



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

**2020 Annual and Summary Reports**

**Zurich Drinking Water System**

**Prepared for the Municipality of Bluewater**

**By the Ontario Clean Water Agency**

Section Number	TABLE OF CONTENTS	Page Number
1	<p><b>Compliance with the Safe Drinking Water Act and Regulation 170/03, drinking water works permit, municipal drinking water licence and any orders applicable to the system</b></p> <p>Statement of Compliance</p>	1
2	<p><b>Non-Compliance with the Safe Drinking Water Act and Regulation 170/03, drinking water works permit, municipal drinking water licence and any orders applicable to the system</b></p> <p>Details of the non-compliance issues as well as how and when any non-compliance issues were corrected</p>	1
3	<p><b>Assessment of the capability of the system to meet existing and planned uses of the system</b></p> <p>Summary and discussion of quantity of water supplied</p>	1-2
<p><b>Appendix A: Section 11 Annual Report</b></p>		

## **SECTION 1 - Statement of Compliance**

This report is a summary of water quantity and quality information for the Zurich Drinking Water System and published in accordance with Schedule 22 of Ontario's Safe Drinking Water Act, Ontario Regulation 170/03 for the reporting period of January 1, 2020 to December 31, 2020. The Zurich Drinking Water System is categorized as a Large Municipal Residential Drinking Water System.

The Zurich Drinking Water System was operated and maintained in such a manner that the water supplied to the consumers serviced by the system satisfied all the requirements in the Safe Drinking Water Act, the Regulations, the Drinking Water Works Permit Number: 045-204, Issue Number: 02, the Municipal Drinking Water Licence Number: 045-104, Issue Number 5 and the Permit to Take Water 3617-9RXSNN.

A Ministry of Environment, Conservation & Parks (MECP) inspection occurred December 12<sup>th</sup> 2019; zero non-compliance issues were identified. Inspection report # 1-L5DAC was received March 11<sup>th</sup>, 2020; inspection report rating was 100.00%.

The last Ministry of Environment, Conservation & Parks (MECP) inspection occurred November 24<sup>th</sup> 2020; zero non-compliance issues were identified. Inspection report # 1-00IGN was received November 30<sup>th</sup>, 2020; inspection report rating was 100.00%.

Water quality data is presented in the Section 11 Annual Report found in Appendix A.

## **SECTION 2 - Details of the non-compliance issues as well as how and when any non-compliance issues were corrected**

No non-compliance issues were identified in the MECP inspection which occurred on December 12<sup>th</sup> 2019.

No non-compliance issues were identified in last MECP inspections which occurred on November 24<sup>th</sup>, 2020.

## **SECTION 3 - Summary and discussion of quantity of water supplied**

In accordance with Schedule 22-2 (3) "the report must also include the following information for the purpose of enabling the owner of the system to assess the capability of the system to meet existing and planned uses of the system."

1. A summary of the quantities and totalized volume of water supplied during the period covered by this report including monthly averages, maximum daily and the annual total flow with respect to DWS #260001469.

The Zurich Drinking Water System, Municipal Drinking Water License (License Number: 045 -104 Issue No. 5) total treated water flow for 2020 was 108,311.9 m<sup>3</sup>/yr. The average monthly flow for 2020 was 9,025.99 m<sup>3</sup>; the average daily flow was 295.93 m<sup>3</sup>/ day. The maximum monthly flow for the reporting period was 11,056

m<sup>3</sup> recorded for July 2020. The maximum daily flow for 2020 was 441 m<sup>3</sup>/ day; this flow value was recorded on May 25 & May 26, 2020.

2. A comparison of the summary of flows to the rated capacity and flow rates approved in the system system’s MDWL, DWWP or PTTW.

The Zurich Drinking Water System, Municipal Drinking Water License (License Number: 045 -104 Issue No. 5) identifies a system rated capacity of 1,150 m<sup>3</sup>/ day.

There were no exceedances of the rated capacity in 2020. The maximum daily flow recorded in 2020 was 441 m<sup>3</sup> on May 25 and May 26, 2020. The 2020 maximum daily flow value of 441 m<sup>3</sup> is 38.34 % of the identified rated capacity. The average daily flow for 2020 was 295.93 m<sup>3</sup> which is 25.73 % of the rated capacity.

### Zurich Drinking Water System - 2020 Water Flows

Month	Total Raw Flow m <sup>3</sup>	Total Treated Flow m <sup>3</sup>	Monthly Treated Average m <sup>3</sup> /day	Maximum Daily Treated Flow m <sup>3</sup> /day	Rated Capacity approved in MDWL (m <sup>3</sup> /d)
January	8,504	8,364	269.81	301	1,150
February	8,554	8,309	286.52	406	1,150
March	8,706	8,488	273.81	329	1,150
April	7,918	7,800	260	290	1,150
May	9,630	9,376	302.45	441	1,150
June	10,634	10,327	344.23	425	1,150
July	11,518	11,056	356.65	433	1,150
August	9,735	9,448.9	304.8	348	1,150
September	9,416	9,019	300.63	331	1,150
October	9,264	8,922	287.81	339	1,150
November	8,565	8,246	274.97	292	1,150
December	9,320	8,953	288.81	350	1,150
<b>Total</b>	111,764	108,311.9	-	-	-
<b>Average</b>	9313.7	9,025.99	295.93	-	-

Appendix A  
Section 11 Annual Report

**SECTION 11 ANNUAL REPORT: 2020**

**Drinking-Water System Number:** 220001469  
**Drinking-Water System Name:** Zurich Drinking Water System  
**Drinking-Water System Owner:** Corporation of the Municipality of Bluewater  
**Drinking-Water System Category:** Large Municipal Residential  
**Period being reported:** January 1, 2020 – December 31, 2020

<p><b>Does your Drinking-Water System serve more than 10,000 people?</b> No</p> <p><b>Is your annual report available to the public at no charge on a web site on the Internet?</b> Yes</p> <p><b>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</b></p> <p>Municipality of Bluewater          14 Mill Ave.          Zurich, Ontario N0M 2T0</p>	<p align="center"><b><u>Complete for all other Categories.</u></b></p> <p><b>Number of Designated Facilities served:</b> Not applicable</p> <p><b>Did you provide a copy of your annual report to all Designated Facilities you serve?</b> Not applicable</p> <p><b>Number of Interested Authorities you report to:</b> Not applicable</p> <p><b>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility?</b> Not applicable</p>
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**List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:** Not applicable

**Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?** Not applicable

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

- Public access/notice via the web
- Public access/notice via Government Office-Water Department Office
- Public access/notice via Public Request

**Describe your Drinking-Water System**

The Zurich Water Supply and Distribution System serves the community of Zurich located in the Municipality of Bluewater; approximate population served is 1,820 with a rated capacity of 1,150 m<sup>3</sup>/ day.

Well: System uses two wells, one 88.4 m deep well and one 96.3 m deep well both equipped with a submersible pumps with a rated capacity of 13.3 L/s.

Pumphouse consisting of:

- Two raw piping systems equipped with a water meter, discharging into the reservoir
- Two vertical turbine high lift pumps each with a rated capacity of 11.3 L/s
- Two sodium hypochlorite chemical metering pumps each rated at 1.6 L/hr
- One 20 L sodium hypochlorite tank
- Two iron sequestering metering pumps (one duty and one standby)
- One 20 L sodium silicate tank
- Back-up power supplied by one 100 kW, 125 KVA diesel standby generator

**List all water treatment chemicals used over this reporting period:**

Sodium Hypochlorite

Sodium Silicate

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

System repairs & replacements included:

- Parts Inventory stock
- Watermain Repairs & Service Repairs
- Zurich Reservoir inspection
- Zurich Water Treatment Plant Door replacement

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

No applicable issues for this reporting period.

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

	Number of Samples	Range of E.Coli or Fecal Results (min -max) cfu/100ml	Range of Total Coliform Results (min –max) cfu/100ml	Number of HPC Samples	Range of HPC Results (min –max) cfu/1mL spread plate
Raw	104	0 – 0	0 – 0	-	-
Treated	54	0 – 0	0 – 0	54	< 10 - < 10
Distribution	156	0 – 0	0 – 0	52	< 10 - 40

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

-	Number of Grab Samples	Range of Results min – max	Unit of Measure
Raw Water Turbidity	24	0.09 – 0.29	NTU
Treated Water Chlorine	*8760	0.57– 1.66	mg/L
Distribution Chlorine	367	0.33 – 1.60	mg/L

\*Continuous monitoring

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

Not applicable

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

Treated Water	Sample Date (mm/dd/yyyy)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	1/06/2020	< 0.09	6.0	No	No
Arsenic: As (ug/L) - TW	1/06/2020	6.9	10.0	No	Yes
Barium: Ba (ug/L) - TW	1/06/2020	34.0	1000.0	No	No
Boron: B (ug/L) - TW	1/06/2020	219	5000.0	No	No
Cadmium: Cd (ug/L) - TW	1/06/2020	0.007	5.0	No	No
Chromium: Cr (ug/L) - TW	1/06/2020	0.13	50.0	No	No
Mercury: Hg (ug/L) - TW	1/06/2020	< 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	1/06/2020	< 0.04	10.0	No	No
Uranium: U (ug/L) - TW	1/06/2020	0.973	20.0	No	No

Treated Water	Sample Date (mm/dd/yyyy)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
<b>Additional Inorganics</b>	-	-	-	-	-
Fluoride (mg/L) - TW	1/06/2020	2.06	1.5	Yes	Yes
Nitrite (mg/L) - TW	1/6/2020	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	4/6/2020	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	7/7/2020	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	10/6/2020	<MDL 0.003	1.0	No	No

Treated Water	Sample Date (mm/dd/yyyy)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Nitrate (mg/L) - TW	1/6/2020	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW	4/6/2020	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW	7/7/2020	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW	10/6/2020	<MDL 0.006	10.0	No	No
-	-	-	-	-	-
Sodium: Na (mg/l) – TW	1/6/2020	43.7	20	Yes	Yes

**Summary of lead testing under Schedule 15.1 during this reporting period**

Location Type	Date Sampled	Number of Samples	pH Range	Range of Alkalinity (min – max) mg/L	Range of Lead Results (min – max) ug/L	Number of Exceedances
Distribution	Mar 30, 2020	2	7.02 - 7.07	168 - 180	0.02 - 0.06	0
Distribution	Aug 13, 2020	2	7.73 - 7.76	165 - 174	0.06 - 0.28	0

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

Treated Water	Sample Date (mm/dd/yyyy)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TW	1/06/2020	< 0.02	5.00	No	No
Atrazine + N-dealkylated metabolites	1/06/2020	< 0.01	5.00	No	No
Atrazine (ug/L) – TW	1/06/2020	<0.01	n/a	n/a	n/a
Azinphos-methyl (ug/L) - TW	1/06/2020	< 0.05	20.00	No	No
Benzene (ug/L) - TW	1/06/2020	< 0.32	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	1/06/2020	< 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	1/06/2020	< 0.33	5.00	No	No
Carbaryl (ug/L) - TW	1/06/2020	< 0.05	90.00	No	No
Carbofuran (ug/L) - TW	1/06/2020	< 0.01	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	1/06/2020	< 0.177	2.00	No	No
Chlorpyrifos (ug/L) - TW	1/06/2020	< 0.02	90.00	No	No
Desethyl atrazine (ug/L) – TW	1/06/2020	<0.01	n/a	n/a	n/a
Diazinon (ug/L) - TW	1/06/2020	< 0.02	20.00	No	No
Dicamba (ug/L) - TW	1/06/2020	< 0.20	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	1/06/2020	< 0.41	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	1/06/2020	< 0.36	5.00	No	No

Treated Water	Sample Date (mm/dd/yyyy)	Sample Result	MAC	Exceedances	
				MAC	1/2 MAC
1,2-Dichloroethane (ug/L) - TW	1/06/2020	< 0.35	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	1/06/2020	< 0.33	14.00	No	No
Dichloromethane (Methylene	1/06/2020	< 0.35	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	1/06/2020	< 0.15	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-	1/06/2020	< 0.19	100.00	No	No
Diclofop-methyl (ug/L) - TW	1/06/2020	< 0.40	9.00	No	No
Dimethoate (ug/L) - TW	1/06/2020	< 0.06	20.00	No	No
Diquat (ug/L) - TW	1/06/2020	< 1.0	70.00	No	No
Diuron (ug/L) - TW	1/06/2020	< 0.03	150.00	No	No
Glyphosate (ug/L) - TW	1/06/2020	< 1.0	280.00	No	No
Malathion (ug/L) - TW	1/06/2020	< 0.02	190.00	No	No
Metolachlor (ug/L) - TW	1/06/2020	< 0.01	50.00	No	No
Metribuzin (ug/L) - TW	1/06/2020	< 0.02	80.00	No	No
MCPA (mg/L) – TW	1/06/2020	0.00012	0.1	No	No
Monochlorobenzene (Chlorobenzene)	1/06/2020	< 0.3	80.00	No	No
Paraquat (ug/L) - TW	1/06/2020	< 1.0	10.00	No	No
PCB (ug/L) - TW	1/06/2020	< 0.04	3.00	No	No
Pentachlorophenol (ug/L) - TW	1/06/2020	< 0.15	60.00	No	No
Phorate (ug/L) - TW	1/06/2020	< 0.01	2.00	No	No
Picloram (ug/L) - TW	1/06/2020	< 1.0	190.00	No	No
Prometryne (ug/L) - TW	1/06/2020	< 0.03	1.00	No	No
Simazine (ug/L) - TW	1/06/2020	< 0.01	10.00	No	No
Terbufos (ug/L) - TW	1/06/2020	< 0.01	1.00	No	No
Tetrachloroethylene (ug/L) - TW	1/06/2020	< 0.35	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	1/06/2020	< 0.20	100.00	No	No
Triallate (ug/L) - TW	1/06/2020	< 0.01	230.00	No	No
Trichloroethylene (ug/L) - TW	1/06/2020	< 0.44	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	1/06/2020	< 0.25	5.00	No	No
Trifluralin (ug/L) - TW	1/06/2020	< 0.02	45.00	No	No
Vinyl Chloride (ug/L) - TW	1/06/2020	< 0.17	1.00	No	No

Parameter	Annual Running Average	Result Value	MAC ug/L	Exceedance
Trihalomethane: Total (ug/L)	Jan - Dec. 2020	18.0	100.00	No
Haloacetic Acids: Total (ug/L)	Jan - Dec. 2020	< 5.3	80.00	No

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

<b>Incident Date</b>	<b>Parameter</b>	<b>Result</b>	<b>Unit of Measure</b>	<b>Corrective Action</b>	<b>Corrective Action Date</b>
Jan. 20 2017	Fluoride	1.75	mg/L	Re-sampled	Jan. 26 2017
Jan. 26 2017	Fluoride	2.08	mg/L	Naturally occurring; no further action	Not applicable
Feb. 21 2017	Sodium	41.1	mg/L	Re-sampled	Feb. 27 2017
Feb. 27 2017	Sodium	44.0	mg/L	Naturally occurring; no further action	Not applicable
Jan. 06 2020	Fluoride	2.06	mg/L	Naturally occurring; no further action	Not applicable
Jan. 06 2020	Sodium	43.7	mg/L	Naturally occurring; no further action	Not applicable