

**ANNUAL REPORT**

Drinking Water System Number:	260019630
Drinking Water System Name:	Varna Drinking Water System
Drinking Water System Owner:	Corporation of the Municipality of Bluewater
Drinking Water System Category:	Small Municipal Residential System
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	

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 Varna Water Supply and Distribution System serves the community of Varna located in the Municipality of Bluewater; approximate population served is 154.

Water is sourced from a 73 m deep well; the well has a 15.2 cm diameter casing installed to a depth of 57.3 m and extends above grade approximately 33 cm. The well has a 100 mm diameter sleeve installed from 57.3 m to 73 m. The well is equipped with a 1.6 L/s, 3 HP/1Ph/230V Franklin, 10E14 model submersible pump. The well pump was installed at a depth of 65.8 m with 32 mm diameter galvanized steel discharge piping.

There are 3 - 450 L chlorine contact tanks in the existing pump house. A 12 kW Briggs and Stratton standby propane generator was installed in 2007. Other existing equipment includes: 3 WR260 Well Rite pressure tanks, a 60 L chlorine storage tank, two chlorine pumps, and various other pressure gauges, meters, and sample taps.

The normal operating pressure in the system is set by the pressure switch in the well house to between 275 and 415 kPa; typical operating pressures in this system are in the range of 250 to 450 kPa.

All 50 mm diameter watermain is Series 200 conforming to CSA B137.1 and AWWA C901; fittings meet AWWA C906.

Flushing devices (50 mm dia. blow-offs) are provided at each dead-end. There are no fire hydrants on the Varna distribution system.

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

Sodium Hypochlorite

**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**

- System repairs & replacements included:
- Flow meter repairs
  - Well casing and check valve replacement
  - Parts inventory

**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 # 153360	Operational issue: A system wide loss of pressure occurred	N/A	N/A	Well pump operation was restored, the	PBWA lifted Jan. 07, 2021 following

Jan. 04, 2021	due to a well pump failure; a potential for contamination to enter system.			system flushed, public health requested samples collected, Precautionary Boil Water Advisory (PBWA) issued; all regulated notifications made.	receipt of compliant sample reports; AWQI form 2B Resolution was submitted Jan. 11, 2021
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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	20	0 – 0	0 – 0	-	-
Distribution	66	0 – 0	0 – 0	55	< 10 - 120

**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	12	0.24 – 0.60	NTU
Chlorine: Treated Water	*8760	0.59 – 2.84	mg/L
Chlorine: Distribution	104	0.92 – 1.74	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.**

N/A
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**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	2017/10/23	0.04	ug/L	No
Arsenic	2017/10/23	1.5	ug/L	No
Barium	2017/10/23	116	ug/L	No
Boron	2017/10/23	68	ug/L	No
Cadmium	2017/10/23	0.0040	ug/L	No
Chromium	2017/10/23	0.63	ug/L	No
Mercury	2017/10/23	0.01 <MDL	ug/L	No

Selenium	2017/10/23	0.04 <MDL	ug/L	No
Sodium	2017/10/23	9.56	mg/L	No
Uranium	2017/10/23	1.08	ug/L	No
Fluoride	2017/10/23	1.34	mg/L	No
Nitrite	2021/01/05	0.003 <MDL	mg/L	No
Nitrite	2021/04/06	0.003 <MDL	mg/L	No
Nitrite	2021/07/06	0.003 <MDL	mg/L	No
Nitrite	2021/10/05	0.003 <MDL	mg/L	No
Nitrate	2021/01/05	0.006 <MDL	mg/L	No
Nitrate	2021/04/06	0.006 <MDL	mg/L	No
Nitrate	2021/07/06	0.007	mg/L	No
Nitrate	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)

Location Type	Number of Samples	Range of Lead Results min - max	Unit of Measure	Number of Exceedances
Distribution	4	0.06-0.43	ug/L	0

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

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Alachlor	2017/10/23	0.02 <MDL	ug/L	No
Atrazine + N-dealkylated metabolites	2017/10/23	0.01 <MDL	ug/L	No
Azinphos-methyl	2017/10/23	0.05 <MDL	ug/L	No
Benzene	2017/10/23	0.32 <MDL	ug/L	No
Benzo(a)pyrene	2017/10/23	0.004 <MDL	ug/L	No
Bromoxynil	2017/10/23	0.33 <MDL	ug/L	No
Carbaryl	2017/10/23	0.05 <MDL	ug/L	No
Carbofuran	2017/10/23	0.01 <MDL	ug/L	No
Carbon Tetrachloride	2017/10/23	0.16 <MDL	ug/L	No
Chlorpyrifos	2017/10/23	0.02 <MDL	ug/L	No
Diazinon	2017/10/23	0.02 <MDL	ug/L	No
Dicamba	2017/10/23	0.20 <MDL	ug/L	No
1,2-Dichlorobenzene	2017/10/23	0.41 <MDL	ug/L	No
1,4-Dichlorobenzene	2017/10/23	0.36 <MDL	ug/L	No
1,2-Dichloroethane	2017/10/23	0.35 <MDL	ug/L	No
1,1-Dichloroethylene (vinylidene chloride)	2017/10/23	0.33 <MDL	ug/L	No
Dichloromethane	2017/10/23	0.35 <MDL	ug/L	No
2-4 Dichlorophenol	2017/10/23	0.15 <MDL	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D)	2017/10/23	0.19 <MDL	ug/L	No

Diclofop-methyl	2017/10/23	0.40 <MDL	ug/L	No
Dimethoate	2017/10/23	0.03 <MDL	ug/L	No
Diquat	2017/10/23	2 <MDL	ug/L	No
Diuron	2017/10/23	0.03 <MDL	ug/L	No
Glyphosate	2017/10/23	1 <MDL	ug/L	No
HAA5 (Note: show latest running annual average)	2021	5.3	ug/L	No
Malathion	2017/10/23	0.02 <MDL	ug/L	No
Metolachlor	2017/10/23	0.01 <MDL	ug/L	No
Metribuzin	2017/10/23	0.02 <MDL	ug/L	No
Monochlorobenzene	2017/10/23	0.3 <MDL	ug/L	No
Paraquat	2017/10/23	2 <MDL	ug/L	No
Pentachlorophenol	2017/10/23	0.15 <MDL	ug/L	No
Phorate	2017/10/23	0.01 <MDL	ug/L	No
Picloram	2017/10/23	1 <MDL	ug/L	No
Polychlorinated Biphenyls(PCB)	2017/10/23	0.04 <MDL	ug/L	No
Prometryne	2017/10/23	0.03 <MDL	ug/L	No
Simazine	2017/10/23	0.01 <MDL	ug/L	No
Terbufos	2017/10/23	0.01 <MDL	ug/L	No
Tetrachloroethylene (perchloroethylene)	2017/10/23	0.35 <MDL	ug/L	No
2,3,4,6-Tetrachlorophenol	2017/10/23	0.20 <MDL	ug/L	No
THMs (running annual average)	2021	2.3	ug/L	No
Triallate	2017/10/23	0.01 <MDL	ug/L	No
Trichloroethylene	2017/10/23	0.44 <MDL	ug/L	No
2,4,6-Trichlorophenol	2017/10/23	0.25 <MDL	ug/L	No
Trifluralin	2017/10/23	0.02 <MDL	ug/L	No
Vinyl Chloride	2017/10/23	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

N/A



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

**2021 Summary Report**  
**Varna 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 Varna 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 Varna Drinking Water System is categorized as a Small Municipal Residential Drinking Water System.

The Varna 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: 045-206, Issue Number: 2, the Municipal Drinking Water License Number: 045-106, Issue Number 3 and the Permit to Take Water 0266-AE9NRG.

The last Ministry of Environment, Conservation & Parks (MECP) inspection occurred on November 12, 2021; zero non-compliance issues were identified. MECP Inspection report was received November 23, 2021.

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

The last Ministry of Environment, Conservation & Parks (MECP) inspection occurred on November 12, 2021; zero non-compliance issues were identified. No follow up action was required. The routine MECP Inspections have an Inspection Rating Record, which evaluates the system to provide information for the owner/operator on areas that need to be improved. The particular areas that were evaluated for the Varna Drinking Water System were: Source, Capacity Assessment, Treatment Processes, Operations Manuals, Logbooks, Certification and Training, Water Quality Monitoring, and Reporting and Corrective Actions. This system received 0 out of 520 non-compliance ratings and as such received 100% for the Final Inspection Rating.

### **AWQI 153360 Loss of System Pressure**

At approximately 7:30 pm on January 4, 2021 an operator was notified of low pressure in the Varna Drinking Water System. The operator arrived on site and discovered the well pump was not operating as designed. The Huron Perth Public Health, Public Health Inspector (PHI) was notified of this low pressure event at 8:55 pm. The PHI recommended a Precautionary Boil Water Advisory (PBWA) be issued, flushing, and sample collections (chlorine residuals and microbiological) following restoration of operations. Spills Action Centre was called at 9:15 pm, an AWQI # 153360 was issued; PBWA notices were delivered to residents.

The pump was repaired by approximately 1:00 AM on January 5, 2021. The Operator increased the systems chlorine dosage; after system pressure was restored the operator flushed watermains, analyzed residuals and collected microbiological samples as per PHI direction. The PBWA was lifted January 07, 2021 following the receipt of compliant sampling reports; all regulated notifications were completed.

### **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 # 260019630

The total flow for 2021 was 8,047.9 m<sup>3</sup>. The average monthly treated flow in 2021 was 671 m<sup>3</sup>; the average daily treated flow was 22.03 m<sup>3</sup>/day. The maximum monthly flow for the reporting period of 906 m<sup>3</sup> was recorded in June 2021. The maximum daily flow for 2021 was 48 m<sup>3</sup>/ day; this flow value was recorded on June 9<sup>th</sup> and 10<sup>th</sup> of 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 Varna Drinking Water System, Municipal Drinking Water License (License Number: 045 - 106 Issue No. 3) identifies a system rated capacity of 144 m<sup>3</sup>/ day.

There were no exceedances of the rated capacity. The maximum daily flow value for 2021 of 48 m<sup>3</sup>/ day recorded on June 9<sup>th</sup> and June 10<sup>th</sup>, is 33.3 % of the rated capacity of the plant. The plant average daily flow in 2021 was 22.03 m<sup>3</sup> /d; this is 15.30 % of the rated capacity of the plant.

Note: This facility has one flow meter that records both the raw and treated flow.

**Varna Drinking Water System 2021 Water Flows**

<b>Month</b>	<b>Total Raw Flow (m<sup>3</sup>)</b>	<b>Total Treated Flow (m<sup>3</sup>)</b>	<b>Monthly Treated Average (m<sup>3</sup>/day)</b>	<b>Maximum Daily Treated Flow (m<sup>3</sup>/day)</b>	<b>Rated Capacity approved in MDWL (m<sup>3</sup>/d)</b>
<b>January</b>	605	605	19.52	25	144
<b>February</b>	518	518	18.5	22	144
<b>March</b>	576.9	576.9	18.61	22.5	144
<b>April</b>	603	603	20.1	24	144
<b>May</b>	754	754	24.32	32	144
<b>June</b>	906	906	30.2	48	144
<b>July</b>	666	666	21.48	29	144
<b>August</b>	752	752	24.26	28	144
<b>September</b>	604	604	20.13	24	144
<b>October</b>	665	665	21.45	25	144
<b>November</b>	678	678	22.6	27	144
<b>December</b>	720	720	23.23	32	144
<b>Total</b>	8,047.9	8,047.9	-	-	-
<b>Average</b>	671	671	22.03	-	-