

Bobcaygeon Drinking Water System

Waterworks # 210000318
System Category – Large Municipal Residential

Annual Water Report

Prepared For: The City of Kawartha Lakes
Reporting Period of January 1st – December 31st 2020

Issued: February 10, 2021

Revision: 0

Operating Authorities:



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

Table of Contents

Annual Water Report	1
Report Availability	1
Compliance Report Card	1
System Process Description	1
Raw Source	1
Treatment	1/2
Treatment Chemicals used during the reporting year:	2
Summary of Non-Compliance	2
Adverse Water Quality Incidents	2
Non-Compliance	2
Non-Compliance Identified in a Ministry Inspection:	2
Flows	2
Raw Water Flows	2
Total Monthly Flows (m ³ /d)	3
Monthly Rated Flows (L/s)	3
Treated Water Flows	4
Monthly Rated Flows	4
Annual Total Flow Comparison	4/5
Regulatory Sample Results Summary	5
Microbiological Testing	5
Operational Testing	5
Inorganic Parameters	6
Schedule 15 Sampling:	7
Organic Parameters	7-9
Additional Legislated Samples	10
Major Maintenance Summary	10
WTRS Data and Submission Confirmation	A

Report Availability

This system does not serve more than 10,000 residences. The annual reports are available to residents free of charge at the City of Kawartha Lakes – Public Works Administration Office located at 322 Kent Street West in Lindsay, Ontario. The reports are also available online at the [Water and Wastewater pages of the City of Kawartha Lakes website](#).

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, 2020 - December 31, 2020

	# of Events	Date	Details
Health & Safety			
Number of Incidents	0		
Drinking Water			
MECP Inspections	1	September 9, 2020	Announced - Focused Drinking Water Inspection - Final Inspection Rating of 100%
AWQI's	0		
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

There were no Adverse Water Quality Incidents reported during the reporting period.

Non-Compliance

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

Non-Compliance Identified in a Ministry Inspection:

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

Flows

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

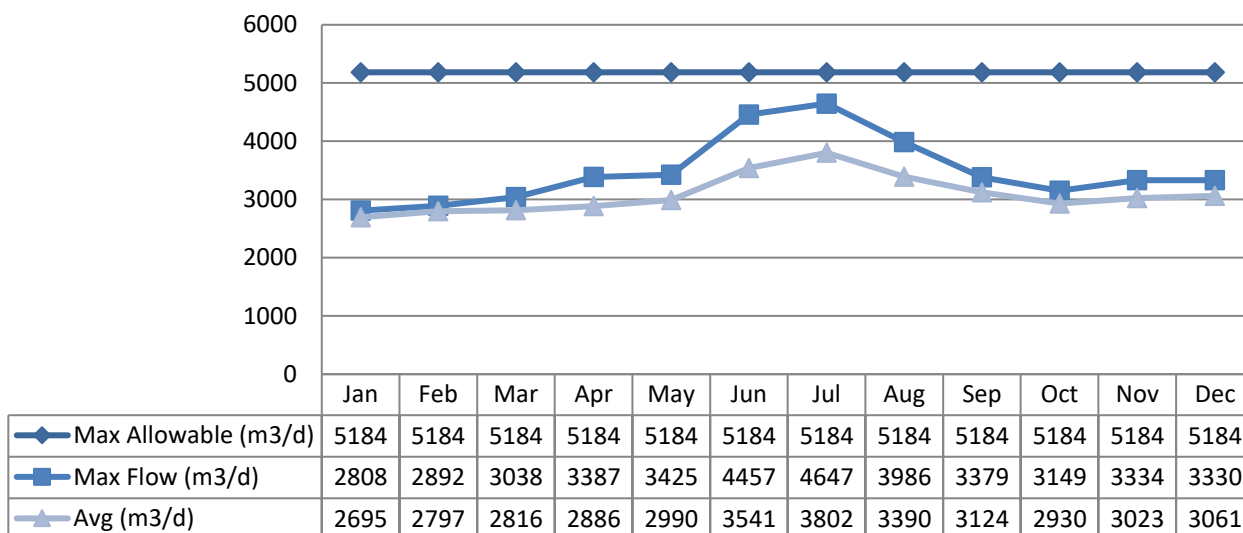
Raw Water Flows

The Raw Water flows are regulated under the Permit to Take Water. 2020 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.

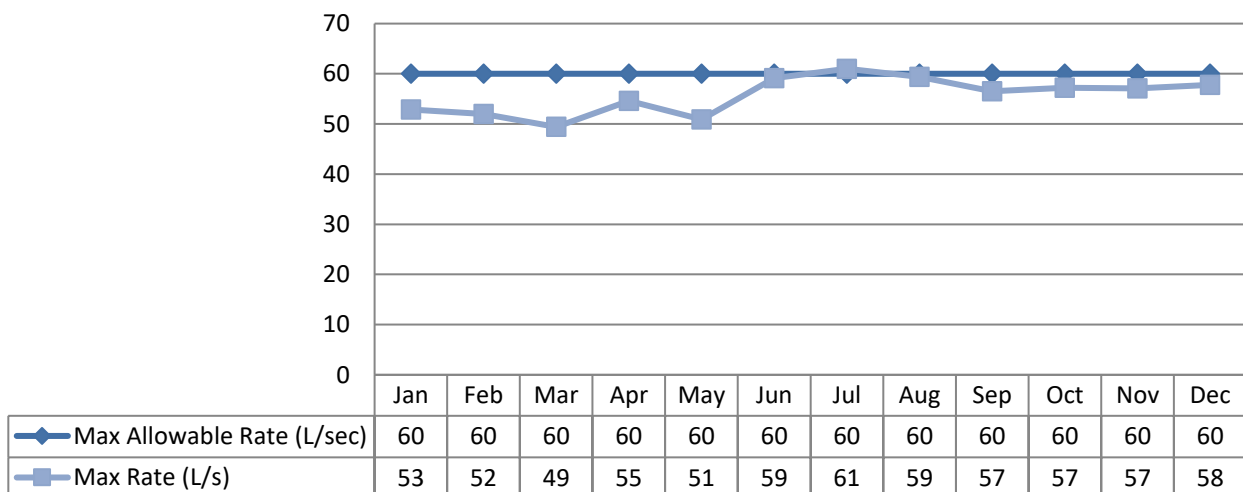
Total Monthly Flows (m3/d)

Max Allowable PTTW- Raw



Monthly Rated Flows (L/s)

Max allowable rate – PTTW- Raw



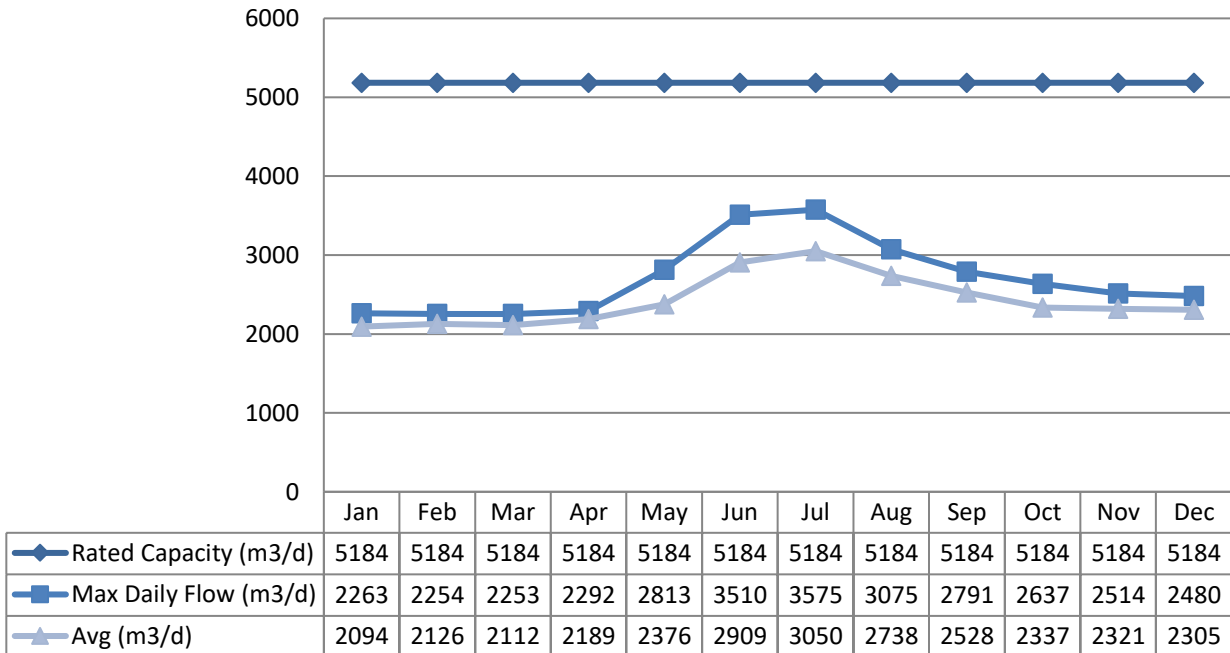
Note: The above table shows there were exceedances in instantaneous peak flow rate (L/s) which were short in duration. The scheduled Flow Meter calibration was in August.

Treated Water Flows

The Treated Water flows are regulated under the Municipal Licence.

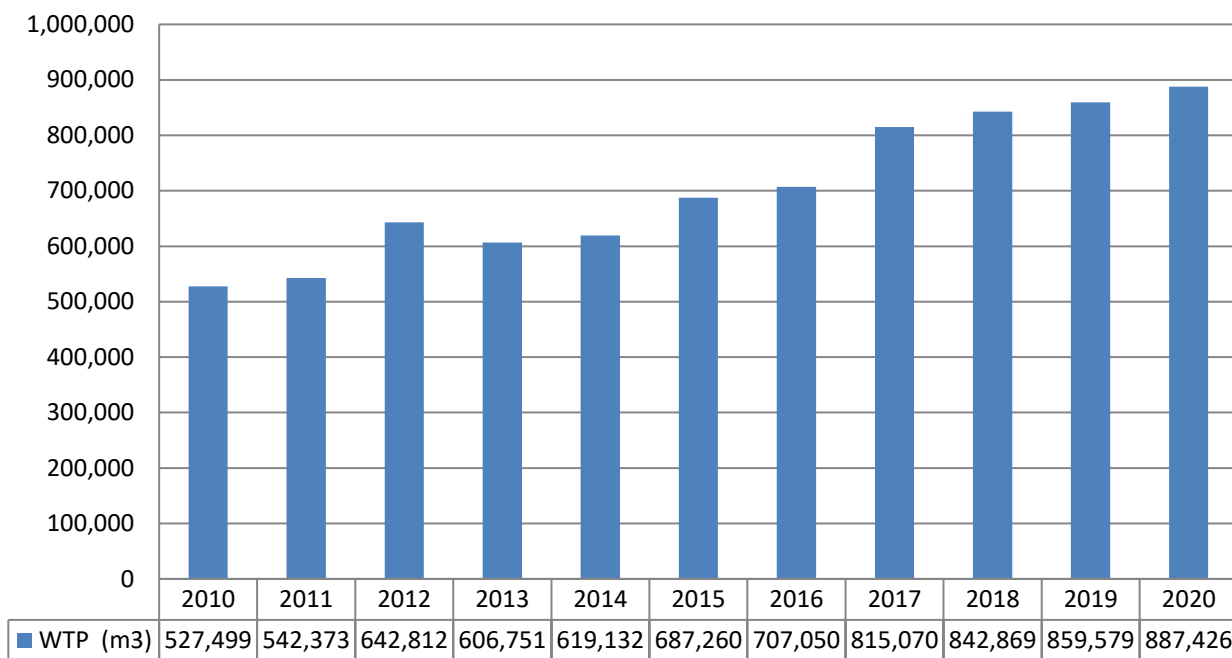
Monthly Rated Flows (m3/d)

Rated Capacity - MDWL



Annual Total Flow Comparison (m3)

Total Annual



Regulatory Sample Results Summary

Microbiological Testing

	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	52	0	45	5	1120		
Treated	52	0	0	0	0	0	43
Distribution	156	0	0	0	0	0	43

Operational Testing

	No. of Samples Collected	Range of Results	Range of Results
		Minimum	Maximum
Turbidity Raw	60	0.44	1.61
Turbidity Filter 1	8760	0	1.54
Turbidity Filter 2	8760	0.024	1.19
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 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

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Results	MAC	No. Of Exceedances	
				MAC	1/2 MAC
Antimony: Sb (ug/L)	2020/01/06	<MDL 0.09	6.0	No	No
Arsenic: As (ug/L)	2020/01/06	<MDL 0.2	10.0	No	No
Barium: Ba (ug/L)	2020/01/06	20.5	1000.0	No	No
Boron: B (ug/L)	2020/01/06	6.0	5000.0	No	No
Cadmium: Cd (ug/L)	2020/01/06	<MDL 0.003	5.0	No	No
Chromium: Cr (ug/L)	2020/01/06	0.35	50.0	No	No
Mercury: Hg (ug/L)	2020/01/06	<MDL 0.01	1.0	No	No
Selenium: Se (ug/L)	2020/01/06	<MDL 0.04	50.0	No	No
Uranium: U (ug/L)	2020/01/06	0.004	20.0	No	No
Additional Inorganics					
Fluoride (mg/L)	2018/01/08	<MDL 0.06	1.5	No	No
Nitrite (mg/L)	2020/01/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2020/04/14	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2020/07/06	<MDL 0.003	1.0	No	No
Nitrite (mg/L)	2020/10/05	<MDL 0.003	1.0	No	No

Treated Water Parameter	Sample Date (yyyy/mm/dd)	Sample Results	MAC	No. Of Exceedances	No. Of Exceedances
Nitrate (mg/L)	2020/01/06	0.098	10.0	No	No
Nitrate (mg/L)	2020/04/14	0.533	10.0	No	No
Nitrate (mg/L)	2020/07/06	0.084	10.0	No	No
Nitrate (mg/L)	2020/10/05	0.035	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	Range of Results	MAC (µg/L)	No. Of Exceedances
			MIN	MAX		
Alkalinity (mg/L)	6	6	59	66	N/A	N/A
pH	6	6	7.18	7.68	N/A	N/A
Lead (µg/l)	6	6	0.05	0.24	10	0

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 Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Alachlor (ug/L)	2020/01/06	<MDL 0.02	5.0	No	No
Atrazine + N-dealkylated metabolites (ug/L)	2020/01/06	<MDL 0.01	5.0	No	No
Azinphos-methyl (ug/L)	2020/01/06	<MDL	20.0	No	No

Parameter Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
		0.05			
Benzene (ug/L)	2020/01/06	<MDL 0.32	1.0	No	No
Benzo(a)pyrene (ug/L)	2020/01/06	<MDL 0.004	0.01	No	No
Bromoxynil (ug/L)	2020/01/06	<MDL 0.33	5.0	No	No
Carbaryl (ug/L)	2020/01/06	<MDL 0.05	90.0	No	No
Carbofuran (ug/L)	2020/01/06	<MDL 0.01	90.0	No	No
Carbon Tetrachloride (ug/L)	2020/01/06	<MDL 0.17	2.0	No	No
Chlorpyrifos (ug/L)	2020/01/06	<MDL 0.02	90.0	No	No
Diazinon (ug/L)	2020/01/06	<MDL 0.02	20.0	No	No
Dicamba (ug/L)	2020/01/06	<MDL 0.2	120.0	No	No
1,2-Dichlorobenzene (ug/L)	2020/01/06	<MDL 0.41	200.0	No	No
1,4-Dichlorobenzene (ug/L)	2020/01/06	<MDL 0.36	5.0	No	No
1,2-Dichloroethane (ug/L)	2020/01/06	<MDL 0.35	5.0	No	No
1,1-Dichloroethylene (ug/L)	2020/01/06	<MDL 0.33	14.0	No	No
Dichloromethane (Methylene Chloride) (ug/L)	2020/01/06	<MDL 0.35	50.0	No	No
2,4-Dichlorophenol (ug/L)	2020/01/06	<MDL 0.15	900.0	No	No
2,4-Dichlorophenoxy acetic acid (2,4-D) (ug/L)	2020/01/06	<MDL 0.19	100.0	No	No
Diclofop-methyl (ug/L)	2020/01/06	<MDL 0.4	9.0	No	No
Dimethoate (ug/L)	2020/01/06	<MDL 0.06	20.0	No	No
Diquat (ug/L)	2020/01/06	<MDL 1.0	70.0	No	No
Diuron (ug/L)	2020/01/06	<MDL 0.03	150.0	No	No
Glyphosate (ug/L)	2020/01/06	<MDL 1.0	280.0	No	No
Malathion (ug/L)	2020/01/06	<MDL 0.02	190.0	No	No

Parameter Treated Water	Sample Date (yyyy/mm/dd)	Sample Result	MAC	Number of Exceedances	
				MAC	1/2 MAC
Metolachlor (ug/L)	2020/01/06	<MDL 0.01	50.0	No	No
Metribuzin (ug/L)	2020/01/06	<MDL 0.02	80.0	No	No
Monochlorobenzene (Chlorobenzene) (ug/L)	2020/01/06	<MDL 0.3	80.0	No	No
Paraquat (ug/L)	2020/01/06	<MDL 1.0	10.0	No	No
PCB (ug/L)	2020/01/06	<MDL 0.04	3.0	No	No
Pentachlorophenol (ug/L)	2020/01/06	<MDL 0.15	60.0	No	No
Phorate (ug/L)	2020/01/06	<MDL 0.01	2.0	No	No
Picloram (ug/L)	2020/01/06	<MDL 1.0	190.0	No	No
Prometryne (ug/L)	2020/01/06	<MDL 0.03	1.0	No	No
Simazine (ug/L)	2020/01/06	<MDL 0.01	10.0	No	No
Terbufos (ug/L)	2020/01/06	<MDL 0.01	1.0	No	No
Tetrachloroethylene (ug/L)	2020/01/06	<MDL 0.35	10.0	No	No
2,3,4,6-Tetrachlorophenol (ug/L)	2020/01/06	<MDL 0.2	100.0	No	No
Triallate (ug/L)	2020/01/06	<MDL 0.01	230.0	No	No
Trichloroethylene (ug/L)	2020/01/06	<MDL 0.44	5.0	No	No
2,4,6-Trichlorophenol (ug/L)	2020/01/06	<MDL 0.25	5.0	No	No
2-methyl-4-chlorophenoxyacetic acid (MCPA) (ug/L)	2020/01/06	<MDL 0.12	100.0	No	No
Trifluralin (ug/L)	2020/01/06	<MDL 0.02	45.0	No	No
Vinyl Chloride (ug/L)	2020/01/06	<MDL 0.17	1.0	No	No
Distribution Water					
Trihalomethane: Total (ug/L) Annual Average - DW	2020/01/01	41.0	100.0	No	No
HAA Total (ug/L) Annual Average - DW	2020/01/01	34.325	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
1584791	Replace V105 Actuator
1792233	Replace Total Chlorine Analyzer
1535560	Ammonia Sulphate Pump 1, Replace
1535561	Ammonia Sulphate Pump 2, Replace
1958183	Install Heater in Washroom
2000353	Replace South Filter Room Exhaust Fan
1709816	Replace Roof Downspout

Appendix A

WTRS Data and Submission Confirmation



Ministry of the Environment,
Conservation and Parks

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WTRS-WT-008

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: Jan 26, 2021 10:06 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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