



ANNUAL REPORT

Drinking-Water System Number:	210000498
Drinking-Water System Name:	Warkworth Drinking Water System
Drinking-Water System Owner:	Municipality of Trent Hills
Municipal Drinking Water Licence	150-101
Drinking Water Works Permit	150-201
Drinking-Water System Category:	WT III, WD II
Period being reported:	January 1 to December 31, 2022

<p><u>Complete if your Category is Large Municipal Residential or Small Municipal Residential</u></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>Trent Hills Municipal Office 66 Front Street South, Campbellford ON</p> </div>	<p><u>Complete for all other Categories.</u></p> <p>Number of Designated Facilities served: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div> </p> <p>Did you provide a copy of your annual report to all Designated Facilities you serve? Yes [] No []</p> <p>Number of Interested Authorities you report to: <div style="border: 1px solid black; width: 100px; height: 20px; margin: 5px 0;"></div></p> <p>Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? Yes [] No []</p>
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Note: For the following tables below, additional rows or columns may be added or an appendix may be attached to the report

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
Warkworth Drinking Water System	210000498

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?
 Yes [X] No []



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 Warkworth water treatment plant is a conventional water treatment system, which draws all of its raw water supply from Burnley Creek. The treatment system consists of a low lift pumping station, one (1) package treatment system consisting of primary and secondary flocculation, sedimentation and two (2) dual-media filters equipped with granular activated carbon for taste, odour and dissolved organic carbon removal, a baffled contact tank connected to the filter discharge providing primary disinfection, and high lift pumping station equipped with secondary disinfection capabilities accomplished by a chlorine injection system located on the plant discharge piping.

A 500 cubic meter off-site storage reservoir provides peak hour demands and fire flow protection. There is a booster pumping station located on Old Hastings Rd. that supplies water to the Old Hastings Rd. area, Percy St. and the Orchard Hills residential development. The booster station is equipped with fire flow capabilities and has emergency back-up power. The water distribution system is comprised of various water main materials of different sizes with two (2) separate pressure zones. The system supplies drinking water to the Village of Warkworth.

List all water treatment chemicals used over this reporting period

1. Poly Aluminum-chloride (SternPAC) - supplied by Kemira
2. Dry Polymer (Magnafloc LT27A) - supplied by Northland Chemical
3. Sodium Hypo-chlorite – supplied by Brenntag Canada

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

- Contracted services \$ 11,973.84
- Equipment repairs \$ 8,854.43
- Chemicals \$ 22,844.20

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
N/A					

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 #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Raw	52	0-1,000	0-4,400	0	N/A
Treated	52	0-0	0-0	52	0-3
Distribution	104	0-0	0-0	55	0-1

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 #)
Turbidity	8760	0.022-0.158 NTU
Chlorine	8760	0.21-3.08 mg/l
Fluoride (If the DWS provides fluoridation)	N/A	N/A

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

NOTE: Record the unit of measure if it is not milligrams per litre.

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
Municipal Drinking Water Licence, Issued June 25th, 2021.	Total Suspended Solids	Samples collected monthly. Result = annual average concentration.	10.17	mg/L

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	10/01/2022	0.6<MDL	Micrograms	0
Arsenic	10/01/2022	0.2<MDL	Micrograms	0
Barium	10/01/2022	48.0	Micrograms	0
Boron	10/01/2022	7	Micrograms	0

Cadmium	10/01/2022	0.003<MDL	Micrograms	0
Chromium	10/01/2022	0.17	Micrograms	0
*Lead				
Mercury	10/01/2022	0.01<MDL	Micrograms	0
Selenium	10/01/2022	0.04<MDL	Micrograms	0
Sodium	10/01/2022	10.7	Milligrams	0
Uranium	10/01/2022	0.021	Micrograms	0
Fluoride	10/01/2022	0.06<MDL	Milligrams	0
Nitrite	14/11/2022	0.003<MDL	Milligrams	0
Nitrate	14/11/2022	0.370	Milligrams	0

*only for drinking water systems testing under Schedule 15.2; this includes large municipal non-residential systems, small municipal non-residential systems, non-municipal seasonal residential systems, large non-municipal non-residential systems, and small non-municipal non-residential systems

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 #)ug/L	Number of Exceedances
Plumbing	N/A	N/A	N/A
Distribution	8	0.04 – 0.76	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	10/01/2022	0.02<MDL	Micrograms	0
Atrazine + N-dealkylated metabolites	10/01/2022	0.01<MDL	Micrograms	0
Atrazine	10/01/2022	0.01<MDL	Micrograms	0
Desethyl atrazine	10/01/2022	0.01<MDL	Micrograms	0
Azinphos-methyl	10/01/2022	0.05<MDL	Micrograms	0
Benzene	10/01/2022	0.32<MDL	Micrograms	0
Benzo(a)pyrene	10/01/2022	0.004<MDL	Micrograms	0
Bromoxynil	10/01/2022	0.33<MDL	Micrograms	0
Carbaryl	10/01/2022	0.05<MDL	Micrograms	0
Carbofuran	10/01/2022	0.01<MDL	Micrograms	0
Carbon Tetrachloride	10/01/2022	0.17<MDL	Micrograms	0
Chlorpyrifos	10/01/2022	0.02<MDL	Micrograms	0
Diazinon	10/01/2022	0.02<MDL	Micrograms	0
Dicamba	10/01/2022	0.20<MDL	Micrograms	0
1,2-Dichlorobenzene	10/01/2022	0.41<MDL	Micrograms	0
1,4-Dichlorobenzene	10/01/2022	0.36<MDL	Micrograms	0
1,2-Dichloroethane	10/01/2022	0.35<MDL	Micrograms	0
1,1-Dichloroethylene(vinylidene chloride)	10/01/2022	0.33 <MDL	Micrograms	0
Dichloromethane	10/01/2022	0.35<MDL	Micrograms	0
2-4 Dichlorophenol	10/01/2022	0.15<MDL	Micrograms	0
2,4-Dichlorophenoxy acetic acid (2,4-D)	10/01/2022	0.19<MDL	Micrograms	0
Diclofop-methyl	10/01/2022	0.40<MDL	Micrograms	0
Dimethoate	10/01/2022	0.06<MDL	Micrograms	0
Diquat	10/01/2022	1<MDL	Micrograms	0
Diuron	10/01/2022	0.03<MDL	Micrograms	0



Glyphosate	10/01/2022	1<MDL	Micrograms	0
Malathion	10/01/2022	0.02<MDL	Micrograms	0
MCPA	10/01/2022	0.00012<MDL	Milligrams	0
Metolachlor	10/01/2022	0.01<MDL	Micrograms	0
Metribuzin	10/01/2022	0.02<MDL	Micrograms	0
Monochlorobenzene	10/01/2022	0.30<MDL	Micrograms	0
Paraquat	10/01/2022	1<MDL	Micrograms	0
Pentachlorophenol	10/01/2022	0.15<MDL	Micrograms	0
Phorate	10/01/2022	0.01<MDL	Micrograms	0
Picloram	10/01/2022	1<MDL	Micrograms	0
Polychlorinated Biphenyls(PCB)	10/01/2022	0.04<MDL	Micrograms	0
Prometryne	10/01/2022	0.03<MDL	Micrograms	0
Simazine	10/01/2022	0.01<MDL	Micrograms	0
THM (NOTE: show latest annual average)		36.75	Micrograms	0
Terbufos	10/01/2022	0.01<MDL	Micrograms	0
Tetrachloroethylene	10/01/2022	0.35<MDL	Micrograms	0
2,3,4,6-Tetrachlorophenol	10/01/2022	0.20<MDL	Micrograms	0
Triallate	10/01/2022	0.01<MDL	Micrograms	0
Trichloroethylene	10/01/2022	0.44<MDL	Micrograms	0
2,4,6-Trichlorophenol	10/01/2022	0.25<MDL	Micrograms	0
Trifluralin	10/01/2022	0.02<MDL	Micrograms	0
Vinyl Chloride	10/01/2022	0.17<MDL	Micrograms	0

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	10.7	ug/l	10/01/2022