

# Haley Drinking Water System

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Waterworks # 250001233  
System Category – Small Municipal Residential

## Annual Water Report

Prepared For: The Township of Whitewater Region

Reporting Period of January 1<sup>st</sup> – December 31<sup>st</sup> 2023

Issued: February 16<sup>th</sup>, 2024

Operating Authority:



This report has been prepared to satisfy the annual reporting requirements in O.Reg 170/03 Section 11 and Schedule 22

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## Report Availability

The annual report will be available to residents at the Township of Whitewater Region's Municipal Office and copies provided free of charge if requested. The Township of Whitewater Region's Municipal Office is located at, 44 Main Street, Cobden, Ontario.

There are no additional drinking water systems that receive water from this facility.

## Compliance Report Card

Compliance Event	# of Events
Ministry of Environment Inspections	2 MECP Inspections on February 8 <sup>th</sup> 2023 with a rating of 91.23% and July 7 <sup>th</sup> 2023 with a rating of 100%
Ministry of Labour Inspections	0
QEMS External Audit	1 Audit completed on February 23 <sup>rd</sup> 2023 by SAI Global. No major or minor non-conformances were identified.
AWQI's/BWA	0/0
Non-Compliance	0
Community Complaints	1
Spills	0
Watermain Breaks	0

## System Process Description

### Raw Source

The Haley DWS drinking water is drawn from two ground water production wells. Both wells are located outside the treatment plant, in a fenced enclosure at 565 Heather Place, in Haley Station Ontario. Well #1 was drilled in late 2005, measuring 150 mm in diameter, 61 m deep and is equipped with a submersible pump rated at 115 L/min at a total dynamic head of 42 m. Well 1 is not under the direct influence of surface water.

Well #2 was drilled in September 2006, measuring 150 mm diameter, 103 m deep and is equipped with a submersible pump rated at 115 L/min with a total dynamic head of 42 m. Well #2 is potentially ground water under the direct influence of surface water (GUDI) however, there is adequate in-situ filtration.

## Treatment

Raw water enters the treatment plant via one of two 50 mm discharge lines, one for each well, before joining a common header and being injected with sodium hypochlorite from one of two chemical metering pumps. A below-grade 12 m long pipeline provides contact time for disinfection to occur. Treated water leaving the plant is continuously monitored for chlorine residual.

## Distribution

This Class 2 Water Distribution and Supply system supplies treated water to 34 single family homes. The most recent estimate of the population served is 96 people. An examination of the residential services completed in 2002, confirmed the absence of cross-connections. The complete replacement of all distribution piping occurred in the fall of 2010.

A hydraulic pressure tank, which is essential in maintaining adequate pressure in the distribution system during the time it takes to switch between the production wells, is located at 532 Sullivan Street. The townsite is presently without hydrant-based fire protection since the hydrants have been disconnected from their water supply. Sampling/flushing stations are installed at two dead end locations at Heather Street and Sullivan Street.

### Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite (12%)	Disinfection	Brenntag Canada Inc.

## Summary of Non-Compliance

### Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
None to report.						

### Non-Compliance

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
None to report.				

### Non-Compliance Identified in a Ministry Inspection:

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
DWWP #203-203 Schedule B	The Form 3 and associated documents were not completed as per the DWWP for the natural gas generator replacement	09/08/2021 to 04/19/2023	OCWA received the completed emissions summary table from EBV engineering and revised the Form 3 to include the NPC-300 requirements and emission summary statement	Complete
O. Reg. 170/03 Schedule 7	The secondary disinfectant residual was not measured as required for the small municipal residential distribution system.	08/05/2023	Staff were trained on the secondary disinfectant residual sampling frequency requirements of Small Municipal Residential Systems April 14 <sup>th</sup> 2023	Complete
O. Reg. 170/03 Schedule 6	All microbiological monitoring requirements prescribed by legislation for distribution samples in a small municipal residential system were not being met.	05/31/2023 & 06/07/2023	Staff were trained on the microbiological sampling frequency requirements of Small Municipal Residential Systems April 14 <sup>th</sup> 2023	Complete

## Flows

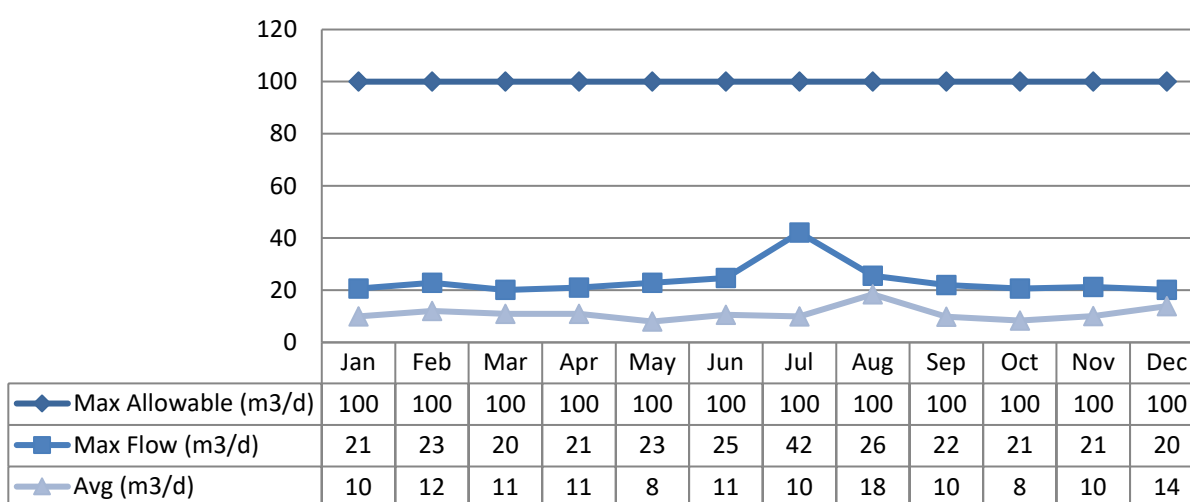
The Haley Drinking Water System is operating on average under half the rated capacity.

### Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water (PTTW). 2023 Raw Flow Data was submitted to the Ministry electronically under permit #P-300-8175675490. The confirmations of the data submitted are attached in Appendix A.

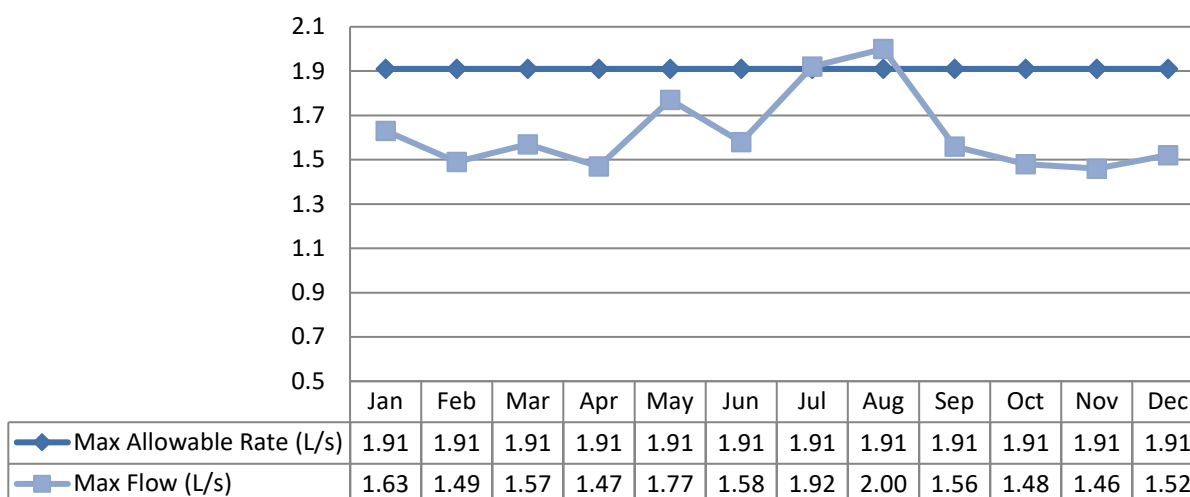
#### Well 1 Total Monthly Flows

Max Allowable - PTTW



#### Well 1 Maximum Flow Rates

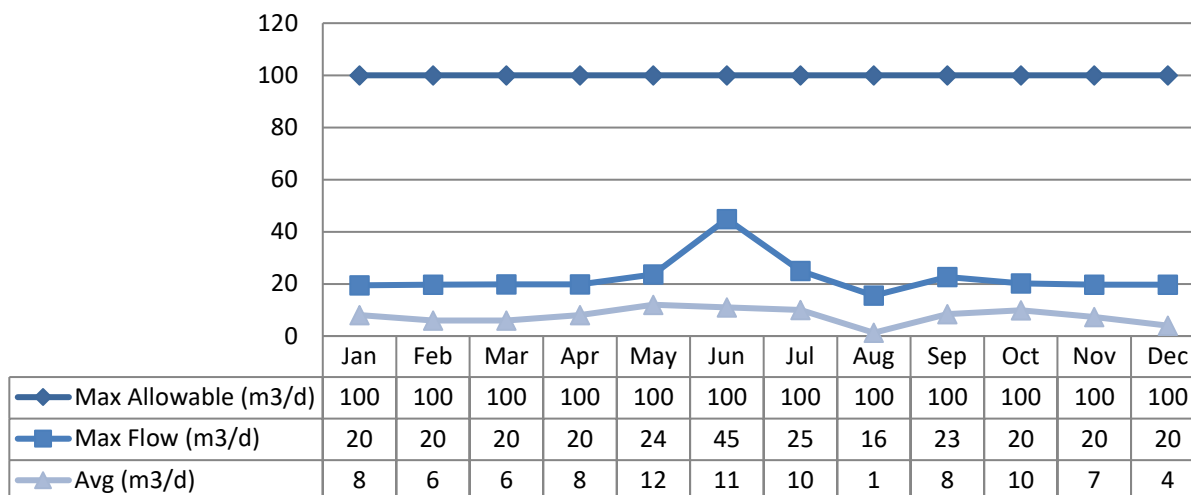
Max Allowable Rate - PTTW



\*Note: spikes in flow rate that are above max allowable rate were on well pump start up after the power to the plant transferred from the generator regular hydro and lasted less than a minute, events under a minute are not reportable as a PTTW exceedance

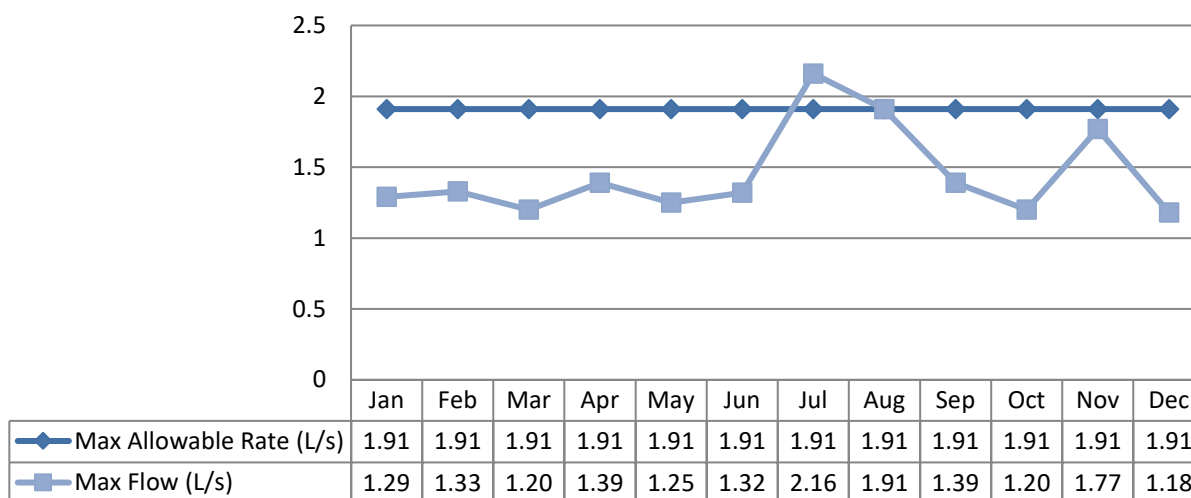
### Well 2 Total Monthly Flows

Max Allowable - PTTW



### Well 2 Maximum Flow Rates

Max Allowable Rate - PTTW



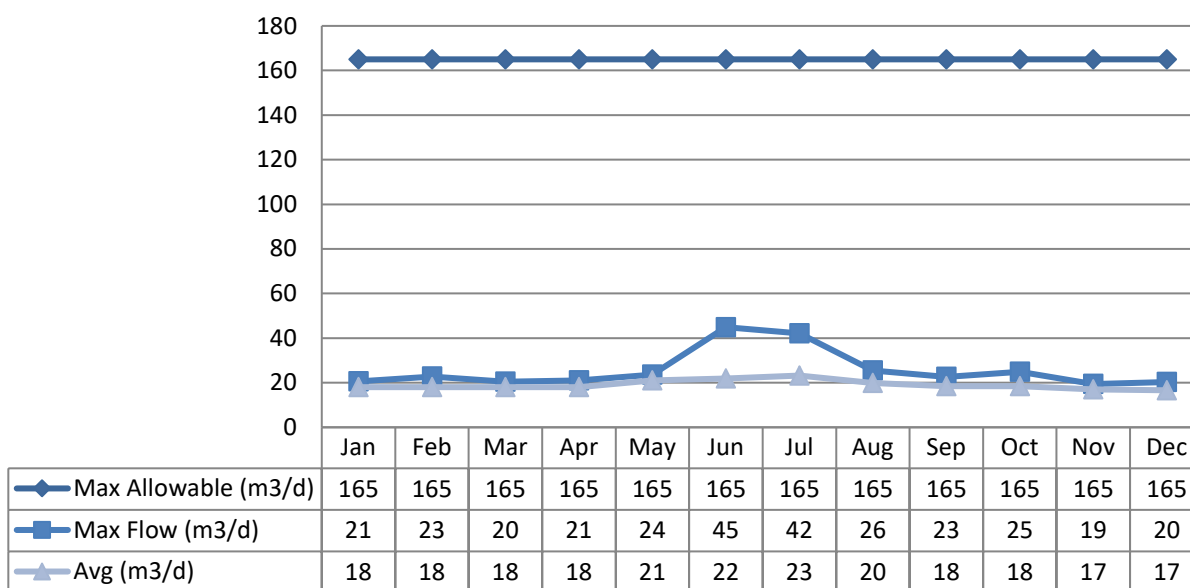
\*Note: spikes in flow rate that are above max allowable rate were on well pump start up after the power to the plant transferred from the generator regular hydro and lasted less than a minute, events under a minute are not reportable as a PTTW exceedance

## Treated Water Flows

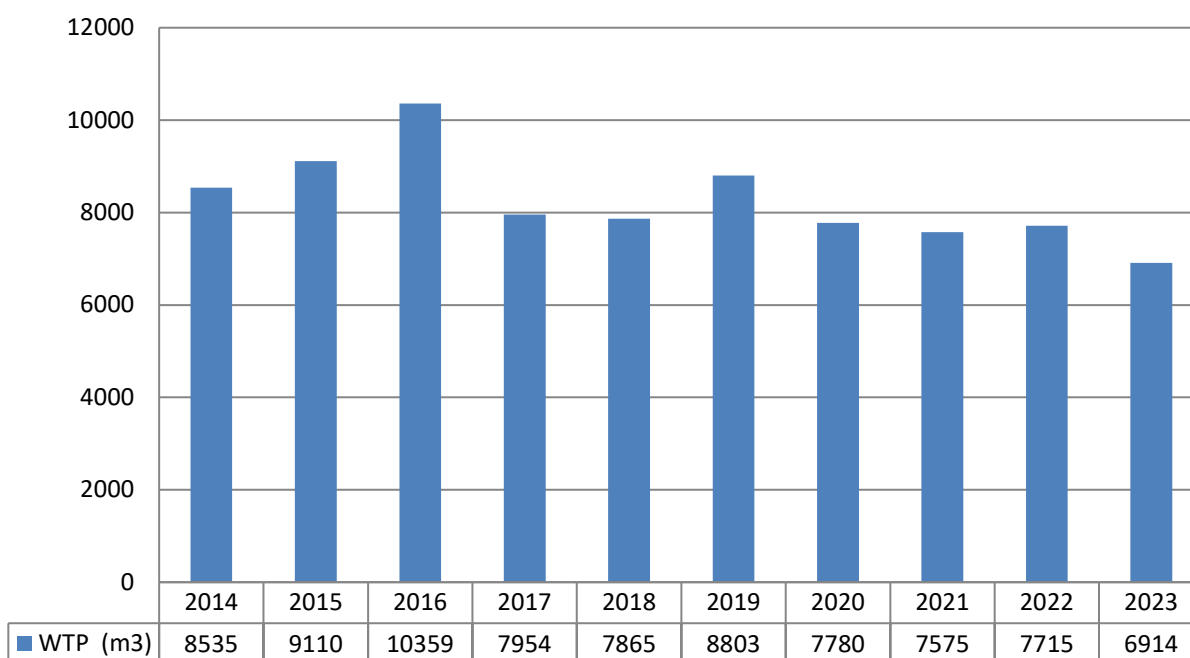
Treated water flows are regulated under the Municipal Drinking Water Licence (MDWL).

### Treated Flows

Rated Capacity - MDWL



### Annual Total Flow Comparison





## Regulatory Sample Results Summary

### Microbiological Testing

	No. of Samples Collected	Range of E.Coli Results		Range of Total Coliform Results		Range of HPC Results	
		Min	Max	Min	Max	Min	Max
Raw Water Well 1	13	0	0	0	0	N/A	N/A
Raw Water Well 2	13	0	0	0	0	N/A	N/A
Distribution Water	27	0	0	0	0	0	2

### Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity, In-House (NTU) - RW1	12	0.09	0.83
Turbidity, In-House (NTU) - RW2	12	0.09	0.87
Turbidity, In-House (NTU) - TW	215	0.04	0.88
Free Chlorine Residual, On-Line (mg/L) - TW	8760	0.90	2.00
Free Chlorine Residual, In-House (mg/L) - DW	104	0.10	1.70

NOTE: Spikes recorded by on-line instrumentation were a result of air bubbles and various maintenance/calibration activities. All spikes are reviewed for compliance with O. Reg. 170/03

### Inorganic Parameters

These parameters are tested as a requirement under O. Reg. 170/03. Sodium and Fluoride are required to be tested every 60 months. Nitrate and Nitrite are tested quarterly and metals are tested every 60 months as required under O. Reg. 170/03. In the event any parameter exceeds half the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O.Reg 169/03
- <MDL = Less than Method Detection Limit

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
<b>Treated Water</b>					
Antimony: Sb (ug/L) - TW	2021/01/13	<MDL 0.9	6.0	No	No
Arsenic: As (ug/L) - TW	2021/01/13	0.8	10.0	No	No
Barium: Ba (ug/L) - TW	2023/01/10	607	1000.0	No	Yes
Barium: Ba (ug/L) - TW	2023/04/04	652	1000.0	No	Yes
Barium: Ba (ug/L) - TW	2023/07/11	519	1000.0	No	Yes
Barium: Ba (ug/L) - TW	2023/10/10	597	1000.0	No	Yes
Boron: B (ug/L) - TW	2021/01/13	24.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2021/01/13	0.172	5.0	No	No
Chromium: Cr (ug/L) - TW	2021/01/13	1.36	50.0	No	No
Mercury: Hg (ug/L) - TW	2021/01/13	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TW	2021/01/13	0.4	50.0	No	No
Uranium: U (ug/L) - TW	2021/01/13	1.47	20.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
<b>Additional Inorganics</b>					
Nitrite (mg/L) - TW	2023/01/10	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2023/04/04	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2023/07/11	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2023/10/10	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2023/01/10	5.66	10.0	No	Yes
Nitrate (mg/L) - TW	2023/04/04	6.13	10.0	No	Yes
Nitrate (mg/L) - TW	2023/07/11	6.9	10.0	No	Yes
Nitrate (mg/L) - TW	2023/10/10	4.76	10.0	No	No
Fluoride (mg/L) - TW	2019/01/03	0.15	1.5	No	No
Sodium: Na (mg/L) - TW	2019/01/08	45	20*	Yes	Yes

\*There is no "MAC" for Sodium. The aesthetic objective for sodium in drinking water is 200 mg/L. The local Medical Officer of Health should be notified mg/L 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.

#### Schedule 15 Sampling:

The Schedule 15 Sampling is required under O.Reg 170/03. This system is under reduced sampling. No plumbing samples were collected.

Distribution System	Number of Sampling Points	Number of Samples	Range of Results		MAC (ug/L)	Number of Exceedances
			Minimum	Maximum		
Alkalinity (mg/L)	2	2	305	311	N/A	N/A
pH	2	2	7.00	7.20	N/A	N/A
Lead (ug/L)	N/A	N/A	N/A	N/A	10	0

#### Organic Parameters

These parameters are tested every 60 months as a requirement under O. Reg. 170/03. In the event any parameter exceeds half the maximum allowable concentration the parameter is required to be sampled quarterly. Distribution samples are tested quarterly for THM's and HAA's in accordance with O. Reg. 170/03.

- MAC = Maximum Allowable Concentration as per O.Reg 169/03
- <MDL = Less than Method Detection Limit

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
<b>Treated Water</b>					
Alachlor (ug/L) - TW	2021/01/13	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2021/01/13	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L) - TW	2021/01/13	<MDL 0.05	20.0	No	No
Benzene (ug/L) - TW	2021/01/13	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L) - TW	2021/01/13	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TW	2021/01/13	<MDL 0.33	5.0	No	No
Carbaryl (ug/L) - TW	2021/01/13	<MDL 0.05	90.0	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Carbofuran (ug/L) - TW	2021/01/13	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L) - TW	2021/01/13	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L) - TW	2021/01/13	<MDL 0.02	90.0	No	No
Diazinon (ug/L) - TW	2021/01/13	<MDL 0.02	20.0	No	No
Dicamba (ug/L) - TW	2021/01/13	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L) - TW	2021/01/13	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L) - TW	2021/01/13	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L) - TW	2021/01/13	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L) - TW	2021/01/13	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2021/01/13	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L) - TW	2021/01/13	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2021/01/13	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L) - TW	2021/01/13	<MDL 0.4	9.0	No	No
Dimethoate (ug/L) - TW	2021/01/13	<MDL 0.06	20.0	No	No
Diquat (ug/L) - TW	2021/01/13	<MDL 1.0	70.0	No	No
Diuron (ug/L) - TW	2021/01/13	<MDL 0.03	150.0	No	No
Glyphosate (ug/L) - TW	2021/01/13	<MDL 1.0	280.0	No	No
Malathion (ug/L) - TW	2021/01/13	<MDL 0.02	190.0	No	No
Metolachlor (ug/L) - TW	2021/01/13	<MDL 0.01	50.0	No	No
Metribuzin (ug/L) - TW	2021/01/13	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2021/01/13	<MDL 0.3	80.0	No	No
Paraquat (ug/L) - TW	2021/01/13	<MDL 1.0	10.0	No	No
PCB (ug/L) - TW	2021/01/13	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L) - TW	2021/01/13	<MDL 0.15	60.0	No	No
Phorate (ug/L) - TW	2021/01/13	<MDL 0.01	2.0	No	No
Picloram (ug/L) - TW	2021/01/13	<MDL 1.0	190.0	No	No
Prometryne (ug/L) - TW	2021/01/13	<MDL 0.03	1.0	No	No
Simazine (ug/L) - TW	2021/01/13	<MDL 0.01	10.0	No	No
Terbufos (ug/L) - TW	2021/01/13	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L) - TW	2021/01/13	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2021/01/13	<MDL 0.2	100.0	No	No
Triallate (ug/L) - TW	2021/01/13	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L) - TW	2021/01/13	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2021/01/13	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW	2021/01/13	<MDL 0.12	100.0	No	No
Trifluralin (ug/L) - TW	2021/01/13	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L) - TW	2021/01/13	<MDL 0.17	1.0	No	No

Distribution samples are tested quarterly for THM's and HAA's in accordance with O. Reg. 170/03.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
<b>DISTRIBUTION WATER</b>					
Trihalomethane (THM): Total (ug/L) – DW*	2023	16.0	100.0	No	No
Haloacetic Acid (HAA): Total (ug/L) - DW*	2023	5.3	80.0	No	No

\*Running Annual Average

<MDL = Less than Method Detection Limit

MAC = Maximum Allowable Concentration as per O. Reg. 169/03

### Additional Legislated Samples

No additional sampling required.

## Maintenance Summary

WO #	Description
3481735	Replaced battery in natural gas generator

# Appendix A

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## RSRS Data and Submission Confirmation



Client Name: THE CORPORATION OF THE TOWNSHIP OF WHITEWATER REGION    Reporting Year: 2023    Service: PTTW    Permit Number: P-300-8175675490    Permit Version: 1.0    New or Updated Submission: NEW

Site Name: Haley Water Treatment Plant

Source ID: 500000637580    Source Name: Well 1

Source Type: Well

UTM(Zone/Easting/Northing): 18/362875.0/5050014.0

Method of Determination: Metered

Unit of Measure: Litre

Description: Well 1

Purpose Category: Utilities

Specific Category: Municipal Supply

Activity: Water Supply

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	17100.0	16000.0	18300.0		4800.0	22400.0	21800.0	21500.0				15500.0
2	18200.0	19200.0	15800.0		13600.0	21500.0	18600.0	20500.0				18700.0
3		16800.0	17600.0			21400.0	18600.0	19900.0		14900.0		17900.0
4		1500.0	17700.0	15700.0		21900.0	23800.0	17700.0		20700.0		16500.0
5			18900.0	3500.0		17600.0		23400.0	12900.0	18500.0		8000.0
6			17500.0	17000.0				25500.0	17900.0	19500.0		
7		17100.0		18200.0	18100.0			22300.0	20100.0	17000.0	11900.0	300.0
8		22800.0		16000.0	20800.0			6800.0	17600.0	19200.0	17500.0	
9		18500.0	20100.0	18800.0	20200.0			6200.0	16600.0	18500.0	4400.0	
10		15900.0	17000.0	19500.0	6400.0			18100.0	17100.0	20500.0		
11		15900.0	18000.0	6700.0				18100.0	21000.0	16900.0		
12		18300.0	20000.0					18500.0	16700.0	18300.0		10000.0
13		18800.0	19100.0					19700.0	19100.0	18300.0		17600.0
14		16100.0	17000.0					18900.0	19600.0	15000.0		18500.0
15		21100.0	16900.0					19900.0	16500.0	18300.0	9300.0	16900.0
16	20500.0	3000.0	17000.0					14600.0	18500.0	17800.0	16300.0	17600.0
17	2300.0		15000.0					20700.0	18500.0	5600.0	16500.0	19400.0
18	18500.0		18800.0					20900.0	18500.0		17300.0	18300.0
19	20600.0		17500.0			100.0	19200.0	21500.0	22000.0		21300.0	17900.0
20	16800.0		17000.0	12100.0		13900.0	19700.0	21500.0	18000.0		16600.0	17300.0
21	18300.0		17700.0	18100.0		18900.0	25100.0	21500.0	4200.0		17000.0	17200.0
22	19000.0		16500.0	18000.0		19000.0	42100.0	20600.0			16900.0	17800.0
23	18200.0	19800.0	100.0	18000.0		18300.0	42100.0	22100.0			17600.0	17600.0
24	18800.0	17900.0		19800.0	22300.0	19400.0	42100.0	16500.0			17900.0	20200.0
25	15000.0	18700.0		14700.0	17100.0	21800.0	24200.0	18100.0			17200.0	17600.0
26	19600.0	17200.0		21000.0	16100.0	19600.0	17800.0	20000.0			17900.0	18600.0
27	17600.0	18000.0		16800.0	17900.0	24700.0	19800.0	20000.0			17200.0	17700.0
28	17600.0	18500.0		21000.0	22800.0	20800.0	18500.0	20000.0			17600.0	17300.0
29	17600.0			21000.0	22800.0	18200.0	17500.0	18900.0			17800.0	17400.0
30	16600.0			21000.0	22800.0	18400.0	20600.0	17400.0			16500.0	18300.0
31	18100.0				20200.0		24600.0					19300.0

Site Name: Haley Water Treatment Plant

Source ID: 500000637579

UTM(Zone/Easting/Northing): 18/362870.0/5050014.0

Source Name: Well 2

Source Type: Well

Method of Determination: Metered

Unit of Measure: Litre

Description: Well 2

Purpose Category: Utilities

Specific Category: Municipal Supply

Activity: Water Supply

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1				17900.0	13800.0				16400.0	17200.0	17100.0	
2				18600.0	3100.0				19300.0	19900.0	17600.0	
3	17900.0			18000.0	22000.0				19300.0	5200.0	16000.0	
4	17100.0	18900.0			15100.0		18100.0		19300.0		16700.0	
5	19200.0	19200.0		10000.0	16500.0		22100.0		5800.0		19700.0	7500.0
6	16800.0	17100.0			23000.0	18900.0	19300.0				17600.0	17400.0
7	18600.0		16400.0		4900.0	18900.0	19600.0				5300.0	17000.0
8	18500.0		17000.0			17300.0	17400.0	10900.0				18700.0
9	18900.0		300.0			16500.0	21200.0	12800.0			13300.0	17400.0
10	17800.0				12800.0	19400.0	24000.0				17200.0	19700.0
11	18300.0			10700.0	23600.0	19100.0	23300.0				16300.0	19400.0
12	18100.0			17300.0	18300.0	21300.0	23300.0				18600.0	6500.0
13	17200.0			18800.0	19100.0	17500.0	25000.0				17300.0	
14	17500.0			16700.0	18900.0	44900.0	23500.0				17700.0	
15	19500.0			18100.0	19300.0	33700.0	19400.0				7200.0	
16		14900.0		19800.0	21100.0	22800.0	19400.0					
17	13800.0	16700.0		19500.0	17300.0	21400.0	19400.0			12000.0		
18		19700.0		16100.0	17400.0	24000.0	11700.0			16900.0		
19		17000.0		19500.0	17500.0	22600.0	4200.0			17100.0		
20		18900.0		7300.0	16600.0					19000.0		
21		18000.0			22900.0				12400.0	16900.0		
22		15300.0			19100.0				21000.0	17600.0		
23			18900.0		22900.0				16400.0	19300.0		
24			17200.0		4800.0				16400.0	19300.0		
25			17100.0						16400.0	16600.0		
26			19800.0						17400.0	20200.0		
27			19000.0						22600.0	15500.0		
28			17700.0						17600.0	18500.0		
29			19500.0						12400.0	18500.0		
30			18500.0						21200.0	18500.0		
31			17200.0					15500.0		19300.0		

**Name of Attester**

**First Name:** Kaylee

**Last Name:** Saar

**Company:** Ontario Clean Water Agency

**Date Certified/Submitted(yyyy/mm/dd):** 2024/01/19