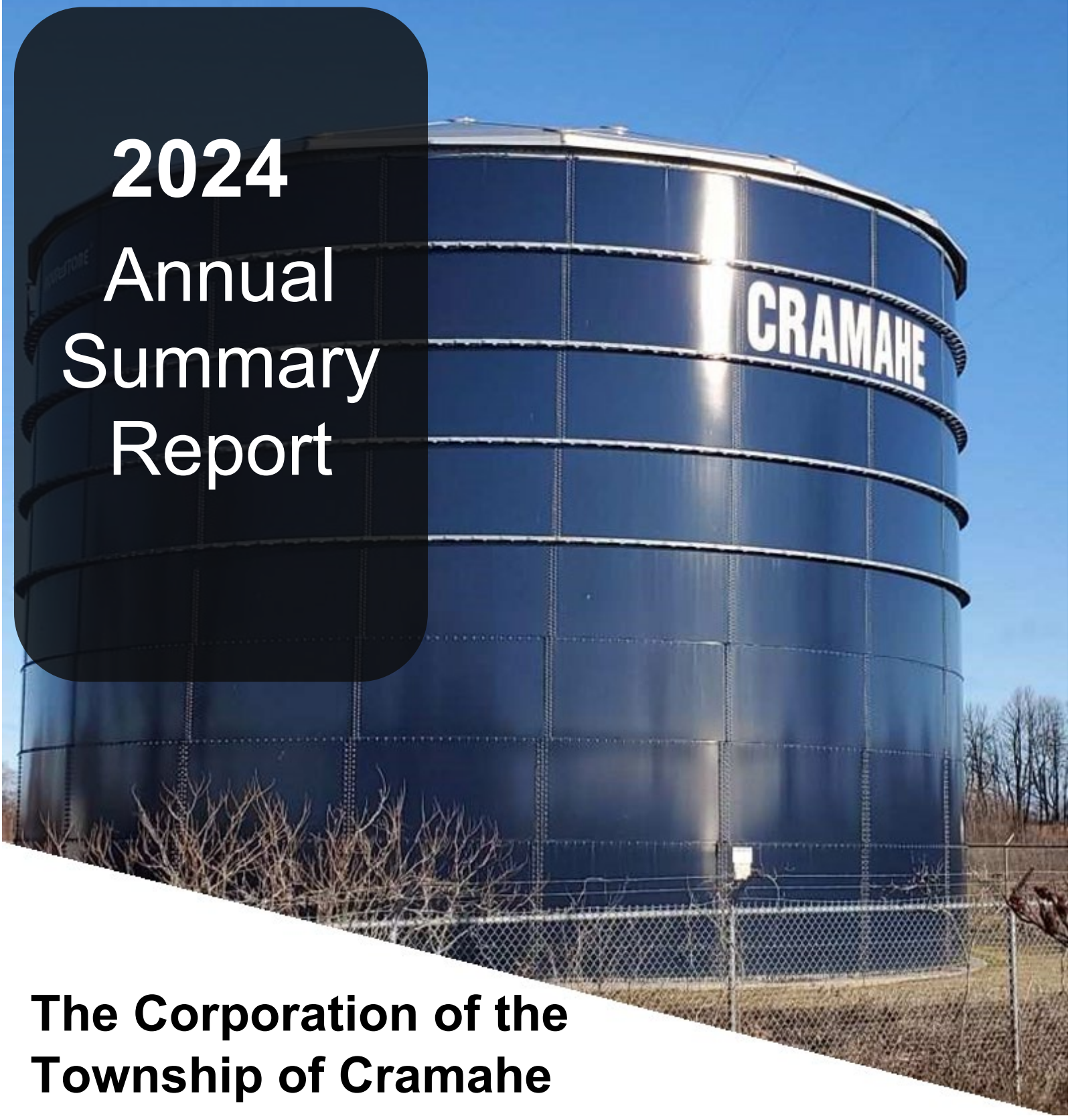
2024 Annual Summary Report



The Corporation of the Township of Cramahe

Colborne Drinking Water System

Prepared by: Lakefront Utility Services Inc.

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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, 2024 to December 31, 2024. *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 #1a 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. There are a total of 1028 metered customers. Water is conveyed to customers by approximately 27 km of watermain ranging from 25 mm to 250 mm, made of PVC, ductile iron and cast iron. There are 138 fire hydrants located within the system.

3. 2024 COMPLIANCE

3.1 MECP INSPECTION

The Colborne Drinking Water System underwent an announced focused MECP compliance inspection starting May 14, 2024 and achieved an inspection rating of 100%. This was a vast improvement from the previous inspection where the inspection rating was 87.98%. There was one best management practices recommendation.

3.1.1. Best Management Practice

- At the time of inspection there were no measures to promote water conservation. The Township provided a newsletter to residents in 2024 and will work on developing further measures to promote water conservation.

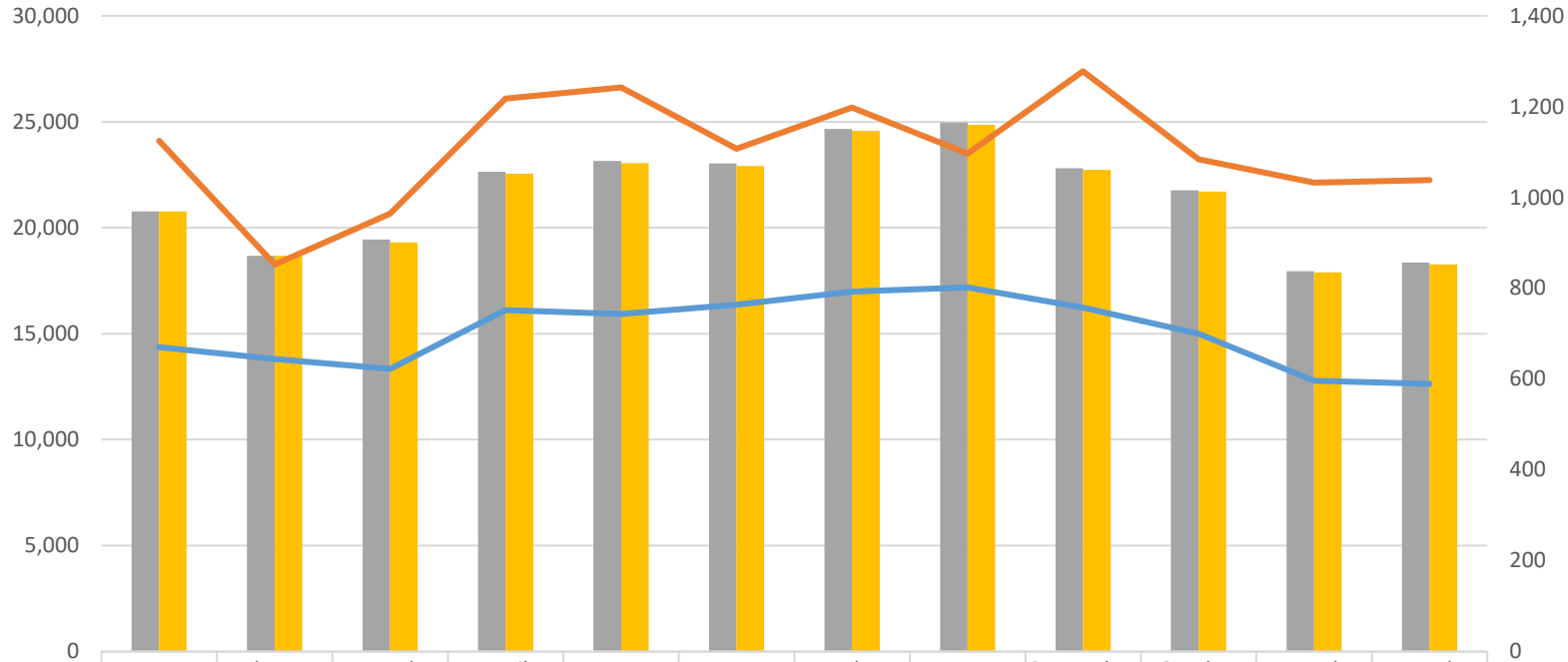
3.2 LICENSE & PERMIT COMPLIANCE

The Colborne DWS maintained compliance with all applicable legislation, and all terms and conditions of the Municipal Drinking Water License (138-101, Issue 4, November 5, 2021), Drinking Water Works Permit (138-201, Issue 3, November 5, 2021), and Permit to Take Water (Permit No. 8612-BNENBH, April, 2020) in 2024.

The Colborne DWS Permit to Take Water allows the taking of 3,283.2 m^3 of water from each well per day at a rate of 2,280 L/min. The average flow rate from the production wells was 787 L/min.

The total quantity of water taken and discharged from the WTP is illustrated in Figure 1, Table 1 and Table 2. In September 2024, the WTP operated at 39.5% 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 (m^3).

Figure 1 - Flow Quantities Colborne Drinking Water System



	January	February	March	April	May	June	July	August	September	October	November	December
Water Taken (m3)	20,779	18,678	19,450	22,641	23,163	23,034	24,664	24,971	22,810	21,766	17,961	18,366
WTP Discharge (m3)	20,773	18,678	19,306	22,551	23,053	22,916	24,578	24,863	22,727	21,703	17,887	18,278
Daily Average Discharge (m3)	670	644	623	752	744	764	793	802	758	700	596	590
Maximum Daily Discharge (m3)	1,125	852	965	1,218	1,243	1,107	1,198	1,097	1,278	1,084	1,033	1,039

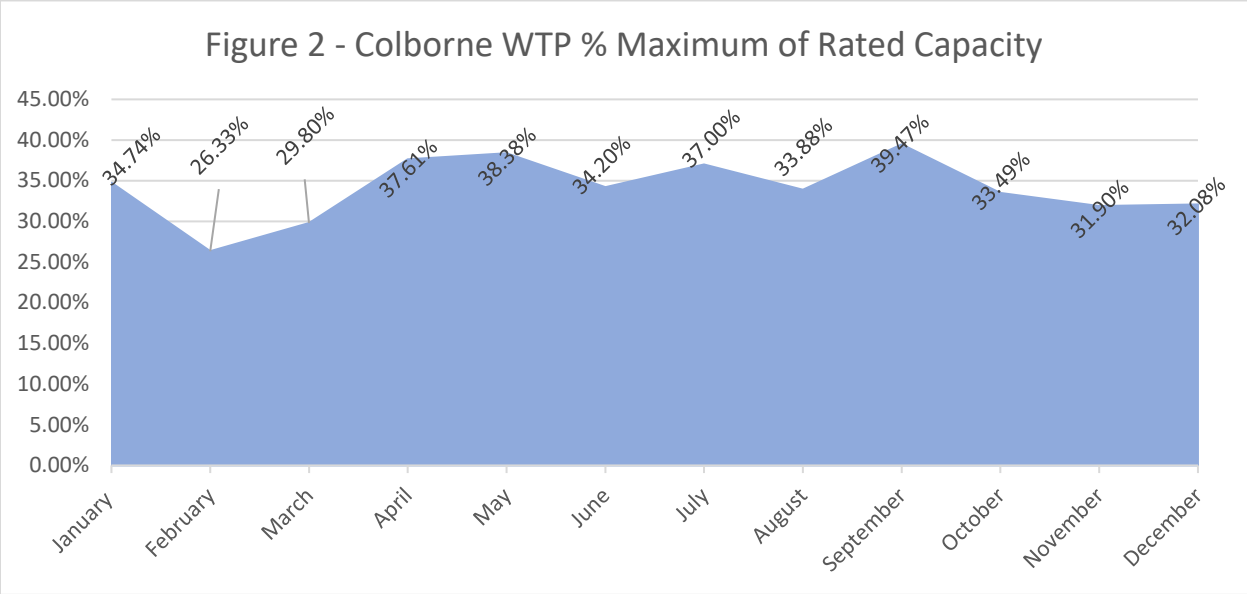


Table 1 - Raw Water Flows (m3)

Month	Monthly Total	Monthly Total Well 1a	Monthly Total Well 2	Daily Average	Minimum	Maximum	% Max PTTW
January	20,779	8,424	12,355	670	232	1,125	34.7%
February	18,678	93	18,586	644	379	852	26.3%
March	19,450	143	19,306	627	205	965	29.8%
April	22,641	164	22,477	755	413	1,218	37.6%
May	23,163	110	23,053	747	320	1,243	38.4%
June	23,034	118	22,916	768	395	1,107	34.2%
July	24,664	86	24,578	796	508	1,214	37.5%
August	24,971	109	24,863	806	382	1,097	33.9%
September	22,810	83	22,727	760	462	1,278	39.5%
October	21,766	62	21,703	702	419	1,095	33.8%
November	17,961	74	17,887	599	262	1,052	32.5%
December	18,366	88	18,278	592	325	1,039	32.1%
Total	**258,283**	**9,554**	**248,729**	-	-	-	-
Average	**21,524**	**796**	**20,727**	**706**	**205**	**1,278**	**39.5%**

Table 2 - Treated Water Flows (m3)

Month	Monthly Total	Daily Average	Daily Maximum	Daily Minimum
January	20,779	670	1,125	323
February	18,678	644	852	379
March	19,450	623	965	205
April	22,641	752	1,218	413
May	23,163	744	1,243	320
June	23,034	764	1,107	395
July	24,664	793	1,198	508
August	24,971	802	1,097	382
September	22,810	758	1,278	462
October	21,766	700	1,084	419
November	17,961	596	1,033	262
December	18,366	590	1,039	325
Total	**257,312**	**-**	**-**	**-**
Average	**21,443**	**703**	**1,278**	**205**

3.3 ADVERSE WATER QUALITY INCIDENT(S)

There were no adverse water quality incidents in 2024.

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 2024 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.

Table 1 - 2024 Major Expenses Incurred at the Colborne WTP, Distribution System and Misc. Activities		
Colborne DWS	Meter Replacement	$221,000
	Old Percy Watermain	$6,381
	MCC/SCADA Upgrades	$36,691

5. SAMPLING AND ANALYSIS

The Colborne DWS exhibited compliance with all sampling and testing as required by *Ontario Regulation 170/03* in the 2023 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.

Table 2 – Colborne DWS Microbiological Sampling

	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 Well 1a	53	0 - 0	53	0 - 0	0	N/A
Raw Well 2	53	0 – 0	53	0 – 0	0	N/A
Treated	53	0 - 0	53	0 - 0	53	0 - 4
Distribution	159	0 - 0	159	0 - 0	102	0 - 23

Operational testing done under Schedule 7 of Ontario Regulation 170/03 during the 2023 reporting period are tabulated in Table 3.

Table 3 – Colborne DWS Schedule 7 Operational Monitoring Samples

	Number of Grab Samples	Range of Results (min # - max #)
Turbidity, Raw Water Well 1a (NTU)	12	0.29-0.86
Turbidity, Raw Water Well 2 (NTU)	12	0.22-0.60
Turbidity, Treated Water (NTU)	12	0.11-0.62
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 (<) or an ND, 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	0.6 <MDL	8-Jan-24
Arsenic	10	1	
Barium	1000	145	
Boron	5000	6	
Cadmium	5	0.004	
Chromium	50	0.09	
Mercury	1	0.01 <MDL	
Selenium	50	0.08	
Uranium	20	7.49	
Benzene	1	0.32 <MDL	
Carbon tetrachloride	2	0.17 <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	0.01 <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	

Table 4 – Colborne DWS Schedule 13, 23 and 24 Sampling			
PARAMETER	**STANDARD (µg/L)**	**SAMPLE RESULT (µg/L)**	**SAMPLE DATE**
Dimethoate	20	0.06 <MDL	
Diuron	150	0.03 <MDL	
Malathion	190	0.02 <MDL	
Metolachlor	50	0.01 <MDL	
Metribuzin	80	0.02 <MDL	
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	0.033 <MDL	
Dicamba	120	0.2 <MDL	
Diclofop-methyl	9	0.4 <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	0.2 <MDL	
Pentachlorophenol	60	0.15 <MDL	
Fluoride	1.5	0.06 <MDL	15-Apr-24
Sodium	20	7.41	15-Apr-24
THM: Annual Average	100	4.45	15-Oct-24
HAA: Annual Average	80	5.3 < MDL	
Nitrite	1	< 0.003 MDL	
Nitrate	10	1.63	