

**ANNUAL REPORT**

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, 2021 – December 31, 2021

<p><b><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></b></p> <p>Does your Drinking Water System serve more than 10,000 people? Yes [ ] No [X]</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <div style="border: 1px solid black; padding: 5px;"> <p>Municipality of Bluewater 14 Mill Ave. Zurich, Ontario N0M 2T0</p> </div>	<p><b><u>Complete for all other Categories</u></b></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; padding: 2px;">n/a</div></p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Not applicable</p> <p>Number of Interested Authorities you report to: <div style="border: 1px solid black; padding: 2px;">n/a</div></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Not applicable</p>
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List all Drinking Water Systems (if any), which receive all their drinking water from your system:

Drinking Water System Name	Drinking Water System Number
Not applicable	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 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
- Public access/notice via a newspaper
- Public access/notice via Public Request
- Public access/notice via a Public Library
- Public access/notice via other method \_\_\_\_\_

**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 966 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.

Pump house 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

**Were any significant expenses incurred to?**

- Install required equipment
- Repair required equipment
- Replace required equipment

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

- Parts Inventory stock
- Watermain Repairs & Service Repairs
- Zurich Reservoir floor clean
- Well # 1 Flow Meter

**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**

Incident Date	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
AWQI # 153406 2021/01/15	Fluoride  (Sample collected 2021/01/12)	1.67	mg/L	Resampled on 2021/01/19; resample fluoride 1.64 mg/L. Fluoride is naturally occurring in source water. HPPH provided fluoride fact sheet to be made available to public; municipality confirmed posted on website and distributed to customers, no further action required.	2021/01/25

AWQI # 155269 2021/08/26	Total Coliform (Treated Water sample collected 2021/08/24)	1	cfu/100 mL	Resampled on Aug. 26 and Aug. 27, 2021; resamples were compliant. All regulated notifications were made; no further action required.	2021/08/31
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**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 Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw Well 1	52	0 – 0	0 – 0	-	-
Raw Well 3	52	0 – 0	0 – 0	-	-
Treated	59	0 – 0	0 – 1	57	< 10 - < 10
Distribution	164	0 – 0	0 – 0	54	< 10 - 180

**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
Turbidity: Well 1	12	0.08 – 0.36	NTU
Turbidity: Well 3	12	0.07 – 0.37	NTU
Chlorine: Treated Water	*8760	0.39– 1.44	mg/L
Chlorine: Distribution	364	0.30 – 1.44	mg/L

*NOTE: For continuous monitors use 8760 as the number of samples*

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

Date of legal instrument issued	Parameter	Date Sampled	Result	Unit of Measure
Not applicable				

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Antimony	2020/01/06	0.09 < MDL	ug/L	No
Arsenic	2021/01/12	7.3	ug/L	No
Arsenic	2021/04/06	7.4	ug/L	No
Arsenic	2021/07/06	7.0	ug/L	No
Arsenic	2021/10/05	6.7	ug/L	No
Barium	2020/01/06	34	ug/L	No
Boron	2020/01/06	219	ug/L	No
Cadmium	2020/01/06	0.007	ug/L	No

<b>Chromium</b>	2020/01/06	0.13	ug/L	No
<b>Mercury</b>	2020/01/06	0.01 <MDL	ug/L	No
<b>Selenium</b>	2020/01/06	0.04 <MDL	ug/L	No
<b>Sodium</b>	2020/01/06	43.7	mg/L	Yes
<b>Uranium</b>	2020/01/06	0.973	ug/L	No
<b>Fluoride</b>	2021/01/12	1.67	mg/L	Yes
<b>Fluoride</b>	2021/01/19	1.64	mg/L	Yes
<b>Nitrite</b>	2021/01/05	0.003	mg/L	No
<b>Nitrite</b>	2021/04/06	0.003 <MDL	mg/L	No
<b>Nitrite</b>	2021/07/06	0.003 <MDL	mg/L	No
<b>Nitrite</b>	2021/10/05	0.003 <MDL	mg/L	No
<b>Nitrate</b>	2021/01/05	0.006 <MDL	mg/L	No
<b>Nitrate</b>	2021/04/06	0.006 <MDL	mg/L	No
<b>Nitrate</b>	2021/07/06	0.006 <MDL	mg/L	No
<b>Nitrate</b>	2021/10/05	0.006 <MDL	mg/L	No

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

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

<b>Location Type</b>	<b>Number of Samples</b>	<b>Range of Lead Results (min#) – (max #)</b>	<b>Unit of Measure</b>	<b>Number of Exceedances</b>
<b>Distribution</b>	4	0.04-0.25	ug/L	0

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

<b>Parameter</b>	<b>Sample Date</b>	<b>Result Value</b>	<b>Unit of Measure</b>	<b>Exceedance</b>
<b>Alachlor</b>	2020/01/06	0.02 <MDL	ug/L	No
<b>Atrazine + N-dealkylated metabolites</b>	2020/01/06	0.01 <MDL	ug/L	No
<b>Azinphos-methyl</b>	2020/01/06	0.05 <MDL	ug/L	No
<b>Benzene</b>	2020/01/06	0.32 <MDL	ug/L	No
<b>Benzo(a)pyrene</b>	2020/01/06	0.004 <MDL	ug/L	No
<b>Bromoxynil</b>	2020/01/06	0.33 <MDL	ug/L	No
<b>Carbaryl</b>	2020/01/06	0.05 <MDL	ug/L	No
<b>Carbofuran</b>	2020/01/06	0.01 <MDL	ug/L	No
<b>Carbon Tetrachloride</b>	2020/01/06	0.17 <MDL	ug/L	No
<b>Chlorpyrifos</b>	2020/01/06	0.02 <MDL	ug/L	No
<b>Diazinon</b>	2020/01/06	0.02 <MDL	ug/L	No

Dicamba	2020/01/06	0.20 <MDL	ug/L	No
1,2-Dichlorobenzene	2020/01/06	0.41 <MDL	ug/L	No
1,4-Dichlorobenzene	2020/01/06	0.36 <MDL	ug/L	No
1,2-Dichloroethane	2020/01/06	0.35 <MDL	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	2020/01/06	0.33 <MDL	ug/L	No
Dichloromethane	2020/01/06	0.35 <MDL	ug/L	No
2-4 Dichlorophenol	2020/01/06	0.15 <MDL	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2020/01/06	0.19 <MDL	ug/L	No
Diclofop-methyl	2020/01/06	0.40 <MDL	ug/L	No
Dimethoate	2020/01/06	0.06 <MDL	ug/L	No
Diquat	2020/01/06	1 <MDL	ug/L	No
Diuron	2020/01/06	0.03 <MDL	ug/L	No
Glyphosate	2020/01/06	1 <MDL	ug/L	No
HAAs (Note: show latest running annual average)	2021	5.3	ug/L	No
Malathion	2020/01/06	0.02 <MDL	ug/L	No
Metolachlor	2020/01/06	0.01 <MDL	ug/L	No
Metribuzin	2020/01/06	0.02 <MDL	ug/L	No
Monochlorobenzene	2020/01/06	0.3 <MDL	ug/L	No
Paraquat	2020/01/06	1 <MDL	ug/L	No
Pentachlorophenol	2020/01/06	0.15 <MDL	ug/L	No
Phorate	2020/01/06	0.01 <MDL	ug/L	No
Picloram	2020/01/06	1 <MDL	ug/L	No
Polychlorinated Biphenyls(PCB)	2020/01/06	0.04 <MDL	ug/L	No
Prometryne	2020/01/06	0.03 <MDL	ug/L	No
Simazine	2020/01/06	0.01 <MDL	ug/L	No
Terbufos	2020/01/06	0.01 <MDL	ug/L	No
Tetrachloroethylene (perchloroethylene)	2020/01/06	0.35 <MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	2020/01/06	0.20 <MDL	ug/L	No
THMs (Note: show latest running annual average)	2021	18.75	ug/L	No
Triallate	2020/01/06	0.01 <MDL	ug/L	No
Trichloroethylene	2020/01/06	0.44 <MDL	ug/L	No
2,4,6-Trichlorophenol	2020/01/06	0.25 <MDL	ug/L	No
Trifluralin	2020/01/06	0.02 <MDL	ug/L	No
Vinyl Chloride	2020/01/06	0.17 <MDL	ug/L	No

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

Parameter	Result Value	Unit of Measure	Date of Sample
Sodium	43.7	mg/L	2020/01/6
Fluoride	1.67	mg/L	2021/01/12
Fluoride	1.64	mg/L	2021/01/19
<b>Arsenic</b>	7.3	ug/L	2021/01/12
<b>Arsenic</b>	7.4	ug/L	2021/04/06
<b>Arsenic</b>	7.0	ug/L	2021/07/06
<b>Arsenic</b>	6.7	ug/L	2021/10/05



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

**2021 Summary Report**

**Zurich Drinking Water System**

**Prepared for the Municipality of Bluewater**

**By the Ontario Clean Water Agency**

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## **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, 2021 to December 31, 2021. 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: 03, the Municipal Drinking Water License Number: 045-104, Issue Number 6 and the Permit to Take Water 3617-9RXSNN.

The last Ministry of Environment, Conservation & Parks (MECP) inspection occurred November 12, 2021; to date inspection report has not been received.

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

Two adverse water quality issues were identified in 2021.

### **Fluoride Exceedance:**

On January 15, 2021 AWQI # 153406 was issued; January 12, 2021 treated water sample fluoride was 1.67 mg/L. Resample sample was collected January 19, 2021, fluoride was 1.64 mg/L. All required notifications were made; fluoride is naturally occurring in the source water. Huron Perth Public Health (HPPH) provided the municipality with a fluoride fact sheet to be distributed to consumers; municipality confirmed delivery and posted fluoride fact sheet on their website. No further action was required.

### **Adverse Water Quality:**

On August 24, 2021 the treated water sample report showed the present of 1 total coliform forming unit per 100mL; AWQI # 155269 was issued on August 26, 2021. Required notifications were made; resamples were collected on August 26 and August 27, 2021. Resample reports were compliant; no further action was required.

## **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. 6) total treated water flow for 2021 was 114,650.7 m<sup>3</sup>. The average monthly treated water flow for 2021 was 9,554.2 m<sup>3</sup>; the average daily flow was 314.11 m<sup>3</sup>/ day. The maximum monthly treated water flow for the reporting period was 10,766.57 m<sup>3</sup> recorded for August 2021. The maximum daily flow for 2021 was 441.41 m<sup>3</sup>/ day; this flow value was recorded on June 06, 2021.

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. 6) identifies a system rated capacity of 1,150 m<sup>3</sup>/ day.

There were no exceedances of the rated capacity in 2021. The maximum daily flow recorded in 2021 was 441.41 m<sup>3</sup> on June 06, 2021. The 2021 maximum daily flow value of 441.41 m<sup>3</sup> is 38.38 % of the identified rated capacity. The average daily flow for 2021 was 314.11 m<sup>3</sup> which is 27.31 % of the rated capacity.

### Zurich Drinking Water System - 2021 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	9,346	8,914.17	289.19	342	1,150
February	8,097	7,778.69	279.5	340	1,150
March	9,017	8,784.86	284.48	322	1,150
April	9,747.37	8,588.37	286.28	329.01	1,150
May	10,288.03	9,963.72	321.41	387.16	1,150
June	10,486.19	10,168.64	338.95	444.41	1,150
July	9,777.94	9,491.73	306.18	369.79	1,150
August	11,144.89	10,766.57	347.31	420.88	1,150
September	9,763.67	9,383.89	312.8	344.55	1,150
October	10,640.45	10,224.99	329.84	352.48	1,150
November	10,478.54	10,289.21	342.97	364.45	1,150
December	10,133.93	10,295.92	332.13	372.16	1,150
<b>Total</b>	118,921	114,650.7	-	-	-
<b>Average</b>	9,910.08	9,554.23	314.11	-	-