



Ontario Clean Water Agency
Agence Ontarienne Des Eaux

2020 Annual and Summary Reports

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, 2020 to December 31, 2020. 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: 1, the Municipal Drinking Water Licence Number: 045-106, Issue Number 2 and the Permit to Take Water 0266-AE9NRG.

A Ministry of Environment, Conservation & Parks (MECP) inspection occurred on December 12, 2019; one non-compliance issue was identified. MECP Inspection report No. 1-LHTK0 was received on March 11, 2020; inspection rating was 95.47%.

The last Ministry of Environment, Conservation & Parks (MECP) inspection occurred on October 19, 2020; zero non-compliance issues were identified. MECP Inspection report 1-O083V was received November 19, 2020; inspection rating was 100%.

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

A Ministry of Environment, Conservation & Parks (MECP) inspection occurred on December 12, 2019; one non-compliance issue was identified. Records did not indicate that the treatment equipment was operated in a manner that achieved the design capabilities required under Ontario Regulation 170/03 or a Drinking Water Works Permit and/ or Municipal Drinking Water Licence issued under Part V of the SDWA at all times that water was being supplied to consumers.

Action(s) Required: An isolated equipment problem on April 4, 2019 lead to a brief period during which the system was unable to provide adequate disinfection. Operators responded promptly to the alarm, and no further action is requested of operators in response to this incident.

The last Ministry of Environment, Conservation & Parks (MECP) inspection occurred on October 19, 2020; zero non-compliance issues were identified.

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 2020 was 8,296.7 m³. The average monthly treated flow in 2020 was 691 m³ per month; the average daily treated flow was 22.67 m³/day. The maximum monthly flow for the reporting period of 1,093 m³/ month was recorded in July 2020. The maximum daily flow for 2020 was 56 m³/ day; this flow value was recorded on July 4th and 5th and September 11th, 12th, and 13th of 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 Varna Drinking Water System, Municipal Drinking Water License (License Number: 045 -106 Issue No. 2) identifies a system rated capacity of 144 m³/ day.

There were no exceedances of the rated capacity. The maximum daily flow value for 2020 of 56 m³/ day recorded on July 4, 5 and September 11, 12, and 13th, is 38.9 % of the rated capacity of the plant. The plant average daily flow in 2020 was 22.67 m³ /d; this is 15.74 % 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 2020 Water Flows

Month	Total Raw Flow m³	Total Treated Flow m³	Monthly Treated Average m³/day	Maximum Daily Treated Flow m³/day	Rated Capacity approved in MDWL (m³/d)
January	590	590	19.03	23	144
February	496.1	496.1	17.11	38	144
March	512.7	512.7	16.54	20	144
April	583	583	19.43	25	144
May	660.9	660.9	21.32	30	144
June	945	945	31.5	42	144
July	1,093	1093	35.26	56	144
August	683.1	683.1	22.04	26.5	144
September	876	876	29.2	56	144
October	631.6	631.6	20.37	24	144
November	616.3	616.3	20.54	24	144
December	609	609	19.65	24	144
Total	8,296.7	8,296.7	-	-	-
Average	-	-	22.67	-	-

Appendix A
Section 11 Annual Report

SECTION 11 ANNUAL REPORT: 2020

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, 2020 – December 31, 2020

<p>Does your Drinking-Water System serve more than 10,000 people? No</p> <p>Is your annual report available to the public at no charge on a web site on the Internet? Yes</p> <p>Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.</p> <p>Municipality of Bluewater 14 Mill Ave. Zurich, Ontario N0M 2T0</p>	<p align="center"><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: Not applicable</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: Not applicable</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 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 Varna Water Supply and Distribution System serves the community of Varna located in the Municipality of Bluewater; approximate population served is 200.

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, a Stenner 45-MHP2 chlorine pump, 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

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

System repairs & replacements included:

- Pressure tank replacement
- Chlorine sensor replacement
- Sump pump 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	13	0 – 0	0 – 0	-	-
Distribution	52	0 – 0	0 – 0	51	< 10 - 50

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	12	0.11 – 0.33	NTU
Treated Water Chlorine	*8760	0.86 – 2.00	mg/L
Distribution Chlorine	104	0.77 – 1.73	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	No. of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L) - TW	10/23/2017	< 0.04	6.0	No	No
Arsenic: As (ug/L) - TW	10/23/2017	1.5	25.0	No	No
Barium: Ba (ug/L) - TW	10/23/2017	116	1000.0	No	No
Boron: B (ug/L) - TW	10/23/2017	68	5000.0	No	No
Cadmium: Cd (ug/L) - TW	10/23/2017	< 0.004	5.0	No	No
Chromium: Cr (ug/L) - TW	10/23/2017	0.63	50.0	No	No
Mercury: Hg (ug/L) - TW	10/23/2017	< 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	10/23/2017	< 0.04	10.0	No	No
Uranium: U (ug/L) - TW	10/23/2017	1.08	20.0	No	No

Treated Water	Sample Date (mm/dd/yyyy)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Additional Inorganics					
Fluoride (mg/L) - TW	10/23/2017	1.34	1.5	No	No
Nitrite (mg/L) - TW	01/06/2020	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	04/06/2020	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	07/07/2020	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	10/06/2020	<MDL 0.003	1.0	No	No

Treated Water	Sample Date (mm/dd/yyyy)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Nitrate (mg/L) - TW	01/06/2020	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW	04/06/2020	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW	07/07/2020	<MDL 0.006	10.0	No	No
Nitrate (mg/L) - TW	10/06/2020	<MDL 0.006	10.0	No	No
Sodium: Na (mg/l) – TW	10/23/2017	9.56	20	No	No

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 27, 2020	2	6.89 - 6.98	229 - 241	0.14 - 0.21	0
Distribution	Aug 13, 2020	2	7.10 - 7.16	229 - 239	0.05 - 0.08	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	No. of Exceedances	
			MAC	MAC
Alachlor (ug/L) - TW	10/23/2017	< 0.02	5.00	No
Atrazine + N-dealkylated	10/23/2017	< 0.01	5.00	No
Atrazine (ug/L) – TW	10/23/2017	<0.01	n/a	No
Azinphos-methyl (ug/L) - TW	10/23/2017	< 0.05	20.00	No
Benzene (ug/L) - TW	10/23/2017	< 0.32	1.00	No
Benzo(a)pyrene (ug/L) - TW	10/23/2017	< 0.004	0.01	No
Bromoxynil (ug/L) - TW	10/23/2017	< 0.33	5.00	No
Carbaryl (ug/L) - TW	10/23/2017	< 0.05	90.00	No
Carbofuran (ug/L) - TW	10/23/2017	< 0.01	90.00	No
Carbon Tetrachloride (ug/L) - TW	10/23/2017	< 0.16	2.00	No
Chlorpyrifos (ug/L) - TW	10/23/2017	< 0.02	90.00	No
Desethyl atrazine (ug/L) – TW	10/23/2017	<0.01	n/a	No
Diazinon (ug/L) - TW	10/23/2017	< 0.02	20.00	No
Dicamba (ug/L) - TW	10/23/2017	< 0.20	120.00	No
1,2-Dichlorobenzene (ug/L) - TW	10/23/2017	< 0.41	200.00	No
1,4-Dichlorobenzene (ug/L) - TW	10/23/2017	< 0.36	5.00	No
1,2-Dichloroethane (ug/L) - TW	10/23/2017	< 0.35	5.00	No
1,1-Dichloroethylene (ug/L) - TW	10/23/2017	< 0.33	14.00	No
Dichloromethane (Methylene	10/23/2017	< 0.35	50.00	No
2,4-Dichlorophenol (ug/L) - TW	10/23/2017	< 0.15	900.00	No

Treated Water	Sample Date (mm/dd/yyyy)	Sample Result	No. of Exceedances	
			MAC	MAC
2,4-Dichlorophenoxy acetic acid	10/23/2017	< 0.19	100.00	No
Diclofop-methyl (ug/L) - TW	10/23/2017	< 0.40	9.00	No
Dimethoate (ug/L) - TW	10/23/2017	< 0.03	20.00	No
Diquat (ug/L) - TW	10/23/2017	< 2.0	70.00	No
Diuron (ug/L) - TW	10/23/2017	< 0.03	150.00	No
Glyphosate (ug/L) - TW	10/23/2017	< 1.0	280.00	No
Malathion (ug/L) - TW	10/23/2017	< 0.02	190.00	No
Metolachlor (ug/L) - TW	10/23/2017	< 0.01	50.00	No
Metribuzin (ug/L) - TW	10/23/2017	< 0.02	80.00	No
MCPA (mg/L) – TW	10/23/2017	0.00012	0.1	No
Monochlorobenzene	10/23/2017	< 0.3	80.00	No
Paraquat (ug/L) - TW	10/23/2017	< 2.0	10.00	No
PCB (ug/L) - TW	10/23/2017	< 0.04	3.00	No
Pentachlorophenol (ug/L) - TW	10/23/2017	< 0.15	60.00	No
Phorate (ug/L) - TW	10/23/2017	< 0.01	2.00	No
Picloram (ug/L) - TW	10/23/2017	< 1.0	190.00	No
Prometryne (ug/L) - TW	10/23/2017	< 0.03	1.00	No
Simazine (ug/L) - TW	10/23/2017	< 0.01	10.00	No
Terbufos (ug/L) - TW	10/23/2017	< 0.01	1.00	No
Tetrachloroethylene (ug/L) - TW	10/23/2017	< 0.35	30.00	No
2,3,4,6-Tetrachlorophenol (ug/L) -	10/23/2017	< 0.20	100.00	No
Triallate (ug/L) - TW	10/23/2017	< 0.01	230.00	No
Trichloroethylene (ug/L) - TW	10/23/2017	< 0.44	5.00	No
2,4,6-Trichlorophenol (ug/L) - TW	10/23/2017	< 0.25	5.00	No
Trifluralin (ug/L) - TW	10/23/2017	< 0.02	45.00	No
Vinyl Chloride (ug/L) - TW	10/23/2017	< 0.17	1.00	No

Parameter	Annual Running Average	Result Value	MAC ug/L	Exceedance
Trihalomethane: Total (ug/L)	Jan - Dec. 2020	1.98	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.

Not applicable