Haley Drinking Water System

Waterworks # 250001233
System Category – Small Municipal Residential

Annual Water Report

Prepared For: The Township of Whitewater Region

Reporting Period of January 1st – December 31st 2020

Issued: February 19th, 2021

Operating Authority:

OCWA
ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

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

This system does not serve more than 10,000 residence and the annual reports will be available to residents at the Township of Whitewater Region's Municipal Office. Notification will be at the 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.

Compliance Report Card

Compliance Event	# of Events
Ministry of Environment Inspections	Inspection on November 3rd, 2020 -Report has no yet been received-
Ministry of Labour Inspections	N/A
QEMS External Audit	Completed on January 21, 2020 by SAI Global. No major or minor non-conformances were identified.
AWQI's/BWA	N/A
Non-Compliance	N/A
Community Complaints	N/A
Spills	N/A
Watermain Breaks	N/A

System Process Description

Raw Source

The source water for the Haley DWS is two drilled wells, Well 2 is a GUDI well and Well 1 is not considered a GUDI well. These wells tap into a pristine source of groundwater where very consistent turbidity is demonstrated throughout the year in both Well #1 and Well #2.

Treatment

Well 1 was constructed late in 2005, as part of the upgrades of the Haley Townsite Well Supply. It is a drilled well measuring 150 mm in diameter, 61 m deep and is equipped with a vented well cap and a submersible pump rated at 115 L/min at a total dynamic head of 42 m. A 50 mm discharge line connects the well to the pump house and pump-to-waste discharge line. The annular space was sealed to a depth of 6.1 m. Well 1 is not under the direct influence of surface water.

Well 2 was constructed in September 2006, as part of the upgrades of the Haley Townsite Well Supply. It is a drilled well measuring 150 mm diameter, 103 m deep and is equipped with a vented cap

and a submersible pump rated at 115 L/min with a total dynamic head of 42 m. A 50 mm discharge line connects the well to the pumphouse and pump-to-waste discharge line. The annular space was sealed to a depth of 6.1 m. Well 2 is potentially under the direct influence of surface water (GUDI), however, there is adequate in-situ filtratio*n {GUDI with Effective lnsitu).*

The Heather Street pumphouse is equipped with a chlorine feed system with two chemical metering pumps, a below-grade 12 m long pipeline for chlorine contact time, a flow meter for each well, a variable frequency drive control system for the submersible well pumps, a natural gas-powered generator rated at 10.5 kW installed in a weather proof acoustic enclosur*e, and control instrumentation.* The Sullivan Street pumphouse still exists, although the well has been disconnected and properly decommissioned.

The operators report that the hydraulic pressure tank is essential in maintaining adequate pressure in the distribution system during the five minutes it *takes to switch between wells*
The entire treatment processes for all these facilities are monitored 24 hrs/day by SCADA computers. These systems have trending and alarm capabilities.

Treatment Chemicals used during the reporting year:

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

Distribution

This Class 1 water distribution system supplies treated water to 33 single family homes. The most recent estimate of the population served is 92 people. Complete replacement of all distribution piping was completed in the Fall of 2010. An examination of the residential services completed in 2002, confirmed the absence of cross-connections.

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.

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
There was no adverse water quality incidents reported during the reporting period.						

Non-Compliance

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
There was no non-compliance issues reported during the reporting period.				

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
There was no inspection during this period.				

Flows

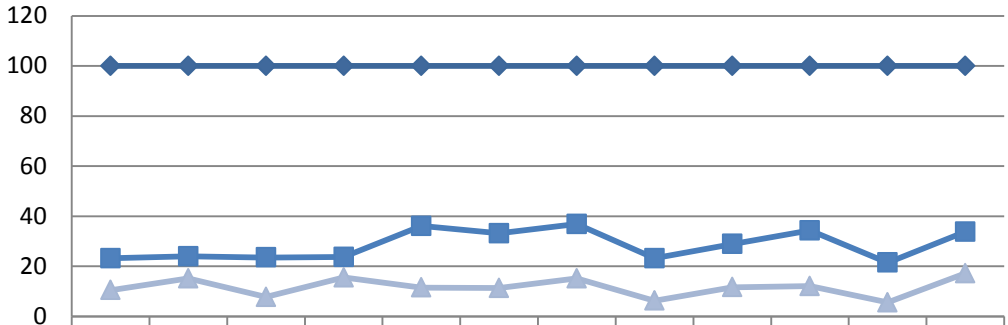
The Haley Drinking Water System is operating under half the rated capacity.

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2019 Raw Flow Data was submitted to the Ministry electronically under permit #6422-8W9PUB. The confirmation and a copy of the data that was submitted are attached in Appendix A.

Well 1 Total Monthly Flows (m3/d)

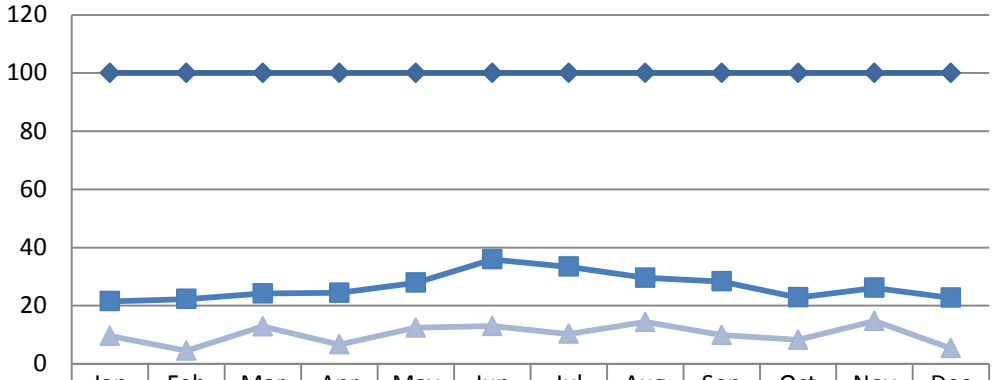
Max Allowable PTTW



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m3/d)	100	100	100	100	100	100	100	100	100	100	100	100
Max Flow (m3/d)	23	24	24	24	36	33	37	23	29	34	22	34
Avg (m3/d)	10	15	8	16	12	11	15	6	12	12	6	17

Well 1 Total Monthly Flows (m3/d)

Max Allowable PTTW

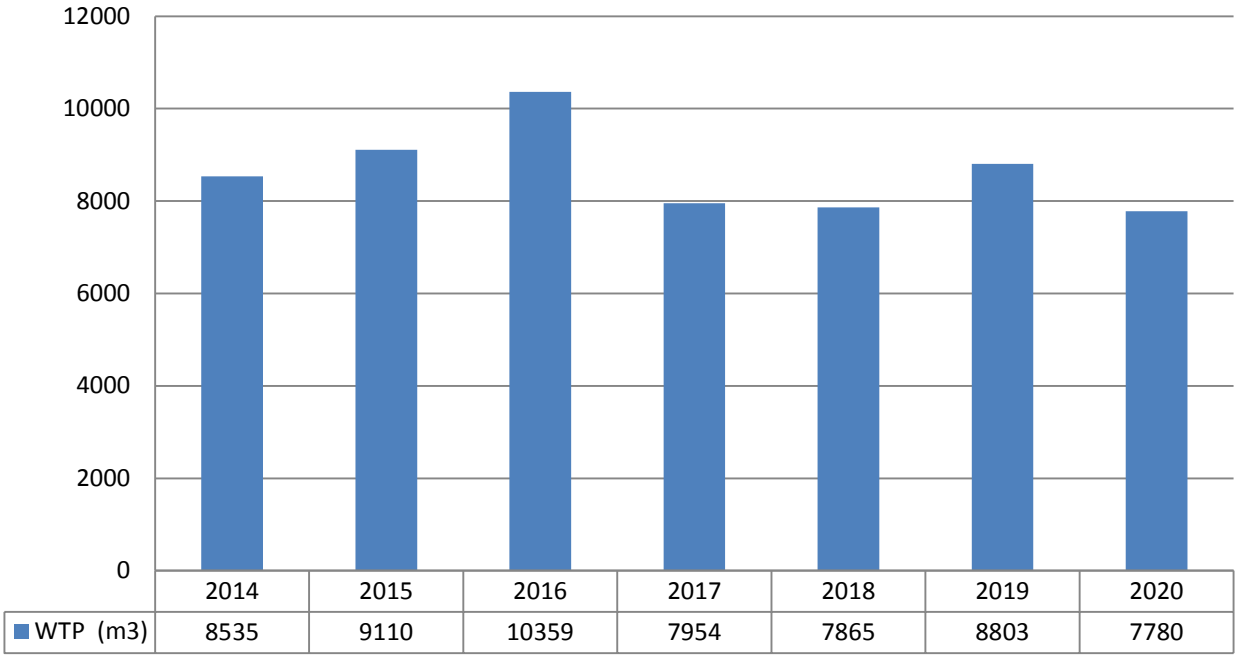


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable (m3/d)	100	100	100	100	100	100	100	100	100	100	100	100
Max Flow (m3/d)	22	22	24	24	28	36	33	30	28	23	26	23
Avg (m3/d)	10	5	13	7	12	13	10	14	10	8	15	5

Treated Water Flows

Annual Total Flow Comparison

Total Annual m3



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	12	0	0	0	0		
Raw Water Well 2	12	0	0	0	0		
Distribution Water	27	0	0	0	0	0	2

Operational Testing

	No. of Samples Collected	Range of Results	
		Minimum	Maximum
Turbidity, In-House (NTU) - RW2	12	0.32	1.2
Turbidity, In-House (NTU) - RW1	12	0.36	0.88
Turbidity, In-House (NTU) - TW	240	0.22	0.77
Free Chlorine Residual, In-House (mg/L) - DW	103	0.65	1.37
Free Chlorine Residual, In-House (mg/L) - TW	258	1.00	1.26
Free Chlorine Residual, Online (mg/L) - TW	258	0.40	3.30
Treated Water / Colour - TCU	45	0	1
Treated Water / pH - ---	44	7.1	8.1

Inorganic Parameters

These parameters are tested as a requirement under 170/03. Sodium and Fluoride are required to be tested every 5 years. Nitrate and Nitrite are tested quarterly and the metals are tested every 60 months as required under 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

- MAC = Maximum Allowable Concentration as per O.Reg 169/03
- BDL = Below the laboratory detection level

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances	
				MAC	1/2 MAC
Treated Water					
Antimony: Sb (ug/L) - TW	2017/01/11	<MDL 0.5	6.0	No	No
Arsenic: As (ug/L) - TW	2017/01/11	<MDL 1.0	10.0	No	No
Barium: Ba (ug/L) - TW	2020/01/08	560	1000.0	No	Yes
Barium: Ba (ug/L) - TW	2020/04/15	541	1000.0	No	Yes
Barium: Ba (ug/L) - TW	2020/07/06	518	1000.0	No	Yes
Barium: Ba (ug/L) - TW	2020/10/21	452	1000.0	No	Yes
Boron: B (ug/L) - TW	2017/01/11	20.0	5000.0	No	No
Cadmium: Cd (ug/L) - TW	2017/01/11	0.1	5.0	No	No
Chromium: Cr (ug/L) - TW	2017/01/11	<MDL 1.0	50.0	No	No
Mercury: Hg (ug/L) - TW	2017/01/11	<MDL 0.1	1.0	No	No
Selenium: Se (ug/L) - TW	2017/01/11	<MDL 1.0	50.0	No	No
Uranium: U (ug/L) - TW	2017/01/11	2.0	20.0	No	No
Additional Inorganics					
Fluoride (mg/L) - TW	2019/01/03	0.15	1.5	No	No
Nitrite (mg/L) - TW	2020/01/08	<MDL 0.1	1.0	No	No
Nitrite (mg/L) - TW	2020/04/15	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/07/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW	2020/10/21	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TW	2020/01/08	5.43	10.0	No	Yes
Nitrate (mg/L) - TW	2020/04/15	5.59	10.0	No	Yes
Nitrate (mg/L) - TW	2020/07/06	6.46	10.0	No	Yes
Nitrate (mg/L) - TW	2020/10/21	4.59	10.0	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	311	316	n/a	n/a
pH	2	2	7.4	7.6	n/a	n/a

Organic Parameters

These parameters are tested every 60 months as a requirement under O.Reg 170/03. In the event any of the parameters exceed half of the maximum allowable concentration the parameter is required to be sampled quarterly.

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Treated Water					
Alachlor (ug/L) - TW	2017/01/11	<MDL 0.5	5.00	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW	2017/01/11	<MDL 0.2	5.00	No	No
Azinphos-methyl (ug/L) - TW	2017/01/11	<MDL 2.0	20.00	No	No
Benzene (ug/L) - TW	2017/01/11	<MDL 0.5	1.00	No	No
Benzo(a)pyrene (ug/L) - TW	2017/01/11	<MDL 0.01	0.01	No	Yes
Bromoxynil (ug/L) - TW	2017/01/11	<MDL 0.5	5.00	No	No
Carbaryl (ug/L) - TW	2017/01/11	<MDL 5.0	90.00	No	No
Carbofuran (ug/L) - TW	2017/01/11	<MDL 5.0	90.00	No	No
Carbon Tetrachloride (ug/L) - TW	2017/01/11	<MDL 0.2	2.00	No	No
Chlorpyrifos (ug/L) - TW	2017/01/11	<MDL 1.0	90.00	No	No
Diazinon (ug/L) - TW	2017/01/11	<MDL 1.0	20.00	No	No
Dicamba (ug/L) - TW	2017/01/11	<MDL 1.0	120.00	No	No
1,2-Dichlorobenzene (ug/L) - TW	2017/01/11	<MDL 0.4	200.00	No	No
1,4-Dichlorobenzene (ug/L) - TW	2017/01/11	<MDL 0.4	5.00	No	No
1,2-Dichloroethane (ug/L) - TW	2017/01/11	<MDL 0.2	5.00	No	No
1,1-Dichloroethylene (ug/L) - TW	2017/01/11	<MDL 0.5	14.00	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TW	2017/01/11	<MDL 4.0	50.00	No	No
2,4-Dichlorophenol (ug/L) - TW	2017/01/11	<MDL 0.5	900.00	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW	2017/01/11	<MDL 1.0	100.00	No	No
Diclofop-methyl (ug/L) - TW	2017/01/11	<MDL 0.9	9.00	No	No
Dimethoate (ug/L) - TW	2017/01/11	<MDL 2.5	20.00	No	No
Diquat (ug/L) - TW	2017/01/11	<MDL 5.0	70.00	No	No
Diuron (ug/L) - TW	2017/01/11	<MDL 10.0	150.00	No	No
Glyphosate (ug/L) - TW	2017/01/11	<MDL 10.0	280.00	No	No
Malathion (ug/L) - TW	2017/01/11	<MDL 5.0	190.00	No	No
2-Methyl-4chlorophenoxyacetic Acid (MCPA)	2017/01/11	<MDL 10.0	100.00	No	No
Metolachlor (ug/L) - TW	2017/01/11	<MDL 1.0	50.00	No	No
Metribuzin (ug/L) - TW	2017/01/11	<MDL 5.0	80.00	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TW	2017/01/11	<MDL 0.2	80.00	No	No
Paraquat (ug/L) - TW	2017/01/11	<MDL 1.0	10.00	No	No
PCB (ug/L) - TW	2017/01/11	<MDL 0.1	3.00	No	No
Pentachlorophenol (ug/L) - TW	2017/01/11	<MDL 0.5	60.00	No	No
Phorate (ug/L) - TW	2017/01/11	<MDL 0.5	2.00	No	No
Picloram (ug/L) - TW	2017/01/11	<MDL 5.0	190.00	No	No

	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Prometryne (ug/L) - TW	2017/01/11	<MDL 0.25	1.00	No	No
Simazine (ug/L) - TW	2017/01/11	<MDL 1.0	10.00	No	No
Terbufos (ug/L) - TW	2017/01/11	<MDL 0.4	1.00	No	No
Tetrachloroethylene (ug/L) - TW	2017/01/11	<MDL 0.3	10.00	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW	2017/01/11	<MDL 0.5	100.00	No	No
Triallate (ug/L) - TW	2017/01/11	<MDL 1.0	230.00	No	No
Trichloroethylene (ug/L) - TW	2017/01/11	<MDL 0.3	5.00	No	No
2,4,6-Trichlorophenol (ug/L) - TW	2017/01/11	<MDL 0.5	5.00	No	No
Trifluralin (ug/L) - TW	2017/01/11	<MDL 1.0	45.00	No	No
Vinyl Chloride (ug/L) - TW	2017/01/11	<MDL 0.2	1.00	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average	2020	9.5	100.0	No	No
HAA Total (ug/L) Annual Average	2020	4.475	80.0*	No	No

MAC = Maximum Allowable Concentration as per O.Reg 169/03
BDL = Below the laboratory detection level

Additional Legislated Samples

There was no additional sampling required

Appendix A

WTRS Data and Submission Confirmation

Ontario

Location: WTRS / WT DATA / Input WT Record WTRS-WT-008

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 6422-8W9PUB
Permit Holder: THE CORPORATION OF THE TOWNSHIP OF WHITEWATER REGION.
Received on:Jan 13, 2021 10:19 AM

This confirmation indicates that your data has been received by the Ministry,but should not be construed as acceptance of this data if it differs from that specified on the Permit Number, assigned to the Permit Holder stated above.

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