



**ONTARIO CLEAN WATER AGENCY**  
**AGENCE ONTARIENNE DES EAUX**

**WALTER'S FALLS  
DRINKING WATER SYSTEM**

Small Municipal Residential

**SECTION 11  
ANNUAL REPORT**

**For the period of  
JANUARY 1, 2022 TO DECEMBER 31, 2022**

Prepared by the Ontario Clean Water Agency  
For the Township of Chatsworth

This report was prepared in accordance with the requirements of [O.Reg 170/03, Section 11, Annual reports](#) for the following system and reporting period:

<b>Drinking Water System Number:</b>	220007034
<b>Drinking Water System Name:</b>	Walter's Falls Drinking Water System
<b>Drinking Water System Owner:</b>	Township of Chatsworth
<b>Drinking Water System Category:</b>	Small Municipal Residential
<b>Reporting Period:</b>	January 1, 2022 – December 31, 2022

**Does your Drinking Water System serve more than 10,000 people?**

No

**Is your Annual Report available to the public at no charge on a website on the Internet?**

Yes

*Note: If a large municipal residential system serves more than 10,000 people, the owner of the system shall ensure that a copy of every report prepared under this section is available to the public at no charge on a website on the Internet. O. Reg. 170/03, Section 11. (10)*

**Location where Summary Report required under O. Reg 170/03, Schedule 22 will be available for inspection. (O. Reg 170/03, Section 11.(6)(5)):**

- Township of Chatsworth Municipal Office, 316837 Highway 6, RR1 Chatsworth, ON, N0H 1G0
- <https://chatsworth.ca/living-here/water-services/#annual-water-reports>

**List all Drinking Water Systems (if any), which receive all of their drinking water from your system:**

Drinking Water System Name	Drinking Water System Number
N/A	N/A

**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?**

N/A

**How system users are notified that the annual report is available, and is free of charge:**

- |                                     |  |
|-------------------------------------|--|
| <input checked="" type="checkbox"/> | Public access/notice via the web           |
| <input checked="" type="checkbox"/> | Public access/notice via Government Office |
| <input type="checkbox"/>            | Public access/notice via a newspaper       |
| <input checked="" type="checkbox"/> | Public access/notice via Public Request    |

- Public access/notice via a Public Library  
 Public access/notice via other method: \_\_\_\_\_

**Description of Drinking Water System (O.Reg 170/03, Section 11.(6)(a)):**

The Walter's Falls Drinking Water System is owned by The Corporation of the Township of Chatsworth and operated by the Ontario Clean Water Agency.

**Well 1**

This well is located adjacent to the pump house and within the fenced-in area. It is a 200 mm diameter, 42.7 m deep drilled groundwater production well (Well TW-1/89). The 2001 Engineer's Report states that they are of the opinion that the well is under the direct influence of surface water (GUDI). Analytical results obtained from the well and from Walter's Creek at the Mill Pond were analyzed for various chemical and physical parameters and similar results were obtained, suggesting the creek is having an influence on the well water supply. The Well is equipped with a submersible well pump rated at 455 L/min @ 32.0 m total dynamic head with a 150 mm diameter discharge line to the pump house. It operates on a demand basis. Warning signs on the fence advise the farmer farming the adjacent field to restrict the use of agricultural fertilizers and pesticides near the pump house and wells.

**Well 2**

This well is located adjacent to the pump house and within the fenced-in area. It is a 200 mm diameter, 42.7 m deep drilled groundwater production well (Well TW-2/89). The 2001 Engineer's Report states that they are of the opinion that the well is under the direct influence of surface water (GUDI). Analytical results obtained from the well and from Walter's Creek at the Mill Pond were analyzed for various chemical and physical parameters and similar results were obtained, suggesting the creek is having an influence on the well water supply.

The well is equipped with a submersible well pump rated at 455 L/min @ 32.0 m total dynamic head with a 150 mm diameter discharge line to the pump house. It operates on a demand basis. Warning signs on the fence advise the farmer farming the adjacent field to restrict the use of agricultural fertilizers and pesticides near the pump house and wells.

The Walter's Falls Drinking Water System's source water has been categorized as Groundwater Under the Direct Influence of Surface Water (GUDI). As such, the minimum log removal/inactivation required is 2 log for Cryptosporidium Oocysts, 3 log for Giardia Cysts and 4 log for viruses. The Walter's Falls Drinking Water System achieves these credits from UV and chlorine disinfection.

Raw water from each well is pumped to a common header. Raw water is directed through the raw water flow meter and then through a cartridge filter. The cartridge filter unit has a treatment capacity of 15.2 L/s when equipped with 12 cartridge filters, restricting particles

one (1) micron and larger. Filtered water is then directed to one of two ultraviolet disinfection reactors; one (1) duty, and one (1) standby. Each UV disinfection reactor is capable of providing a minimum dosage of 40 mJ/cm<sup>2</sup>. Following UV disinfection, the water is treated with sodium hypochlorite for primary and secondary disinfection.

Treated water is then directed into one of the two clear wells. The underground clear wells have a total capacity of 110 cubic meters, provide chlorine contact storage, and provide two-hour storage to meet fire flow requirements.

There are four high lift pumps, the duty pump is rated at 226.8 L/min, at 43.9 m total dynamic head (TDH) and the other three (3) pumps are each rated at 1,135.2 L/min at 46 m TDH. There are five 450 L capacity pressure tanks. The pressure tanks provide storage and prevent the short cycling of the duty high lift pump. The working pressure range of the duty pump is set at 60 to 75 PSI.

A 75 kW standby diesel generator is used to provide power to the pump house and well pumps in the event of power outages.

The Walter's Falls Distribution system has approximately 14 fire hydrants and 50 service connections.

**List of water treatment chemicals used by the system during the reporting period (O.Reg 170/03, Section 11.(6)(a)):**

- Sodium Hypochlorite 6%

**Significant expenses were incurred to:**

- |                                     |                                       |
|-------------------------------------|---------------------------------------|
| <input checked="" type="checkbox"/> | Install required equipment            |
| <input checked="" type="checkbox"/> | Repair required equipment             |
| <input checked="" type="checkbox"/> | Replace required equipment            |
| <input type="checkbox"/>            | No significant expenses were incurred |

**Description of major expenses during the reporting period to install, repair or replace required equipment (O.Reg 170/03, Section 11.(6)(e)):**

- PLC upgrade
- Well #1 below grade inspection
- Miscellaneous distribution parts
- Replacement well pump

**Summary of any reports/notices submitted to the Ministry and/or Spills Action Centre in accordance with subsection 18(1) of the Safe Drinking-Water Act or section 16-4 of Schedule 16 of O.Reg.170/03 during the reporting period, including a description of any corrective actions taken under Schedule 17 or 18 (O. Reg 170/03, Section 11.(6)(b),(d):**

Incident Date (yyyy/mm/dd)	Parameter/ Notice of	Result & Unit	Reporting Summary, Corrective Actions & Resolution
2022/08/29	Distribution Water: Total Coliform	2 cfu/100 mL	<ul style="list-style-type: none"> <li>• AWQI #159805 - Distribution total coliform exceeded the regulatory standard.</li> <li>• Laboratory reported exceedance to OCWA on September 1, 2022. OCWA notified MECP, local Health Unit and SAC on September 1, 2022.</li> <li>• Distribution lines were flushed, free chlorine residual was confirmed to be above 0.2 mg/L. Resamples were collected at site, upstream and downstream. No additional actions required by the Health Unit or MECP.</li> <li>• Resample results received on September 6, 2022, results were within regulatory requirements.</li> <li>• Written notice of resolution submitted on September 6, 2022. No further actions required.</li> </ul>

**Table 1. Microbiological testing done under the Schedule 11 of Regulation 170/03 during this reporting period (O.Reg 170/03, Section 11.(6)(c)).**

Location	Number of Samples	Range of E. Coli or Fecal Results		Range of Total Coliform Results		Number of HPC Samples	Range of HPC Samples	
		Min.	Max.	Min.	Max.		Min.	Max.
Raw Well #1	12	0	1	1	123	N/A	N/A	N/A
Raw Well #2	12	0	0	0	82	N/A	N/A	N/A
Distribution	58	0	0	0	2	52	0	13

**Table 2. Operational testing done under Schedule 7 of Regulation 170/03 during the period covered by this Annual Report (O. Reg 170/03, Section 11.(6)(c)).**

Parameter & Location	Number of Samples	Range of Results	
		Min.	Max.
Turbidity, Raw Well #1 (NTU)	12	0.11	0.74
Turbidity, Raw Well #2 (NTU)	12	0.30	0.68
Turbidity, Filter (NTU)	8760	0.00	2.00*
Free Chlorine Residual, Treated Water (mg/L)	8760	1.18	1.69

Free Chlorine Residual, Distribution Water (mg/L)	104	0.76	1.56
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Note: The number of samples used for continuous monitoring units is 8760.

\*Turbidity spike on October 12, 2022 due to well maintenance. No water being produced at time. No adverse conditions

**Table 3. Summary of additional testing and sampling results carried out in accordance with the requirement of an approval, municipal drinking water licence or order (including OWRA) or other legal instrument. (O. Reg 170/03, Section 11.(6)(c))**

Legal Instrument & Issue Date (yyyy/mm/dd)	Parameter	Date Sampled	Number of Samples	Min	Max
2020/11/10 241-101 (Issue 4)	UV Transmittance	2022 (Monthly)	20	100	100

Note: UV transmittance shall be measured and recorded by grab samples at a minimum frequency of once per month.

**Table 4. Summary of Inorganic parameters tested during this reporting period or the most recent sample results (O.Reg 170/03, Section 11.(6)(c))**

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Antimony: Sb (ug/L) - TW	2021/04/12	<MDL 0.9	6.0	No
Arsenic: As (ug/L) - TW	2021/04/12	<MDL 0.2	10.0	No
Barium: Ba (ug/L) - TW	2021/04/12	6.95	1000.0	No
Boron: B (ug/L) - TW	2021/04/12	9.0	5000.0	No
Cadmium: Cd (ug/L) - TW	2021/04/12	<MDL 0.003	5.0	No
Chromium: Cr (ug/L) - TW	2021/04/12	0.41	50.0	No
Mercury: Hg (ug/L) - TW	2021/04/12	<MDL 0.01	1.0	No
Selenium: Se (ug/L) - TW	2021/04/12	0.1	50.0	No
Uranium: U (ug/L) - TW	2021/04/12	0.147	20.0	No
Fluoride (mg/L) - TW	2022/01/10	<MDL 0.06	1.5	No
Nitrite (mg/L) - TW	2022/01/10	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2022/04/25	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2022/07/11	<MDL 0.003	1.0	No
Nitrite (mg/L) - TW	2022/10/26	<MDL 0.003	1.0	No
Nitrate (mg/L) - TW	2022/01/10	4.02	10.0	No
Nitrate (mg/L) - TW	2022/04/25	3.85	10.0	No
Nitrate (mg/L) - TW	2022/07/11	3.3	10.0	No
Nitrate (mg/L) - TW	2022/10/26	2.82	10.0	No

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Aesthetic Objective (AO)	Exceedance	
				AO	> 20 mg/L
Sodium: Na (mg/L) - TW	2022/01/10 <sup>c</sup>	4.49	200 <sup>d</sup>	No	No

Note: MDL = Minimum Detection Limit

<sup>c</sup>Sodium is reportable every 60 months. Next set of sodium samples is scheduled to be sampled in 2027.

<sup>d</sup>There is no regulatory Maximum Allowable Concentration (MAC) Sodium. The aesthetic objective (AO) 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.

**Table 5: Summary of lead testing under Schedule 15.1 during this reporting period (O.Reg 170/03, Section 11.(6)(g))**

Location/Type & Parameter	Number of Samples	Range of Results		Number of Lead Exceedances (MAC = 10 µ/L)
		Min.	Max.	
<b>Period: January 1 to April 15</b>				
Plumbing – Lead (µg/L) <sup>a</sup>	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) <sup>b</sup>	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO <sub>3</sub> )	1	266	266	N/A
Distribution – pH	1	7.79	7.79	N/A
<b>Period: June 15 to October 15</b>				
Plumbing – Lead (µg/L) <sup>a</sup>	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) <sup>b</sup>	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO <sub>3</sub> )	1	321	321	N/A
Distribution – pH	1	7.14	7.14	N/A
<b>Period: December 15 to 31</b>				
Plumbing – Lead (µg/L) <sup>a</sup>	N/A	N/A	N/A	N/A
Distribution – Lead (µg/L) <sup>b</sup>	N/A	N/A	N/A	N/A
Distribution – Alkalinity (mg/L as CaCO <sub>3</sub> )	N/A	N/A	N/A	N/A
Distribution - pH	N/A	N/A	N/A	N/A

Note: this is required for large municipal residential systems, small municipal residential systems or non-municipal year-round residential system.

<sup>a</sup>Plumbing samples are not applicable as this system qualifies for the plumbing exemption per O. Reg 170/03 Schedule 15.1-5 (9) (10).

<sup>b</sup>Distribution lead samples are taken every 36 months. The next set of distribution lead samples is scheduled to be sampled during the winter period of December 15, 2023 to April 15, 2024 and summer period of June 15, 2024 to October 15, 2024.

**Table 6: Summary of Organic parameters sampled during this reporting period or the most recent sample results (O.Reg 170/03, Section 11.(6)(c)).**

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Alachlor (ug/L) - TW	2021/04/12	<MDL 0.02	5.0	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2021/04/12	<MDL 0.01	5.0	No
Azinphos-methyl (ug/L) - TW	2021/04/12	<MDL 0.05	20.0	No
Benzene (ug/L) - TW	2021/04/12	<MDL 0.32	1.0	No
Benzo(a)pyrene (ug/L) - TW	2021/04/12	<MDL 0.004	0.01	No
Bromoxynil (ug/L) - TW	2021/04/12	<MDL 0.33	5.0	No
Carbaryl (ug/L) - TW	2021/04/12	<MDL 0.05	90.0	No
Carbofuran (ug/L) - TW	2021/04/12	<MDL 0.01	90.0	No
Carbon Tetrachloride (ug/L) - TW	2021/04/12	<MDL 0.17	2.0	No
Chlorpyrifos (ug/L) - TW	2021/04/12	<MDL 0.02	90.0	No
Diazinon (ug/L) - TW	2021/04/12	<MDL 0.02	20.0	No
Dicamba (ug/L) - TW	2021/04/12	<MDL 0.2	120.0	No
1,2-Dichlorobenzene (ug/L) - TW	2021/04/12	<MDL 0.41	200.0	No
1,4-Dichlorobenzene (ug/L) - TW	2021/04/12	<MDL 0.36	5.0	No
1,2-Dichloroethane (ug/L) - TW	2021/04/12	<MDL 0.35	5.0	No
1,1-Dichloroethylene (ug/L) - TW	2021/04/12	<MDL 0.33	14.0	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2021/04/12	<MDL 0.35	50.0	No
2,4-Dichlorophenol (ug/L) - TW	2021/04/12	<MDL 0.15	900.0	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2021/04/12	<MDL 0.19	100.0	No
Diclofop-methyl (ug/L) - TW	2021/04/12	<MDL 0.4	9.0	No
Dimethoate (ug/L) - TW	2021/04/12	<MDL 0.06	20.0	No
Diquat (ug/L) - TW	2021/04/12	<MDL 1.0	70.0	No
Diuron (ug/L) - TW	2021/04/12	<MDL 0.03	150.0	No
Glyphosate (ug/L) - TW	2021/04/12	<MDL 1.0	280.0	No
Malathion (ug/L) - TW	2021/04/12	<MDL 0.02	190.0	No
Metolachlor (ug/L) - TW	2021/04/12	<MDL 0.01	50.0	No
Metribuzin (ug/L) - TW	2021/04/12	<MDL 0.02	80.0	No



Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result	Maximum Allowable Concentration (MAC)	Exceedance of MAC
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2021/04/12	<MDL 0.3	80.0	No
Paraquat (ug/L) - TW	2021/04/12	<MDL 1.0	10.0	No
PCB (ug/L) - TW	2021/04/12	<MDL 0.04	3.0	No
Pentachlorophenol (ug/L) - TW	2021/04/12	<MDL 0.15	60.0	No
Phorate (ug/L) - TW	2021/04/12	<MDL 0.01	2.0	No
Picloram (ug/L) - TW	2021/04/12	<MDL 1.0	190.0	No
Prometryne (ug/L) - TW	2021/04/12	<MDL 0.03	1.0	No
Simazine (ug/L) - TW	2021/04/12	<MDL 0.01	10.0	No
Terbufos (ug/L) - TW	2021/04/12	<MDL 0.01	1.0	No
Tetrachloroethylene (ug/L) - TW	2021/04/12	<MDL 0.35	10.0	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2021/04/12	<MDL 0.2	100.0	No
Triallate (ug/L) - TW	2021/04/12	<MDL 0.01	230.0	No
Trichloroethylene (ug/L) - TW	2021/04/12	<MDL 0.44	5.0	No
2,4,6-Trichlorophenol (ug/L) - TW	2021/04/12	<MDL 0.25	5.0	No
Trifluralin (ug/L) - TW	2021/04/12	<MDL 0.12	45.0	No
Vinyl Chloride (ug/L) - TW	2021/04/12	<MDL 0.02	1.0	No
Trihalomethane: Total (ug/L) Annual Average - DW	2022 (Quarterly)	16.75	100.0	No
HAA Total (ug/L) Annual Average - DW	2022 (Quarterly)	5.30	80.0	No

*Note: DW = Distribution Water, TW = Treated Water, MDL = Minimum Detection Limit, MAC = Maximum Allowable Concentration*

**Table 7: List of Inorganic or Organic parameter(s) that exceeded half the standard prescribed in Schedule 2 of Ontario Drinking Water Quality Standards for the reporting period.**

Parameter & Location	Sample Date (yyyy/mm/dd)	Sample Result
N/A	N/A	N/A