

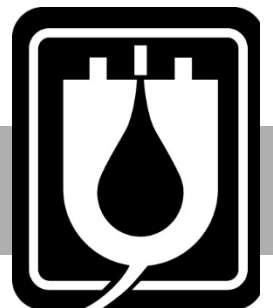


2020

**Annual
Summary
Report**

**The Corporation of the
Township of Cramahe
Colborne Drinking Water
System**

Prepared by: Lakefront Utility Services Inc.



CONTENTS

1. PURPOSE	3
2. COLBORNE DRINKING WATER SYSTEM OVERVIEW.....	4
3. 2020 COMPLIANCE.....	4
3.1 MECP Inspection	4
3.2 License & Permit Compliance	4
3.3 Adverse Water Quality Incident(s).....	7
4. CONTINUAL IMPROVEMENT	7
5. SAMPLING AND ANALYSIS	8

1. PURPOSE

The purpose of the Annual Water Quality Report is to provide information to residents and stakeholders of the Township of Cramahe. Furthermore, satisfying the regulatory requirements of the *Safe Drinking Water Act, 2002* including the Drinking Water Quality Management Standard (DWQMS) reports to owner, and regulatory reporting required under *Ontario Regulation 170/03*. This annual water quality report fulfills all requirements of *Ontario Regulation 170/03* Section 11 Annual Reports and Schedule 22 Summary Reports for Municipalities.

The annual water quality report is prepared by Lakefront Utility Services Inc. (operating authority) on behalf of the Township of Cramahe (owner).

Scope

This annual water quality report includes information pertaining to the Village of Colborne's Drinking Water System (Colborne DWS) for the period of January 1, 2020 to December 31, 2020. *Ontario Regulation 170/03* requires reported information be provided to:

- **Drinking Water System Owners (Mayor and Council)**
- **Owner and Operating Authority Top Management**
- **The Public**

Availability

The Colborne DWS is a large municipal residential system that serves approximately 2,000 people. Copies of this annual water quality report are available online at <https://www.lakefrontutilities.com/regulatory-water/>. Hard copies are also available at the LUSI's office at 207 Division St, Cobourg ON, K9A 4L3.

Customers of the Colborne DWS are notified that the annual water quality report is available via "What's New" <https://www.lakefrontutilities.com/whats-new/>, social media posts and "Stay Connected" LUSI bill insert.

Council Resolution

Ontario Regulation 170/03 requires Summary Reports be distributed to municipal council no later than March 31 of each year. The Township of Cramahe must provide LUSI with a copy of council resolution indicating the report has been accepted.

2. COLBORNE DRINKING WATER SYSTEM OVERVIEW

The Colborne Water Treatment Plant (WTP) takes water from two wells, Well #1 and Well #2, located approximately 25m apart from each other. *Sodium hypochlorite* is injected for disinfection and *sodium silicate* is used as an iron sequestering agent. Primary disinfection is achieved via the 215m serpentine (buried east of the plant). Water is conveyed to the distribution system and the elevated storage tank, which has a capacity of 2,342m³.

The distribution system is split into two pressure zones that are regulated by two pressure reducing valves that maintain the pressure between 20 and 90 PSI. As of December 31, 2020, there are a total of 1028 metered customers. Water is conveyed to customers by approximately 27km of watermain ranging from 25mm to 250mm, made of PVC, ductile iron and cast iron. There are 130 fire hydrants located within the system.

3. 2020 COMPLIANCE

3.1 MECP INSPECTION

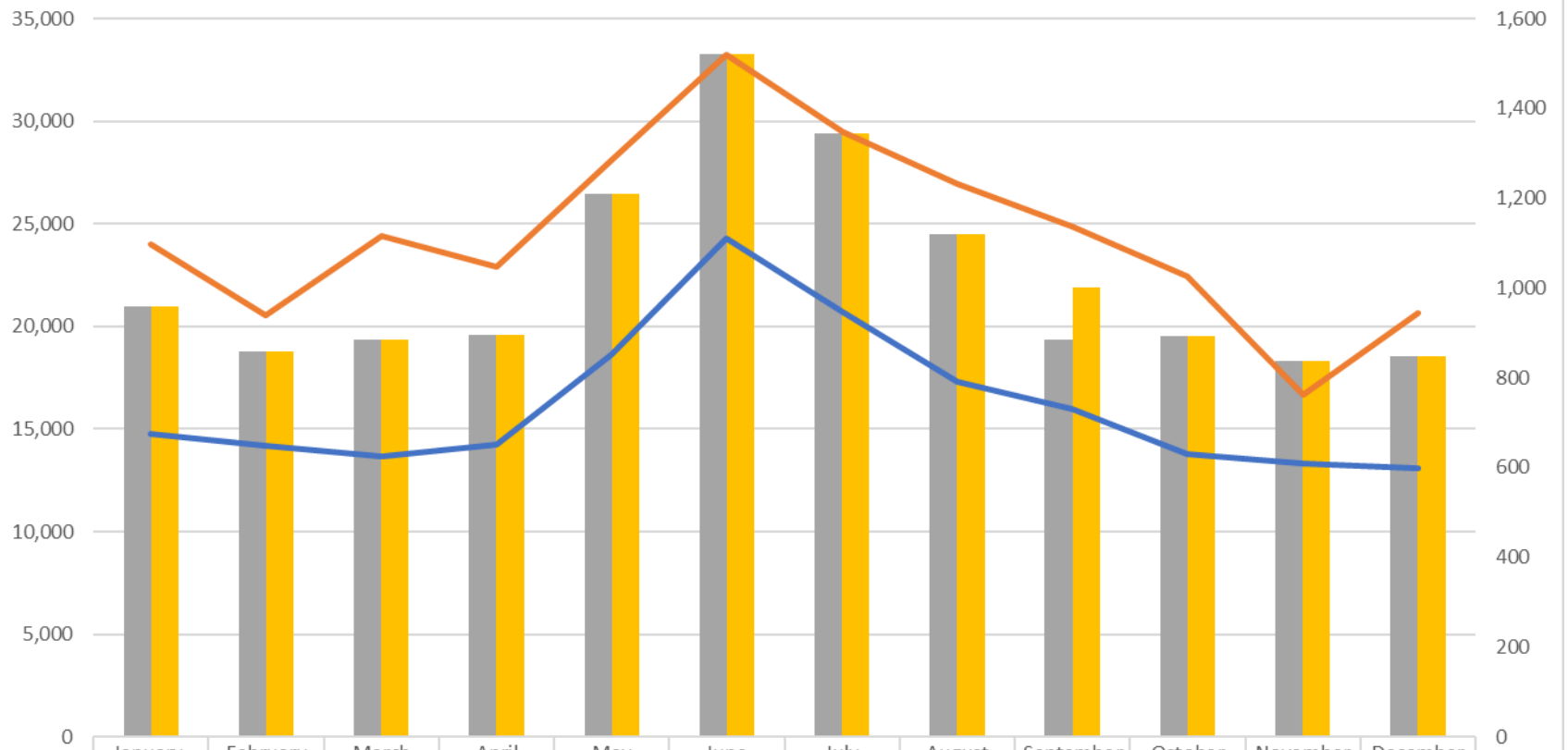
The Colborne Drinking Water System underwent an announced focused MECP compliance inspection starting August 19, 2020 and achieved an inspection rating of 100.00%. No non-compliance with regards to regulatory requirements, or recommendation and best practice issues were identified in the 2020 MECP inspection.

3.2 LICENSE & PERMIT COMPLIANCE

A new permit to take water (PTTW) was issued to Cramahe Township in April 2020. The new permit, PTTW No. 8612-BNENBH allows water taking from well #2 and well #1A. Well #1A has not been commissioned yet, however the old well #1 can be run in the case of emergency. The volumes allowed to take have remained unchanged, the maximum rated capacity for taking water from well #1A and well #2 shall not exceed 3283 m³ per day, per well. The average flow rate from production well #2 was 516 L/min, below the maximum rate.

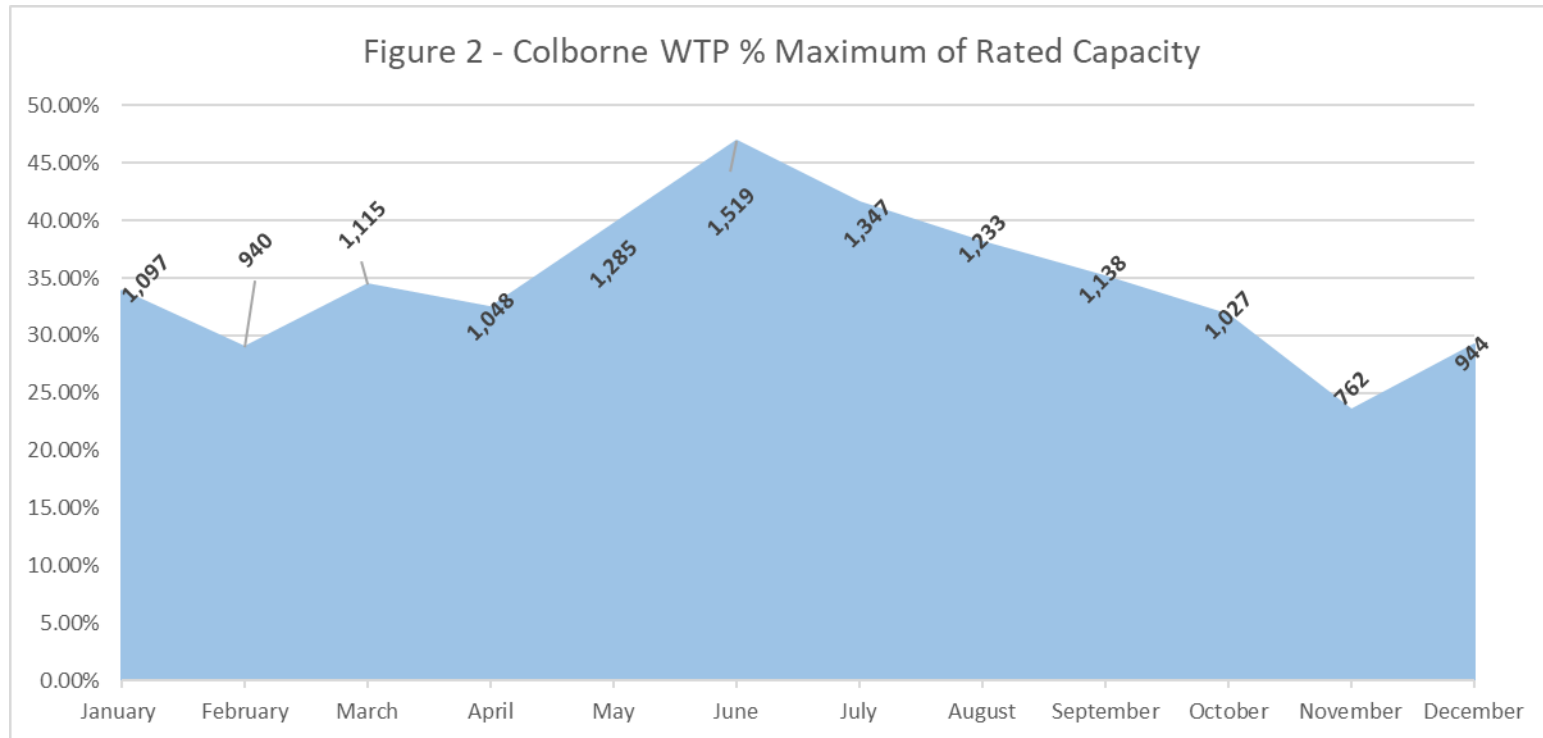
The total quantity of water taken and discharged from the WTP is illustrated in Figure 1. In 2020 there were no incidents related to surpassing the maximum volume of water permitted to take. In August 2020, the WTP operated at 41% of its maximum rated capacity, as shown in Figure 2. The labels presented in Figure 2 are representative of the maximum flow observed for the respective month (m³).

Figure 1 - Flow Quantities Colborne Drinking Water System



Water Taken (m3)	20,961	18,802	19,351	19,570	26,435	33,284	29,393	24,513	19,351	19,549	18,293	18,532
WTP Discharge (m3)	20,961	18,802	19,351	19,570	26,435	33,284	29,380	24,513	21,923	19,549	18,293	18,532
Daily Average Discharge (m3)	676	648	624	652	853	1,109	948	791	731	631	610	598
Maximum Daily Discharge (m3)	1,097	940	1,115	1,048	1,285	1,519	1,347	1,233	1,138	1,027	762	944

Water Taken (m3) WTP Discharge (m3) Daily Average Discharge (m3) Maximum Daily Discharge (m3)



3.3 ADVERSE WATER QUALITY INCIDENT(S)

Incident #1 – June 23, 2020

On June 23, 2020 it was observed that there was virtually no water being supplied to a water meter at 13580 County Rd 2. LUSI checked the neighbouring houses (13574 and 13590 County Rd 2) and they also had no water supply. When moderate pressure was restored to the system there was chlorine residual present, however the Haliburton, Kawartha, Pine Ridge Public Health Unit issued a Boil Water Order (BWO). The BWO was issued to 13548, 13574, 13580 and 13590 County Rd 2 residences. Additionally, the BWO requires that all necessary repairs be completed on or before July 31, 2020.

An extension to the BWO was provided on November 26, 2020, the extension requires that all necessary repairs be completed on or before March 31, 2020.

4. CONTINUAL IMPROVEMENT

LUSI's commitment to continual improvement requires investigating and investing in, where appropriate, methods and technologies to improve

- The quality of processes used to ensure production of ample clean water, and
- The quality and effectiveness of the distribution system.

During the 2020 reporting year, LUSI demonstrated this commitment by completing all the activities listed in Table 1. Table 1 also satisfies O. Reg 170/03 requirement to describe major expenses occurred during the reporting period.

Colborne Water Treatment Plant	Turbidimeter Purchase	\$5,900
	Verbatim Replacement	\$7,300
	Sodium Silicate Pump Replacement	\$3,200
	SCADA Computer Replacement	\$5,500
Colborne Distribution System	County Rd 2 Watermain Replacement	\$429,000
	Installation of Distribution System Sampling Stations	\$4,000
Miscellaneous	WTP Roof Replacement	\$20,500

5. SAMPLING AND ANALYSIS

The Colborne DWS exhibited compliance with all sampling and testing as required by *Ontario Regulation 170/03* in the 2020 calendar year. Table 2 illustrates all microbiological testing done under Schedule 10 of *Ontario Regulation 170/03*. There were no instances of adverse water quality results as a result of a parameter exceeding its respective maximum acceptable concentration.

	E. Coli, (cfu/100mL)		Total Coliform, (cfu/100mL)		HPC, (cfu/1mL)	
	# of Samples	Range of Results (min # - max #)	# of Samples	Range of Results (min # - max #)	# of Samples	Range of Results (min # - max #)
Raw	106	0 - 0	106	0 - 0	0	N/A
Treated	53	0 - 0	53	0 - 0	53	0 - 1
Distribution	162	0 - 0	162	0 - 0	106	0 - 20

Operational testing done under Schedule 7 of Ontario Regulation 170/03 during the 2020 reporting period are tabulated in Table 3.

	Number of Grab Samples	Range of Results (min # - max #)
Turbidity, Raw Water (NTU)	12	0.23 – 3.35
Turbidity, Treated Water (NTU)	12	0.08 – 0.87
Treated Water Free Chlorine Residual (mg/L)	8760 (continuous monitoring)	0 – 5.0

In addition to the microbiological sampling and testing requirements, sampling and testing is required for chemical, inorganic and organic parameters. Table 4 illustrates Schedule 13, Schedule 23 and Schedule 24 sample analysis results, with no exceedances during the reporting period. If there were multiple samples taken during the reporting period, the most recent sample result is provided. A parameter below the method detection limit indicated by (<), cannot be detected as the concentration is lower than minimum concentration that can be measured and reported with 99% certainty.

Table 4 – Colborne DWS Schedule 13, 23 and 24 Sampling			
PARAMETER	STANDARD (µg/L)	SAMPLE RESULT (µg/L)	SAMPLE DATE
Antimony	6	0.09	13-Jan-20
Arsenic	10	0.5	
Barium	1000	141	
Boron	5000	7	
Cadmium	5	0.007	
Chromium	50	0.09	
Mercury	1	0.01 <MDL	
Selenium	50	0.06	
Uranium	20	4.09	
Benzene	1	0.32 <MDL	
Carbon tetrachloride	2	0.16 <MDL	
1,2-Dichlorobenzene	200	0.41 <MDL	
1,4-Dichlorobenzene	5	0.36 <MDL	
1,1-Dichloroethylene (vinylidene chloride)	14	0.33 <MDL	
1,2-Dichloroethane	5	0.35 <MDL	
Dichloromethane	50	0.35 <MDL	
Monochlorobenzene	80	0.3 <MDL	
Tetrachloroethylene (perchloroethylene)	10	0.35 <MDL	
Trichloroethylene	5	0.44 <MDL	
Vinyl Chloride	1	0.17 <MDL	
Diquat	70	1 <MDL	
Paraquat	10	1 <MDL	
Glyphosate	280	1 <MDL	
Polychlorinated Biphenyls (PCBs) - Total	3	0.04 <MDL	
Benzo(a)pyrene	0.01	0.004 <MDL	
Alachlor	5	0.02 <MDL	
Atrazine + N-dealkylated metabolites	5	0.02 <MDL	
Atrazine	-	0.01 <MDL	
Desethyl atrazine	-	0.01 <MDL	
Azinphos-methyl	20	0.05 <MDL	
Carbaryl	90	0.05 <MDL	
Carbofuran	90	0.01 <MDL	
Chlorpyrifos	90	0.02 <MDL	
Diazinon	20	0.02 <MDL	
Dimethoate	20	0.03 <MDL	
Diuron	150	0.03 <MDL	
Malathion	190	0.02 <MDL	
Metolachlor	50	0.01 <MDL	
Metribuzin	80	0.02 <MDL	

Table 4 – Colborne DWS Schedule 13, 23 and 24 Sampling			
PARAMETER	STANDARD (µg/L)	SAMPLE RESULT (µg/L)	SAMPLE DATE
Phorate	2	0.01 <MDL	
Prometryne	1	0.03 <MDL	
Simazine	10	0.01 <MDL	
Terbufos	1	0.01 <MDL	
Triallate	230	0.01 <MDL	
Trifluralin	45	0.02 <MDL	
2,4-dichlorophenoxyacetic acid (24,-D)	100	0.19 <MDL	
Bromoxynil	5	0.33 <MDL	
Dicamba	120	0.20 <MDL	
Diclofop-methyl	9	0.40 <MDL	
MCPA	0.1	0.00012 <MDL	
Picloram	190	1 <MDL	
2,4-dichlorophenol	900	0.15 <MDL	
2,4,6-trichlorophenol	5	0.25 <MDL	
2,3,4,6-tetrachlorophenol	100	0.20 <MDL	
Pentachlorophenol	60	0.15 <MDL	
Fluoride	1.5	0.09	16-Sept-19
Sodium	20	6.87	
THM: Annual Average	100	5.25	13-Oct-20
HAA: Annual Average	80	5.3 < MDL	
Nitrite	1	< 0.003 MDL	
Nitrate	10	1.68	