

**CITY OF TIMMINS**



# **TIMMINS WATER FILTRATION PLANT**

**Provincial Regulation 170/03  
Summary Report  
For the Period  
January 1<sup>st</sup> to December 31<sup>st</sup>, 2023**

**Submitted to:**

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**Prepared by:**

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**Date Submitted:**

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## **Section 1: Executive Summary**

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The 2023 Summary Report for the Timmins Water Filtration Plant is being submitted to satisfy Schedule 22 of Ontario Regulation 170/03, the requirement to prepare and distribute a summary report of water quality. As per Ontario Regulation 170/03, the summary report must contain the following information:

- List the requirements of the Safe Drinking Water Act, the corresponding regulations, the system's Drinking Water Works Permit, any order of which the system failed to ensure compliance at any time during the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2023, and to specify the duration of any non-compliant situations;
- For each period of non-compliance, describe the measures and corrective actions taken to restore the system's integrity;
- Provide a summary of the quantities and flow rates of the raw waters treated and the waters supplied to the distribution system during the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2023, including maximum daily flows, instantaneous peak flows and monthly averages; and
- A comparison of the actual flows to the rated capacity and flow rates approved in the Drinking Water Works Permit.

Water consumption in 2023 totalled 8,251,061 cubic metres of water for an average daily flow of 22,544 m<sup>3</sup>/day. The peak daily flow of 34,053 m<sup>3</sup> occurred on August 1, 2023. This is similar compared to water consumption in 2022, and consistent with consumption from previous years.

In 2023, a total of 921 distribution samples and 112 treated water samples were collected and tested for bacteriological parameters. Once distribution sample exceeded O. Reg. 169/03 standards for total Coliforms and became an Adverse Water Quality Incident (AWQI 161839). A second exceedance for E. coli and Total Coliform was report (AWQI 163798), however it was determined that it was due to incorrect sampling. There was one additional AWQIs in the distribution system for low Free Chlorine Residual and two additional operational AWQIs in the distribution system where preventative boil water advisories were initiated.

1. AWQI 161839 – April 25, 2023 – Total Coliform (1) was recorded during a bacteriological sample collected at Spruce Hill Lodge.
  - As per requirements of O. Reg. 170, the Ministry of Environment and Porcupine Health Unit were contacted for reporting of the AWQI
  - Watermain was flushed again by distribution staff.
  - Samples collected at the AWQI location and two upstream samples (no downstream as it is an endpoint) over the next two days and tested for total coliforms and E. coli.
  - Bacteriological sample from AWQI location came back clear. AWQI was closed on June April 29, 2023.

2. AWQI 163798 – October 12, 2023 – E. coli and Total Coliforms (NDOGT - No Data, Overgrown with Target) was recorded during a bacteriologic sample collected at a hydrant near 108 Pine Street South.
  - As per requirements of O. Reg. 170, the Ministry of Environment and Porcupine Health Unit were contacted for reporting of the AWQI
  - Sample had high chlorine residual, determine incorrect sampling.
  - Watermain was flushed again by distribution staff.
  - However, re-sampling at the AWQI location, upstream and downstream. All samples came back clear and the AWQI was closed on October 14, 2023.
  
3. AWQI 163837 – October 18, 2023 - Free Chlorine Residual (0.05mg/l) was recorded during a leak repair in Porcupine.
  - As per requirements of O. Reg. 170, the Ministry of Environment and Porcupine Health Unit were contacted for reporting of the AWQI.
  - Confirmed with the chlorine analyser at King Shop (6075 King Street) that the chlorine residual never went below 0.05mg/L and therefore not a true AWQI.
  - Watermain was flushed again by distribution staff.
  - One set of samples were collected at fire hydrants at the original location and downstream and tested for total coliforms and E. coli
  - No samples tested positive for total coli forms or E. coli and the AWQI was closed on October 19, 2023.

All Schedule 23 and 24 parameters (inorganic and organic) tested were within Ontario Drinking Water Quality Standards.

Quarterly tests for nitrites and nitrates, THM's and HAA's were tested as per Schedule 13 as well as tests for Sodium and Fluoride.

Schedule 16, Subsection 4 states a Duty to report if an observation other than an adverse test result.

- On October 23, 2023 a Precautionary Boil Water Advisory was issued to all customers in Porcupine east of Bristol Road due to the potential low chlorine residual. Precautionary Boil Water Advisory issued. An AWQI report was made (163854). Leaking valve repaired, flushing conducted throughout Porcupine prior to the shutdown to bring up and maintain residuals. As residuals and pressure were maintained, preventative BWA was rescinded.
- On November 27, 2023 a Precautionary Boil Water Advisory was issued to all customers consumers on Pine Street between Second and Third Avenue due to the loss of pressure and loss of water for the area. An AWQI report was made (164122). Water supply was restored, flushing and re-sampling upstream and downstream of watermain break. All samples came back clear. Precautionary Boil Water Advisory was then lifted.

Lead samples were collected as per Schedule 15.1 in the distribution system, with no exceedances.

In 2023, the City had various capital projects.

Maclean Drive, new Natural Gas Backup Generator	\$	103,706.40
Backwash Pump Design & Study	\$	22,532.24
Plant Security & Keyless Entry updates	\$	21,115.64
Purchase new HLP#6 & 7	\$	84,648.14
Online Instrumentation	\$	46,150.92
SCBA x6 (self-contained breathing apparatus)	\$	21,237.14
Surface Sweep Valves (inside Plant)	\$	44,326.48
Flow Measurement	\$	32,669.38
Connecting Link -Water	\$	311,874.54
Water Capital - Roads Projects (Crawford WM)	\$	2,141,572.73
Hydrant Sensor Monitoring (x5)	\$	61,157.80
Watermain lining - Various Streets (See ENG List)	\$	3,141,121.50

Looking forward to the future, major projects are budgeted in 2024 include:

Roof Replacement at Vipond Road	\$	20,000.00
General Safety Upgrades - plant intercom and alarms	\$	30,000.00
Plant Automation - Moneta & McLean Valve Replacement	\$	80,000.00
Vehicle Replacement	\$	85,000.00
SCADA assets replacement, instrumentation and auxiliaries	\$	150,000.00
Caustic Soda Liner Change	\$	150,000.00
New Transformers and Substation Design	\$	300,000.00
Tisdale reservoir - Replacement	\$	500,000.00
Actiflo -New lamellas & cleaning system	\$	500,000.00
McClellan Drive, New Generator and MCC	\$	500,000.00
Installation of New HLP#6 & 7	\$	900,000.00
Water Meters – City Buildings	\$	155,000.00
Acoustic & Pressure Transient Hydrant monitoring system	\$	65,000.00
Connecting Link – Water	\$	1,427,350.00
Water Needs Study RFP issued in 2020	\$	353,000.00

Regards,

Mark Johnston CET, CMM III  
Chief Operator  
Timmins Water Filtration Plant  
The Corporation of the City of Timmins

## **Section 2: Introduction / Technical Brief**

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The goal of the Timmins Water Filtration Plant and associated facilities is to provide customers within the City of Timmins with valued service through responsible water resource management. The Timmins Water Filtration Plant is solely owned by the Corporation of the City of Timmins, and provides and promotes reliable cost-effective systems for the continual safe delivery of consistently high-quality potable water.

In response to an outbreak of Escherichia (E. coli) in Walkerton, the former Ontario Provincial Ministry of the Environment (MOE) announced 'Operation Clean Water' and enacted the Safe Drinking Water Act in 2002. The Safe Drinking Water Act prescribes strict, enforceable, mandatory requirements for the testing and treatment of all municipal drinking water systems, and the necessary protocols when standards are not met. The regulation also identifies accountability for drinking water safety with those persons who dictate an intimate responsibility for the safety of the system and supports the consumer's right to timely and accurate reporting of water quality information. The Safe Drinking Water Act and associated releases recognizes the facility operators and the members of City Council, as responsible individuals who are inherently responsible for potable water infrastructure and public health and safety.

Schedule 22 of Ontario Regulation 170/03 requires all waterworks to produce and distribute this Summary Report. The report for 2023 shall be submitted to the Director of Public Works & Environmental Services by March 31<sup>st</sup>, 2024. An electronic copy of the report will be made available on the official web site at [www.timmins.ca](http://www.timmins.ca)

### **Timmins Water Filtration Plant**

The Timmins Water Filtration Plant is a conventional water filtration plant located at 110 Feldman Road. The facility receives surface waters from the Mattagami River, at a maximum daily rate of 54,600 m<sup>3</sup>/ day, through a single 1500 mm diameter screened intake pipe. The raw water flows by gravity into a raw water well where a combination of four (4) low lift pumps transfer the water into a mixing chamber for chemical conditioning.

At the flash mix chamber, Sodium Hydroxide (caustic soda) is added to increase alkalinity of the water to allow subsequent reactions with alum and a cationic polymer. At this point, the water travels to a series of two Actiflo trains for settling and removal of colour and turbidity. The Actiflo system was implemented during a major construction project in May, 2008. The footprint of the two Actiflo Trains occupies the same physical space as the old Degreemeont clarifier. However, with the addition of micro-sand into the clarification process, the clarification and solids removal occurs rapidly with a retention time of less than 1 hour. This allows for the plant to treat the same amount of water within a much smaller footprint. The old MicroFloc Plant has been converted into a residuals management system to treat water generated as waste in the plant for backwashes. This water now leaves the plant at the suspended solids loading lower than the required concentration of 25 mg/L.

Flows from each of the Actiflo Trains then enter six (6) dual media filters to remove the small particles of flocculation which are too light in weight to settle. Once the water has gone through the filters it is pumped into the blending chamber where final chlorination takes place. Water then enters a single 4.54 million liter chlorine contact chamber (CT Chamber) where the incoming waters are forced to follow a serpentine path, preventing

the short-circuiting of water and providing the maximum residence time to ensure adequate disinfection of microbiological parameters.

The ultra violet (UV) treatment system started in June 2017 at the Timmins Water Filtration Plant. Water is directed from Filters 1,2,3 and 4,5,6 to the UV process, where water undergoes disinfection processes by passing through UV reactors, and chlorine injection. Water from the UV system then enters the Clearwells for storage. The addition of UV disinfection along with Chlorine Disinfection ensures the waters are treated with the multi-barrier approach increasing the disinfection properties, (log removal) of pathogens.

### **Reservoirs at Water Filtration Plant**

Two (2) 4.54 million liter storage tanks called clearwells are situated directly after the CT Chamber and hold the treated water prior to pumping into the distribution system. The addition of caustic soda for pH control also provides the necessary alkalinity adjustment to effectively reduce water corrosion within the distribution system just prior to distribution pumps. Four (4) electric high lift pumps are used to supply the required amount of water and pressure to a maximum of 875 kPa (Zone 1) to satisfy the needs of the population base. In the event of a power outage a large diesel generator will start automatically to ensure a non-interruption of electrical service at the plant.

### **Other Reservoirs within Distribution System**

In addition to the storage at the Plant, there are three (3) reservoirs located within the distribution system.

- Hollinger Park Standpipe
  - Above ground, single cell, steel storage facility
  - Volume of 10, 400 m<sup>3</sup>
  - Dimensions are 39.6 m high x 18.3 m diameter
  - Hypochlorite re-chlorination capability with chemical feed pumps
  
- Maclean Drive Reservoir
  - In ground, dual cell concrete reservoir
  - Volume of 10, 400 m<sup>3</sup>
  - 2 high lift pumps, each capable of supplying the potable water demands for Timmins and Mountjoy at a pressure of 650 kPa
  - Hypochlorite re-chlorination capability with chemical feed pumps
  
- Tisdale Reservoir
  - In ground, dual cell concrete reservoir
  - Volume of 5,678 m<sup>3</sup>
  - Chlorine gas re-chlorination capability
  - 2 booster pumps to maintain supply in South Porcupine and Whitney,
  - Isolated to pressure Zone 3.

### **Booster Stations**

In addition, the Moneta Booster pumping station, located on Goldmine Road, boosts the pressure to (Zone 2) Schumacher, MacDonald Lake, and the transmission mains to South Porcupine. The discharge pressure leaving the booster station is 590 kPa. The booster station normally operates with 4 high lift pumps (3 operating and 1 standby). In the event of low demand periods, 3 jockey pumps (2 operating and 1 standby) are

available. A diesel generator is available in the event of electrical power disruption. The Moneta Booster Station is fully controlled from the Water Filtration Plant SCADA system.

### **Zones of Distribution**

The communities of South Porcupine, Porcupine, and Whitney receive all their drinking water from the Timmins Water Filtration Plant via the Moneta Booster Station. Due to an elevation drop, the pressure entering these communities is higher than acceptable guidelines. As such, the water flows through a pressure reducing station to drop the pressures (Zone 3) to an acceptable range. The Goldmine Road PRV building also has the capability of Post Chlorination with Sodium hypochlorite.

The MacDonald Lake Treatment Plant has been converted to a Booster Station and now operates on the Timmins distribution system network. In addition, the Shaw Well system was disconnected in December 2006 and now operates on the Timmins distribution system network. Hence, all potable waters supplied to the residents of Timmins, Schumacher, MacDonald Lake, Buffalo Ankerite, Delnite, South Porcupine and Porcupine have since been connected to ensure a constant supply of esthetically clean potable water which is free of microbiological activity.

The Winding Woods subdivision water distribution and supply subsystem and Northglenn Trailer park private distribution and supply system was connected to the Timmins distribution network in 2009. The existing pumping station at Winding woods is used to monitor water quality including Chlorine Residuals at the Northern endpoint of the distribution network.

### **Facility Specifics**

- i. The Timmins Water Filtration Plant is a Class IV System. Certificate # 454. This type of facility requires that the Overall Responsible Operator (ORO) have a Class IV Treatment License. In our situation, the Chief Water Operator of Water Treatment is designated ORO and is a Certified Engineering Technologist with a Class IV Water Treatment License and Class IV Water Distribution and Supply License. The Maintenance Supervisor has a Class III Water Treatment License. One Control Room Operator has a Class IV Water Treatment License is also designated at times to be acting ORO.
- ii. The Timmins Distribution System is a Class III system. Certificate # 3257. This type of system requires that the Overall Responsible Operator (ORO) have a Class III Distribution License or Higher. In our situation, the Chief Operator of Distribution and Collection is designated ORO with a Class III Distribution License. There is also 2 Field Supervisors who are designated at times to be acting ORO, one with a Class III Distribution License and one with a Class II Distribution License.
- iii. Municipal Drinking Water License #220-101 Issue #5 Date of Issue: June 11<sup>th</sup>, 2021
- iv. Drinking Water Works Permit Number 220-201 Issue #4 Date of Issue: June 11<sup>th</sup>, 2021
- v. Drinking Water System: Large Municipal Residential
- vi. Permit to Take Water Number: 8121-B3EL5Q Expiry Date: August 9, 2028
- vii. Maximum rate of Raw Water Taking: 54,600 m<sup>3</sup>/day
- viii. Waterworks Number: 220003065



### **Section 3: Water Treatment Summary**

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Section 3 describes the type and amount of drinking water treatment chemicals used in the production of potable water at the Timmins Water Filtration Plant in the 2023 fiscal year.

Sodium Hydroxide (Caustic Soda 50%- membrane grade) is a liquid that is pumped directly into the finished water for pH adjustment of the water entering the distribution system and into the rapid mix tank for alkalinity adjustment. Caustic is added at a feed rate of approximately 7 mg/L to the rapid mix tank and 10 mg/L to the finished water. A maximum total of 26,000 litres of caustic soda is stored on site.

Aluminum sulphate tetradecahydrate, ALUM, {formula as  $\text{Al}_2(\text{SO}_4)_3 \bullet 14 \text{H}_2\text{O}$ } is supplied in liquid form and introduced to the raw water for the pretreatment of colloidal suspensions. The ALUM provides the mechanism for the removal of colour, odour and particulate matter prior to filtration. A total of 31 metric tonnes is stored on the site at any given period.

Polyfloc CP 1801, an organic flocculant or cationic polymer, utilized as a settling agent is supplied in granular form and must be mixed / dissolved prior to use within the facility. As a result of the ionic charge, the flocculant upon reaction with the conditioned particulate matter joins together to form large particles which drop out of suspension within the clarifiers to improve filter performance and reduce overall turbidity levels. A total of 1 metric tonnes is stored on the site at any given period.

Elemental chlorine, in the form of liquefied gas is utilized for primary and secondary disinfection of potable waters entering the blending chamber. The overflow of waters is then directed to the contact chamber. Following sufficient contact time, the waters are stored within the clearwells for later use within the distribution system. The free chlorine residual at the point of entry to the distribution system is controlled between 1.50 mg/L and 1.80 mg/L in summer months, and 1.80 mg/l to 2.10 mg/l in summer months. A total of 11 metric tonnes is stored on the site at any given period. Elemental chlorine, in the form of liquefied gas is also utilized for post disinfection of potable waters at the Tisdale Reservoir. A total of 1.5 metric tonnes is stored on the site at any given period.

Chlorine, in the form of Sodium hypochlorite ( $\text{NaOCl}$ ) is used for post-chlorination to ensure a free chlorine residual of at least 0.20 mg/L at the furthest point within the distribution system.

These systems are located at the Hollinger Pumphouse, and at the MacLean Drive Reservoir. A total of four (4) metric tonnes are stored at the Hollinger Pumphouse and one (1) metric tonne at the MacLean Drive Reservoir at any given period.

Chlorine, in the form of Sodium hypochlorite ( $\text{NaOCl}$ ) is utilized for cleaning and disinfection of maintenance and construction items at all locations. All components which have been removed from service must first be thoroughly disinfected with Sodium hypochlorite prior to being reinstalled and returned to normal service within the potable water system.

Actisand, is microsand that has been cleaned and screened for a uniform size. It is utilized as a seed for floc formation by providing surface area that enhances flocculation and acts as ballast to aid in rapid settlement. The sand is in constant recycling through the pretreatment process but will eventually be lost out of the process and needs to be replenished.

Polyfloc AP1100P, an organic flocculant or anionic polymer, utilized as a settling agent is supplied in granular form and must be mixed / dissolved prior to use within the facility. As a result of the opposite ionic charge, when combined with the residual flocculant utilized with the pre-treatment, the particles join together to form larger particles which drop out of suspension. This chemical is used to assist the residual management clarifiers to reduce overall turbidity levels and suspended particles of our waste water. A total of 500 kg is stored on the site at any given period.

Sodium Bisulphite, (NaHSO<sub>3</sub>) is a common reducing agent used to combine with Chlorine. It is added to our residual management discharge to reduce the residual chlorine in the water returning to the Mattagami River. A total of 1 metric tonne is stored on the site at any given period.

**TABLE 3.1- CHEMICAL USAGE FOR THE TIMMINS FILTRATION PLANT IN 2023**

Facility	Chemical Addition Mean Value kg/day	Water Produced Mean Value m <sup>3</sup> /day	Applied Dosage Mean Value mg/L (ppm)
TWFP Polyfloc CP1801	6.42	22,544	0.278
TWFP Alum	1569	22,544	69.58
TWFP Chlorine	67.5	22,544	3.00
TWFP Caustic Soda	915	22,544	40.6
TWFP Actisand	56.2	22,544	2.49
TWFP Polyfloc AP1100†	0.376	22,544	16.71 ppb
TWFP Sodium Bisulphite†	10.86	22,544	0.48

†Chemicals used only for wastewater at facility.

## **Section 4: Monitoring Requirements / Summary of Water Quality Results**

Section 4 summarizes the water quality data required by the Ontario Drinking Water System, Ontario Regulation 170/03 for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2023.

**TABLE 4.1- SUMMARY OF MICROBIOLOGICAL TEST PARAMETERS**

	<i>Number of Samples</i>	<i>Range of E.Coli Or Fecal Results (min #)-(max #)</i>	<i>Range of Total Coliform Results (min #)-(max #)</i>	<i>Number of HPC Samples</i>	<i>Range of HPC Results (min #)-(max #)</i>
<i>Raw</i>	<b>100</b>	<b>0-60</b>	<b>9-740</b>	<b>1</b>	<b>43-43</b>
<i>Treated</i>	<b>101</b>	<b>0-0</b>	<b>0-0</b>	<b>96</b>	<b>0-17</b>
<i>Distribution</i>	<b>921</b>	<b>0-&lt;20</b>	<b>0-300</b>	<b>457</b>	<b>0-72</b>

In 2023, there were 5 AWQI (Adverse Water Quality Incident) events reported and are summarized in Table 5.1 below. In general, of the 921 bacteriological samples collected from the distribution system sampling locations, 1 sample showed a total coliform presence. Indicator bacteria are not disease causing but provide an indication of a potential bacterial onset.

**TABLE 4.2- PLANT SAMPLES**

	<i>Number of Grab Samples</i>	<i>Range of Results (min #)-(max #)</i>
Turbidity Entering Distribution	8760	0.06-3.67
Chlorine	8760	0.84-3.12
Fluoride (If the DWS provides fluoridation)	N/A	N/A

The control room operator through the use of the Delta-V Supervisory Control and Data Acquisition System (SCADA), continuously monitors, records and trends all operational parameters from the plant on a 24/7 basis. All non-compliant conditions from within the TWFP result in both an audible alarm and a visual display until such time that they are acknowledged and addressed by the Control Room Operator. The operator tests and monitors hourly for all operational parameters, including pH, filtered water turbidity, finished (system) water turbidity, colour, free chlorine residual, UV transmittance, and chemical dosage settings (i.e.: caustic soda, aluminium sulphate, cationic polymer and elemental chlorine).

Annual and quarterly samples reflecting the maximum residence time in the distribution system are collected and analysed for all microbiological parameters and those conditions listed in Schedule 23 (Inorganics), and Schedule 24 (Organics), Iron, Lead, Sodium, THM's, and Fluoride as outlined within Ontario Regulation 170/03.

**TABLE 4.3- SUMMARY OF THM RESULTS FOR DISTRIBUTION SYSTEM**

	1 <sup>st</sup> Quarter	2nd Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
<b>Quarterly Average</b>	<b>59.8</b>	<b>89.0</b>	<b>95.3</b>	<b>77.0</b>
<b>System THM – Entering Distribution</b>	<b>36</b>	<b>47</b>	<b>55</b>	<b>48</b>
<b>Maximum Acceptable Concentration - THM</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>
<b>4 Quarter Average THM RAA (100 MAC)</b>	92.2	89.2	80.5	80.3
<b>*All units as µg/L (ppb)</b>				

**TABLE 4.4- SUMMARY OF HAA RESULTS FOR DISTRIBUTION SYSTEM**

	1 <sup>st</sup> Quarter	2nd Quarter	3 <sup>rd</sup> Quarter	4 <sup>th</sup> Quarter
<b>Quarterly Average</b>	<b>49.0</b>	<b>60.8</b>	<b>66.8</b>	<b>68.4</b>
<b>System HAA – Entering Distribution</b>	<b>31.7</b>	<b>36.8</b>	<b>33.9</b>	<b>36.9</b>
<b>Maximum Acceptable Concentration – HAA</b>	<b>80</b>	<b>80</b>	<b>80</b>	<b>80</b>
<b>4 Quarter Average HAA RAA (80 MAC)</b>	69.1	65.3	61.2	61.3
<b>*All units as µg/L (ppb)</b>				

**TABLE 4.5- INORGANIC TEST PARAMATERS IN DISTRIBUTION SYSTEM**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
<b>Antimony</b>	02/28/2023	<0.0006	mg/L	None
<b>Arsenic</b>	02/28/2023	0.0004	mg/L	None
<b>Barium</b>	02/28/2023	0.00478	mg/L	None
<b>Boron</b>	02/28/2023	0.015	mg/L	None
<b>Cadmium</b>	02/28/2023	<0.000003	mg/L	None
<b>Chromium</b>	02/28/2023	0.00023	mg/L	None
<b>*Lead</b>				
<b>Mercury</b>	02/28/2023	<0.00001	mg/L	None
<b>Selenium</b>	02/28/2023	0.00027	mg/L	None
<b>Sodium</b>	02/28/2023	15.1	mg/L	None
<b>Uranium</b>	02/28/2023	0.000011	mg/L	None
<b>Fluoride</b>	02/28/2023	<0.06	mg/L	None
<b>Nitrate</b>	02/28/2023 05/15/2023 08/28/2023 11/07/2023	0.111 0.08 0.014 0.035	mg/L	None
<b>Nitrite</b>	02/28/2023 05/15/2023 08/28/2023 11/07/2023	<0.003 <0.003 <0.003 <0.003	mg/L	None

\*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

**TABLE 4.6- ORGANIC TEST PARAMETERS IN DISTRIBUTION SYSTEM**

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
1,1-Dichloroethylene	02/28/2023	<0.00033	mg/l	None
1,2-Dichlorobenzene	02/28/2023	<0.00041	mg/l	None
1,2-Dichloroethane	02/28/2023	<0.00035	mg/l	None
1,4-Dichlorobenzene	02/28/2023	<0.00036	mg/l	None
2,3,4,6-Tetrachlorophenol	02/28/2023	<0.00020	mg/l	None
2,4,6-Trichlorophenol	02/28/2023	<0.00025	mg/l	None
2-4 Dichlorophenol	02/28/2023	<0.00015	mg/l	None
2,4-Dichlorophenoxy acetic acid (2,4-D)	02/28/2023	<0.00019	mg/l	None
Alachlor	02/28/2023	<0.00002	mg/l	None
Atrazine + N-dealkylated metabolites	02/28/2023	<0.00001	mg/l	None
Azinphos-methyl	02/28/2023	<0.00005	mg/l	None
Benzene	02/28/2023	<0.00032	mg/l	None
Benzo(a)pyrene	02/28/2023	<0.000004	mg/l	None
Bromoxynil	02/28/2023	<0.00033	mg/l	None
Carbaryl	02/28/2023	<0.00005	mg/l	None
Carbofuran	02/28/2023	<0.00001	mg/l	None
Carbon Tetrachloride	02/28/2023	<0.00017	mg/l	None
Chlorobenzene	02/28/2023	<0.0003	mg/l	None
Chlorpyrifos	02/28/2023	<0.00002	mg/l	None
Diazinon	02/28/2023	<0.00002	mg/l	None
Dicamba	02/28/2023	<0.00020	mg/l	None
Dichloromethane	02/28/2023	<0.00035	mg/l	None
Diclofop-methyl	02/28/2023	<0.00040	mg/l	None
Dimethoate	02/28/2023	<0.00006	mg/l	None
Diquat	02/28/2023	<0.001	mg/l	None
Diuron	02/28/2023	<0.00003	mg/l	None
Glyphosate	02/28/2023	<0.001	mg/l	None
Malathion	02/28/2023	<0.00002	mg/l	None
Metolachlor	02/28/2023	<0.00001	mg/l	None
Metribuzin	02/28/2023	<0.00002	mg/l	None
Paraquat	02/28/2023	<0.001	mg/l	None
Pentachlorophenol /PCP	02/28/2023	<0.00015	mg/l	None
Phorate	02/28/2023	<0.00001	mg/l	None
Picloram	02/28/2023	<0.001	mg/l	None
Polychlorinated Biphenyls(PCB)	02/28/2023	<0.00004	mg/l	None
Prometryne	02/28/2023	<0.00003	mg/l	None
Simazine	02/28/2023	<0.00001	mg/l	None
Terbufos	02/28/2023	<0.00001	mg/l	None
Tetrachloroethylene	02/28/2023	<0.00035	mg/l	None
Triallate	02/28/2023	<0.00001	mg/l	None
Trichloroethylene	02/28/2023	<0.00044	mg/l	None
Trifluralin	02/28/2023	<0.00002	mg/l	None
Vinyl Chloride	02/28/2023	<0.00017	mg/l	None

## **Section 5: Summary of Adverse Test Results and Corrective Actions**

Section 5 summarizes the adverse water quality test results and the corresponding corrective actions taken as required by the Ontario Drinking Water System, Ontario Regulation 170/03 for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2023.

**TABLE 5.1- SUMMARY OF ADVERSE TEST RESULTS AND CORRECTIVE ACTION**

<b>Incident Date (dd/mm/yy)</b>	<b>Parameter</b>	<b>Result</b>	<b>Unit of Measure</b>	<b>Corrective Action</b>	<b>Corrective Action Date</b>
25/04/2023	Total Coliform AWQI No. 161839	1	CFU/100 mL	Flushing and re-sampling at the AWQI location and two upstream samples (no downstream as it is an endpoint). All samples came back clear.	29/04/2023
12/10/2023	E. coli and Total Coliform AWQI 163798	*NDOGT	CFU/100 mL	High residual, determine incorrect sampling. However, conducted flushing and re-sampling at the AWQI location, upstream and downstream. All samples came back clear. *NDOGT - No Data, Overgrown with Target	14/10/2023
19/10/2023	Free Chlorine Residual in Distribution AWQI No. 163837	0.05	ppm	Flushed and restored residuals. Sampled AWQI location as well as downstream. All results came back clear.	19/10/2023
23/10/2023	Duty to report other observations : potential low chlorine residuals AWQI No. 163854	n/a	n/a	Precautionary Boil Water Advisory was issued to all customers in Porcupine east of Bristol Road due to the potential low chlorine residual. Precautionary Boil Water Advisory issued. Leaking valve repaired, flushing conducted throughout Porcupine prior to the shutdown to bring up and maintain residuals. As residuals and pressure were maintained, preventative BWA was rescinded.	24/10/2023
27/11/2023	Duty to report other observations : loss of water supply AWQI No. 164122	n/a	n/a	Precautionary Boil Water Advisory was issued to all customers consumers on Pine Street between Second and Third Avenue due to the loss of pressure and loss of water for the area. Water supply was restored, flushing and re-sampling upstream and downstream of watermain break. All samples came back clear. Precautionary Boil Water Advisory was then lifted.	30/11/2023

## **Section 6: Summary of Non-Compliance Issues**

Section 6 summarizes the non-compliance issues from the City's most recent inspection from the Ministry of Environment Parks and Conservation.

There was 1 inspection conducted on January 24, 2024 for the period of October 19, 2022 to December 31, 2023.

Two sections of the report, namely, "*Actions Required*" and "*Recommended Actions*" are intended to identify aspects of the drinking water system's operation with the potential for improvement.

"*Actions Required*" are linked to incidents of non-compliance with regulatory requirements contained within an Act, a Regulation or site-specific approvals, licenses, permits, orders, or instructions. Such violations could result in the issuance of mandatory abatement instruments including Orders, tickets, penalties, or referrals to the Ministry's Investigations and Enforcement Branch.

"*Recommended Actions*" convey information that the owner and operation authority should consider implementing in order to advance efforts already in place to address such issues as emergency preparedness, the fulsome availability of information to consumers and conformance with existing and emerging industrial standards. Please note items which appear as recommended actions do not, in themselves, constitute violations.



**TABLE 6.1- SUMMARY OF 2023 ACTIONS REQUIRED**

<b>NON-COMPLIANCE ISSUE</b>		<b>ACTION REQUIRED</b>	<b>ACTION TAKEN</b>
<b>#</b>	<b>General Detailed Description</b>		
NC-1	Records did not confirm that the water treatment equipment which provides chlorination or chloramination for secondary disinfection purposes was operated so that at all times and all locations in the distribution system the chlorine residual was never less than 0.05 mg/l free or 0.25 mg/l combined.	In accordance with subsection 1-2 (2)4 of Schedule 1 to O. Reg 170/03, the owner and operating authority for the system must ensure that the treatment equipment is operated so that, at all times and at all locations within the distribution system, the free chlorine residual is never less than 0.05 mg/L.	Ensure that the treatment equipment is operated so that, at all times and at all locations within the distribution system, the free chlorine residual is never less than 0.05 mg/L.
NC-2	All continuous monitoring equipment utilized for sampling and testing required by O. Reg. 170/03, or Municipal Drinking Water Licence or Drinking Water Works Permit or order, were not equipped with alarms or shut-off mechanisms that satisfy the standards described in Schedule 6.	The owner/operating authority shall adjust the low-level alarm setpoint for the regulatory free chlorine residual analyzer which monitors primary disinfection to a minimum of 0.8 mg/L in accordance with information provided in the Timmins WFP Operations Manual.  Further, a review of the Timmins WFP Operations Manual and Standard Operating Procedures (SOPs) identified discrepancies of the alarm setpoints for free chlorine residual monitoring. The owner and operating authority shall review all procedures and update accordingly to reflect current operations. Updated SOP's shall be provided to the Water Compliance Officer by April 19, 2024.	Confirmation provided to the Water Compliance Officer that the low-level alarm setpoint are set to minimum 0.8mg/L was provided to the Water Compliance Officer.  SOPs will be been updated and provided to the Water Compliance Officer as required.
NC-3	All microbiological water quality monitoring requirements prescribed by legislation for treated samples were not being met.	It was indicated that an issue with the electronic chain of custody forms for the samples taken between December 7, 2022, and January 3, 2023, may have caused HPC testing to be omitted for the treated water samples. The chain of custody forms are now password protected to prevent similar incidents from reoccurring. No further action required.	The chain of custody forms are now password protected to prevent the incident from reoccurring.

NC-4	All water quality monitoring requirements imposed by the MDWL or DWWP issued under Part V of the SDWA were not being met.	It was indicated that the TSS sample has been added to the monthly checklist that is used to ensure the correct number/type of samples are taken. The TSS sample schedule is also posted in the TWFP control room for operators to reference. No further action required.	TSS sample has been added to the monthly checklist that is used to ensure the correct number/type of samples are taken.
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**TABLE 6.2- SUMMARY OF 2023 RECOMMENDED ACTIONS**

<b>TABLE 6.2- SUMMARY OF 2023 RECOMMENDED ACTIONS</b>				
<b>RECOMMENDATION AND BEST PRACTICE ISSUE</b>			<b>ACTION RECOMMENDED</b>	<b>ACTION TAKEN</b>
<b>#</b>	<b>General</b>	<b>Detailed Description</b>		
No recommended actions identified in the inspection report.				

## **Section 7: Summary of Quantity of Water Supplied**

Section 7 summarizes the quantity of water treated and supplied to the consumer and industrial customer for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2023.

**TABLE 7.1- WATER QUANTITIES TAKEN**

<b>Maximum Daily Volume in m<sup>3</sup>/day</b>				
<b>Maximum Flows</b>	<b>TWFP Rate of Raw Water Taking</b>	<b>TWFP Filtered Water</b>	<b>TWFP Finished to Distribution</b>	<b>TWFP Backwash</b>
Certificate of Approval Volume	<b>54,600</b>	<b>54,600</b>	<b>54,600</b>	<b>54,600</b>
Jan-23	24,731	23,054	21,177	4,414
Feb-23	26,456	24,793	22,558	3,814
Mar-23	25,128	23,601	21,620	3,545
Apr-23	26,073	24,535	22,037	3,832
May-23	29,279	27,691	25,123	3,435
Jun-23	32,910	31,189	30,122	3,522
Jul-23	28,645	26,791	25,663	2,666
Aug-23	34,053	32,383	29,753	3,403
Sep-23	24,964	23,487	20,673	3,896
Oct-23	21,365	19,875	17,825	5,141
Nov-23	24,227	22,676	21,153	4,392
Dec-23	21,978	20,560	18,617	4,566
Highest % of Maximum Volume	62.37	59.31	55.17	9.42

**TABLE 7.2- WATER TOTAL / AVERAGE / PEAK FLOWS**

	<b>Total Flow</b>	<b>Average Daily Flow</b>	<b>Maximum Daily Flow</b>	<b>Instantaneous Peak Flow</b>	<b>C of A Maximum Flow</b>	<b>% Capacity</b>
	<b>m<sup>3</sup></b>	<b>m<sup>3</sup>/day</b>	<b>m<sup>3</sup>/day</b>	<b>L/s</b>	<b>m<sup>3</sup>/day</b>	
<b>January</b>	717,808	23,155	24,731	337.8	54,600	45.3
<b>February</b>	681,920	24,354	26,456	458.9	54,600	48.5
<b>March</b>	745,712	24,055	25,128	393.7	54,600	46.0
<b>April</b>	709,968	23,666	26,073	331.8	54,600	47.8
<b>May</b>	716,047	23,098	29,279	467.3	54,600	53.6
<b>June</b>	744,708	24,824	32,910	469.0	54,600	60.3
<b>July</b>	769,059	24,808	28,645	462.2	54,600	52.5
<b>August</b>	735,877	23,738	34,053	476.1	54,600	62.4
<b>September</b>	624,490	20,816	24,964	385.6	54,600	45.7
<b>October</b>	592,366	19,109	21,365	588.7	54,600	39.1
<b>November</b>	592,464	19,749	24,227	366.7	54,600	44.4
<b>December</b>	620,642	20,021	21,978	391.6	54,600	40.3
<b>2023</b>	8,251,061	22,544	34,053	588.7	54,600	41.3