sup> indicated no microcystins and no blooms were observed in the HAB monitoring area. Incident resolved on August 18<sup>th</sup></p>
August 25, 2022	1-24D2CV	<p>Suspected harmful algae bloom observed by the member of the public on August 22<sup>nd</sup> in Lake Temiskaming, upstream from the HAB monitoring area. OCWA was notified of the observation on August 25<sup>th</sup> by the local MECP Inspector.</p> <p>Filtration and disinfection processes were operating optimally and were closely monitored.</p> <p>OCWA performs daily (during the work week) observations of the HAB monitoring area and performs weekly proactive sampling for microcystins (raw and treated) from June 1 to October 31 every year.</p> <ul style="list-style-type: none"> <li>- Weekly sampling of the raw and treated water continued weekly,</li> <li>- Visual monitoring continued to be done daily during the work week,</li> <li>- Incident was resolved when until 3 sets of consecutive results were non-detectable for microcystins.</li> </ul> <p>Resample dates: August 29, September 5, September 12 (detectable microcystins).</p>



**Incidents of Suspected or Confirmed HABs**

Date	Ref. No.	Details
		<p>Incident was resolved October 31, 2022 when three (3) consecutive sets of results collected on October 11<sup>th</sup>, October 17<sup>th</sup> and October 24<sup>th</sup> had no detectable microcystins and no blooms were observed in the HAB monitoring area.</p>
<p>September 12, 2022</p>	<p>1-269JCO</p>	<p>Total microcystins were detected in a raw water sample collected from the Haileybury WTP on September 12, 2022 at 10:36 AM (result = 0.17 ug/L). A treated water sample was collected on the same day at 10:00 AM and no microcystins were detected (&lt;0.15 ug/L).</p> <p>No blooms were observed in the HAB monitoring area. Filtration and disinfection processes were optimized and closely monitored.</p> <ul style="list-style-type: none"> <li>- Weekly sampling of the raw and treated water continued weekly,</li> <li>- Visual monitoring continued to be done daily during the work week.</li> <li>- Incident was resolved when until 3 sets of consecutive results were non-detectable for microcystins</li> </ul> <p>MOH, SAC, MECP Inspector &amp; Owner notified and notification report submitted on September 19, 2022.</p> <p>Resample dates: September 19, September 26, October 3 (detectable microcystins).</p> <p>Incident was resolved October 31, 2022 when three (3) consecutive sets of results collected on October 11<sup>th</sup>, October 17<sup>th</sup> and October 24<sup>th</sup> had no detectable microcystins and no blooms were observed in the HAB monitoring area.</p>
<p>October 3, 2022</p>	<p>1-27PYCS</p>	<p>Total microcystins were detected in a raw water sample collected on October 3, 2022 at 10:00 AM from the Haileybury WTP (&lt;0.15 ug/L). The sample was analyzed in duplicate and the replicate result was 0.18 ug/L. A treated water sample also had detectable total microcystins with a result of 0.18 ug/L. Sample collected on the same day at 12:00 PM.</p> <p>No blooms were observed in the HAB monitoring area. Filtration and disinfection processes were optimized and closely monitored.</p> <ul style="list-style-type: none"> <li>- Weekly sampling of the raw and treated water continued weekly,</li> <li>- Visual monitoring continued to be done daily during the work week.</li> <li>- Incident was resolved when until 3 sets of consecutive results were non-detectable for microcystins</li> </ul> <p>Resample dates: October 11, October 18, October 25</p> <p>Incident was resolved October 31, 2022 when three (3) consecutive sets of</p>



***Incidents of Suspected or Confirmed HABs***

<b><i>Date</i></b>	<b><i>Ref. No.</i></b>	<b><i>Details</i></b>
		results collected on October 11 <sup>th</sup> , October 17 <sup>th</sup> and October 24 <sup>th</sup> had no detectable microcystins and no blooms were observed in the HAB monitoring area.



Haileybury Drinking Water System

Schedule 22

# 2022 SUMMARY REPORT FOR MUNICIPALITIES

## Schedule 22 - SUMMARY REPORTS for MUNICIPALITIES

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### 1.0 INTRODUCTION

<b>Drinking-Water System Name</b>	<b>Haileybury Drinking Water System</b>
<b>Municipal Drinking Water Licence (MDWL)</b>	218-102-6 (issued July 23, 2021)
<b>Drinking Water Works Permit (DWWP)</b>	218-202-5 (issued July 23, 2021)
<b>Permit to Take Water (PTTW)</b>	P-300-1067513491 (issued February 13, 2020)
<b>Reporting Period</b>	January 1, 2022 to December 31, 2022

### 2.0 REQUIREMENTS THE SYSTEM FAILED TO MEET

According to information kept on record by OCWA, the Haileybury Drinking Water System failed to meet the following requirement during the 2022 reporting period:

<b>Drinking Water Legislation</b>	<b>Requirement(s) the System Failed to Meet</b>	<b>Duration</b>	<b>Corrective Action(s)</b>	<b>Status</b>
Condition 6.0 (6.3) of Schedule C to Municipal Drinking Water License (MDWL) #218-102	<p>Missed reporting of a blue-green algae bloom on August 15<sup>th</sup> and 16<sup>th</sup>.</p> <p>The HAB monitoring plan for the facility instructs operators to report a suspected or occurring HAB within the HAB monitoring area, as required. A potential HAB was observed in the HAB monitoring area on August 15, 2022, and August 16, 2022. In both cases, the operator recorded the observation, as required. However, the observation was not reported to the medical officer of health or the Ministry's Spills Action Centre in accordance with the facilities HAB monitoring, reporting, and sampling plan.</p> <p>A second event was reported to MOH and SAC on August 25<sup>th</sup> after a bloom was observed upstream from the HAB monitoring area (Ministry Reference No. 1-24D2CV).</p>	August 15, 2022	<p>Local MECP inspector was made aware of the issue on September 13, 2022 when discovered during a data review.</p> <p>Raw water sample was collected on August 15<sup>th</sup>, 2022 and no total microcystins were detected.</p> <p>Operators were reminded of the notification, reporting, and sampling requirements if a HAB is suspected or occurring in the HAB monitoring area. Furthermore, the operating authority provides Harmful Algal Bloom (HAB) Plan Awareness Training to operators annually in April/May.</p>	Complete





Drinking Water Legislation	Requirement(s) the System Failed to Meet	Duration	Corrective Action(s)	Status
<p>Section 27(4) of O. Reg. 128/04</p>	<p>Facility records contain numerous entries that were made by an operator who initialed/signed records with another operators initials. Some of these instances can be explained (e.g. they are a copy of the previous record from the superceding logsheet). However, in other instances, an explanation is not as apparent and they constitute violations of Section 27(4) of O. Reg. 128/04.</p> <p>The other instances in question ;</p> <ul style="list-style-type: none"> <li>- Haileybury WTP Free Ammonium &amp; Chlorine Residuals Logsheets, July 2022</li> <li>- Haileybury DWS - Data Review Sheet</li> <li>- January 2022 (logsheet entries and comments section)</li> <li>- February 2022 (logsheet entries and comments section)</li> <li>- June 2022 (comments section)</li> <li>- July 2022 (comments section)</li> <li>- Haileybury WTP Chemical Usage &amp; Dosage Record, March 2022</li> <li>- Haileybury WTP Weekly Data Collection, April 2022.</li> <li>- Haileybury WTP Free Ammonium &amp; Chlorine Residuals July 2022</li> <li>- Haileybury DWS - Data Review Sheet for February 2022.</li> </ul> <p>The operator reviewing facility sheets noticed missing initials and took it upon themselves to sign the entry rather than ask the operator who recorded the data to sign their own initials.</p> <p>The operator also transferred data from one sheet unintentionally made error when rewriting the results.</p>	<p>January 2022 to July 2022</p> <p>Discovered in November 2022</p>	<p>January 23 – a meeting was held with the operator and Team Lead to discuss the issues. Each incident identified in the MECP inspection report was reviewed and discussed.</p> <p>January 24 – an email was send to MECP Water Inspector, Scott Hanselman providing an explanation for all the incidents.</p> <p>February 1 – training conducted with all operational staff and City’s Environmental Services Manager.</p> <p>February 2 – training records provided to MECP Water Inspector Scott Hanselman</p>	<p>Complete</p>

It should be mentioned that sixteen (16) adverse water quality incidents were reported to the Ministry’s Spills Action Center during the reporting period. Refer to Section 5.0 – *Details on*

Notices of Adverse Test Results and Other Problems Reported to & Submitted to the Spills Actions Center on page 6 of this report for details.

### 3.0 SUMMARY OF QUANTITIES & FLOW RATES

#### **Flow Monitoring**

Municipal Drinking Water Licence (MDWL) #218-102 requires the owner to install a sufficient number of flow measuring devices to permit the continuous measurement and recording of:

- the flow rate and daily volume of water conveyed from the treatment system to the distribution system, and
- the flow rate and daily volume of water conveyed into the treatment system.

The flow monitoring equipment identified in the MDWL is present and operating as required. These flow meters are calibrated on an annual basis as specified in the manufacturers' instructions.

#### **Water Usage**

The following Water Usage Tables summarize the quantities and flow rates of water taken and produced during the 2022 reporting period, including average monthly volumes, maximum monthly volumes, total monthly volumes and maximum flow rates.

#### Raw Water

##### **2022 - Monthly Summary of Water Takings from the Source (Lake Temiskaming)**

Regulated by Permit to Take Water (PTTW) #P-300-1067513491, issued February 13, 2020

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m <sup>3</sup> )	77046	70728	78830	75142	76341	75131	88515	78445	73696	73482	58149	58627	884130
Average Volume (m <sup>3</sup> /d)	2485	2526	2543	2505	2463	2504	2855	2530	2457	2370	1938	1891	2422
Maximum Volume (m <sup>3</sup> /d)	3300	3245	3027	3136	2809	2852	4088	2742	2794	2692	2193	2567	4088
PTTW - Maximum Allowable Volume (m <sup>3</sup> /day)	6816	6816	6816	6816	6816	6816	6816	6816	6816	6816	6816	6816	6816
Maximum Flow Rate (L/min)	4462	4458	4570	4476	3744	4542	4422	4404	4566	4218	3374	4586	4586
PTTW - Maximum Allowable Flow Rate (L/min)	4733	4733	4733	4733	4733	4733	4733	4733	4733	4733	4733	4733	4733

The system's Permit to Take Water #P-300-1067513491 allows the municipality to withdraw a maximum volume of 6816 cubic meters from Lake Temiskaming each day at a maximum flow rate of 4733 L/minute. A review of the raw water flow data indicates that the system did not exceed the maximum allowable volume or maximum flow rate during the reporting period.



Treated Water

**2022 - Monthly Summary of Treated Water Supplied to the Distribution System**

Regulated by Municipal Drinking Water Licence (MDWL) #218-102 (issue 3), issued July 23, 2021

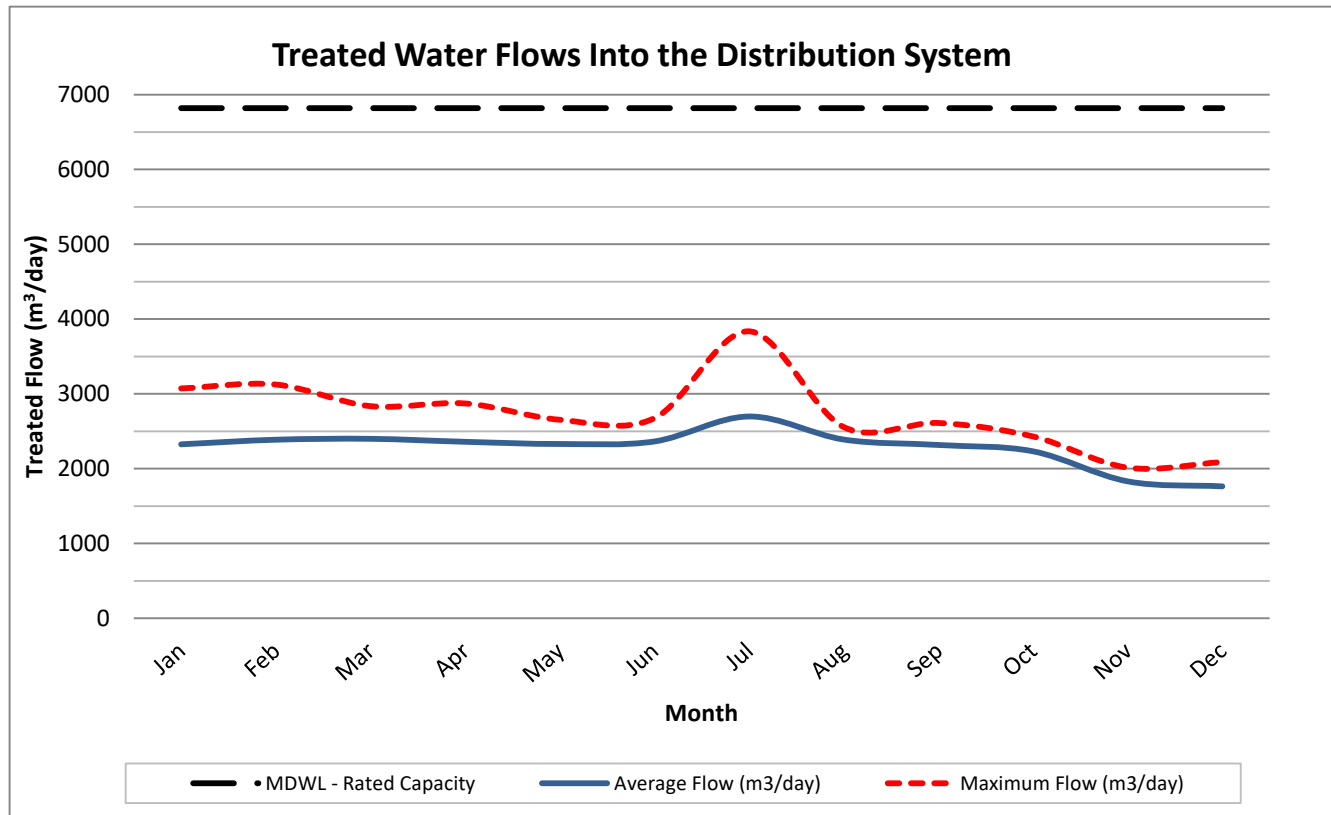
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year to Date
Total Volume (m <sup>3</sup> )	72091	66837	74365	70773	72231	70909	83618	74067	69498	69190	54908	54652	833137
Average Volume (m <sup>3</sup> /d)	2326	2387	2399	2359	2330	2364	2697	2389	2317	2232	1830	1763	2283
Maximum Volume (m <sup>3</sup> /d)	3073	3125	2836	2872	2654	2675	3836	2556	2611	2431	2014	2088	3836
MDWL - Rated Capacity (m <sup>3</sup> /day)	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820

Schedule C, Section 1.0 (1.1) of MDWL No. 218-102 states that the maximum daily volume of treated water that flows from the treatment subsystem to the distribution system shall not exceed 6820 m<sup>3</sup>/day. The Haileybury DWS complied with this limit having a recorded maximum volume of 3836 m<sup>3</sup>/day on July 18<sup>th</sup>, which represents 56.2% of the rated capacity.

Figure 1 compares the average and maximum flow rates into the distribution system to the approved rated capacity of the system as identified in the MDWL.

**Figure 1: 2022 - Comparison of Treated Water Flows to the Rated Capacity**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Average Flow (m <sup>3</sup> /day)	2326	2387	2399	2359	2330	2364	2697	2389	2317	2232	1830	1763
Maximum Flow (m <sup>3</sup> /day)	3073	3125	2836	2872	2654	2675	3836	2556	2611	2431	2014	2088
MDWL - Rated Capacity	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820
% Rated Capacity	45	46	42	42	39	39	56	37	38	36	30	31



### ***Summary of System Performance***

The following information is provided to enable the Owner to assess the capability of the system to meet existing and future water usage needs:

Rated Capacity of the Plant (MDWL)	6820 m <sup>3</sup> /day	
Average Daily Flow for 2022	2283 m <sup>3</sup> /day	33.5 % of the rated capacity
Maximum Daily Flow for 2022	3836 m <sup>3</sup> /day	56.2 % of the rated capacity
Total Treated Water Produced in 2022	833,137 m <sup>3</sup>	

### ***Historical Flows***

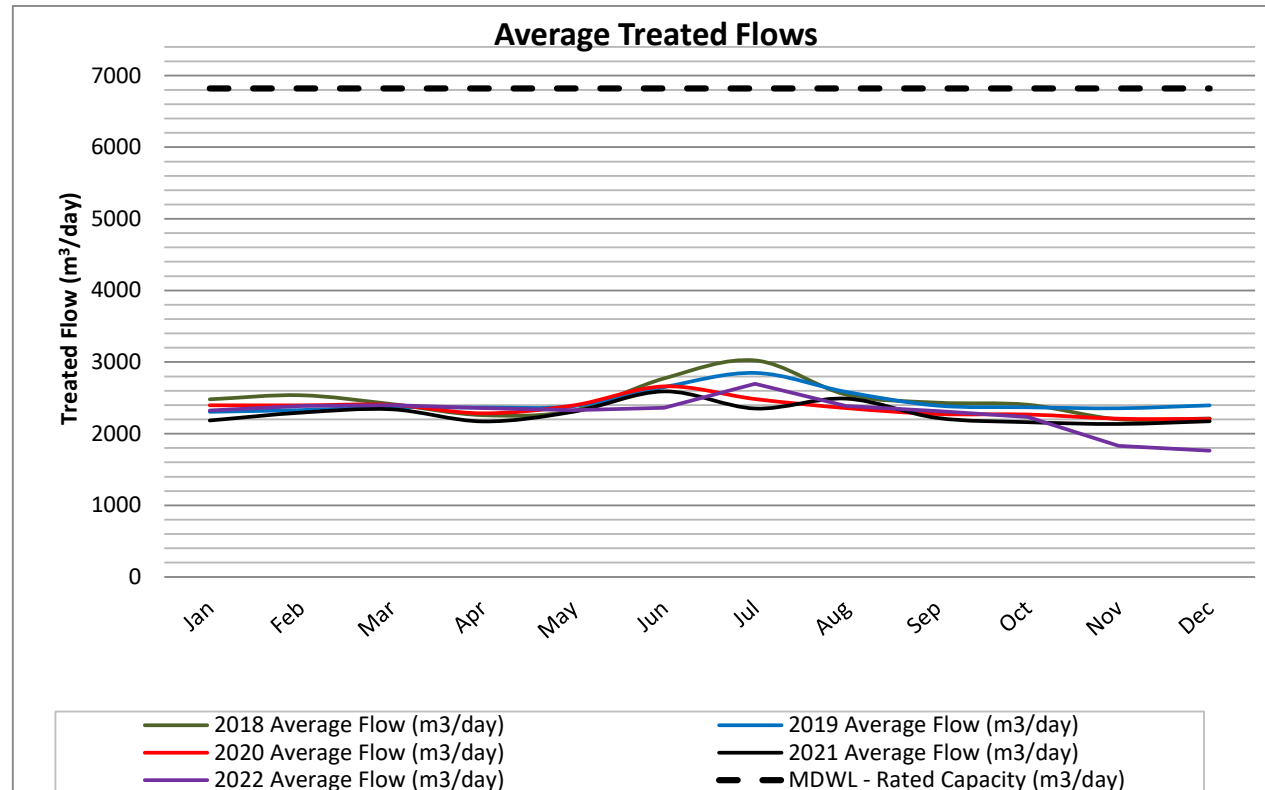
#### ***Haileybury Water Treatment Plant – Flow Comparison***

<b>Year</b>	<b>Maximum Treated Flow (m<sup>3</sup>/d)</b>	<b>Average Daily Flow (m<sup>3</sup>/d)</b>	<b>Average Day % of Rated Capacity (6820 m<sup>3</sup>/d)</b>
<b>2022</b>	<b>3836</b>	<b>2283</b>	<b>33.5%</b>
2021	3372	2285	33.5%
2020	3565	2362	34.6%
2019	2446	3486	51.1%
2018	4220	2467	36.2%

Figure 2 compares the average treated water flows from 2018 to 2022.

**Figure 2: Haileybury Water Treatment System - Average Treated Water Flows from 2018 to 2022**

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2018 Average Flow (m <sup>3</sup> /day)	2481	2537	2414	2259	2322	2773	3023	2546	2434	2405	2201	2213
2019 Average Flow (m <sup>3</sup> /day)	2306	2330	2369	2367	2386	2651	2849	2584	2393	2369	2355	2396
2020 Average Flow (m <sup>3</sup> /day)	2397	2396	2403	2285	2395	2661	2484	2358	2275	2268	2210	2206
2021 Average Flow (m <sup>3</sup> /day)	2185	2294	2341	2172	2307	2591	2352	2490	2221	2161	2136	2174
2022 Average Flow (m <sup>3</sup> /day)	2326	2388	2399	2359	2330	2364	2697	2389	2317	2232	1830	1763
MDWL - Rated Capacity (m <sup>3</sup> /day)	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820	6820





## CONCLUSION

The water quality data collected in 2022 demonstrates that the Haileybury drinking water system provided high quality drinking water to its users.

The system was able to operate in accordance with the terms and conditions of the Permit to Take Water and in accordance with the rated capacity of the licence while meeting the community's demand for water use.

All Adverse Water Quality Incidents were reported to the Ministry's Spills Action Center and the corrective actions were completed as required and resolved as soon as possible.

A non-compliance occurred in August, when a suspected blue-green harmful algae bloom (HAB) was observed in the source water, but the observation was not reported to the Medical Officer of Health or the Ministry's Spills Action Centre as described in the facilities HAB monitoring, reporting, and sampling plan. The non-compliance was reported to the local MECP Water Inspector when discovered.



# **APPENDIX A**

Monthly Summary of Microbiological  
Test Results





# **APPENDIX B**

Monthly Summary of Operational Data