ANNUAL REPORT 2021

Drinking Water System Number:	**220000521**
Drinking Water System Name:	St. Marys Drinking Water System
Drinking Water System Owner:	The Corporation of the Town of St. Marys
Drinking Water System Category:	Large, Municipal, Residential
Period being reported:	January 1, 2021 to December 31, 2021

Complete if your Category is Large Municipal Residential or Small Municipal Residential

Does your Drinking Water System serve more than 10,000 people? Yes [ ] No [X]

Is your annual report available to the public at no charge on a web site on the Internet? Yes [X] No [ ]

Location where Summary Report required under O. Reg. 170/03 Schedule 22 will be available for inspection.

Municipal Operations Center,
408 James St South
www.townofstmarys.com

Complete for all other Categories

Number of Designated Facilities served: n/a

Did you provide a copy of your annual report to all Designated Facilities you serve? n/a

Number of Interested Authorities you report to: n/a

Did you provide a copy of your annual report to all Interested Authorities you report to for each Designated Facility? n/a

List all Drinking Water Systems (if any), which receive all their drinking water from your system: 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 drinking water? n/a

Indicate how you notified system users that your annual report is available and is free of charge.

- **[X] Public access/notice via the web**
- **[ ] Public access/notice via Government Office**
- **[ ] Public access/notice via a newspaper**
- **[X] Public access/notice via Public Request**
- **[ ] Public access/notice via a Public Library**
- **[X] Public access/notice via other method:** Municipal Office

Describe your Drinking Water System

Each of the pump houses #1, 2A and 3 house have a vertical turbine pump rated at 60 L/s capacity. These pumps draw ground water from each of the three wells. Water passes air release valves, a backflow check valve, pressure gauges, primary UV light disinfection, flow meter, the chlorine gas injection point, actuator control valve and then into the contact chamber piping located underground.

Booster Station
This provides additional system pressure for industrial properties within the southeast area of the town during fire emergencies.

Reservoir
A ground level reservoir and booster pumping station was completed in 2019 to add an additional 1,600 m^3 of water storage to the system. The reservoir is located next to the existing Well #1.

Water Tower
The water tower is for system pressure regulation and has a storage capacity of 1,820 m^3.

List all water treatment chemicals used over this reporting period

Chlorine gas for disinfection

Were any significant expenses incurred to?

[X] Install required equipment
[X] Repair required equipment
[X] Replace required equipment

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

Thamescrest Phase 1 Subdivision	$ 150,000
Tower Safety Upgrades	$ 22,000
Well #1 – Well Rehab	$ 29,000
Well #2A – Water Heater Replacement	$ 1,036
Well #3 – Backflush Gate Valve Replacement	$ 2,852
SCBA Replacements	$ 7,814
Well #2A – UV Ballast	$ 2,215
All Wells - UV Bulbs	$ 4,340
All Wells – Chlorine Gas Parts	$ 7,077
Well #3 – PLC UPS Replacement	$ 4,058
All Wells – Service Contract for UV Systems	$ 2,900
Distribution Parts	$ 22,500
Hydrant Parts	$ 1,000
Elizabeth and Waterloo Service Replacements/Re-construction	$ 110,000
Total	$ 366,792

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
No reportable 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 Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #)	Number of HPC Samples	Range of HPC Results (min #)-(max #)
Well #1 Raw	53	0-0	0-91	-	-
Well #2A Raw	52	0-0	0-0	-	-
Well #3 Raw	53	0-0	0-0	-	-
Well #1Treated	49	0-0	0-0	49	0-1
Well #2A Treated	52	0-0	0-0	52	0-1
Well #3 Treated	52	0-0	0-0	52	0-400
Distribution	210	0-0	0-0	54	0-<10

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	156	Well #1: 0.09-0.60 Well#2A: 0.11-0.58 Well#3: 0.08-0.53	NTU
Chlorine-Treated	8760	Well #1: 0.44-2.09 Well#2A: 0.49-3.53 Well#3: 0.33-1.95	mg/L
Chlorine-Distribution	361	0.39-1.34	mg/L

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

Treated Water	Sample Date (yyyy/mm/dd)	Sample Result
UV Transmittance % - TW1	2021/01/04	95.1
UV Transmittance % - TW1	2021/04/06	94.4
UV Transmittance % - TW1	2021/07/06	95.2
UV Transmittance % - TW1	2021/10/05	93.9
UV Transmittance % - TW2A	2021/01/04	93.7
UV Transmittance % - TW2A	2021/04/06	94.3
UV Transmittance % - TW2A	2021/07/06	94.2
UV Transmittance % - TW2A	2021/10/05	95.0
UV Transmittance % - TW3	2021/01/04	95.8
UV Transmittance % - TW3	2021/04/06	95.9
UV Transmittance % - TW3	2021/07/06	95.9
UV Transmittance % - TW3	2021/10/05	96.0

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 – TW1	2021/01/04	<MDL 0.9	ug/L	No
Antimony – TW2	2021/01/04	<MDL 0.9	ug/L	No
Antimony – TW3	2021/01/04	<MDL 0.9	ug/L	No
Arsenic – TW1	2021/01/04	0.3	ug/L	No
Arsenic – TW2	2021/01/04	0.4	ug/L	No
Arsenic – TW3	2021/01/04	<MDL 0.2	ug/L	No
Barium – TW1	2021/01/04	125	ug/L	No
Barium – TW2	2021/01/04	89.6	ug/L	No
Barium – TW3	2021/01/04	105	ug/L	No
Boron – TW1	2021/01/04	51	ug/L	No
Boron – TW2	2021/01/04	67	ug/L	No
Boron – TW3	2021/01/04	55	ug/L	No
Cadmium – TW1	2021/01/04	0.101	ug/L	No
Cadmium – TW2	2021/01/04	0.028	ug/L	No
Cadmium – TW3	2021/01/04	0.043	ug/L	No
Chromium – TW1	2021/01/04	0.67	ug/L	No
Chromium – TW2	2021/01/04	0.64	ug/L	No
Chromium – TW3	2021/01/04	0.77	ug/L	No
Mercury – TW1	2021/01/04	<MDL 0.01	ug/L	No
Mercury – TW2	2021/01/04	<MDL 0.01	ug/L	No
Mercury – TW3	2021/01/04	<MDL 0.01	ug/L	No

Selenium – TW1	2021/01/04	0.65	ug/L	No
Selenium – TW2	2021/01/04	0.36	ug/L	No
Selenium – TW3	2021/01/04	0.51	ug/L	No
Sodium – TW1	2020/01/09	27.2	mg/L	Yes
Sodium – TW2	2020/01/09	49.7	mg/L	Yes
Sodium – TW3	2020/01/09	44.1	mg/L	Yes
Uranium – TW1	2021/01/04	1.14	ug/L	No
Uranium – TW2	2021/01/04	1.63	ug/L	No
Uranium – TW3	2021/01/04	2.03	ug/L	No
Fluoride – TW21	2020/01/06	1.07	mg/L	No
Fluoride – TW2	2020/01/06	1.25	mg/L	No
Fluoride – TW3	2020/01/06	1.19	mg/L	No
Nitrite – TW1	2021/01/04	<MDL 0.003	mg/L	No
Nitrite – TW2	2021/01/04	<MDL 0.003	mg/L	No
Nitrite – TW3	2021/01/04	<MDL 0.003	mg/L	No
Nitrite – TW1	2021/04/06	0.007	mg/L	No
Nitrite – TW2	2021/04/06	<MDL 0.003	mg/L	No
Nitrite – TW3	2021/04/06	<MDL 0.003	mg/L	No
Nitrite – TW1	2021/07/06	<MDL 0.003	mg/L	No
Nitrite – TW2	2021/07/06	<MDL 0.003	mg/L	No
Nitrite – TW3	2021/07/06	<MDL 0.003	mg/L	No
Nitrite – TW1	2021/10/05	<MDL 0.003	mg/L	No
Nitrite – TW2	2021/10/05	<MDL 0.003	mg/L	No
Nitrite – TW3	2021/10/05	<MDL 0.003	mg/L	No
Nitrate – TW1	2021/01/04	1.65	mg/L	No
Nitrate – TW2	2021/01/04	0.413	mg/L	No
Nitrate – TW3	2021/01/04	0.399	mg/L	No
Nitrate – TW1	2021/04/06	3.04	mg/L	No
Nitrate – TW2	2021/04/06	0.758	mg/L	No
Nitrate – TW3	2021/04/06	0.677	mg/L	No
Nitrate – TW1	2021/07/06	1.67	mg/L	No
Nitrate – TW2	2021/07/06	0.695	mg/L	No
Nitrate – TW3	2021/07/06	0.400	mg/L	No
Nitrate – TW1	2021/10/05	3.55	mg/L	No
Nitrate – TW2	2021/10/05	0.862	mg/L	No
Nitrate – TW3	2021/10/05	0.527	mg/L	No

***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 #)	Unit of Measure	Number of Exceedances
Distribution	6	0.01-0.47	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 – TW1	2021/01/04	<MDL 0.02	ug/L	No
Alachlor – TW2	2021/01/04	<MDL 0.02	ug/L	No
Alachlor – TW3	2021/01/04	<MDL 0.02	ug/L	No
Atrazine + N-dealkylated metabolites – TW1	2021/01/04	<MDL 0.01	ug/L	No
Atrazine + N-dealkylated metabolites – TW2	2021/01/04	<MDL 0.01	ug/L	No
Atrazine + N-dealkylated metabolites – TW3	2021/01/04	<MDL 0.01	ug/L	No
Azinphos-methyl – TW1	2021/01/04	<MDL 0.05	ug/L	No
Azinphos-methyl – TW2	2021/01/04	<MDL 0.05	ug/L	No
Azinphos-methyl – TW3	2021/01/04	<MDL 0.05	ug/L	No
Benzene – TW1	2021/01/04	<MDL0.32	ug/L	No
Benzene – TW2	2021/01/04	<MDL 0.32	ug/L	No
Benzene – TW3	2021/01/04	<MDL 0.32	ug/L	No
Benzo(a)pyrene – TW1	2021/01/04	<MDL 0.004	ug/L	No
Benzo(a)pyrene – TW2	2021/01/04	<MDL 0.004	ug/L	No
Benzo(a)pyrene – TW3	2021/01/04	<MDL 0.004	ug/L	No
Bromoxynil – TW1	2021/01/04	<MDL 0.33	ug/L	No
Bromoxynil – TW2	2021/01/04	<MDL 0.33	ug/L	No
Bromoxynil – TW3	2021/01/04	<MDL 0.33	ug/L	No
Carbaryl – TW1	2021/01/04	<MDL 0.05	ug/L	No
Carbayl – TW2	2021/01/04	<MDL 0.05	ug/L	No
Carbayl – TW3	2021/01/04	<MDL 0.05	ug/L	No
Carbofuran – TW1	2021/01/04	<MDL 0.01	ug/L	No
Carbofuran – TW2	2021/01/04	<MDL 0.01	ug/L	No
Carbofuran – TW3	2021/01/04	<MDL 0.01	ug/L	No
Carbon Tetrachloride – TW1	2021/01/04	<MDL 0.17	ug/L	No
Carbon Tetrachloride – TW2	2021/01/04	<MDL 0.17	ug/L	No
Carbon Tetrachloride – TW3	2021/01/04	<MDL 0.17	ug/L	No
Chlorpyrifos – TW1	2021/01/04	<MDL 0.02	ug/L	No
Chlorpyrifos – TW2	2021/01/04	<MDL 0.02	ug/L	No
Chlorpyrifos – TW3	2021/01/04	<MDL 0.02	ug/L	No
Diazinon – TW1	2021/01/04	<MDL 0.02	ug/L	No
Diazinon – TW2	2021/01/04	<MDL 0.02	ug/L	No
Diazinon – TW3	2021/01/04	<MDL 0.02	ug/L	No
Dicamba – TW1	2021/01/04	<MDL 0.2	ug/L	No
Dicamba – TW2	2021/01/04	<MDL 0.2	ug/L	No
Dicamba – TW3	2021/01/04	<MDL 0.2	ug/L	No
1,2-Dichlorobenzene – TW1	2021/01/04	<MDL 0.41	ug/L	No
1,2-Dichlorobenzene – TW2	2021/01/04	<MDL 0.41	ug/L	No
1,2-Dichlorobenzene – TW3	2021/01/04	<MDL 0.41	ug/L	No
1,4-Dichlorobenzene – TW1	2021/01/04	<MDL 0.36	ug/L	No

1,4-Dichlorobenzene – TW2	2021/01/04	<MDL 0.36	ug/L	No
1,4-Dichlorobenzene – TW3	2021/01/04	<MDL 0.36	ug/L	No
1,2-Dichloroethane – TW1	2021/01/04	<MDL 0.35	ug/L	No
1,2-Dichloroethane – TW2	2021/01/04	<MDL 0.35	ug/L	No
1,2-Dichloroethane – TW3	2021/01/04	<MDL 0.35	ug/L	No
1,1-Dichloroethylene – TW1 (vinylidene chloride)	2021/01/04	<MDL 0.33	ug/L	No
1,1-Dichloroethylene – TW2 (vinylidene chloride)	2021/01/04	<MDL 0.33	ug/L	No
1,1-Dichloroethylene – TW3 (vinylidene chloride)	2021/01/04	<MDL 0.33	ug/L	No
Dichloromethane – TW1	2021/01/04	<MDL 0.35	ug/L	No
Dichloromethane – TW2	2021/01/04	<MDL 0.35	ug/L	No
Dichloromethane – TW3	2021/01/04	<MDL 0.35	ug/L	No
2-4 Dichlorophenol – TW1	2021/01/04	<MDL 0.15	ug/L	No
2-4 Dichlorophenol – TW2	2021/01/04	<MDL 0.15	ug/L	No
2-4 Dichlorophenol – TW3	2021/01/04	<MDL 0.15	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D) – TW1	2021/01/04	<MDL 0.19	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D) – TW2	2021/01/04	<MDL 0.19	ug/L	No
2,4-Dichlorophenoxy acetic acid (2,4-D) – TW3	2021/01/04	<MDL 0.19	ug/L	No
Diclofop-methyl – TW1	2021/01/04	<MDL 0.4	ug/L	No
Diclofop-methyl – TW2	2021/01/04	<MDL 0.4	ug/L	No
Diclofop-methyl – TW3	2021/01/04	<MDL 0.4	ug/L	No
Dimethoate – TW1	2021/01/04	<MDL0.06	ug/L	No
Dimethoate – TW2	2021/01/04	<MDL 0.06	ug/L	No
Dimethoate – TW3	2021/01/04	<MDL 0.06	ug/L	No
Diquat – TW1	2021/01/04	<MDL 1.0	ug/L	No
Diquat – TW2	2021/01/04	<MDL 1.0	ug/L	No
Diquat – TW3	2021/01/04	<MDL 1.0	ug/L	No
Diuron – TW1	2021/01/04	<MDL 0.03	ug/L	No
Diuron – TW2	2021/01/04	<MDL 0.03	ug/L	No
Diuron – TW3	2021/01/04	<MDL 0.03	ug/L	No
Glyphosate – TW1	2021/01/04	<MDL 1.0	ug/L	No
Glyphosate – TW2	2021/01/04	<MDL 1.0	ug/L	No
Glyphosate – TW3	2021/01/04	<MDL 1.0	ug/L	No
HAAs (*Note***:** show latest running annual average**)**	2021	9.025	ug/L	No
Malathion – TW1	2021/01/04	<MDL 0.02	ug/L	No
Malathion – TW2	2021/01/04	<MDL 0.02	ug/L	No
Malathion – TW3	2021/01/04	<MDL 0.02	ug/L	No
Metolachlor – TW1	2021/01/04	<MDL 0.01	ug/L	No
Metolachlor – TW2	2021/01/04	<MDL 0.01	ug/L	No
Metolachlor – TW3	2021/01/04	<MDL 0.01	ug/L	No
Metribuzin – TW1	2021/01/04	<MDL 0.02	ug/L	No
Metribuzin – TW2	2021/01/04	<MDL 0.02	ug/L	No

Metribuzin – TW3	2021/01/04	<MDL 0.02	ug/L	No
Monochlorobenzene – TW1	2021/01/04	<MDL 0.3	ug/L	No
Monochlorobenzene – TW2	2021/01/04	<MDL 0.3	ug/L	No
Monochlorobenzene – TW3	2021/01/04	<MDL 0.3	ug/L	No
Paraquat – TW1	2021/01/04	<MDL1.0	ug/L	No
Paraquat – TW2	2021/01/04	<MDL 1.0	ug/L	No
Paraquat – TW3	2021/01/04	<MDL 1.0	ug/L	No
Pentachlorophenol – TW1	2021/01/04	<MDL 0.15	ug/L	No
Pentachlorophenol – TW2	2021/01/04	<MDL 0.15	ug/L	No
Pentachlorophenol – TW3	2021/01/04	<MDL 0.15	ug/L	No
Phorate – TW1	2021/01/04	<MDL 0.01	ug/L	No
Phorate – TW2	2021/01/04	<MDL 0.01	ug/L	No
Phorate – TW3	2021/01/04	<MDL 0.01	ug/L	No
Picloram – TW1	2021/01/04	<MDL 1.0	ug/L	No
Picloram – TW2	2021/01/04	<MDL 1.0	ug/L	No
Picloram – TW3	2021/01/04	<MDL 1.0	ug/L	No
Polychlorinated Biphenyls(PCB) – TW1	2021/01/04	<MDL 0.04	ug/L	No
Polychlorinated Biphenyls(PCB) – TW2	2021/01/04	<MDL 0.04	ug/L	No
Polychlorinated Biphenyls(PCB) – TW3	2021/01/04	<MDL0.04	ug/L	No
Prometryne – TW1	2021/01/04	<MDL 0.03	ug/L	No
Prometryne – TW2	2021/01/04	<MDL 0.03	ug/L	No
Prometryne – TW3	2021/01/04	<MDL 0.03	ug/L	No
Simazine – TW1	2021/01/04	<MDL 0.01	ug/L	No
Simazine – TW2	2021/01/04	<MDL 0.01	ug/L	No
Simazine – TW3	2021/01/04	<MDL 0.01	ug/L	No
Terbufos – TW1	2021/01/04	<MDL 0.01	ug/L	No
Terbufos – TW2	2021/01/04	<MDL 0.01	ug/L	No
Terbufos – TW3	2021/01/04	<MDL 0.01	ug/L	No
Tetrachloroethylene (perchloroethylene) – TW1	2021/01/04	<MDL 0.35	ug/L	No
Tetrachloroethylene (perchloroethylene) – TW2	2021/01/04	<MDL 0.35	ug/L	No
Tetrachloroethylene (perchloroethylene) – TW3	2021/01/04	<MDL 0.35	ug/L	No
2,3,4,6-Tetrachlorophenol – TW1	2021/01/04	<MDL0.2	ug/L	No
2,3,4,6-Tetrachlorophenol – TW2	2021/01/04	<MDL 0.2	ug/L	No
2,3,4,6-Tetrachlorophenol – TW3	2021/01/04	<MDL 0.2	ug/L	No
THMs (*Note:* show latest running annual average)	2021	19.75	ug/L	No
Triallate – TW1	2021/01/04	<MDL 0.1	ug/L	No
Triallate – TW2	2021/01/04	<MDL 0.1	ug/L	No

Triallate – TW3	2021/01/04	<MDL 0.1	ug/L	No
Trichloroethylene – TW1	2021/01/04	<MDL 0.44	ug/L	No
Trichloroethylene – TW2	2021/01/04	<MDL 0.44	ug/L	No
Trichloroethylene – TW3	2021/01/04	<MDL 0.44	ug/L	No
2,4,6-Trichlorophenol – TW1	2021/01/04	<MDL0.25	ug/L	No
2,4,6-Trichlorophenol – TW2	2021/01/04	<MDL 0.25	ug/L	No
2,4,6-Trichlorophenol – TW3	2021/01/04	<MDL 0.25	ug/L	No
Trifluralin TW 1 – TW1	2021/01/04	<MDL 0.02	ug/L	No
Trifluralin TW 2 – TW2	2021/01/04	<MDL 0.02	ug/L	No
Trifluralin TW 3 – TW3	2021/01/04	<MDL 0.02	ug/L	No
Vinyl Chloride - TW 1	2021/01/04	<MDL 0.17	ug/L	No
Vinyl Chloride – TW 2	2021/01/04	<MDL 0.17	ug/L	No
Vinyl Chloride - TW 3	2021/01/04	<MDL 0.17	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 – TW1	27.2	mg/L	2020/01/09
Sodium – TW2	49.7	mg/L	2020/01/09
Sodium – TW3	44.1	mg/L	2020/01/09