

Bobcaygeon Drinking Water System

Waterworks # 210000318
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes

Operating Authorities:



OCWA



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 residents. The annual reports are available to residents free of charge at the City of Kawartha Lakes – Public Works Administration Office located at 12 Peel Street in Lindsay, Ontario. The reports are also available online at the [City of Kawartha Lakes website](http://www.kawarthalakes.ca). (www.kawarthalakes.ca)

Compliance Report Card

Drinking Water System Number: 210000318

Drinking Water System Name: Bobcaygeon WTP

Drinking Water System Owner: City of Kawartha Lakes

Drinking Water System Category: Large Municipal Residential

Period Being Reported: January 1, 2019 - December 31, 2019

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	October 2, 2019	Announced - Focused Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	1	March 21, 2019	Turbidity analyzer value held for maintenance to prevent false SCADA readings and alarms. Analyzer output not returned to 'normal' status after maintenance completed. Alarms still active through analyzer during event.
Number of Non-Compliances	0		
Number of Boil Water Advisories	0		

System Process Description

Raw Source

The Bobcaygeon WTP sources its water from the Big Bob River.

Treatment

The treatment system consists of the following:

- Three lowlifts
- SternPAC feed system with metering pumps
- Two solids re-circulating reactivator type flocculator/clarifier units in parallel which includes flash mixing, flocculation and sedimentation chambers
- Two dual media (anthracite/sand) high rate gravity filters in parallel
- Continuous online turbidity analyzers
- Sodium hypochlorite feed system with metering pumps
- Continuous online chlorine analyzers
- Four clear wells
- Ammonium sulfate feed system with metering pumps
- Continuous online flow meters
- Three highlifts
- Water storage standpipe with a capacity of 4400 m³
- One surge equalization tank for the sludge from the settling tanks and the backwash wastewater from the filters
- Standby power generator

Treatment Chemicals used during the reporting year:

Chemical Name	Use	Supplier
Sodium Hypochlorite	Disinfection	Brenntag
SternPAC	Coagulant	Kemira
Ammonium Sulphate	Chloramination	FloChem

Summary of Non-Compliance

Adverse Water Quality Incidents

Date	AWQI #	Location	Problem	Details	Legislation	Corrective Action Taken
March 21, 2019	145039	Filter Turbidity	Filter turbidity was not recorded at least once every 15 minutes while filters were in production	Turbidity analyzer value held for maintenance to prevent false SCADA readings and alarms. Analyzer output not returned to 'normal' status after maintenance completed. Alarms still active through analyzer during event.	O. Reg. 170/03 Schedule 6 Section 2	Analyzer values are now held on SCADA during maintenance. SCADA alerts operator that value has been held.

Non-Compliance

There were no non-compliances identified during the reporting period.

Non-Compliance Identified in a Ministry Inspection

There were no non-compliances identified in a Ministry Inspection during the reporting period.

Flows

The Bobcaygeon Drinking Water System is operating near or over half the rated capacity.

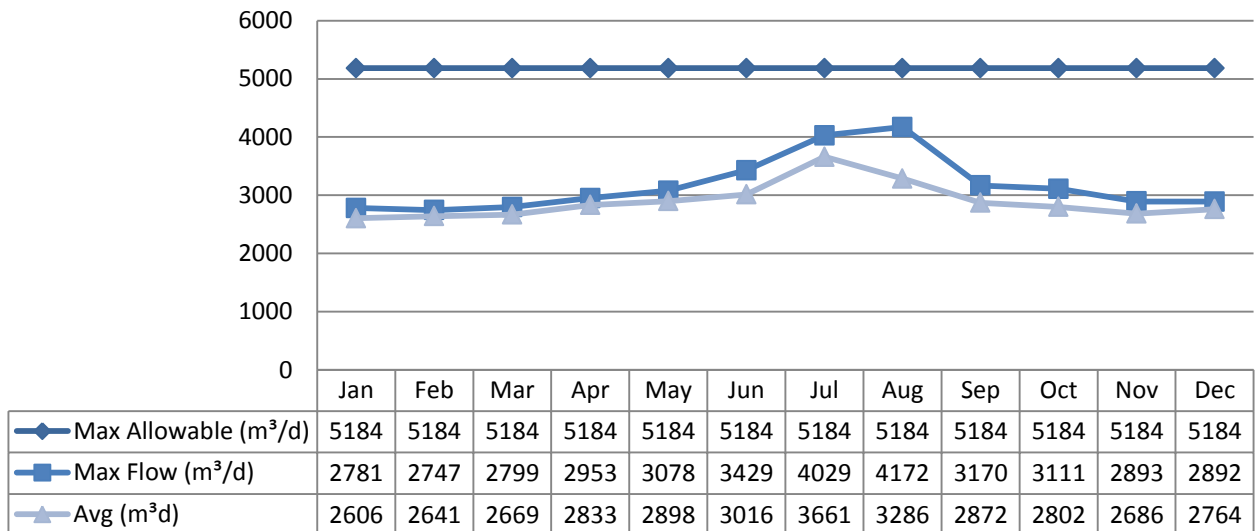
Issued: February 20, 2020

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 #7640-AQJHCV. The confirmation and a copy of the data that was submitted are attached in Appendix A.

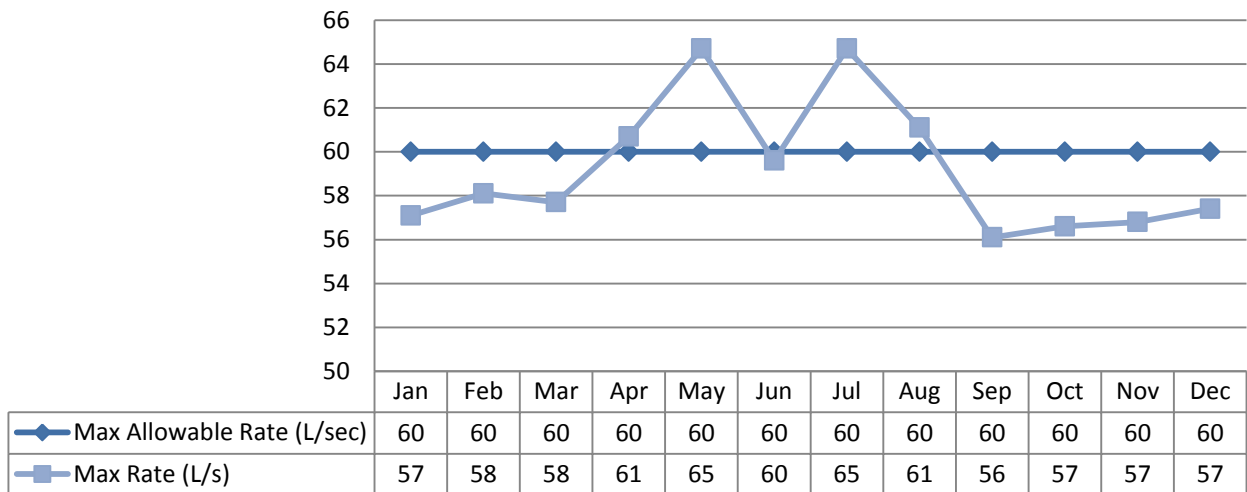
Total Monthly Flows (m³/d)

Max Allowable PTTW- Raw



Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Raw



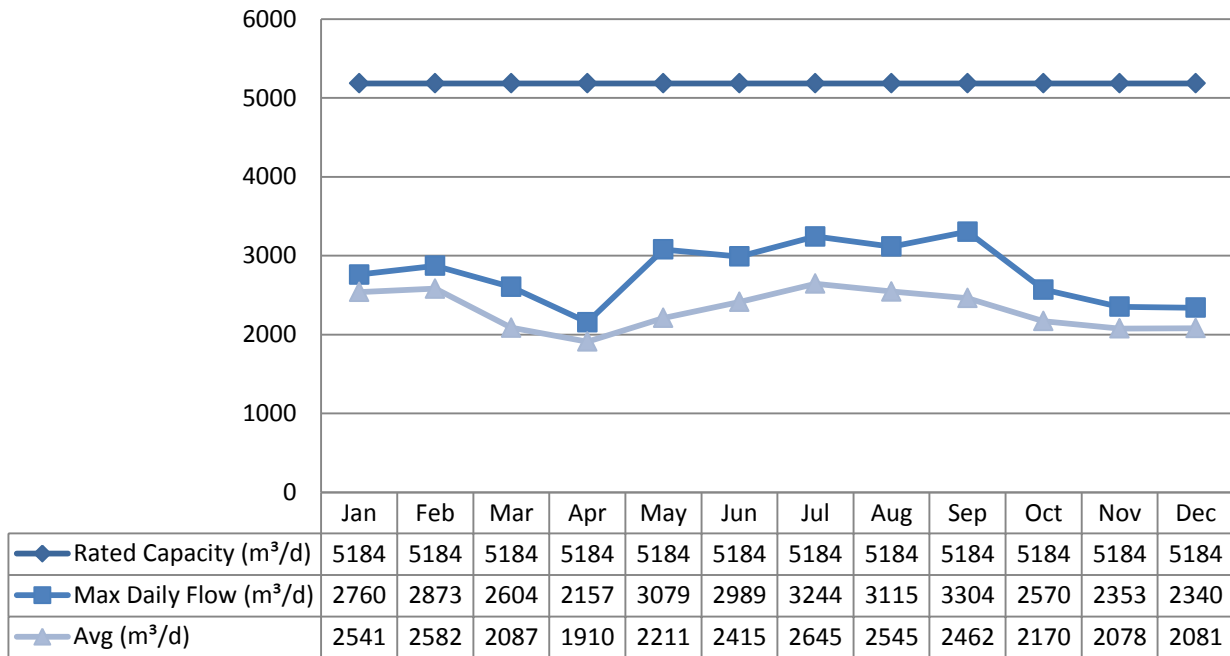
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) which were short in duration. The scheduled Flow Meter calibration was in July.

Treated Water Flows

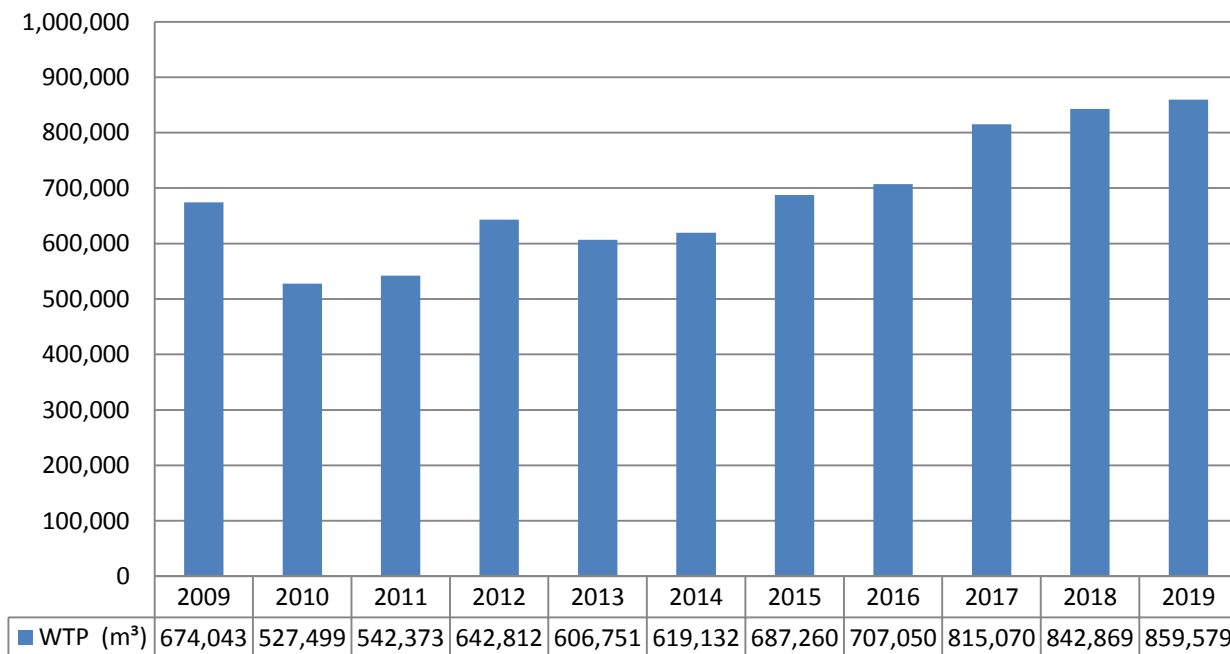
The Treated Water flows are regulated under the Municipal Licence.

Monthly Rated Flows

Rated Capacity - MDWL

**Annual Total Flow Comparison**

Total Annual m³



Regulatory Sample Results Summary

Microbiological Testing

Location	No. of Samples Collected	Range of E.coli Results	Range of E.coli Results	Range of Total Coliform Results	Range of Total Coliform Results	Range of HPC Results	Range of HPC Results
		Min	Max	Min	Max	Min	Max
Raw	53	0	20	7	2740		
Treated	52	0	0	0	0	0	2
Distribution	159	0	0	0	0	0	39

Operational Testing

Location	No. of Samples Collected	Range of Results (MIN)	Range of Results (MAX)
Turbidity Raw	59	0.49	1.71
Turbidity Filter 1	8760	0	2
Turbidity Filter 2	8760	0	1.99
Chlorine	8760	0	5.91
Fluoride (If the DWS provides fluoridation)	N/A	N/A	N/A

Note: Record the unit of measure if it is **not** milligrams per litre.

Note: For continuous monitors 8760 is used as the number of samples. 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 5 years. Nitrate and Nitrite are tested quarterly and the metals are tested annually 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
- MDL = Method Detection Limit

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances (MIN)	No. of Exceedances (MAX)
Treated Water					
Antimony: Sb (ug/L)	2019/01/08	0.03	6.0	No	No
Arsenic: As (ug/L)	2019/01/08	0.2	10.0	No	No
Barium: Ba (ug/L)	2019/01/08	21.9	1000.0	No	No
Boron: B (ug/L)	2019/01/08	13.0	5000.0	No	No

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances (MIN)	No. of Exceedances (MAX)
Cadmium: Cd (ug/L)	2019/01/08	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L)	2019/01/08	0.12	50.0	No	No
Mercury: Hg (ug/L)	2019/01/08	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L)	2019/01/08	<MDL 0.04	50.0	No	No
Uranium: U (ug/L)	2019/01/08	0.013	20.0	No	No
Additional Inorganics					
Fluoride (mg/L)	2018/01/08	<MDL 0.06	1.5	No	No
Nitrite (mg/L)	2019/01/08	0.006	1.0	No	No
Nitrite (mg/L)	2019/04/09	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2019/07/08	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2019/10/07	<MDL 0.003	1.0	No	No
Nitrate (mg/L)	2019/01/08	0.316	10.0	No	No
Nitrate (mg/L)	2019/04/09	0.364	10.0	No	No
Nitrate (mg/L)	2019/07/08	0.105	10.0	No	No
Nitrate (mg/L)	2019/10/07	0.05	10.0	No	No
Sodium: Na (mg/L)	2018/01/08	8.54	20*	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.

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	No. of Sampling Points	No. of Samples	Range of Results (MIN)	Range of Results (MAX)	MAC	No. of Exceedances
Alkalinity (mg/L)	6	6	60	67	N/A	N/A
pH	6	6	7.25	8.21	N/A	N/A
Lead (ug/l)	N/A	N/A				

Organic Parameters

These parameters are tested annually 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.

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances (MAC)	No. of Exceedances (1/2 MAC)
Treated Water					
Alachlor (ug/L)	2019/01/08	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L)	2019/01/08	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L)	2019/01/08	<MDL 0.05	20.0	No	No
Benzene (ug/L)	2019/01/08	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L)	2019/01/08	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L)	2019/01/08	<MDL 0.33	5.0	No	No
Carbaryl (ug/L)	2019/01/08	<MDL 0.05	90.0	No	No
Carbofuran (ug/L)	2019/01/08	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L)	2019/01/08	<MDL 0.16	2.0	No	No
Chlorpyrifos (ug/L)	2019/01/08	<MDL 0.02	90.0	No	No
Diazinon (ug/L)	2019/01/08	<MDL 0.02	20.0	No	No
Dicamba (ug/L)	2019/01/08	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L)	2019/01/08	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L)	2019/01/08	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L)	2019/01/08	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L)	2019/01/08	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L)	2019/01/08	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L)	2019/01/08	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2019/01/08	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L)	2019/01/08	<MDL 0.4	9.0	No	No
Dimethoate (ug/L)	2019/01/08	<MDL 0.03	20.0	No	No
Diquat (ug/L)	2019/01/08	<MDL 1.0	70.0	No	No
Diuron (ug/L)	2019/01/08	<MDL 0.03	150.0	No	No
Glyphosate (ug/L)	2019/01/08	<MDL 1.0	280.0	No	No
Malathion (ug/L)	2019/01/08	<MDL 0.02	190.0	No	No
Metolachlor (ug/L)	2019/01/08	<MDL 0.01	50.0	No	No
Metribuzin (ug/L)	2019/01/08	<MDL 0.02	80.0	No	No
Monochlorobenzene	2019/01/08	<MDL 0.3	80.0	No	No

Parameter	Sample Date (yyyy/mm/dd)	Sample Result	MAC	No. of Exceedances (MAC)	No. of Exceedances (1/2 MAC)
(Chlorobenzene) (ug/L)					
Paraquat (ug/L)	2019/01/08	<MDL 1.0	10.0	No	No
PCB (ug/L)	2019/01/08	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L)	2019/01/08	<MDL 0.15	60.0	No	No
Phorate (ug/L)	2019/01/08	<MDL 0.01	2.0	No	No
Picloram (ug/L)	2019/01/08	<MDL 1.0	190.0	No	No
Prometryne (ug/L)	2019/01/08	<MDL 0.03	1.0	No	No
Simazine (ug/L)	2019/01/08	<MDL 0.01	10.0	No	No
Terbufos (ug/L)	2019/01/08	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L)	2019/01/08	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	2019/01/08	<MDL 0.2	100.0	No	No
Triallate (ug/L)	2019/01/08	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L)	2019/01/08	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L)	2019/01/08	<MDL 0.25	5.0	No	No
2-methyl-4- chlorophenoxyacetic acid (MCPA) (ug/L)	2019/01/08	<MDL 0.12	100.0	No	No
Trifluralin (ug/L)	2019/01/08	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L)	2019/01/08	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2019	52.0	100.0	No	Yes
HAA Total (ug/L) Annual Average - DW	2019	38.375	80.0*	No	No

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

MDL = Method Detection Limit

Additional Legislated Samples

There was no additional sampling required.

Major Maintenance Summary incurred to install, repair or replace required equipment

WO #	Description
1380662	Static Mixer, Gear Drive, Repair/Replace
1219986	Refurbish Backwash Actuator Valve V205
1301238	Filter 2 Waste Valve, Replace

Appendix A

WTRS Data and Submission Confirmation

Water Taking Data submitted successfully.

Confirmation:

Thank you for submitting your water taking data online.

Permit Number: 7640-AQJHCV

Permit Holder: THE CORPORATION OF THE CITY OF KAWARTHA LAKES.

Received on: Feb 5, 2020 1:25 PM

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.