Havelock Drinking Water System

Annual Water Report

Reporting period of January 1, 2020 – December 31, 2020

Prepared For: The Township of Havelock-Belmont-Methuen

Prepared By: Ontario Clean Water Agency
Agence Ontarienne Des Eaux

This report has been prepared to satisfy the annual reporting requirements of the Provincial Regulations and Guidelines established by the Ministry of the Environment in the Province of Ontario including the section 11 and Schedule 22 reports identified in O.Reg 170/03, Drinking Water Systems Regulation and the Permit to Take Water Reports identified in O.Reg 387/04, Water Taking and Transfer Regulation.

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Report Availability

Population Served:	< 10,000
Website where the annual report can be viewed by the public:	www.hbmtwp.ca
Alternate location were annual report will be available for inspection and is free of charge:	Municipal Office
How are system users notified that the annual report is available and is free of charge?	Public access/notice via Township Website and Utility Bill
Number of Designated Facilities served:	None
Has a copy of this report been provided to all Designated Facilities?	N/A
Number of Interested Parties reported to:	N/A
Has a copy of this report been provided to all Interested Parties?	N/A
The following Drinking-Water Systems receive drinking water from this system:	N/A
Has a copy of this report been provided to connected owners?	N/A

Compliance Report Card

Drinking Water System Number:	210000595
System Owner:	The Corporation of the Township of Havelock-Belmont-Methuen
Operating Authority:	Ontario Clean Water Agency
Drinking Water System Category:	Large Municipal Residential
Reporting Period:	January 1, 2020 – December 31, 2020

Event Summary	# of Events	Date	Details
Ministry of Environment Inspections	1	Jan 30th, 2020	Announced – Detailed Drinking Water Inspection – Final Inspection Rating of 97.98%
Ministry of Labour Inspections	0		
DWQMS Audits	1	April 16th, 2020	Surveillance System Audit
AWQI's	0		
Non-Compliance	1	Jan 30th, 2020	UV Sensor Calibrations
Community Complaints	0		
Spills	0		

Quality Control Measures

The Township of Havelock-Belmont-Methuen facilities are part of OCWA's operational Trent Valley Hub. The facilities are supported by hub, regional and corporate resources. Operational Services are delivered by OCWA staff who live and work in the surrounding area.

OCWA operates facilities in compliance with applicable regulations. The facility has comprehensive manuals detailing operations, maintenance, instrumentation, and emergency procedures. All procedures are treated as active documents, with annual reviews.

OCWA has additional "Value Added" and operational support services that the Township of Havelock-Belmont-Methuen benefits from including:

- Access to a network of operational compliance and support experts at the regional and corporate level, as well as affiliated programs that include the following:
  - Quality & Environmental Management System, Occupational Health & Safety System and an internal compliance audit system.
  - Process Data Collection (PDC) and PDM (WISKI) facility operating information repository, which consolidates field data, online instrumentation, and electronic receipt of lab test results for reporting, tracking and analysis.
  - Work Management System (WMS) and Maximo track and reports maintenance activities, and creates predictive and preventative reports.
  - Outpost 5 wide-area SCADA system allows for process optimization and data logging, process trending, remote alarming and optimization of staff time.
- Client reporting which includes operational data, equipment inventory, financial statements, maintenance work orders, and capital status reports
- Site-Specific Contingency Plans and Standard Operating Procedures
- Use of accredited laboratories
- Access to a network of operational compliance and support experts at the hub, region and corporate level
- Additional support in response to unusual circumstances, and extra support in an emergency.
- Use of sampling schedules for external laboratory sampling

System Process Description

Raw Source

Raw water source for the Havelock Drinking Water System are from three groundwater wells; Well 1, Well 3 and Well 4.

Treatment

The Havelock Drinking Water System is operated with two treatment subsystems; Well #3 which is an independent subsystem and Wells 1&4 which are operated together. Well #3 is under the direct influence of surface water system. Treatment consists of chemically assisted duel media (GAC/sand) gravity filtration plus ultraviolet and sodium hypochlorite disinfection. Well #1 and Well #4 utilize ultraviolet disinfection and sodium hypochlorite for treatment. This water system has continuous, alarmed monitoring for treated water free chlorine residual, filter effluent turbidity and distribution free chlorine residual.

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
SternPac	Primary Coagulation	Kemira
Magnafloc	Coagulant aid	BASF Canada
Granular Activated Carbon	Filter Media	Nichem
Sodium Hypochlorite – 12%	Disinfection	Brenntag

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Cause			Corrective Action Taken
		Parameter	Result	Exceedance of	
N/A					

Non-Compliance

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
N/A				

Non-Compliance Identified in a Ministry Inspection:

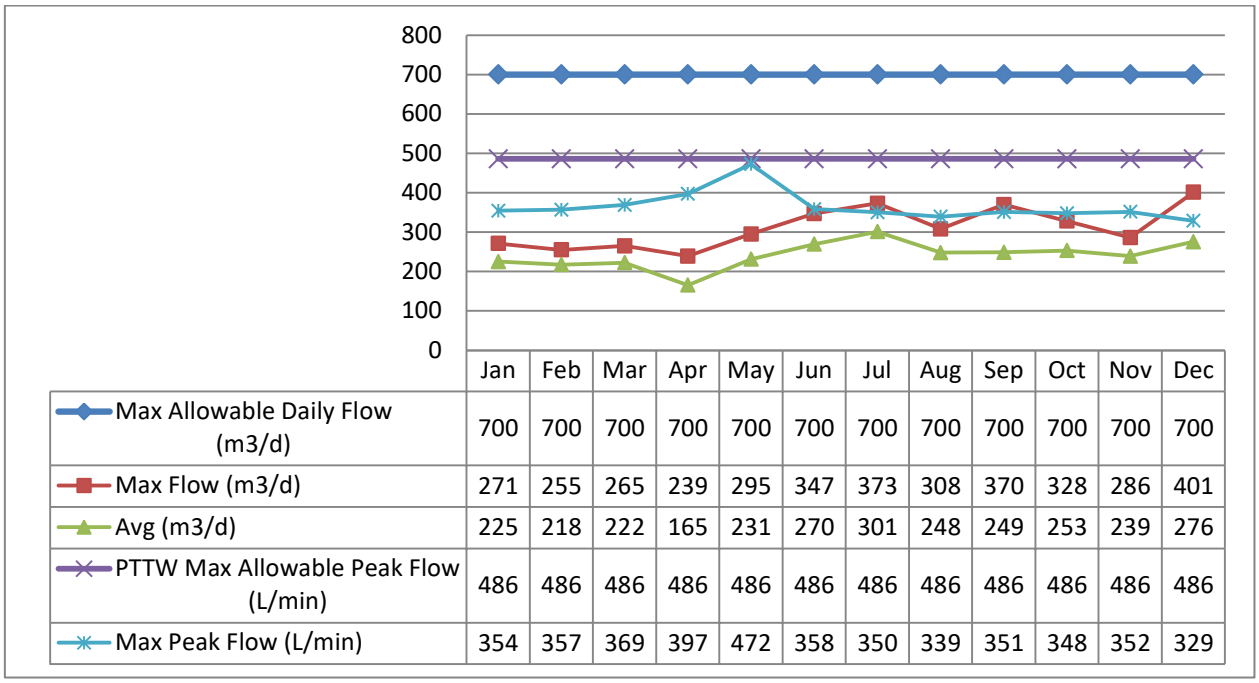
Ministry of Environment Inspection Rating: 97.98%

Legislation	requirement(s) system failed to meet	duration of the failure (i.e. date(s))	Corrective Action	Status
Municipal Drinking Water License #140-101	Schedule E: 1. Duty UV sensors shall be checked on at least a monthly basis against a reference UV sensor or at a frequency as otherwise recommended by the UV equipment manufacturer	Annual check for 2019	The Owner/Operating Authority of the Havelock Drinking Water System shall ensure that UV reference sensor checks are completed in accordance with Schedule E of Municipal Drinking Water Licence 140-101 Issue Number 3. By no later than March 30, 2020, the Owner/Operating Authority of the Havelock Drinking Water System shall provide confirmation to Provincial Officer Rebecca Troan that UV sensor reference checks have been completed at the Well 3 treatment plant.	Complete

Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water.

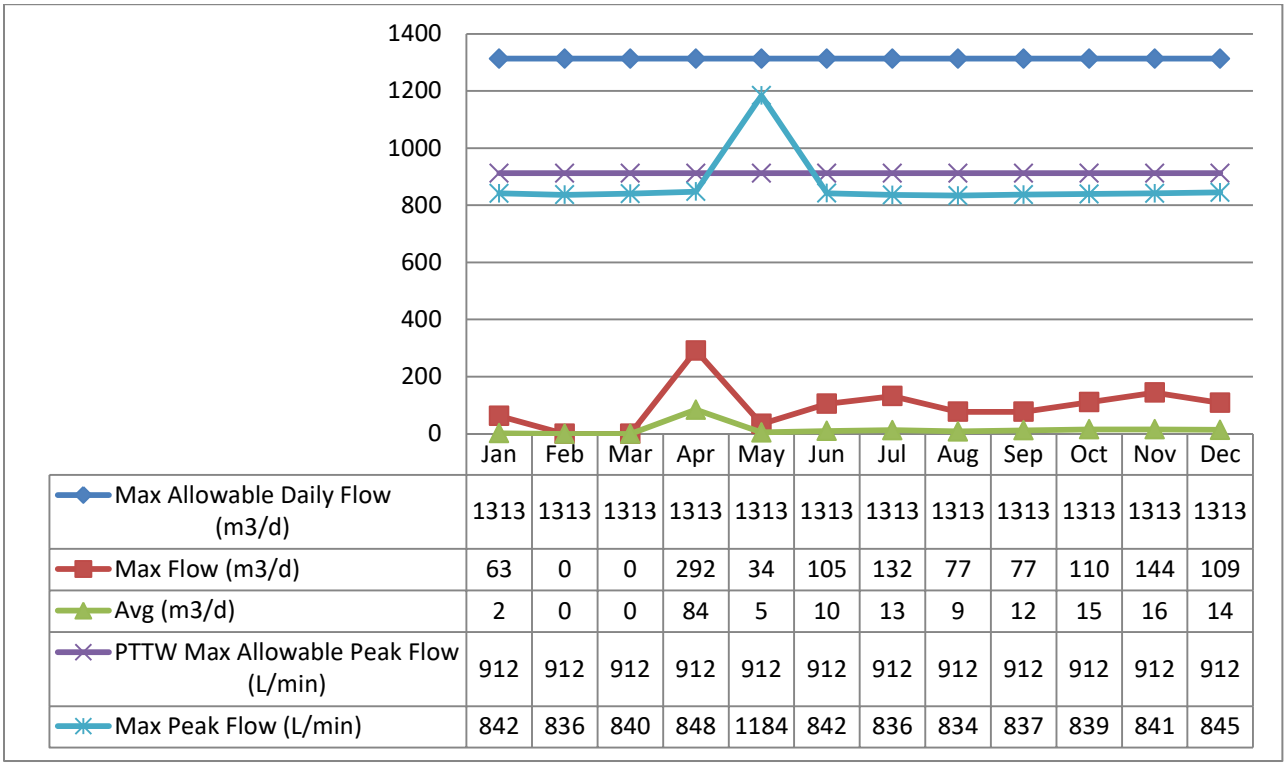
Raw Water Volume Taken- Raw Well 1:



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Daily Flow (m3/d)	700	700	700	700	700	700	700	700	700	700	700	700
Max Flow (m3/d)	271	255	265	239	295	347	373	308	370	328	286	401
Avg (m3/d)	225	218	222	165	231	270	301	248	249	253	239	276
PTTW Max Allowable Peak Flow (L/min)	486	486	486	486	486	486	486	486	486	486	486	486
Max Peak Flow (L/min)	354	357	369	397	472	358	350	339	351	348	352	329

The Peak Flow rate was increased in May 2020 during scheduled flow meter calibrations.

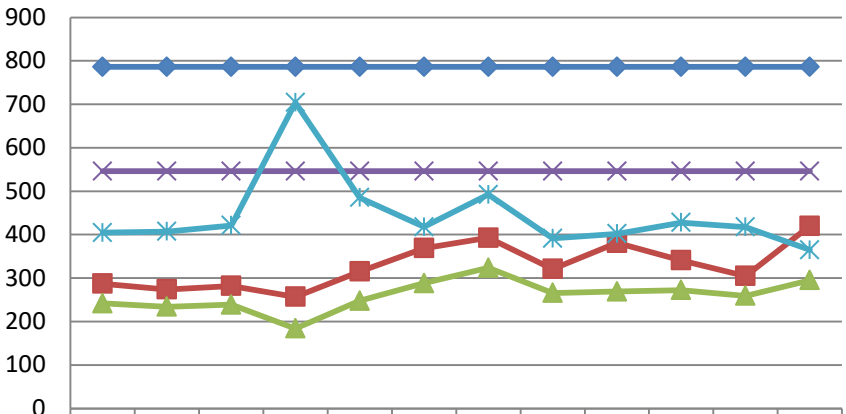
Raw Water Daily Rate of Taking Raw Well 3:



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Daily Flow (m3/d)	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313
Max Flow (m3/d)	63	0	0	292	34	105	132	77	77	110	144	109
Avg (m3/d)	2	0	0	84	5	10	13	9	12	15	16	14
PTTW Max Allowable Peak Flow (L/min)	912	912	912	912	912	912	912	912	912	912	912	912
Max Peak Flow (L/min)	842	836	840	848	1184	842	836	834	837	839	841	845

The Peak Flow rate was exceeded in May 2020 during scheduled flow meter calibrations.

Raw Water Daily Rate of Taking Raw Well 4:



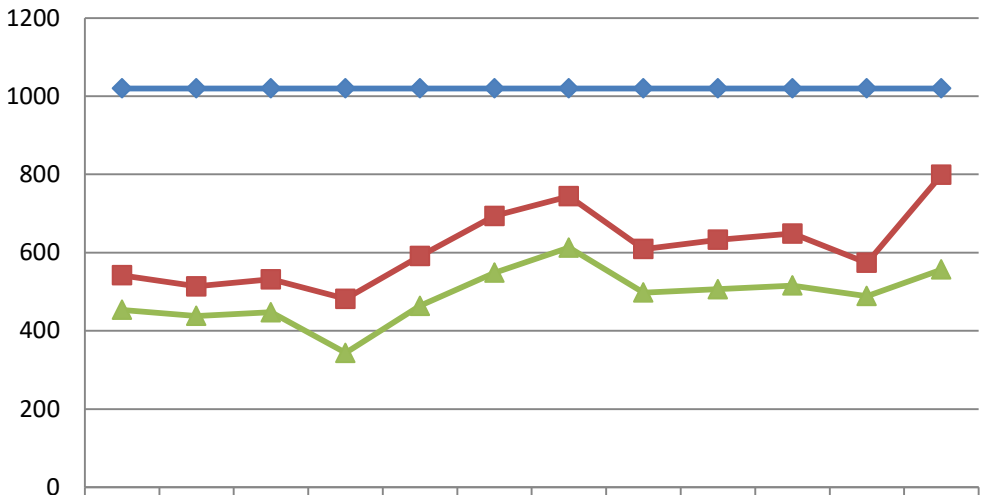
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Max Allowable Daily Flow (m3/d)	786	786	786	786	786	786	786	786	786	786	786	786
Max Flow (m3/d)	287	274	282	257	315	369	393	321	381	341	305	420
Avg (m3/d)	242	234	239	184	248	288	324	266	269	273	259	295
PTTW Max Allowable Peak Flow (L/min)	546	546	546	546	546	546	546	546	546	546	546	546
Max Peak Flow (L/min)	405	407	421	704	485	418	492	391	402	428	417	365

The Peak Flow rate was increased in May 2020 during scheduled flow meter calibrations.

Treated Water Flows

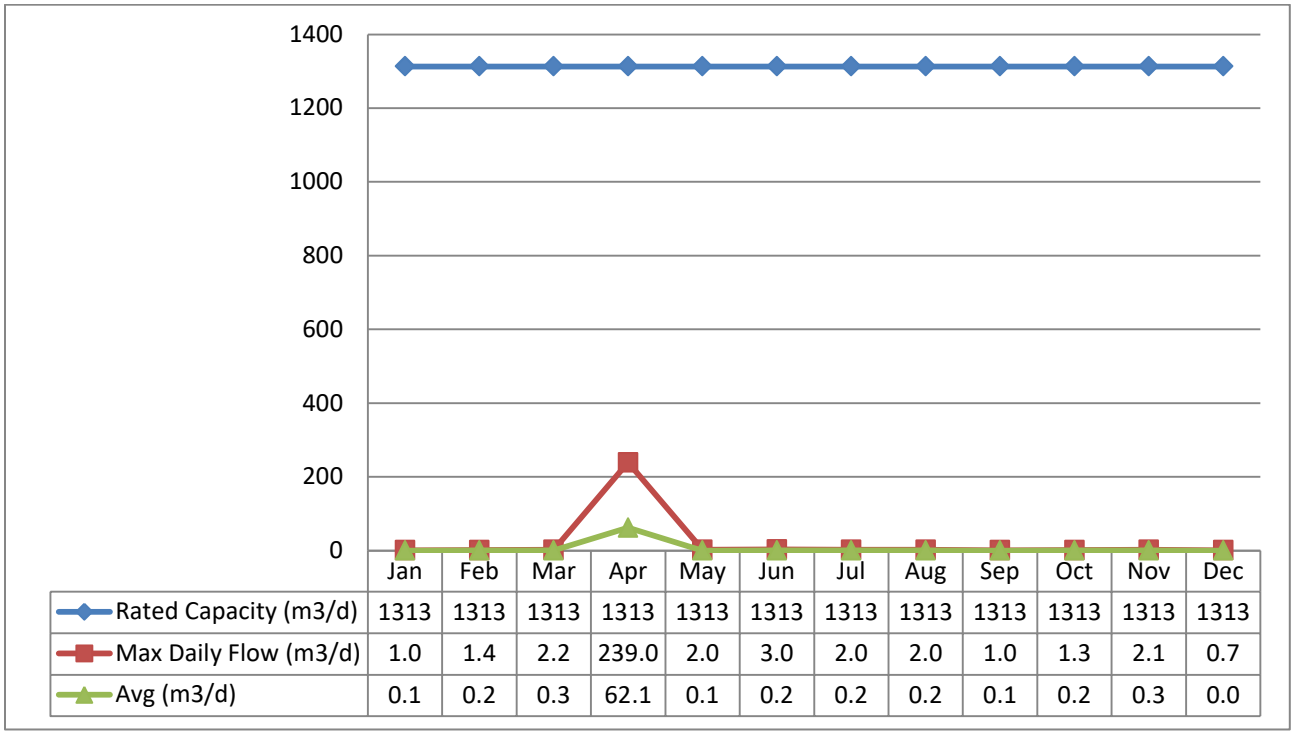
The Treated Water flows are regulated under the Municipal Drinking Water License. The Havelock Drinking Water System has a rated capacity of 1020m3/day for Well 1&4 and 1313m^3/day for Well 3. Additional flow data can be found under the Water Taking and Transfer Data section.

Treated Water Well 1 & 4:



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m3/d)	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020	1020
Max Daily Flow (m3/d)	542	514	532	482	591	694	744	609	633	649	574	799
Avg (m3/d)	454	438	448	344	464	548	613	498	506	516	489	557

Treated Water Well 3:



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m3/d)	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313	1313
Max Daily Flow (m3/d)	1.0	1.4	2.2	239.0	2.0	3.0	2.0	2.0	1.0	1.3	2.1	0.7
Avg (m3/d)	0.1	0.2	0.3	62.1	0.1	0.2	0.2	0.2	0.1	0.2	0.3	0.0

Regulatory Sample Results Summary

- RW1 = Raw Water Well 1
- RW3 = Raw Water Well 3
- RW4 = Raw Water Well 4
- TW3 = Treated Water Well 3
- TWc = Treated Water Well 1&4 Combined
- DW = Distribution Water

Microbiological Testing

Location	Number of Samples	E. Coli Results (min) - (max)	Total Coliform Results (min) – (max)	Number of HPC Samples	HPC Results (min) - (max)
Raw, Well 1	52	0 – 2	0 – 4	~	~
Raw, Well 3	52	0 - 27	0 – 71	~	~
Raw, Well 4	52	0 – 2	0 – 13	~	~
Treated, Well 3	52	0 – 0	0 - 0	52	0 – 1
Treated – Well 1 & 4 Combined	52	0 - 0	0 - 0	52	0 – 6
Distribution - DW	159	0 - 0	0 - 0	153	0 – 15

Operational Testing

On-Line

Parameter	Range of Results (min # - max #)
Filter #1 Effluent Turbidity, Well 3	0.05 – 5.00 NTU*
Filter #2 Effluent Turbidity, Well 3	0.00 – 5.00 NTU*
Treated Water Free Chlorine, Well 3	0.94 – 3.00 mg/L*
Turbidity, Well 1	0.00 – 1.85 NTU*
Turbidity, Well 4	0.00 – 5.00 NTU*
Treated Water Free Chlorine, TWc	1.58 – 2.5 mg/L
Distribution Free Chlorine	0.47– 2.72 mg/L
Treated Water Fluoride	Fluoride is not added at this facility

***** Instrument spikes and dips recorded by on-line instrumentation were a result of air bubbles and various maintenance and calibration activities. Power interruptions may also cause an instrument reading to drop to zero. All events are reviewed for compliance with O. Reg. 170/03 and if warranted, are reported to the Ministry of Environment as Adverse Water Quality Incidents.

In-House

Parameter	# of grab samples taken	Range of Results (min # - max #)
Raw Water Turbidity, Well 1	12	0.09 – 0.14 NTU
Raw Water Turbidity, Well 4	12	0.09 – 0.12 NTU
Treated Water Free Chlorine, Well 1&4	54	1.58 – 2.50 mg/L
Treated Water Free Chlorine, Well 3	54	0.94– 3.00 mg/L
Distribution Free Chlorine	159	0.48 – 2.4 mg/L

* Instrument spikes and dips recorded by on-line instrumentation were a result of air bubbles and various maintenance and calibration activities. Power interruptions may also cause an instrument reading to drop to zero. All events are reviewed for compliance with O. Reg. 170/03 and if warranted, are reported to the Ministry of Environment as Adverse Water Quality Incidents.

Laboratory

Parameter	# of grab samples taken	Range of Results (min # - max #)
Treated Water Fluoride	Fluoride is not used at this facility	
Raw Water Iron, Well 3	6	1140.0 – 11700.0 ug/L
Raw Water Manganese, Well 3	6	300.0 – 3040.0ug/L
Treated Water Iron, Well 3	6	10.0 – 120.0 ug/L
Treated Water Manganese, Well 3	6	0.0 – 10.0 ug/L

Additional Legislated Samples

Legal Document	Date of Issuance	Parameter	# of grab samples taken	Annual Average Concentration	Annual Average Maximum Concentration
Municipal Licence	June 29, 2016	Suspended Solids	12	2.41 mg/L	25 mg/L

Inorganic Parameters

- MAC = Maximum Allowable Concentration as per O. Reg 169/03
- BDL = Below the laboratory detection level
- Note: Fluoride and Sodium are only required to be tested every 60 months.

Parameter	Sample Date	Result Value	MAC	Exceedance	
				MAC	½ MAC
Antimony: Sb (ug/L) - TWc	2020/03/23	0.11	6.0	No	No
Antimony: Sb (ug/L) - TW3	2020/03/23	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L) - TWc	2020/03/23	<MDL 0.2	25.0	No	No
Arsenic: As (ug/L) - TW3	2020/03/23	<MDL 0.2	25.0	No	No
Barium: Ba (ug/L) - TWc	2020/03/23	139.0	1000.0	No	No
Barium: Ba (ug/L) - TW3	2020/03/23	128.0	1000.0	No	No
Boron: B (ug/L) - TWc	2020/03/23	34.0	5000.0	No	No
Boron: B (ug/L) - TW3	2020/03/23	37.0	5000.0	No	No
Cadmium: Cd (ug/L) - TWc	2020/03/23	0.006	5.0	No	No
Cadmium: Cd (ug/L) - TW3	2020/03/23	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L) - TWc	2020/03/23	0.35	50.0	No	No
Chromium: Cr (ug/L) - TW3	2020/03/23	0.32	50.0	No	No
Mercury: Hg (ug/L) - TWc	2020/03/23	<MDL 0.01	1.0	No	No
Mercury: Hg (ug/L) - TW3	2020/03/23	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L) - TWc	2020/03/23	0.73	10.0	No	No
Selenium: Se (ug/L) - TW3	2020/03/23	0.73	10.0	No	No
Uranium: U (ug/L) - TWc	2020/03/23	0.192	20.0	No	No
Uranium: U (ug/L) - TW3	2020/03/23	0.184	20.0	No	No
Nitrite (mg/L) - TWc	2020/01/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TWc	2020/04/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TWc	2020/07/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TWc	2020/10/05	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW3	2020/01/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW3	2020/04/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW3	2020/07/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L) - TW3	2020/10/05	<MDL 0.003	1.0	No	No
Nitrate (mg/L) - TWc	2020/01/06	2.21	10.0	No	No
Nitrate (mg/L) - TWc	2020/04/06	2.11	10.0	No	No
Nitrate (mg/L) - TWc	2020/07/06	2.46	10.0	No	No
Nitrate (mg/L) - TWc	2020/10/05	1.97	10.0	No	No
Nitrate (mg/L) - TW3	2020/01/06	2.25	10.0	No	No
Nitrate (mg/L) - TW3	2020/04/06	1.99	10.0	No	No
Nitrate (mg/L) - TW3	2020/07/06	2.36	10.0	No	No
Nitrate (mg/L) - TW3	2020/10/05	2.06	10.0	No	No
Sodium (mg/L) - TWc	2018/06/25	123.0	20.0*	Yes	Yes
Sodium (mg/L) – TW3	2018/06/29	45.3	20.0*	Yes	Yes
Fluoride (mg/L)- TWc	2018/06/25	0.09	1.5	No	No
Fluoride (mg/L)- TW3	2018/06/25	0.06	1.5	No	No

*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 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.

Organic Parameters

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

TREATED WATER	Sample Date	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L) - TWc	2020/03/23	<MDL 0.02	5	No	No
Alachlor (ug/L) - TW3	2020/03/23	<MDL 0.02	5	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TWc	2020/03/23	<MDL 0.01	5	No	No
Atrazine + N-dealkylated metabolites (ug/L) - TW3	2020/03/23	<MDL 0.01	5	No	No
Azinphos-methyl (ug/L) - TWc	2020/03/23	<MDL 0.05	20	No	No
Azinphos-methyl (ug/L) - TW3	2020/03/23	<MDL 0.05	20	No	No
Benzene (ug/L) - TWc	2020/03/23	<MDL 0.32	5	No	No
Benzene (ug/L) - TW3	2020/03/23	<MDL 0.32	5	No	No
Benzo(a)pyrene (ug/L) - TWc	2020/03/23	<MDL 0.004	0.01	No	No
Benzo(a)pyrene (ug/L) - TW3	2020/03/23	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L) - TWc	2020/03/23	<MDL 0.33	5	No	No
Bromoxynil (ug/L) - TW3	2020/03/23	<MDL 0.33	5	No	No
Carbaryl (ug/L) - TWc	2020/03/23	<MDL 0.05	90	No	No
Carbaryl (ug/L) - TW3	2020/03/23	<MDL 0.05	90	No	No
Carbofuran (ug/L) - TWc	2020/03/23	<MDL 0.01	90	No	No
Carbofuran (ug/L) - TW3	2020/03/23	<MDL 0.01	90	No	No
Carbon Tetrachloride (ug/L) - TWc	2020/03/23	<MDL 0.17	5	No	No
Carbon Tetrachloride (ug/L) - TW3	2020/03/23	<MDL 0.17	5	No	No
Chlorpyrifos (ug/L) - TWc	2020/03/23	<MDL 0.02	90	No	No
Chlorpyrifos (ug/L) - TW3	2020/03/23	<MDL 0.02	90	No	No
Diazinon (ug/L) - TWc	2020/03/23	<MDL 0.02	20	No	No
Diazinon (ug/L) - TW3	2020/03/23	<MDL 0.02	20	No	No
Dicamba (ug/L) - TWc	2020/03/23	<MDL 0.2	120	No	No
Dicamba (ug/L) - TW3	2020/03/23	<MDL 0.2	120	No	No
1,2-Dichlorobenzene (ug/L) - TWc	2020/03/23	<MDL 0.41	200	No	No
1,2-Dichlorobenzene (ug/L) - TW3	2020/03/23	<MDL 0.41	200	No	No
1,4-Dichlorobenzene (ug/L) - TWc	2020/03/23	<MDL 0.36	5	No	No
1,4-Dichlorobenzene (ug/L) - TW3	2020/03/23	<MDL 0.36	5	No	No
1,2-Dichloroethane (ug/L) - TWc	2020/03/23	<MDL 0.35	5	No	No
1,2-Dichloroethane (ug/L) - TW3	2020/03/23	<MDL 0.35	5	No	No
1,1-Dichloroethylene (ug/L) - TWc	2020/03/23	<MDL 0.33	14	No	No
1,1-Dichloroethylene (ug/L) - TW3	2020/03/23	<MDL 0.33	14	No	No
Dichloromethane (Methylene Chloride) (ug/L) - TWc	2020/03/23	<MDL 0.35	50	No	No

Dichloromethane (Methylene Chloride) (ug/L) - TW3	2020/03/23	<MDL 0.35	50	No	No
2,4-Dichlorophenol (ug/L) - TWc	2020/03/23	<MDL 0.15	900	No	No
2,4-Dichlorophenol (ug/L) - TW3	2020/03/23	<MDL 0.15	900	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TWc	2020/03/23	<MDL 0.19	100	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L) - TW3	2020/03/23	<MDL 0.19	100	No	No
Diclofop-methyl (ug/L) - TWc	2020/03/23	<MDL 0.4	9	No	No
Diclofop-methyl (ug/L) - TW3	2020/03/23	<MDL 0.4	9	No	No
Dimethoate (ug/L) - TWc	2020/03/23	<MDL 0.06	20	No	No
Dimethoate (ug/L) - TW3	2020/03/23	<MDL 0.06	20	No	No
Diquat (ug/L) - TWc	2020/03/23	<MDL 1.0	70	No	No
Diquat (ug/L) - TW3	2020/03/23	<MDL 1.0	70	No	No
Diuron (ug/L) - TWc	2020/03/23	<MDL 0.03	150	No	No
Diuron (ug/L) - TW3	2020/03/23	<MDL 0.03	150	No	No
Glyphosate (ug/L) - TWc	2020/03/23	<MDL 1.0	280	No	No
Glyphosate (ug/L) - TW3	2020/03/23	<MDL 1.0	280	No	No
Malathion (ug/L) - TWc	2020/03/23	<MDL 0.02	190	No	No
Malathion (ug/L) - TW3	2020/03/23	<MDL 0.02	190	No	No
Metolachlor (ug/L) - TWc	2020/03/23	<MDL 0.01	50	No	No
Metolachlor (ug/L) - TW3	2020/03/23	<MDL 0.01	50	No	No
Metribuzin (ug/L) - TWc	2020/03/23	<MDL 0.02	80	No	No
Metribuzin (ug/L) - TW3	2020/03/23	<MDL 0.02	80	No	No
Monochlorobenzene (Chlorobenzene) (ug/L) - TWc	2020/03/23	<MDL 0.3	-	-	-
Monochlorobenzene (Chlorobenzene) (ug/L) - TW3	2020/03/23	<MDL 0.3	-	-	-
Paraquat (ug/L) - TWc	2020/03/23	<MDL 1.0	80	No	No
Paraquat (ug/L) - TW3	2020/03/23	<MDL 1.0	80	No	No
PCB (ug/L) - TWc	2020/03/23	<MDL 0.04	10	No	No
PCB (ug/L) - TW3	2020/03/23	<MDL 0.04	10	No	No
Pentachlorophenol (ug/L) - TWc	2020/03/23	<MDL 0.15	3	No	No
Pentachlorophenol (ug/L) - TW3	2020/03/23	<MDL 0.15	3	No	No
Phorate (ug/L) - TWc	2020/03/23	<MDL 0.01	60	No	No
Picloram (ug/L) - TWc	2020/03/23	<MDL 1.0	60	No	No
Prometryne (ug/L) - TWc	2020/03/23	<MDL 0.03	2	No	No
Prometryne (ug/L) - TW3	2020/03/23	<MDL 0.03	190	No	No
Simazine (ug/L) - TWc	2020/03/23	<MDL 0.01	1	No	No
Simazine (ug/L) - TW3	2020/03/23	<MDL 0.01	1	No	No
Terbufos (ug/L) - TWc	2020/03/23	<MDL 0.01	10	No	No
Terbufos (ug/L) - TW3	2020/03/23	<MDL 0.01	10	No	No
Tetrachloroethylene (ug/L) - TWc	2020/03/23	<MDL 0.35	1	No	No
Tetrachloroethylene (ug/L) - TW3	2020/03/23	<MDL 0.35	1	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TWc	2020/03/23	<MDL 0.2	30	No	No
2,3,4,6-Tetrachlorophenol (ug/L) - TW3	2020/03/23	<MDL 0.2	30	No	No
Triallate (ug/L) - TWc	2020/03/23	<MDL 0.01	100	No	No

Triallate (ug/L) - TW3	2020/03/23	<MDL 0.01	100	No	No
Trichloroethylene (ug/L) - TWc	2020/03/23	<MDL 0.44	230	No	No
Trichloroethylene (ug/L) - TW3	2020/03/23	<MDL 0.44	230	No	No
2,4,6-Trichlorophenol (ug/L) - TWc	2020/03/23	<MDL 0.25	50	No	No
2,4,6-Trichlorophenol (ug/L) - TW3	2020/03/23	<MDL 0.25	50	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TWc	2020/03/23	<MDL 0.12	5	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L) - TW3	2020/03/23	<MDL 0.12	5	No	No
Trifluralin (ug/L) - TWc	2020/03/23	<MDL 0.02	45	No	No
Trifluralin (ug/L) - TW3	2020/03/23	<MDL 0.02	45	No	No
Vinyl Chloride (ug/L) - TWc	2020/03/23	<MDL 0.17	2	No	No
Vinyl Chloride (ug/L) - TW3	2020/03/23	<MDL 0.17	2	No	No
DISTRIBUTION WATER					
Trihalomethane: Total (ug/L) Annual Average - DW	2020/01/01	33.85	100	No	No
HAA Total (ug/L) Annual Average - DW	2020/01/01	13.257	80	No	No

Lead Sampling

The Lead Sampling Program is required under O.Reg 170/03. This system qualified for the plumbing exemption. This facility is on a reduced sampling schedule and lead is sampled every 36 months, the last samples were taken in 2018.

Location	Date	Lead (mg/L)	pH	Alkalinity (mg/L) as CACO3
Hydrant #47	16-Mar-20	--	8.10	262
Hydrant #68	16-Mar-20	--	8.14	254
Hydrant #47	21-Sept-20	--	8.13	300
Hydrant #68	21-Sept-20	--	8.16	300

Maintenance Summary

OCWA uses a risk-based preventative maintenance framework that ensures assets are maintained to manufacturer's and/or industry standards. Maintenance is completed using various tools and operational supports.

OCWA uses a Workplace Maintenance System (WMS). WMS is a maintenance tracking system that can generate work orders as well as give summaries of completed and scheduled work. During the year, the operating authority at the facility generates scheduled work orders on a weekly, monthly and annual basis. The service work is recorded in the work order history. This ensures routine and preventive maintenance is carried out. Emergency and capital repair maintenance is completed and added to the system.

Preventative Maintenance Work Orders Completed	298
Operational Maintenance Work Orders Completed	19
Capital Maintenance Work Orders Completed	24

Capital projects are listed and provided to the The Township of Havelock-Belmont-Methuen in the form of a "Capital Forecast". This list is developed by facility staff and provides recommendations for facility components requiring upgrading or improvement.

QEMS

A S2 Surveillance Audit was conducted by QMI-SAI Canada Limited on April 16th, 2020. The Township of Havelock-Belmont-Methuen's Quality Management System conforms to the Standard.

Maintenance Highlights: major expenses incurred to install, repair or replace required equipment

Allan Bradley PLC - Well 1&4
Allan Bradley PLC - Well 3
Spare Turbidimeter
Isolated Frequency Transmittor/Receiver - Water Tower
Hallet UV Parts - Well 3
UV Parts - Well 1&4

Water Taking and Transfer Data

Data for the reporting period of January 1, 2020 - December 31, 2020 was submitted electronically to the Ministry of the Environment on Jan 29th, 2021 under Permit to Take Water PTTW 3448-9LMT5K.