



# Annual and Summary Report

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For the Period of Jan. 1, 2022 to Dec. 31, 2022

**For Arthur and Mount Forest Drinking Water Systems**

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## Introduction

### Purpose

The purpose of this report is to provide information to several stakeholders and to satisfy the regulatory requirements of the Safe Drinking Water Act (SDWA), reporting required under Ontario Regulation 170/03 (Section 11 and Schedule 22). The report is a compilation of information that helps to demonstrate the ongoing provision of safe, consistent supply of high-quality drinking water to customers located within the Township of Wellington North (Arthur and Mount Forest).

### Scope

This Annual and Summary report includes information from both Mount Forest and Arthur Drinking Water Systems for the period of January 1<sup>st</sup> to December 31<sup>st</sup>, 2022 (unless otherwise noted). The report is a collection of information that was previously found in two separate reports (Annual Report and Summary 22 Report to Council). The information is required to be reported to the following:

- the Drinking Water System Owners (Township of Wellington North Council);
- the public and customers

This report satisfies the requirements of both the Safe Drinking Water Act (SDWA) and Ontario Regulation 170/03:

-Section 11, Annual Reports which includes:

- a brief description of the drinking water systems;
- a list of water treatment chemicals used;
- a summary of the most recent water tests results required under O. Reg.170/03 or an approval, Municipal Drinking Water License (MDWL) or order;
- a summary of adverse test results and other issues reported to the Ministry including corrective action taken;
- a description of major expenses incurred to install, repair or replace required equipment;
- the location where this report is available for inspection/review.

And;

-Schedule 22, Summary Report which includes:

- list the requirements of the Safe Drinking Water Act, the Regulations, Drinking Water Works Permits (DWWP), Municipal Drinking Water License (MDWL), and any orders applicable to the system that were not met at any time during the period covered by the report;
- for each requirement that was not met, the duration of the failure and measures that were taken to correct the failure;

- a summary of the quantities and flow rates of the water supplied during the period covered by the report, including monthly average and maximum daily flows; and
- a comparison of this information to the rated capacity and flow rates approved in the system's approval, DWWP and/or MDWL.

This report satisfies applicable requirements for both the Arthur and Mount Forest Drinking Water Systems.

A copy of this report is available for viewing online at [www.wellington-north.com](http://www.wellington-north.com)

Inquiries can be made by emailing [smcdougall@wellington-north.com](mailto:smcdougall@wellington-north.com) or by calling 519-848-3620 x 4628

#### Notice

Please note that every reasonable effort is made to ensure the accuracy of this report. This report is published with the best available information at the time of the publication. In the events that errors or omissions occur, the online report will be updated. Please refer to the online version of the report for the most current version.

#### Systems Overview

The role of the water department is to provide customers and the community with safe, consistent supply of high-quality drinking water while meeting, exceeding, and continually improving on legal, operational, and quality management system requirements.

The Arthur and Mount Forest drinking water systems are Class II Water and Distribution Supply Subsystems, composed of groundwater wells and water distribution system. From January 1<sup>st</sup> to December 31<sup>st</sup>, 2022, certified staff of three Operators, one Lead Hand, one Manager and one Process Compliance Analyst operated and maintained the systems.

The water department received full scope reaccreditation to the Drinking Water Quality Management Standard after a successful off-site audit on July 9<sup>th</sup>, 2021 conducted by a third-party accreditation body. This full accreditation satisfies part of the requirements under the Municipal Drinking Water Licensing Program.

#### Arthur Drinking Water System

Arthur's municipal drinking water system provides water for a permanent population of approximately 2,628, comprised of approximately 1,255 residential connections and 110 Industrial/Commercial/Institutional (ICI). ICI customers are fully metered and residential units are on a flat rate system. Arthur has approximately 21 km of water main.

The Arthur water system is comprised of three drilled wells, two pump houses, two elevated storage tanks and a water distribution system. The township uses 12% sodium hypochlorite for disinfection. Sodium silicate is used for iron sequestering at Well #7 and Waterworx is used at Well #8 for manganese sequestering. Each well is equipped with one well pump, discharge piping, and disinfection equipment. Well #8 is equipped with a back-up diesel generator. The system's supply for fire protection, peak demands and emergencies, is stored within two elevated storage tanks, one with a capacity of 1137 m<sup>3</sup> and one with a capacity of 227m<sup>3</sup>.

The well pumps and associated metering pumps are started and stopped based on the water level in elevated tank number one. Once the low water level in the tank has been reached, the pump stations are called upon to supply the distribution system with the excess filling the elevated storage tanks to the normal top water level. This system is a demand/storage system. When the level drops below the lead pump start level, the lead well pump will start. If the level continues to drop, the next duty pump in sequence will start. All pumps stop at the normal top water level until the water level drops in elevated tank number one and the pumps are required again. Whenever all pumps have stopped; the pump sequence changes. Pumps removed from service are automatically skipped.

From January 1<sup>st</sup> to December 31<sup>st</sup>, 2022, a total of 361,192.61 cubic meters of water was treated and pumped to the system. The average daily water demand was 989.14 cubic meters. The highest daily use of water occurred on June 30, 2022 when 1,558.05 cubic meters of water was pumped.

### **Mount Forest Drinking Water System**

Mount Forest's municipal drinking water system provides water for a permanent population of approximately 5,040, comprised of approximately 2,215 residential connections and 241 ICI connections. ICI customers are fully metered, and residential units are on a flat rate system. Mount Forest distribution system is approximately 37 km of water main.

The Mount Forest water system is comprised of four groundwater wells, four pump houses, a standpipe, and a water distribution system. The township uses 12% sodium hypochlorite for disinfection. Each well is equipped with one well pump, discharge piping, and disinfection equipment. Well #3 is equipped with a back-up diesel generator and a booster pump. The system's supply for fire protection, peak demands and emergencies, is stored within a 2083 m<sup>3</sup> standpipe.

The well pumps and sodium hypochlorite metering pumps are started and stopped based on the standpipe water level. Once the low water level in the tank has been reached, the pump stations are called upon to supply the distribution system with the excess filling the standpipe to the normal top water level. This system is a demand/storage system. When the level drops below the lead pump start level, the lead well pump will start. If the level continues to drop, the first, second and third lag well pumps will be started, respectively. All pumps stop at the normal top water level until the water levels drops in the standpipe and the pumps are required again. Whenever all pumps have stopped; the pump sequence changes. Pumps removed from service are automatically skipped.

From January 1<sup>st</sup> to December 31<sup>st</sup>, 2022, a total of 507,788.89 cubic meters of water was treated and pumped to the system. The average daily water demand was 1,390.71 cubic meters. The highest daily use of water occurred on June 25, 2022 when 2,239.71 cubic meters of water was pumped.

### **Sampling and Testing**

The Township of Wellington North's certified operators regularly test the water within the overall system including the raw water at the well source(s), after treatment, and within the distribution system. From January 1<sup>st</sup> to December 31<sup>st</sup>, 2022, all regulatory microbiological and chemical quality samples were taken by certified operators and tests performed by accredited, licensed laboratories on water samples collected throughout the drinking water system. These tests include regulatory testing, and those results are included in this report.

Arthur and Mount Forest drinking water systems are defined as large residential systems operated under the regulatory requirements of the Safe Drinking Water Act and the Ontario Water Resources Act (accessed at [www.e-laws.gov.on.ca](http://www.e-laws.gov.on.ca)). The Arthur Drinking Water System is operated under Municipal Drinking Water License (MDWL) 113-101 and the Drinking Water Works Permit (DWWP) 113-201. The Mount Forest Drinking Water System is operated under MDWL 113-102 and DWWP 113-202.

The MDWL and the DWWP describe system-specific requirements that are supplementary to provincial regulations and act as a license for water supply and distribution operations. These documents outline specific conditions and requirements regarding operation, maintenance and upgrades that are required by the system and are considered regulatory in nature. These documents are available by request for viewing at 160 Preston Street, Arthur.

### **Summary Report**

#### **a) Incidents of Regulatory Non-Compliance**

This section describes all incidents of non-compliance (excluding those defined as "Adverse Water Quality Incidents" (AWQI) reported in Section B of this report). AWQI's are required to be reported to the Ministry of Environment, Conservation & Parks (MECP) with respect to the following Acts and related regulations: Ontario Water Resources Act (OWRA), Safe Drinking Water Act (SDWA), the Environmental Protection Act (EPA), and Municipal Drinking Water Licenses (MDWL) and Drinking Water Works Permits (DWWP).

The most recent assessment of compliance for Arthur and Mount Forest Drinking Water Systems as determined by the MECP during the 2022 Annual Inspections resulted in a final inspection rating of 100% for each facility.

There was no non-compliance for either Arthur or Mount Forest Drinking Water Systems during the MECP inspections in 2022.

## b) Adverse Water Quality Incidents

This section describes all “Adverse Water Quality Incidents” (AWQI). This term refers to any unusual test results from treated water that does not meet a provincial water quality standard, or situation where disinfection of the water may be compromised. An adverse water quality incident indicates that on at least one occasion, a water quality standard was not met.

There were zero AWQI in Mount Forest and zero AWQI in Arthur in 2022.

## c) Summaries of Flow Rates and Water Supply Capacities

The Safe Drinking Water Act (SDWA) and the Ontario Water Resources Act (OWRA) each require that operating authority’s record and report water takings as governed by the Permits to Take Water (PTTW). The following tables list the quantities and flow rates of the water supplied during this reporting period, including monthly average and maximum daily flows, daily instantaneous peak flow rates and a comparison to the rated capacity and flow rates specified in the system approval:

**Table 1: Arthur Well #7b Flows**

**Approved Volume (m3/day): 1961**

**Approved Flow Rate (L/sec): 22.7**

	Avg Daily Volume (m <sup>3</sup> )	% of Approved Volume	Max Daily Volume (m <sup>3</sup> )	% of Approved Volume	Peak Flow Rate (L/sec)	% of Approved Flow Rate
<b>January</b>	298.85	15.2	497.94	25.4	24.17	106.5% *
<b>February</b>	325.08	16.6	616.49	31.4	20.10	88.5
<b>March</b>	287.32	14.7	481.23	24.5	20.10	88.5
<b>April</b>	324.48	16.5	580.94	29.6	20.61	90.8
<b>May</b>	316.92	16.2	575.70	29.4	21.09	92.9
<b>June</b>	389.62	19.9	923.03	47.1	20.59	90.7
<b>July</b>	386.92	19.7	924.68	47.2	20.29	89.4
<b>August</b>	357.39	18.2	579.81	29.6	20.87	91.9
<b>September</b>	381.70	19.5	958.38	48.9	20.12	88.6
<b>October</b>	327.10	16.7	618.53	31.5	19.82	87.3
<b>November</b>	318.70	16.3	601.74	30.7	20.16	88.8
<b>December</b>	309.08	15.8	629.31	32.1	20.79	91.6

\* Flow Rate exceedance occurred on January 9<sup>th</sup>, 2022 for less than 30 seconds. Reason is unknown.



Table 2: Arthur Well #8a Flows

Approved Volume (m<sup>3</sup>/day): 2255

Approved Flow Rate (L/sec): 26.1

	Avg Daily Volume (m <sup>3</sup> )	% of Approved Volume	Max Daily Volume (m <sup>3</sup> )	% of Approved Volume	Peak Flow Rate (L/sec)	% of Approved Flow Rate
January	293.33	13.0	722.96	32.1	22.09	84.6
February	298.27	13.2	591.63	26.2	22.10	84.7
March	295.75	13.1	694.62	30.8	22.33	85.6
April	287.47	12.7	528.90	23.5	22.90	87.7
May	324.62	14.4	531.12	23.6	22.58	86.5
June	356.10	15.8	626.32	27.8	22.52	86.3
July	371.28	16.5	587.84	26.1	22.04	84.4
August	364.03	16.1	674.57	29.9	21.84	83.7
September	361.38	16.0	652.15	28.9	21.78	83.4
October	344.55	15.3	492.92	21.9	21.73	83.3
November	335.28	14.9	603.50	26.8	21.60	82.8
December	331.16	14.7	535.95	23.8	21.39	82.0

Table 3: Arthur Well #8b Flows

Approved Volume (m<sup>3</sup>/day): 2255

Approved Flow Rate (L/sec): 26.1

	Avg Daily Volume (m <sup>3</sup> )	% of Approved Volume	Max Daily Volume (m <sup>3</sup> )	% of Approved Volume	Peak Flow Rate (L/sec)	% of Approved Flow Rate
January	306.93	13.6	564.35	25.0	21.58	82.7
February	282.07	12.5	534.75	23.7	21.60	82.8
March	286.53	12.7	535.20	23.7	21.58	82.7
April	258.34	11.5	552.69	24.5	21.63	82.9
May	321.21	14.2	660.84	29.3	22.04	84.4
June	363.87	16.1	547.47	24.3	22.90	87.8
July	380.64	16.9	607.66	26.9	21.31	81.6
August	330.87	14.7	670.58	29.7	21.35	81.8
September	326.16	14.5	538.39	23.9	21.13	81.0
October	353.02	15.7	563.77	25.0	21.05	80.7
November	347.45	15.4	646.94	28.7	20.64	79.1
December	326.17	14.5	649.85	28.8	20.79	79.7

There was 361,192.61 m<sup>3</sup> of water processed in Arthur for 2022 (Jan. 01 to Dec. 31). This represents 1.31 % decrease compared to the same time period in 2021 and 4.21 % decrease from 2020.

**Table 4: Mount Forest Well #3 Flows****Approved Volume (m<sup>3</sup>/day): 1637****Approved Flow Rate (L/sec):22.7**

	<b>Avg Daily Volume (m<sup>3</sup>)</b>	<b>% of Approved Volume</b>	<b>Max Daily Volume (m<sup>3</sup>)</b>	<b>% of Approved Volume</b>	<b>Peak Flow Rate (L/sec)</b>	<b>% of Approved Flow Rate</b>
<b>January</b>	267.48	16.3	491.59	30.0	19.15	84.4
<b>February</b>	282.80	17.3	535.16	32.7	18.49	81.5
<b>March</b>	288.13	17.6	559.86	34.2	18.71	82.4
<b>April</b>	261.44	16.0	513.52	31.4	18.56	81.8
<b>May</b>	263.86	16.1	482.89	29.5	18.78	82.7
<b>June</b>	253.91	15.5	489.48	29.9	17.66	77.8
<b>July</b>	256.71	15.7	509.59	31.1	21.62	95.2
<b>August</b>	272.38	16.6	490.07	29.9	18.39	81.0
<b>September</b>	253.79	15.5	471.87	28.8	18.42	81.1
<b>October</b>	249.86	15.3	490.24	29.9	18.19	80.1
<b>November</b>	144.13	8.8	533.70	32.6	19.17	84.4
<b>December</b>	273.65	16.7	516.92	31.6	18.89	83.2

**Table 5: Mount Forest Well #4 Flows****Approved Volume (m<sup>3</sup>/day): 1964****Approved Flow Rate (L/sec): 22.7**

	<b>Avg Daily Volume (m<sup>3</sup>)</b>	<b>% of Approved Volume</b>	<b>Max Daily Volume (m<sup>3</sup>)</b>	<b>% of Approved Volume</b>	<b>Peak Flow Rate (L/sec)</b>	<b>% of Approved Flow Rate</b>
<b>January</b>	342.38	17.4	641.73	32.7	19.20	84.6
<b>February</b>	379.01	19.3	661.49	33.7	19.30	85.0
<b>March</b>	333.63	17.0	681.42	34.7	19.15	84.4
<b>April</b>	265.86	13.5	534.18	27.2	19.33	85.2
<b>May</b>	326.43	16.6	654.45	33.3	19.36	85.3
<b>June</b>	284.49	14.5	643.59	32.8	19.21	84.6
<b>July</b>	322.19	16.4	594.81	30.3	20.86	91.9
<b>August</b>	338.96	17.3	657.88	33.5	19.05	83.9
<b>September</b>	279.25	14.2	702.42	35.8	18.92	83.3
<b>October</b>	315.62	16.1	709.83	36.1	19.06	84.0
<b>November</b>	403.67	20.6	714.53	36.4	18.99	83.7
<b>December</b>	325.65	16.6	643.92	32.8	19.39	85.4

**Table 6: Mount Forest Well #5 Flows**Approved Volume (m<sup>3</sup>/day): 3928

Approved Flow Rate (L/sec): 45.5

	Avg Daily Volume (m <sup>3</sup> )	% of Approved Volume	Max Daily Volume (m <sup>3</sup> )	% of Approved Volume	Peak Flow Rate (L/sec)	% of Approved Flow Rate
January	295.02	7.5	678.03	17.3	35.58	78.2
February	333.94	8.5	647.95	16.5	35.84	78.8
March	358.17	9.1	887.91	22.6	35.06	77.1
April	422.91	10.8	649.54	16.5	37.36	82.1
May	398.36	10.1	688.17	17.5	35.22	77.4
June	534.27	13.6	1160.42	29.5	35.56	78.2
July	571.82	14.6	1332.29	33.9	38.37	84.3
August	473.93	12.1	967.80	24.6	35.29	77.6
September	343.29	8.7	674.99	17.2	35.28	77.5
October	375.97	9.6	735.33	18.7	35.45	77.9
November	407.51	10.4	773.39	19.7	36.01	79.1
December	399.13	10.2	798.05	20.3	35.58	78.2

**Table 7: Mount Forest Well #6 Flows**Approved Volume (m<sup>3</sup>/day): 3928

Approved Flow Rate (L/sec): 45.5

	Avg Daily Volume (m <sup>3</sup> )	% of Approved Volume	Max Daily Volume (m <sup>3</sup> )	% of Approved Volume	Peak Flow Rate (L/sec)	% of Approved Flow Rate
January	454.24	11.6	826.78	21.0	33.26	73.1
February	338.41	8.6	800.84	20.4	32.37	71.1
March	363.02	9.2	916.55	23.3	31.43	69.1
April	372.95	9.5	711.41	18.1	34.20	75.2
May	404.64	10.3	958.38	24.4	33.10	72.7
June	537.74	13.7	887.80	22.6	31.03	68.2
July	469.72	12.0	929.78	23.7	38.43	84.5
August	407.78	10.4	1162.58	29.6	30.27	66.5
September	467.33	11.9	833.64	21.2	29.39	64.6
October	374.07	9.5	615.60	15.7	46.25	101.6 % *
November	321.28	8.2	573.17	14.6	37.41	82.2
December	277.77	7.1	758.36	19.3	34.92	76.7

\* Flow Rate exceedance occurred on October 26<sup>th</sup>, 2022 during Annual Emergency Power Test using the Tractor PTO. Operators were onsite monitoring at this time.

There was 507,788.89 m<sup>3</sup> of water processed in Mount Forest for 2022 (Jan. 01 to Dec. 31). This represents 2.86 % decrease compared to the same time period in 2021 and 0.76 % increase from 2020.

#### d) Raw and Treated Water Quality

This section describes the water quality monitoring, both regulatory and operational, that has been completed in 2022.

##### Water Quality Review

Under the SDWA, municipalities are required to monitor both the raw and treated quality of the source water supplied. This monitoring is performed for both regulatory compliance and due diligence and is expected to identify any changes within the treated water as well as in raw source waters.

**Table 8: O. Regulation 170/03 Schedule 7-2, Distribution Manual Free Chlorine Residual Summary**

Parameter	ODWQS	Total Analyzed	Total Outside ODWQS Criteria	Range	Units
Arthur Free Chlorine Residual	0.05 - 4.0	365	0	0.78 to 1.85	mg/L
Mount Forest Free Chlorine Residual	0.05 - 4.0	365	0	0.67 to 1.97	mg/L

**Table 9: O. Regulation 170/03 Schedule 10-4- Raw Bacteriological Sampling Summary**

Parameter	ODWQS	Total Analyzed	Total Outside ODWQS Criteria	Range	Units
Arthur Raw - T.coli	n/a	156	n/a	0	cfu/100mL
Arthur Raw - E.coli	n/a	156	n/a	0	cfu/100mL
Mount Forest Raw - T.coli	n/a	207	n/a	0	cfu/100mL
Mount Forest Raw - E.coli	n/a	207	n/a	0	cfu/100mL

**Table 10: O. Regulation 170/03 Schedule 10-3, Treated Bacteriological Sampling Summary**

Parameter	ODWQS	Total Analyzed	Total Outside ODWQS Criteria	Range	Units
Arthur Treated - T.coli	0	104	0	0	cfu/100mL
Arthur Treated - E.coli	0	104	0	0	cfu/100mL
Mount Forest Treated - T.coli	0	207	0	0	cfu/100mL
Mount Forest Treated - E.coli	0	207	0	0	cfu/100mL

**Table 11: O. Regulation 170/03 Schedule 10-2, Distribution Samples Summary**

Parameter	ODWQS	Total Analyzed	Total Outside ODWQS Criteria	Range	Units
Arthur Distribution - T.coli	0	156	0	0	cfu/100mL
Arthur Distribution - E.coli	0	156	0	0	cfu/100mL
Arthur Distribution - HPC	n/a	156	n/a	<10 – 100	cfu/mL
Mount Forest Distribution - T.coli	0	208	0	0	cfu/100mL
Mount Forest Distribution - E.coli	0	208	0	0	cfu/100mL
Mount Forest Distribution - HPC	n/a	208	n/a	<10 – 1100	cfu/mL

\* Note: On August 29, 2022 two Arthur Distribution samples were contaminated during the lab process therefore no results could be provided for TC & EC (NDCS – No Data: Contamination Suspected). The following week on September 6, 2022 the same sample locations results were zero.

\* Note: On September 6, 2022 an Arthur Distribution sample resulted in an HPC of NDOGHP (No Data: Overgrown with HPC). The following week on September 12, 2022 the same sample location result was zero.

#### **Treated Water Quality- O. Regulation 170/03 Schedule 13-6, 13-6.1 and 13-7, “Three Month” Sampling Results Summary**

In 2022, all operational Treated sources were sampled and analyzed for Schedule 13-6, 13-6.1 and 13-7 parameters as per O.Reg. 170-03.

Regulation 170/03, Schedule 13-6 requires a minimum of one distribution sample taken from the Distribution System where THM's (trihalomethanes) are most likely to develop (locations with high retention times). The Maximum Allowable Concentration (MAC) for THM's is 100 ug/L. However, for this parameter the MAC uses a running annual average of quarterly samples.

The results of the running average value for THM's for all related Distribution System samples in 2022 are below the ½ MAC (half of the maximum allowable concentration). Mount Forest had an annual running average of 16.25 ug/L of Total THM's and Arthur had an annual running average of 17.65 ug/L of Total THM's.

Regulation 170/03, Schedule 13-6.1 requires a minimum of one distribution sample taken from the Distribution System where HAA's (haloacetic acids) are most likely to develop. On January 1, 2020, the Maximum Allowable Concentration (MAC) for HAA's of 80 ug/L came into effect. For this parameter, the MAC uses a running annual average of quarterly samples.

The results of HAA's for all related Distribution System samples in 2022 are below the ½ MAC (half of the maximum allowable concentration). Mount Forest had an annual running average of <5.3 ug/L of HAA's and Arthur had an annual running average of <5.3 ug/L of HAA's.

All operational Treated Sources were sampled and analyzed for Nitrates and Nitrites as per Regulation 170/03, Schedule 13-7. There was no instance of any adverse results in 2022.

**Table 12: O. Regulation 170/03 Schedule 13-7, Nitrite and Nitrate Sampling Results Summary**

Arthur	Date	ODWQS MAC	Well #7b	Well #8a/b
<b>Nitrite (mg/L)</b>	Feb 2022	1	0.003<MDL	0.003<MDL
	May 2022	1	0.003<MDL	0.003<MDL
	Aug 2022	1	0.003<MDL	0.003<MDL
	Nov 2022	1	0.003<MDL	0.003<MDL
<b>Nitrate (mg/L)</b>	Feb 2022	10	0.006	0.006<MDL
	May 2022	10	0.008	0.006<MDL
	Aug 2022	10	0.010	0.006<MDL
	Nov 2022	10	0.006<MDL	0.006<MDL

\*MDL- method detection limit

Mount Forest	Date	ODWQS MAC	Well #3	Well #4	Well #5	Well #6
<b>Nitrite (mg/L)</b>	Feb 2022	1	0.003<MDL	0.003<MDL	0.003<MDL	0.003<MDL
	May 2022	1	0.003<MDL	0.003<MDL	0.003<MDL	0.003<MDL
	Aug 2022	1	0.003	0.003<MDL	0.003<MDL	0.003<MDL
	Nov 2022	1	0.003<MDL	0.003<MDL	0.003<MDL	0.003<MDL
<b>Nitrate (mg/L)</b>	Feb 2022	10	0.076	0.006<MDL	1.92	0.006<MDL
	May 2022	10	0.087	0.006<MDL	2.12	0.006<MDL
	Aug 2022	10	0.079	0.006<MDL	2.32	0.006<MDL
	Nov 2022	10	0.073	0.006<MDL	2.17	0.006<MDL

\*MDL- method detection limit

**Treated Water Quality Statistics- O. Regulation 170/03 Schedule 23 Results Summary**

If sampling for a particular schedule's parameters (e.g., Schedule 23 or 24) did not occur within the calendar year of the report, then the most recent values are required to be included in the report for reference.

**Table 13: O. Regulation 170/03 Schedule 23 Results Arthur Well #7b**

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
<b>Antimony</b>	Aug. 23/21	0.9<MDL	<b>6</b>	ug/L	No
<b>Arsenic</b>	Aug. 23/21	3	<b>10</b>	ug/L	No
<b>Barium</b>	Aug. 23/21	56.4	<b>1000</b>	ug/L	No
<b>Boron</b>	Aug. 23/21	84	<b>5000</b>	ug/L	No
<b>Cadmium</b>	Aug. 23/21	0.006	<b>5</b>	ug/L	No
<b>Chromium</b>	Aug. 23/21	0.18	<b>50</b>	ug/L	No
<b>Mercury</b>	Aug. 23/21	0.01<MDL	<b>1</b>	ug/L	No
<b>Selenium</b>	Aug. 23/21	0.04<MDL	<b>50</b>	ug/L	No
<b>Uranium</b>	Aug. 23/21	0.229	<b>20</b>	ug/L	No

**Table 14: O. Regulation 170/03 Schedule 23 Results Arthur Well #8**

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
<b>Antimony</b>	Aug. 23/21	0.9<MDL	<b>6</b>	ug/L	No
<b>Arsenic</b>	Aug. 23/21	0.2<MDL	<b>10</b>	ug/L	No
<b>Barium</b>	Aug. 23/21	59.2	<b>1000</b>	ug/L	No
<b>Boron</b>	Aug. 23/21	60	<b>5000</b>	ug/L	No
<b>Cadmium</b>	Aug. 23/21	0.004	<b>5</b>	ug/L	No
<b>Chromium</b>	Aug. 23/21	0.25	<b>50</b>	ug/L	No
<b>Mercury</b>	Aug. 23/21	0.01<MDL	<b>1</b>	ug/L	No
<b>Selenium</b>	Aug. 23/21	0.04<MDL	<b>50</b>	ug/L	No
<b>Uranium</b>	Aug. 23/21	0.43	<b>20</b>	ug/L	No

**Table 15: O. Regulation 170/03 Schedule 23 Results Mount Forest Well #3**

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
<b>Antimony</b>	Jan. 24/22	0.6<MDL	<b>6</b>	ug/L	No
<b>Arsenic</b>	Jan. 24/22	1.6	<b>10</b>	ug/L	No
<b>Barium</b>	Jan. 24/22	139	<b>1000</b>	ug/L	No
<b>Boron</b>	Jan. 24/22	41	<b>5000</b>	ug/L	No
<b>Cadmium</b>	Jan. 24/22	0.004	<b>5</b>	ug/L	No
<b>Chromium</b>	Jan. 24/22	0.18	<b>50</b>	ug/L	No
<b>Mercury</b>	Jan. 24/22	0.01<MDL	<b>1</b>	ug/L	No
<b>Selenium</b>	Jan. 24/22	0.05	<b>50</b>	ug/L	No
<b>Uranium</b>	Jan. 24/22	0.32	<b>20</b>	ug/L	No

**Table 16: O. Regulation 170/03 Schedule 23 Results Mount Forest Well #4**

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
<b>Antimony</b>	Jan. 24/22	0.6<MDL	<b>6</b>	ug/L	No
<b>Arsenic</b>	Jan. 24/22	1.0	<b>10</b>	ug/L	No
<b>Barium</b>	Jan. 24/22	221	<b>1000</b>	ug/L	No
<b>Boron</b>	Jan. 24/22	40	<b>5000</b>	ug/L	No
<b>Cadmium</b>	Jan. 24/22	0.009	<b>5</b>	ug/L	No
<b>Chromium</b>	Jan. 24/22	0.24	<b>50</b>	ug/L	No
<b>Mercury</b>	Jan. 24/22	0.01<MDL	<b>1</b>	ug/L	No
<b>Selenium</b>	Jan. 24/22	0.04<MDL	<b>50</b>	ug/L	No
<b>Uranium</b>	Jan. 24/22	0.166	<b>20</b>	ug/L	No

**Table 17: O. Regulation 170/03 Schedule 23 Results Mount Forest Well #5**

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
<b>Antimony</b>	Jan. 24/22	0.6<MDL	<b>6</b>	ug/L	No
<b>Arsenic</b>	Jan. 24/22	0.2 <MDL	<b>10</b>	ug/L	No
<b>Barium</b>	Jan. 24/22	169	<b>1000</b>	ug/L	No
<b>Boron</b>	Jan. 24/22	37	<b>5000</b>	ug/L	No
<b>Cadmium</b>	Jan. 24/22	0.1	<b>5</b>	ug/L	No
<b>Chromium</b>	Jan. 24/22	0.26	<b>50</b>	ug/L	No
<b>Mercury</b>	Jan. 24/22	0.01 <MDL	<b>1</b>	ug/L	No
<b>Selenium</b>	Jan. 24/22	0.61	<b>50</b>	ug/L	No
<b>Uranium</b>	Jan. 24/22	0.727	<b>20</b>	ug/L	No



Table 18: O. Regulation 170/03 Schedule 23 Results Mount Forest Well #6

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Antimony	Jan. 24/22	0.6<MDL	6	ug/L	No
Arsenic	Jan. 24/22	1.6	10	ug/L	No
Barium	Jan. 24/22	174	1000	ug/L	No
Boron	Jan. 24/22	32	5000	ug/L	No
Cadmium	Jan. 24/22	0.003<MDL	5	ug/L	No
Chromium	Jan. 24/22	0.12	50	ug/L	No
Mercury	Jan. 24/22	0.01<MDL	1	ug/L	No
Selenium	Jan. 24/22	0.04<MDL	50	ug/L	No
Uranium	Jan. 24/22	0.226	20	ug/L	No

#### Treated Water Quality Statistics- O. Regulation 170/03 Schedule 24 Results Summary

If sampling for a particular schedule's parameters (e.g., Schedule 23 or 24) did not occur within the calendar year of the report, then the most recent values are required to be included in the report for reference.

Table 19: O. Regulation 170/03 Schedule 24 Results for Arthur Well #7b

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Alachlor	Aug. 23/21	0.02<MDL	5	ug/L	No
Atrazine + N-dealkylated metabolites	Aug. 23/21	0.01<MDL	5	ug/L	No
Azinphos-methyl	Aug. 23/21	0.05<MDL	20	ug/L	No
Benzene	Aug. 23/21	0.32<MDL	1	ug/L	No
Benzo(a)pyrene	Aug. 23/21	0.004<MDL	0.01	ug/L	No
Bromoxynil	Aug. 23/21	0.33<MDL	5	ug/L	No
Carbaryl	Aug. 23/21	0.05<MDL	90	ug/L	No
Carbofuran	Aug. 23/21	0.01<MDL	90	ug/L	No
Carbon Tetrachloride	Aug. 23/21	0.17<MDL	2	ug/L	No
Chlorpyrifos	Aug. 23/21	0.02<MDL	90	ug/L	No
Diazinon	Aug. 23/21	0.02<MDL	20	ug/L	No
Dicamba	Aug. 23/21	0.20<MDL	120	ug/L	No
1,2-Dichlorobenzene	Aug. 23/21	0.41<MDL	200	ug/L	No
1,4-Dichlorobenzene	Aug. 23/21	0.36<MDL	5	ug/L	No
1,2-Dichloroethane	Aug. 23/21	0.35<MDL	5	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Aug. 23/21	0.33<MDL	14	ug/L	No
Dichloromethane	Aug. 23/21	0.35<MDL	50	ug/L	No

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
2-4 Dichlorophenol	Aug. 23/21	0.15<MDL	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug. 23/21	0.19<MDL	100	ug/L	No
Diclofop-methyl	Aug. 23/21	0.40<MDL	9	ug/L	No
Dimethoate	Aug. 23/21	0.06<MDL	20	ug/L	No
Diquat	Aug. 23/21	1.0<MDL	70	ug/L	No
Diuron	Aug. 23/21	0.03<MDL	150	ug/L	No
Glyphosate	Aug. 23/21	1.0<MDL	280	ug/L	No
Malathion	Aug. 23/21	0.02<MDL	190	ug/L	No
MCPA	Aug. 23/21	0.00012<MDL	0.1	mg/L	No
Metolachlor	Aug. 23/21	0.01<MDL	50	ug/L	No
Metribuzin	Aug. 23/21	0.02<MDL	80	ug/L	No
Monochlorobenzene	Aug. 23/21	0.3<MDL	80	ug/L	No
Paraquat	Aug. 23/21	1.0<MDL	10	ug/L	No
Pentachlorophenol	Aug. 23/21	0.15<MDL	60	ug/L	No
Phorate	Aug. 23/21	0.01<MDL	2	ug/L	No
Picloram	Aug. 23/21	1.0<MDL	190	ug/L	No
Polychlorinated Biphenyls(PCB)	Aug. 23/21	0.04<MDL	3	ug/L	No
Prometryne	Aug. 23/21	0.03<MDL	1	ug/L	No
Simazine	Aug. 23/21	0.01<MDL	10	ug/L	No
Terbufos	Aug. 23/21	0.01<MDL	1	ug/L	No
Tetrachloroethylene	Aug. 23/21	0.35<MDL	10	ug/L	No
2,3,4,6-Tetrachlorophenol	Aug. 23/21	0.20<MDL	100	ug/L	No
Triallate	Aug. 23/21	0.01<MDL	230	ug/L	No
Trichloroethylene	Aug. 23/21	0.44<MDL	5	ug/L	No
2,4,6-Trichlorophenol	Aug. 23/21	0.25<MDL	5	ug/L	No
Trifluralin	Aug. 23/21	0.02<MDL	45	ug/L	No
Vinyl Chloride	Aug. 23/21	0.17<MDL	1	ug/L	No

Table 20: O. Regulation 170/03 Schedule 24 Results for Arthur Well #8

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Alachlor	Aug. 23/21	0.02<MDL	5	ug/L	No
Atrazine + N-dealkylated metabolites	Aug. 23/21	0.01<MDL	5	ug/L	No
Azinphos-methyl	Aug. 23/21	0.05<MDL	20	ug/L	No
Benzene	Aug. 23/21	0.32<MDL	1	ug/L	No
Benzo(a)pyrene	Aug. 23/21	0.004<MDL	0.01	ug/L	No
Bromoxynil	Aug. 23/21	0.33<MDL	5	ug/L	No
Carbaryl	Aug. 23/21	0.05<MDL	90	ug/L	No
Carbofuran	Aug. 23/21	0.01<MDL	90	ug/L	No
Carbon Tetrachloride	Aug. 23/21	0.17<MDL	2	ug/L	No
Chlorpyrifos	Aug. 23/21	0.02<MDL	90	ug/L	No
Diazinon	Aug. 23/21	0.02<MDL	20	ug/L	No
Dicamba	Aug. 23/21	0.20<MDL	120	ug/L	No
1,2-Dichlorobenzene	Aug. 23/21	0.41<MDL	200	ug/L	No
1,4-Dichlorobenzene	Aug. 23/21	0.36<MDL	5	ug/L	No
1,2-Dichloroethane	Aug. 23/21	0.35<MDL	5	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Aug. 23/21	0.33<MDL	14	ug/L	No
Dichloromethane	Aug. 23/21	0.35<MDL	50	ug/L	No
2-4 Dichlorophenol	Aug. 23/21	0.15<MDL	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Aug. 23/21	0.19<MDL	100	ug/L	No
Diclofop-methyl	Aug. 23/21	0.40<MDL	9	ug/L	No
Dimethoate	Aug. 23/21	0.06<MDL	20	ug/L	No
Diquat	Aug. 23/21	1.0<MDL	70	ug/L	No
Diuron	Aug. 23/21	0.03<MDL	150	ug/L	No
Glyphosate	Aug. 23/21	1.0<MDL	280	ug/L	No
Malathion	Aug. 23/21	0.02<MDL	190	ug/L	No
MCPA	Aug. 23/21	0.00012<MDL	0.1	mg/L	No
Metolachlor	Aug. 23/21	0.01<MDL	50	ug/L	No
Metribuzin	Aug. 23/21	0.02<MDL	80	ug/L	No
Monochlorobenzene	Aug. 23/21	0.3<MDL	80	ug/L	No
Paraquat	Aug. 23/21	1.0<MDL	10	ug/L	No
Pentachlorophenol	Aug. 23/21	0.15<MDL	60	ug/L	No
Phorate	Aug. 23/21	0.01<MDL	2	ug/L	No
Picloram	Aug. 23/21	1.0<MDL	190	ug/L	No
Polychlorinated Biphenyls(PCB)	Aug. 23/21	0.04<MDL	3	ug/L	No
Prometryne	Aug. 23/21	0.03<MDL	1	ug/L	No
Simazine	Aug. 23/21	0.01<MDL	10	ug/L	No
Terbufos	Aug. 23/21	0.01<MDL	1	ug/L	No
Tetrachloroethylene	Aug. 23/21	0.35<MDL	10	ug/L	No

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
<b>2,3,4,6-Tetrachlorophenol</b>	Aug. 23/21	0.20<MDL	<b>100</b>	ug/L	No
<b>Triallate</b>	Aug. 23/21	0.01<MDL	<b>230</b>	ug/L	No
<b>Trichloroethylene</b>	Aug. 23/21	0.44<MDL	<b>5</b>	ug/L	No
<b>2,4,6-Trichlorophenol</b>	Aug. 23/21	0.25<MDL	<b>5</b>	ug/L	No
<b>Trifluralin</b>	Aug. 23/21	0.02<MDL	<b>45</b>	ug/L	No
<b>Vinyl Chloride</b>	Aug. 23/21	0.17<MDL	<b>1</b>	ug/L	No

Table 21: O. Regulation 170/03 Schedule 24 Results for Mount Forest Well #3

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
<b>Alachlor</b>	Jan. 24/22	0.02<MDL	<b>5</b>	ug/L	No
<b>Atrazine + N-dealkylated metabolites</b>	Jan. 24/22	0.01<MDL	<b>5</b>	ug/L	No
<b>Azinphos-methyl</b>	Jan. 24/22	0.05<MDL	<b>20</b>	ug/L	No
<b>Benzene</b>	Jan. 24/22	0.32<MDL	<b>1</b>	ug/L	No
<b>Benzo(a)pyrene</b>	Jan. 24/22	0.004<MDL	<b>0.01</b>	ug/L	No
<b>Bromoxynil</b>	Jan. 24/22	0.33<MDL	<b>5</b>	ug/L	No
<b>Carbaryl</b>	Jan. 24/22	0.05<MDL	<b>90</b>	ug/L	No
<b>Carbofuran</b>	Jan. 24/22	0.01<MDL	<b>90</b>	ug/L	No
<b>Carbon Tetrachloride</b>	Jan. 24/22	0.17<MDL	<b>2</b>	ug/L	No
<b>Chlorpyrifos</b>	Jan. 24/22	0.02<MDL	<b>90</b>	ug/L	No
<b>Diazinon</b>	Jan. 24/22	0.02<MDL	<b>20</b>	ug/L	No
<b>Dicamba</b>	Jan. 24/22	0.20<MDL	<b>120</b>	ug/L	No
<b>1,2-Dichlorobenzene</b>	Jan. 24/22	0.41<MDL	<b>200</b>	ug/L	No
<b>1,4-Dichlorobenzene</b>	Jan. 24/22	0.36<MDL	<b>5</b>	ug/L	No
<b>1,2-Dichloroethane</b>	Jan. 24/22	0.35<MDL	<b>5</b>	ug/L	No
<b>1,1-Dichloroethylene (vinylidene chloride)</b>	Jan. 24/22	0.33<MDL	<b>14</b>	ug/L	No
<b>Dichloromethane</b>	Jan. 24/22	0.35<MDL	<b>50</b>	ug/L	No
<b>2-4 Dichlorophenol</b>	Jan. 24/22	0.15<MDL	<b>900</b>	ug/L	No
<b>2,4-Dichlorophenoxy acetic acid (2,4-D)</b>	Jan. 24/22	0.19<MDL	<b>100</b>	ug/L	No
<b>Diclofop-methyl</b>	Jan. 24/22	0.40<MDL	<b>9</b>	ug/L	No
<b>Dimethoate</b>	Jan. 24/22	0.06<MDL	<b>20</b>	ug/L	No
<b>Diquat</b>	Jan. 24/22	1.0<MDL	<b>70</b>	ug/L	No
<b>Diuron</b>	Jan. 24/22	0.03<MDL	<b>150</b>	ug/L	No
<b>Glyphosate</b>	Jan. 24/22	1<MDL	<b>280</b>	ug/L	No
<b>Malathion</b>	Jan. 24/22	0.02<MDL	<b>190</b>	ug/L	No
<b>MCPA</b>	Jan. 24/22	0.00012<MDL	<b>0.1</b>	mg/L	No
<b>Metolachlor</b>	Jan. 24/22	0.01<MDL	<b>50</b>	ug/L	No
<b>Metribuzin</b>	Jan. 24/22	0.02<MDL	<b>80</b>	ug/L	No
<b>Monochlorobenzene</b>	Jan. 24/22	0.3<MDL	<b>80</b>	ug/L	No
<b>Paraquat</b>	Jan. 24/22	1<MDL	<b>10</b>	ug/L	No

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Pentachlorophenol	Jan. 24/22	0.15<MDL	60	ug/L	No
Phorate	Jan. 24/22	0.01<MDL	2	ug/L	No
Picloram	Jan. 24/22	1<MDL	190	ug/L	No
Polychlorinated Biphenyls(PCB)	Jan. 24/22	0.04<MDL	3	ug/L	No
Prometryne	Jan. 24/22	0.03<MDL	1	ug/L	No
Simazine	Jan. 24/22	0.01<MDL	10	ug/L	No
Terbufos	Jan. 24/22	0.01<MDL	1	ug/L	No
Tetrachloroethylene	Jan. 24/22	0.35<MDL	10	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan. 24/22	0.20<MDL	100	ug/L	No
Triallate	Jan. 24/22	0.01<MDL	230	ug/L	No
Trichloroethylene	Jan. 24/22	0.44<MDL	5	ug/L	No
2,4,6-Trichlorophenol	Jan. 24/22	0.25<MDL	5	ug/L	No
Trifluralin	Jan. 24/22	0.02<MDL	45	ug/L	No
Vinyl Chloride	Jan. 24/22	0.17<MDL	1	ug/L	No

Table 22: O. Regulation 170/03 Schedule 24 Results for Mount Forest Well #4

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Alachlor	Jan. 24/22	0.02<MDL	5	ug/L	No
Atrazine + N-dealkylated metabolites	Jan. 24/22	0.01<MDL	5	ug/L	No
Azinphos-methyl	Jan. 24/22	0.05<MDL	20	ug/L	No
Benzene	Jan. 24/22	0.32<MDL	1	ug/L	No
Benzo(a)pyrene	Jan. 24/22	0.004<MDL	0.01	ug/L	No
Bromoxynil	Jan. 24/22	0.33<MDL	5	ug/L	No
Carbaryl	Jan. 24/22	0.05<MDL	90	ug/L	No
Carbofuran	Jan. 24/22	0.01<MDL	90	ug/L	No
Carbon Tetrachloride	Jan. 24/22	0.17<MDL	2	ug/L	No
Chlorpyrifos	Jan. 24/22	0.02<MDL	90	ug/L	No
Diazinon	Jan. 24/22	0.02<MDL	20	ug/L	No
Dicamba	Jan. 24/22	0.20<MDL	120	ug/L	No
1,2-Dichlorobenzene	Jan. 24/22	0.41<MDL	200	ug/L	No
1,4-Dichlorobenzene	Jan. 24/22	0.36<MDL	5	ug/L	No
1,2-Dichloroethane	Jan. 24/22	0.35<MDL	5	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan. 24/22	0.33<MDL	14	ug/L	No
Dichloromethane	Jan. 24/22	0.35<MDL	50	ug/L	No
2,4 Dichlorophenol	Jan. 24/22	0.15<MDL	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan. 24/22	0.19<MDL	100	ug/L	No
Diclofop-methyl	Jan. 24/22	0.40<MDL	9	ug/L	No
Dimethoate	Jan. 24/22	0.06<MDL	20	ug/L	No

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Diquat	Jan. 24/22	1.0<MDL	70	ug/L	No
Diuron	Jan. 24/22	0.03<MDL	150	ug/L	No
Glyphosate	Jan. 24/22	1<MDL	280	ug/L	No
Malathion	Jan. 24/22	0.02<MDL	190	ug/L	No
MCPA	Jan. 24/22	0.00012<MDL	0.1	mg/L	No
Metolachlor	Jan. 24/22	0.01<MDL	50	ug/L	No
Metribuzin	Jan. 24/22	0.02<MDL	80	ug/L	No
Monochlorobenzene	Jan. 24/22	0.3<MDL	80	ug/L	No
Paraquat	Jan. 24/22	1<MDL	10	ug/L	No
Pentachlorophenol	Jan. 24/22	0.15<MDL	60	ug/L	No
Phorate	Jan. 24/22	0.01<MDL	2	ug/L	No
Picloram	Jan. 24/22	1<MDL	190	ug/L	No
Polychlorinated Biphenyls(PCB)	Jan. 24/22	0.04<MDL	3	ug/L	No
Prometryne	Jan. 24/22	0.03<MDL	1	ug/L	No
Simazine	Jan. 24/22	0.01<MDL	10	ug/L	No
Terbufos	Jan. 24/22	0.01<MDL	1	ug/L	No
Tetrachloroethylene	Jan. 24/22	0.35<MDL	10	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan. 24/22	0.20<MDL	100	ug/L	No
Triallate	Jan. 24/22	0.01<MDL	230	ug/L	No
Trichloroethylene	Jan. 24/22	0.44<MDL	5	ug/L	No
2,4,6-Trichlorophenol	Jan. 24/22	0.25<MDL	5	ug/L	No
Trifluralin	Jan. 24/22	0.02<MDL	45	ug/L	No
Vinyl Chloride	Jan. 24/22	0.17<MDL	1	ug/L	No

Table 23: O. Regulation 170/03 Schedule 24 Results for Mount Forest Well #5

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Alachlor	Jan. 24/22	0.02<MDL	5	ug/L	No
Atrazine + N-dealkylated metabolites	Jan. 24/22	0.01<MDL	5	ug/L	No
Azinphos-methyl	Jan. 24/22	0.05<MDL	20	ug/L	No
Benzene	Jan. 24/22	0.32<MDL	1	ug/L	No
Benzo(a)pyrene	Jan. 24/22	0.004<MDL	0.01	ug/L	No
Bromoxynil	Jan. 24/22	0.33<MDL	5	ug/L	No
Carbaryl	Jan. 24/22	0.05<MDL	90	ug/L	No
Carbofuran	Jan. 24/22	0.01<MDL	90	ug/L	No
Carbon Tetrachloride	Jan. 24/22	0.17<MDL	2	ug/L	No
Chlorpyrifos	Jan. 24/22	0.02<MDL	90	ug/L	No
Diazinon	Jan. 24/22	0.02<MDL	20	ug/L	No
Dicamba	Jan. 24/22	0.20<MDL	120	ug/L	No
1,2-Dichlorobenzene	Jan. 24/22	0.41<MDL	200	ug/L	No
1,4-Dichlorobenzene	Jan. 24/22	0.36<MDL	5	ug/L	No
1,2-Dichloroethane	Jan. 24/22	0.35<MDL	5	ug/L	No

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
1,1-Dichloroethylene (vinylidene chloride)	Jan. 24/22	0.33<MDL	14	ug/L	No
Dichloromethane	Jan. 24/22	0.35<MDL	50	ug/L	No
2-4 Dichlorophenol	Jan. 24/22	0.15<MDL	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan. 24/22	0.19<MDL	100	ug/L	No
Diclofop-methyl	Jan. 24/22	0.40<MDL	9	ug/L	No
Dimethoate	Jan. 24/22	0.06<MDL	20	ug/L	No
Diquat	Jan. 24/22	1.0<MDL	70	ug/L	No
Diuron	Jan. 24/22	0.03<MDL	150	ug/L	No
Glyphosate	Jan. 24/22	1<MDL	280	ug/L	No
Malathion	Jan. 24/22	0.02<MDL	190	ug/L	No
MCPA	Jan. 24/22	0.00012<MDL	0.1	mg/L	No
Metolachlor	Jan. 24/22	0.01<MDL	50	ug/L	No
Metribuzin	Jan. 24/22	0.02<MDL	80	ug/L	No
Monochlorobenzene	Jan. 24/22	0.3<MDL	80	ug/L	No
Paraquat	Jan. 24/22	1<MDL	10	ug/L	No
Pentachlorophenol	Jan. 24/22	0.15<MDL	60	ug/L	No
Phorate	Jan. 24/22	0.01<MDL	2	ug/L	No
Picloram	Jan. 24/22	1<MDL	190	ug/L	No
Polychlorinated Biphenyls(PCB)	Jan. 24/22	0.04<MDL	3	ug/L	No
Prometryne	Jan. 24/22	0.03<MDL	1	ug/L	No
Simazine	Jan. 24/22	0.01<MDL	10	ug/L	No
Terbufos	Jan. 24/22	0.01<MDL	1	ug/L	No
Tetrachloroethylene	Jan. 24/22	0.63	10	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan. 24/22	0.20<MDL	100	ug/L	No
Triallate	Jan. 24/22	0.01<MDL	230	ug/L	No
Trichloroethylene	Jan. 24/22	0.44<MDL	5	ug/L	No
2,4,6-Trichlorophenol	Jan. 24/22	0.25<MDL	5	ug/L	No
Trifluralin	Jan. 24/22	0.02<MDL	45	ug/L	No
Vinyl Chloride	Jan. 24/22	0.17<MDL	1	ug/L	No

Table 24: O. Regulation 170/03 Schedule 24 Results for Mount Forest Well #6

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Alachlor	Jan. 24/22	0.02<MDL	5	ug/L	No
Atrazine + N-dealkylated metabolites	Jan. 24/22	0.01<MDL	5	ug/L	No
Azinphos-methyl	Jan. 24/22	0.05<MDL	20	ug/L	No
Benzene	Jan. 24/22	0.32<MDL	1	ug/L	No
Benzo(a)pyrene	Jan. 24/22	0.004<MDL	0.01	ug/L	No
Bromoxynil	Jan. 24/22	0.33<MDL	5	ug/L	No
Carbaryl	Jan. 24/22	0.05<MDL	90	ug/L	No

Parameter	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Carbofuran	Jan. 24/22	0.01<MDL	90	ug/L	No
Carbon Tetrachloride	Jan. 24/22	0.17<MDL	2	ug/L	No
Chlorpyrifos	Jan. 24/22	0.02<MDL	90	ug/L	No
Diazinon	Jan. 24/22	0.02<MDL	20	ug/L	No
Dicamba	Jan. 24/22	0.20<MDL	120	ug/L	No
1,2-Dichlorobenzene	Jan. 24/22	0.41<MDL	200	ug/L	No
1,4-Dichlorobenzene	Jan. 24/22	0.36<MDL	5	ug/L	No
1,2-Dichloroethane	Jan. 24/22	0.35<MDL	5	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	Jan. 24/22	0.33<MDL	14	ug/L	No
Dichloromethane	Jan. 24/22	0.35<MDL	50	ug/L	No
2-4 Dichlorophenol	Jan. 24/22	0.15<MDL	900	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	Jan. 24/22	0.19<MDL	100	ug/L	No
Diclofop-methyl	Jan. 24/22	0.40<MDL	9	ug/L	No
Dimethoate	Jan. 24/22	0.06<MDL	20	ug/L	No
Diquat	Jan. 24/22	1.0<MDL	70	ug/L	No
Diuron	Jan. 24/22	0.03<MDL	150	ug/L	No
Glyphosate	Jan. 24/22	1<MDL	280	ug/L	No
Malathion	Jan. 24/22	0.02<MDL	190	ug/L	No
MCPA	Jan. 24/22	0.00012<MDL	0.1	mg/L	No
Metolachlor	Jan. 24/22	0.01<MDL	50	ug/L	No
Metribuzin	Jan. 24/22	0.02<MDL	80	ug/L	No
Monochlorobenzene	Jan. 24/22	0.3<MDL	80	ug/L	No
Paraquat	Jan. 24/22	1<MDL	10	ug/L	No
Pentachlorophenol	Jan. 24/22	0.15<MDL	60	ug/L	No
Phorate	Jan. 24/22	0.01<MDL	2	ug/L	No
Picloram	Jan. 24/22	1<MDL	190	ug/L	No
Polychlorinated Biphenyls(PCB)	Jan. 24/22	0.04<MDL	3	ug/L	No
Prometryne	Jan. 24/22	0.03<MDL	1	ug/L	No
Simazine	Jan. 24/22	0.01<MDL	10	ug/L	No
Terbufos	Jan. 24/22	0.01<MDL	1	ug/L	No
Tetrachloroethylene	Jan. 24/22	0.35<MDL	10	ug/L	No
2,3,4,6-Tetrachlorophenol	Jan. 24/22	0.20<MDL	100	ug/L	No
Triallate	Jan. 24/22	0.01<MDL	230	ug/L	No
Trichloroethylene	Jan. 24/22	0.44<MDL	5	ug/L	No
2,4,6-Trichlorophenol	Jan. 24/22	0.25<MDL	5	ug/L	No
Trifluralin	Jan. 24/22	0.02<MDL	45	ug/L	No
Vinyl Chloride	Jan. 24/22	0.17<MDL	1	ug/L	No



### Treated Water Quality Statistics- O. Regulations 170/03 Schedule 13-8 and 13-9, “60 Months” Sampling Results Summary

If sampling for a particular schedule’s parameters (e.g., Schedule 23 or 24) did not occur within the calendar year of the report, then the most recent values are required to be included in the report for reference.

Fluoride and Sodium are sampled on the “60 Months” sampling schedule. Results for most recent tests can be found in Table 25.

**Table 25: O. Regulation 170/03 Schedule 13-8 and 13-9, Fluoride and Sodium Results**

Parameter/Location	Sample Date	Result Value	Unit of Measure	Exceedance
Sodium- Arthur Well #7b	Sep. 10/18	36.6	mg/L	Yes <sup>1</sup>
Sodium- Arthur Well #8	Nov. 16/20	22.4	mg/L	Yes <sup>1</sup>
Sodium- Mount Forest Well #3	Sep. 10/18	21.3	mg/L	Yes <sup>1</sup>
Sodium- Mount Forest Well #4	Sep. 10/18	12.3	mg/L	No
Sodium- Mount Forest Well #5	Sep. 10/18	61.2	mg/L	Yes <sup>1</sup>
Sodium- Mount Forest Well #6	Sep. 10/18	11.7	mg/L	No
Fluoride- Arthur Well #7b	Sep. 10/18	1.30	mg/L	No
Fluoride-Arthur Well #8	Nov. 16/20	0.35	mg/L	No
Fluoride-Mount Forest Well #3	Sep. 10/18	1.05	mg/L	No
Fluoride-Mount Forest Well #4	Sep. 10/18	0.80	mg/L	No
Fluoride-Mount Forest Well #5	Sep. 10/18	0.14	mg/L	No
Fluoride-Mount Forest Well #6	Sep. 10/18	1.34	mg/L	No

<sup>1</sup> The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified when the sodium concentration exceeds 20 mg/L so that this information may be communicated to local physicians for their use with patients on sodium restricted diets.

### Treated Water Quality Statistics- O. Regulations 170/03 Schedule 15.1 Sampling Results Summary

If sampling for a particular schedule’s parameters (e.g., Schedule 23 or 24) did not occur within the calendar year of the report, then the most recent values are required to be included in the report for reference.

The Mount Forest and Arthur Drinking Water Systems are under reduced sampling under Schedule 15.1 which means we are not required to sample plumbing but are still required to sample in the distribution system. Results for most recent tests can be found in Table 26.

Table 26: O. Regulation 170/03 Schedule 15.1, Lead, Alkalinity and pH Results

Parameter/Location	Sample Date	Result Value	MAC	Unit of Measure	Exceedance
Lead – Hydrant # 125 James St.	Jan 11/21	0.04	10	ug/L	No
Lead – Hydrant # 32 Queen St. West	Jan 11/21	0.01<MDL	10	ug/L	No
Lead – Hydrant # 24 Elgin St. South	Jan 11/21	0.05	10	ug/L	No
Lead – Hydrant # 95 Francis St.	Jan 11/21	0.02	10	ug/L	No
Lead – Tucker/Eliza St. Blow Off	Jan 11/21	0.1	10	ug/L	No
Alkalinity – Hydrant # 125 James St.	Jan 24/22	245	30-500	mg/L	No
Alkalinity – Hydrant # 32 Queen St. West	Jan 24/22	238	30-500	mg/L	No
Alkalinity – Hydrant # 24 Elgin St. South	Jan 24/22	227	30-500	mg/L	No
Alkalinity – Hydrant # 95 Francis St.	Jan 24/22	208	30-500	mg/L	No
Alkalinity – Tucker/Eliza St. Blow Off	Jan 24/22	216	30-500	mg/L	No
Field pH – Hydrant # 125 James St.	Jan 24/22	7.34	-	-	No
Field pH – Hydrant # 32 Queen St West	Jan 24/22	7.39	-	-	No
Field pH – Hydrant # 24 Elgin St. South	Jan 24/22	7.43	-	-	No
Field pH – Hydrant # 95 Francis St.	Jan 24/22	8.15	-	-	No
Field pH – Tucker/Eliza St. Blow Off	Jan 24/22	7.9	-	-	No
Lead – Hydrant # 125 James St.	Jul 12/21	0.10	10	ug/L	No
Lead – Hydrant # 32 Queen St. West	Jul 12/21	5.13	10	ug/L	No
Lead – Hydrant # 24 Elgin St. South	Jul 12/21	0.16	10	ug/L	No
Lead – Hydrant # 95 Francis St	Jul 12/21	0.13	10	ug/L	No
Lead – Tucker/Eliza St. Blow Off	Jul 12/21	0.1	10	ug/L	No
Alkalinity – Hydrant # 125 James St.	Jul 11/22	253	30-500	mg/L	No
Alkalinity – Hydrant # 32 Queen St. West	Jul 11/22	228	30-500	mg/L	No
Alkalinity – Hydrant # 24 Elgin St. South	Jul 11/22	242	30-500	mg/L	No
Alkalinity – Hydrant # 95 Francis St.	Jul 11/22	204	30-500	mg/L	No
Alkalinity – Tucker/Eliza St. Blow Off	Jul 11/22	195	30-500	mg/L	No
Field pH – Hydrant # 125 James St.	Jul 11/22	7.09	-	-	No
Field pH – Hydrant # 32 Queen St. West	Jul 11/22	7.18	-	-	No
Field pH – Hydrant # 32 24 Elgin St. South	Jul 11/22	7.15	-	-	No
Field pH – Hydrant # 95 Francis St.	Jul 11/22	7.91	-	-	No
Field pH – Tucker/Eliza St. Blow Off	Jul 11/22	7.89	-	-	No

### e) Significant Expenses Incurred

The table below outlines a brief description and breakdown for significant monetary expenses occurred in 2022.

Location	Maintenance Item	Cost
Arthur	Domville Street Reconstruction	\$289,271.50
Mount Forest	Queen Street East Reconstruction	\$671,180.51
Arthur	Arthur Water Supply Study/Well Exploration	\$104,463.77
Mount Forest	Leak Detection – West Side of Mount Forest	\$3,663.36
Arthur/Mount Forest	2 New Chemical Feed Pumps	\$6,876.26
Mount Forest	New VFD on Well 3 Booster Pump	\$9,720.11
Arthur/Mount Forest	New Valve Maintenance/Vac Trailer	\$108,816.35
Arthur	Hydrant # 1 and Secondary Valve Replacement	\$27,725.00
Arthur	Golden Valley Farms Property Line Valve Replacement	\$14,831.86
Mount Forest	Well 3 Maintenance/Inspection and 40 HP Motor Replacement	\$47,191.63
Mount Forest	SCADA Upgrades for Pressure Mode	\$21,656.78
Mount Forest	Main Valve Replacement – Newfoundland at Wellington East	\$6,105.60
Arthur/Mount Forest	New Pick-Up Truck	\$51,676.76

### f) Source Water Protection

For reporting purposes, the Township of Wellington North is subject to two Source Protection Plans (based on watershed or Conservation Authority boundaries): Grand River Plan and the Saugeen Valley, Grey Sauble, Northern Bruce Peninsula Plan (Saugeen Valley). Although the Ausable Bayfield Maitland Valley (ABMV – Maitland Valley) Plan also encompasses part of the municipality, there are no reporting requirements associated with that Plan for the Township. In 2022, all Source Protection Plans were in effect.

Under Section 81 of the Clean Water Act and Section 65 of O. Reg. 287/07, an annual report must be prepared by a Risk Management Official and submitted to the appropriate Source Protection Authority (Conservation Authority) by February 1<sup>st</sup> of each year. Under Section 45 of the *Clean Water Act*, a public body, including a municipality, must comply with monitoring and reporting policies designated by a Source Protection Plan. The Township of Wellington North Risk Management Official and Municipal Annual Reports were prepared and submitted to the appropriate authorities by February 1, 2023.

### Summary of Key Aspects

The Wellington County municipalities continue to implement source protection under the Wellington Source Water Protection partnership, [www.wellingtonwater.ca](http://www.wellingtonwater.ca) In 2022, progress continued in the implementation of source protection in the municipality.

A summary of key aspects of the Risk Management Official Report and Municipal Report are provided below.

In 2022, there were 6 development review notices issued per Section 59 of the Clean Water Act within the municipality. Additionally, Source Protection staff comments were provided on an additional 33 applications that did not require development review notices, for a total of 39 development applications (notices and comments) reviewed in the municipality. There were 60 Section 59 notices issued County wide and Source Protection staff comments on 365 additional development applications, County wide, for a total of 425 development applications (notices and comments) reviewed County wide in 2022. This represents an increase in the total number of development applications (notices and comments) reviewed County wide from 2021 (390) and an increase compared to the five year average of 340 development applications (notices and comments).

For the municipality, 2022 also represents an increase in the number of development notices issued and in comments from the previous five year average of 28 development applications (notices and comments), however, the total number in 2022 (39) is similar as 2021 (38). In addition to the notices and comments provided, other applications were screened out by building or planning staff following Risk Management Official Written Direction provided by Wellington Source Water Protection.

Analysis continued on the threat verification data collected in previous years on residential, agricultural, industrial, commercial and institutional activities identified as potential significant drinking water threats in the approved Assessment Reports. In November 2022, please note that the Saugeen Valley Source Protection Plan was amended and approved by the Province. This resulted in changes to the remaining threat activities including the addition of 20 winter maintenance properties within the score 10 (red area on the mapping) in Mount Forest. Staff complete a variety of tasks to remove or confirm and then mitigate activities identified as potential significant drinking water threats in the approved Assessment Reports. These threat activities are existing and the analysis can involve desk top interpretation of air photos or GIS data, phone calls, review of municipal records, windshield surveys, site inspections by Risk Management staff and if confirmed, then mitigation through septic inspection, prohibition and / or negotiation of risk management plans. As a result of this analysis, staff currently estimate approximately 22% of threat activities in the municipality still require action to either remove or confirm / mitigate the threat activities while 78% have been either removed or confirmed and mitigated. Note that the percentages are weighted equally between Source Protection Authorities to provide an overall municipal percentage. The majority of the remaining threat activities are winter maintenance or chemical handling / storage activities.

To support this threats analysis and to determine compliance, 46 inspections were conducted in the Township in 2022 with 16 for compliance purposes (prohibition) with no contraventions found and 30 for threat verification or risk management plan negotiation purposes. County wide, 357 inspections were conducted in 2022 with 52% of inspections (187) being prohibition compliance inspections, 1% (1) being RMP compliance inspections and 47% (169) of inspections conducted for threat activity

verification or risk management plan negotiation purposes. The inspections were to ensure compliance with manure application and storage prohibitions, review winter maintenance activities and / or review / confirm chemical / fuel handling and storage.

Seven Risk Management Plans were agreed to in 2022 with 13 Risk Management Plans agreed to cumulatively within the Township. There are 57 Risk Management Plans in place County wide. This leaves 4 Risk Management Plans still to be signed in the Township for chemical or fuel handling / storage and all are being negotiated. There was a Source Protection Plan deadline to have these plans in place by December 31, 2022 and this has not occurred. When the extension timeline of December 31, 2022 was established in 2021, it was prior to the Omicron variant and during a time when restrictions were lifting. Given the winter 2022 lockdowns and restrictions related to the Omicron variant including reductions for in person inspections, this slowed our progress in negotiating Risk Management Plans in 2022. Staff have been in contact with the Source Protection Authority Program Manager to inform them of this and no concerns were raised prior to the deadline passing. This information will be presented to the Source Protection Committee and the Province over the next few months and if concerns are raised by either of these bodies then staff will inform Council. Since these 4 Risk Management Plans are in the process of negotiation, it is anticipated they will be agreed to during 2023. Two require corporate input and possibly sign off from the parent corporations of the properties and this has lengthened the negotiations. Staff also can impose the Risk Management Plans via an order. To date, staff have not chosen this route so not to disrupt the negotiations. It is staff's intention to negotiate a mutually agreed to Risk Management Plan for each of the remaining 3 properties and only utilize the order powers if negotiations fail. If an order is deemed necessary, staff are required to provide 120 days notice to the ordered parties prior to issuance of the order and the order is appealable. For the 20 winter maintenance properties that were added to the Assessment Report in November 2022, staff will first verify whether Risk Management Plans are required and then add the verified properties to the Risk Management Plan total in 2023.

The following is a summary of the E and O results, County wide, for 2022. One training session and a number of individual sessions were run for municipal staff to provide a refresher and train new staff on what source protection is and how it relates to municipal planning and building processes. Four newspaper ads were run during the year on topics related to water conservation, salt and fertilizer use. Staff organized 2 events, in collaboration with the City of Guelph, on Smart about Salt training for private contractors. Municipal Smart about Salt training was organized and delivered to 50 Roads, Public Works, Parks and Water staff from all eight municipalities in three sessions. Development reviews and inspections continued and include educational material being provided directly to the proponents generally regarding the threats present, the process (development review, RMP, prohibition etc.) and property specific mapping. In person inspections were limited in 2022 where educational material was provided directly to proponents as most inspections were completed contactless. Outreach to proponents related to negotiation of RMPs continued and comprised mostly of discussions, meetings and provision of outreach material via email. Wellington Source Water Protection continues

to maintain and update a website ([www.wellingtonwater.ca](http://www.wellingtonwater.ca)), ten fact sheets on specific topics and other print media (i.e. post cards to direct applicants to mapping). Throughout the year, social media posts on a variety of topics were either posted or re-shared by our municipalities' corporate channels. Often the content of these posts was from the Conservation Ontario social media calendar or in partnership with the local Conservation Authorities. Staff participate and Wellington Source Water Protection / County of Wellington is a sponsor for the Waterloo-Wellington Children's Groundwater Festival. Following the Festival's cancellation in 2020, due to the COVID-19 pandemic, a virtual Festival was developed and successfully presented in 2021 and again in May 2022 over four days. Links to the virtual Festival content are available here <https://www.youtube.com/@watereducation4640> Registration for the 2022 Festival was 10,337 students and teachers with views of the videos continuing after the Festival. Approximately 11% of the registrations were from Wellington County. Staff continue to participate on the organizing committee and various sub-committees including serving as co-chair.

In 2022, all five Source Protection Plans within the County were at different stages of amendments. Staff reviewed, provided comments and in some cases assisted Conservation Authority staff in authoring portions of the various amendments. Staff also provided support to the County's Official Plan Municipal Comprehensive Review, provided support to a number of water supply and / or water supply master plan projects related to water systems within or adjacent to the County, were involved in technical studies related to wellhead protection area updates and location of new municipal wells and participated in a provincial working group on annual reporting metrics. This includes support to the Township hydrogeologist for the new well location in Arthur. In 2022, the Province approved an amendment to the Saugeen Valley Source Protection Plan. Staff comments on the amendment were previously reported to Council and provided to the Conservation Authority. This amendment updates data for the municipality and strengthens protection related to winter maintenance activities in the areas closest to the municipal wells (vulnerability score 10 or red areas on mapping). Staff will now begin to implement the amendments including following up on Conservation Authority outreach to affected property owners.

The Township is represented at the Source Protection Committee by John Fruin. Mr. Fruin's term will expire in 2023 and a notice from the Source Protection Authority will be sent to the Township Clerk, County Clerk and Town of Minto Clerk to request nominations for the position. It is a shared position with Bruce County and Grey County municipalities and Mr. Fruin was originally nominated by the Town of Hanover. It is our understanding that Mr. Fruin is interested in standing again, however, this will be confirmed once the official notice is received. That notice is anticipated in April 2023.

The septic inspection program occurs on a five year cycle. The second round of inspections was scheduled to start in 2020, however, was postponed due to the COVID pandemic, therefore, all septic inspections are currently outstanding and must be completed by 2025. In 2022, a successful request for proposal was completed and a contract awarded to EnVision Consultants Ltd to manage and complete the septic system inspection program across the County. If a septic system is present within well head

protection area with a vulnerability score of 10 or within an issues contributing area for nitrates, a septic inspection is required every 5 years. The second round of septic inspections will begin in 2023.

For further information, please contact Kyle Davis, Risk Management Official, 519-846-9691 ext. 362 or [kdavis@centrewellington.ca](mailto:kdavis@centrewellington.ca)

*Note: The Source Water Protection information in this report was provided by Kyle Davis, Risk Management Official.*