



00	02-25-2020	Issued for Information	PL	PL	PL	
Rev	Date	DESCRIPTION	MADE	CHECKED	APPR'D	
						
SAINT JOHN SAFE CLEAN DRINKING WATER PROJECT						
						
<p>PRIMARY INFRASTRUCTURE - COMPONENT 1-1 & 2-1 ANNUAL OPERATIONS REPORT <i>January 1, 2019-December 31, 2019</i></p>						
Project Code	Company Code	Area Code	Discipline Code	Document Type	Document N°	Rev
SCDWP	PCWS	1-1/2-1	OP	RP	00001	00



Drinking-Water Systems Annual Report 2019

Table of Contents

Annual Report Requirements & System Information	3
System Information	3
Describe your Drinking-Water System	5
List all water treatment chemicals used over this reporting period.....	6
Provide details on the Operator training, certification, staff changes in accordance with Approval to Operate W-1673.	7
Provide details on the notices submitted in accordance with Approval to Operate W-1673 and reported to NBDELG or DOH.	8
Microbiological testing done during this reporting period (January 1 to December 31, 2019)	8
Operational testing done during the period covered by this Annual Report (January 1 to December 31, 2019).....	9
Summary of Water production. (January 1 st , 2019 to December 31, 2019) as per the requirement of contract and approval #W-1673.	10
Summary of on-line testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.....	11
Summary of Inorganic parameters tested during this reporting period or the most recent sample results.....	12
Summary of Organic parameters sampled during this reporting period or the most recent sample results.....	19
List any Inorganic or Organic parameter(s) that exceeded MAC, IMAC or over half MAC of the CDWQG, NBDWG or HAL limits in Water Quality Standards.	23
Summary of Public Relations (Notifications & Public Education & Tours) during this reporting period (January 1 st , 2019 – December 31 st , 2019).	23
Summary of Backflow prevention activities during this reporting period (January 1 st , 2019 – December 31 st , 2019).	24
List of Abbreviations:.....	25

Annual Report Requirements & System Information

Approval to Operate Annual Report Requirements W-1673:

**The Approval Holder shall submit an annual report for the reporting period of January to December to the Director, no later than March 1st of the following year. The report shall include the following (if applicable):*

- a) Monitoring results (daily/ weekly/ monthly data such as free chlorine residual, turbidity, pH, temperature, Mn, Fe, etc.);(Range of results summary)*
- b) Monthly water production in m3;*
- c) Operational highlights (significant incidents & system improvements, changes or additions)*
- d) Alarm log; (Alarms reportable were done under “notices” during this reporting period).*
- e) Summary of backflow prevention and cross-connection control activities; (BPV’s in plant tested and certified. There are no known cross connections in the system)*
- f) Summary of flushing activities; (No flushing activities took place during the reporting period)*
- g) Operator information (training, certification & staffing changes);*
- h) Public relations (notifications & public education);*
- i) list of new extensions and/or renewals complete with analytical results (microbiological, organic & inorganic); (No new extensions and/or renewals were conducted during the reporting period)*
- j) Additional comments.*

System Information

Drinking-Water Approval Number:	W-1673
Drinking-Water System Name:	Loch Lomond Water Treatment Plant
Drinking-Water System Owner:	The City of Saint John
Drinking-Water System Category:	Water Treatment Class IV
Period being reported:	January 1-December 31, 2019



Drinking-Water Systems Annual Report 2019

Does your Drinking-Water System serve more than 10,000 people?
 Yes [] No []

Is your annual report available to the public at no charge on a web site on the Internet?
 Yes [] No []

Location where Report will be available for inspection.

City of Saint John Web Page
 or hard copies by request to PCWS at
 55 Latimore Lake Road, Saint John NB
 E2N 1W6

List all Drinking-Water Systems (if any), which receive all of their drinking water from your system:

Drinking Water System Name	Drinking Water System Approval Number
Saint John East Distribution System	W-1332

Did you provide a copy of your annual report to all Drinking-Water System owners that are connected to you and to whom you provide all of its drinking water?
 Yes [] No []

Indicate how you notified system users that your annual report is available, and is free of charge.

- [X] Public access/notice via the web (City web page)
- [] Public access/notice via Government Office
- [] Public access/notice via a newspaper
- [] Public access/notice via Public Request
- [] Public access/notice via a Public Library
- [X] Public access/notice via other method

Describe your Drinking-Water System

The Loch Lomond WTP is categorized as a Class IV WT plant operated by PCWS under Approval to Operate # W-1673 issued August 24, 2018. The Loch Lomond WTP is the new drinking water treatment facility supplying Saint John East customers in 2019; (Approximately 55,000) residential, business and industrial. Treatment is in the form of surface water received from Latimore Lake Reservoir intakes (City operated) through two (2) large raw water transmission mains feeding the plant. The treatment plant consists of four (4) lines or ‘trains’; each line incorporates a flash mix tank, floc tank, DAF and filter. Each “train” is capable of 25MLD flow rates. The total plant maximum treatment design rate is for 75MLD.

The treatment consists of alkalinity and pH adjustment through lime and CO₂, with pre-oxidation of metals with Potassium Permanganate. This raw inlet water is then chemically assisted to coagulate and flocculate the fine suspended organic and inorganic particulates with coagulant and polymer. This coagulated water passes through a flash mix chamber, flocculation basins and the solids removal is obtained via Dissolved Air Flotation units (DAF’s). The effluent water from the DAF’s is then directed onto multi media filters (4) where final solids removal is performed. The filtered water then flows through a chlorine contact chamber (baffled) where primary chlorination is achieved.

The treated water at this point is then pH adjusted and corrosion inhibitor applied to protect the City network. Caustic Soda is used for pH adjustment and Zinc Orthophosphate used as a corrosion inhibitor. This water is then pumped via high lift pumps (4) through UV Trojan disinfection (as needed) to the storage tanks (3) each consisting of 11,000m³ volume. The water from the tanks then flows through Treated water meters on supply lines (2) to Lakewood Heights and Hickey Road where secondary chlorination occurs to ensure proper residuals for City network.

There are several auxiliary possesses consisting of plant service water pumps (2), potable water feed pumps (3), backwash pumps (2), and blowers and compressors for treatment. There is also sludge pumps (2), backwash waste pumps (2) and sewer pumps (2) along with flow metering for process lines and systems.

Staffing consists of a Plant Manager, Maintenance/Operations Manager, and five (5) Operators.



Drinking-Water Systems Annual Report 2019

List all water treatment chemicals used over this reporting period

- Lime
- CO₂
- KMNO₄
- Orthophosphate (Corrosion inhibitor)
- Sodium Hydroxide (Caustic)
- Sodium Hypochlorite (Bleach/Chlorine)
- PAX XL1900 (Coagulant)
- Polymer (Magnafloc 27AG)
- Polymer (Sludge dewatering LT22S & Zetag)

Were any significant expenses incurred to?

N/A

- Install required equipment
- Repair required equipment
- Replace required equipment

Please provide a brief description and a breakdown of monetary expenses incurred.

NONE, NEW FACILITY



Drinking-Water Systems Annual Report 2019

Provide details on the Operator training, certification, staff changes in accordance with Approval to Operate W-1673.

Name	Certification	Training Hours/CEU	Other Details
Peter Larsen	WT IV/ WD IV/ WWT IV/ WWC IV	74 hrs	Ops Meeting safety(30), Confined space (16), Fall arrest (8), Overhead Crane (4), Annual ACWWA Conference (16)
Shon Karolic	WT III	58 hrs	Ops Meeting safety (30), Fall arrest (8), Confined Space (16), Overhead Crane (4)
Brenda MacKinnon	WT III	110 hrs	Ops Meeting safety (30), On site WT course (32) Confined Space (16), Fall arrest (16), Annual ACWWA conference (16)
Andrew Barnard (Resigned September 2019)	Cal State WT Course I & II	232 hrs 18 CEU's	Cal State WT I&II course certificates (180), Basic WT course (32), Ops Meeting safety (20)
Travis Keenan	WT I, Cal State WT Course I&II	298 hrs 18 CEU's	Cal State WT I&II course certificates (180), Basic WT course (32), On site WT course (32), Ops meeting safety (30), Confined Space (16), Fall Protection (8)
Thomas Grant	WT I, Cal State WT Course I&II	202 hrs 18 CEU's	Cal State WT I&II course certificate (180), Basic WT course (32), On site WT course (32), Confined Space (16), Fall Protection (8), Overhead Crane Training (4), Ops meeting safety (30)
Robert Theriault	WT I, Cal State WT Course I&II	276 hrs, 18 CEU's	Cal State WT I&II course certificates (180), On site WT course (32), Confined Space (16), Fall Protection (8), Ops meeting safety (30)



Drinking-Water Systems Annual Report 2019

Provide details on the notices submitted in accordance with Approval to Operate W-1673 and reported to NBDELG or DOH.

Incident: Date / number	Parameter	Result	Unit of Measure	Corrective Action	Corrective Action Date
June 17, 2019	Low chlorine contact tank	<0.02 mg/L	mg/L	Provided notification to Medical Officer of Health and NBDELG and City water department. Rectified equipment issues and verified TW results well within limits. No further action required	June 15, 2019
December 30, 2019	Low chlorine contact tank	<0.02 mg/L	mg/L	Provided notification to Medical Officer of Health and NBDELG and City water department. Rectified equipment issues and verified TW results well within limits. No further action required	Dec 30, 2019

Microbiological testing done during this reporting period (January 1 to December 31, 2019)

Water Type	Number of Samples	Range of E.Coli or Fecal Results (min #)-(max #)	Range of Total Coliform Results (min #)-(max #) as cfu/100 ml	Number of HPC Samples (Background) as cfu/ml	Range of HPC Results (Background) (min #)-(max #)
Raw Water	52	0 to 4	2 to TNTC	Not applicable.	Not applicable.
Treated Lakewood Heights	52	0 to 0	0 to 0	31	0 to 1179
Treated Hickey Road	52	0 to 0	0 to 0	30	0 to 242



Drinking-Water Systems Annual Report 2019

Operational testing done during the period covered by this Annual Report (January 1 to December 31, 2019)

Parameter (RW & FW)	Number of Grab Samples #	Range of Results (min #)-(max #)
Turbidity (NTU)		
RW	729	0.370 – 32.40
FW	729	0.024 – 0.125
pH		
RW	729	5.59 – 7.37
FW	729	7.10 – 7.80
Cl₂ (mg/L free)		
FW	729	0.64 – 1.45
CL₂ (mg/l free) TW		
Hickey Road line	729	0.86 – 1.70
Lakewood Heights Line	720	0.97 – 1.46
Alkalinity (mg/L)		
RW	729	6.4 – 12.6
FW	729	23.2 – 33.6

NOTE: Other process analysis results obtained as part of operational controls are available at WTP as required.



Drinking-Water Systems Annual Report 2019

Summary of Water production. (January 1st, 2019 to December 31, 2019) as per the requirement of contract and approval #W-1673.

Date	Water Produced M³
January 2019	1,336,000
February 2019	1,245,540
March 2019	1,410,500
April 2019	1,314,500
May 2019	1,250,850
June 2019	1,037,850
July 2019	1,046,070
August 2019	1,087,130
September 2019	981,880
October 2019	974,700
November 2019	932,160
December 2019	1,006,900

Summary of on-line testing and sampling carried out in accordance with the requirement of an approval, order or other legal instrument.

Parameter	Unit of Measure	Number of Samples (Jan 1, 2019-Dec 31, 2019)	Range of Results (min#-max#)
Filter Turbidity#1	NTU	8760	0.018 – 2.134
Filter Turbidity#2	NTU	8760	0.018 – 1.465
Filter Turbidity#3	NTU	8760	0.019 – 1.689
Filter Turbidity#4	NTU	8760	0.018 – 1.268
FW Turbidity	NTU	8760	0.021 – 0.351
FW pH	pH	8760	7.13 – 7.81
TW CL ₂ free Hickey Road Lakewood Heights	mg/L	8760	0.98 – 2.59 0.93 – 1.94

*NOTE: Record the unit of measure if it is not milligrams per litre.
NOTE: For continuous monitors use 8760 as the number of samples/year.*

Summary of Inorganic parameters tested during this reporting period or the most recent sample results

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Aluminium	Standard –	MAC 0.100	mg/L	
Raw Water	Jan 17.19	0.284	mg/L	NONE
Treated Water		0.008	mg/L	
Raw Water	Sept 17.19	0.077	mg/L	NONE
Treated Water		0.009	mg/L	
Antimony	Standard –	IMAC 0.006	mg/L	
Raw Water	Jan 17.19	<0.002	mg/L	NONE
Treated Water		<0.002	mg/L	
Raw Water	Sept 17.19	<0.002	mg/L	NONE
Treated Water		<0.002	mg/L	
Arsenic	Standard -	IMAC 0.010	mg/L	
Raw Water	Jan 17.19	<0.001	mg/L	NONE
Treated Water		<0.001	mg/L	
Raw Water	Sept 17.19	<0.001	mg/L	NONE
Treated Water		<0.001	mg/L	
Barium	Standard -	MAC 1.0	mg/L	
Raw Water	Jan 17.19	<0.010	mg/L	NONE
Treated Water		<0.010	mg/L	
Raw Water	Sept 17.19	0.010	mg/L	NONE
Treated Water		<0.010	mg/L	
Boron	Standard -	IMAC 5.0	mg/L	
Raw Water	Jan 17.19	<0.1	mg/L	NONE
Treated Water		<0.1	mg/L	
Raw Water	Sept 17.19	<0.1	mg/L	NONE
Treated Water		<0.1	mg/L	

Drinking-Water Systems Annual Report 2019

Cadmium	Standard -	MAC 0.005	mg/L	
Raw Water	Jan 17.19	<0.00002	mg/L	NONE
Treated Water		<0.00002	mg/L	
Raw Water	Sept 17.19	<0.00002	mg/L	NONE
Treated Water		<0.00002	mg/L	
Calcium	Standard -	N/A	mg/L	
Raw Water	Jan 17.19	4.4	mg/L	N/A
Treated Water		6.9	mg/L	
Raw Water	Sept 17.19	5.6	mg/L	N/A
Treated Water		9.2	mg/L	
Chloride	Standard -	AO 250	mg/L	
Raw Water	Jan 17.19	7.0	mg/L	NONE
Treated Water		11.4	mg/L	
Raw Water	Sept 17.19	8.7	mg/L	NONE
Treated Water		10.5	mg/L	
Chromium	Standard -	MAC 0.05	mg/L	
Raw Water	Jan 17.19	<0.001	mg/L	NONE
Treated Water		<0.001	mg/L	
Raw Water	Sept 17.19	<0.001	mg/L	NONE
Treated Water		<0.001	mg/L	
Copper	Standard -	AO 10000	mg/L	
Raw Water	Jan 17.19	<1.0	mg/L	NONE
Treated Water		<1.0	mg/L	
Raw Water	Sept 17.19	<1.0	mg/L	NONE
Treated Water		<1.0	mg/L	

Drinking-Water Systems Annual Report 2019

Iron	Standard -	AO 300	mg/L	
Raw Water	Jan 17.19	120.0	mg/L	NONE
Treated Water		<2.0	mg/L	
Raw Water	Sept 17.19	44.0	mg/L	NONE
Treated Water		5.0	mg/L	
Lead	Standard -	MAC 0.010	mg/L	
Raw Water	Jan 17.19	<0.001	mg/L	NONE
Treated Water		<0.001	mg/L	
Raw Water	Sept 17.19	<0.001	mg/L	NONE
Treated Water		<0.001	mg/L	
Mercury	Standard -	MAC 0.001	mg/L	
Raw Water	Jan 17.19	<0.00002	mg/L	NONE
Treated Water		<0.00002	mg/L	
Raw Water	Sept 17.19	<0.00002	mg/L	NONE
Treated Water		<0.00002	mg/L	
Potassium	Standard -	N/A	mg/L	
Raw Water	Jan 17.19	0.20	mg/L	N/A
Treated Water		0.10	mg/L	
Raw Water	Sept 17.19	0.5	mg/L	N/A
Treated Water		0.5	mg/L	
Selenium	Standard -	MAC 0.05	mg/L	
Raw Water	Jan 17.19	<0.002	mg/L	NONE
Treated Water		<0.002	mg/L	
Raw Water	Sept 17.19	<0.002	mg/L	NONE
Treated Water		<0.002	mg/L	

Drinking-Water Systems Annual Report 2019

Sodium	Standard -	AO 200	mg/L	
Raw Water	Jan 17.19	3.9	mg/L	NONE
Treated Water		9.7	mg/L	
Raw Water	Sept 17.19	4.0	mg/L	NONE
Treated Water		10.8	mg/L	
Magnesium	Standard -	N/A	mg/L	
Raw Water	Jan 17.19	0.90	mg/L	N/A
Treated Water		0.80	mg/L	
Raw Water	Sept 17.19	0.6	mg/L	N/A
Treated Water		0.6	mg/L	
Manganese	Standard -	AO 0.05	mg/L	
Raw Water	Jan 17.19	0.006	mg/L	NONE
Treated Water		0.003	mg/L	
Raw Water	Sept 17.19	0.024	mg/L	NONE
Treated Water		<0.002	mg/L	
Thallium	Standard -	N/A	mg/L	
Raw Water	Jan 17.19	<0.001	mg/L	N/A
Treated Water		<0.001	mg/L	
Raw Water	Sept 17.19	<0.001	mg/L	N/A
Treated Water		<0.001	mg/L	
Uranium	Standard -	MAC 0.02	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	

Fluoride	Standard -	MAC 1.5	mg/L	
Raw Water	Jan 17.19	<0.10	mg/L	NONE
Treated Water		<0.10	mg/L	
Raw Water	Sept 17.19	<0.10	mg/L	NONE
Treated Water		<0.10	mg/L	
Zinc	Standard -	AO 0.5	mg/L	
Raw Water	Jan 17.19	<0.002	mg/L	NONE
Treated Water		0.073	mg/L	
Raw Water	Sept 17.19	0.003	mg/L	NONE
Treated Water		0.091	mg/L	
Sulphate	Standard -	AO 5000	mg/L	
Raw Water	Jan 17.19	2.0	mg/L	NONE
Treated Water		2.0	mg/L	
Raw Water	Sept 17.19	2.0	mg/L	NONE
Treated Water		2.0	mg/L	
Nitrate	Standard	MAC 45.0	mg/L	
Raw Water	Jan 17.19	<0.20	mg/L	NONE
Treated Water		<0.20	mg/L	
Raw Water	Sept 17.19	<0.20	mg/L	NONE
Treated Water		<0.20	mg/L	
Nitrite	Standard	MAC 3.0	mg/L	
Raw Water	Jan 17.19	<0.20	mg/L	NONE
Treated Water		<0.20	mg/L	
Raw Water	Sept 17.19	<0.20	mg/L	NONE
Treated Water		<0.20	mg/L	

Bromide	Standard -	N/A	mg/L	
Raw Water	Jan 17.19	<0.2	mg/L	N/A
Treated Water		<0.2	mg/L	
Raw Water	Sept 17.19	<0.2	mg/L	N/A
Treated Water		<0.2	mg/L	
Bromate	Standard -	MAC 0.01	mg/L	
<i>(Last Analysis value)</i>	Sept 11.18	<0.003	mg/L	NONE
Raw Water		<0.003	mg/L	
Treated Water				
Chlorite	Standard -	MAC 1.0	mg/L	
<i>(Last Analysis value)</i>	Sept 11.18	<0.01	mg/L	NONE
Raw Water		<0.01	mg/L	
Treated Water				
Chlorate	Standard -	MAC 1.0	mg/L	
<i>(Last Analysis value)</i>	Sept 11.18	<0.01	mg/L	NONE
Raw Water		0.04	mg/L	
Treated Water				
Turbidity	Standard -	MAC 0.005	NTU	
Raw Water	Jan 17.19	8.09	NTU	NONE
Treated Water		0.14	NTU	
Raw Water	Sept 17.19	0.73	NTU	NONE
Treated Water		0.14	NTU	
Conductivity	Standard -	N/A	us/cm	
Raw Water	Jan 17.19	50	us/cm	N/A
Treated Water		101	us/cm	
Raw Water	Sept 17.19	45	us/cm	N/A
Treated Water		106	us/cm	

TDS	Standard -	N/A	mg/L	
Raw Water Treated Water	Jan 17.19	23 48	mg/L mg/L	N/A
Raw Water Treated Water	Sept 17.19	21 50	mg/L mg/L	N/A
True Colour	Standard -	AO <15.0	TCU	
Raw Water Treated Water	Jan 17.19	25.0 <1.0	TCU TCU	NONE
Raw Water Treated Water	Sept 17.19	18.0 <1.0	TCU TCU	NONE
Hardness as CaCO₃	Standard -	N/A	mg/L	
Raw Water Treated Water	Jan 17.19	15 21	mg/L mg/L	N/A
Raw Water Treated Water	Sept 17.19	16 25	mg/L mg/L	N/A
Alkalinity mg/L as CaCO₃	Standard -	N/A	mg/L	
Raw Water Treated Water	Jan 17.19	8.0 23.0	mg/L mg/L	N/A
Raw Water Treated Water	Sept 17.19	9.0 29.0	mg/L mg/L	N/A
pH	Standard -	N/A	pH	
Raw Water Treated Water	Jan 17.19	6.48 7.05	pH pH	N/A
Raw Water Treated Water	Sept 17.19	6.73 7.43	pH pH	N/A

Summary of Organic parameters sampled during this reporting period or the most recent sample results.

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
Benzene	Standard –	MAC 0.005	mg/L	NONE
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Benzo(a)pyrene	Standard –	MAC 0.00004	mg/L	
Raw Water	Jan 17.19	<0.00001	mg/L	NONE
Treated Water		<0.00001	mg/L	
Raw Water	Sept 17.19	<0.00001	mg/L	NONE
Treated Water		<0.00001	mg/L	
Carbon Tetrachloride	Standard –	MAC 0.002	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 11.18	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Bromodichloromethane	Standard –	HAL 0.016 Part of THM	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		0.0021	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		0.0036	mg/L	
Bromoform	Standard –	Part of THM	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	

Drinking-Water Systems Annual Report 2019

Chloroform	Standard –	Part of THM	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		0.012		
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		0.030	mg/L	
Dibromochloromethane	Standard –	Part of THM	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
1,2-Dichlorobenzene	Standard –	MAC 0.200	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
1,4-Dichlorobenzene	Standard –	MAC 0.005	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 11.18	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
1,2-Dichloroethane	Standard –	IMAC 0.005	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Dichloromethane	Standard –	MAC 0.050	mg/L	
Raw Water	Jan 17.19	<0.0010	mg/L	NONE
Treated Water		<0.0010	mg/L	
Raw Water	Sept 17.19	<0.0010	mg/L	NONE
Treated Water		<0.0010	mg/L	

Drinking-Water Systems Annual Report 2019

Ethylbenzene	Standard -	MAC 0.14	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Methyl-t-butyl Ether (MTBE)	Standard -	AO 0.015	mg/L	
Raw Water	Jan 17.19	<0.0010	mg/L	NONE
Treated Water		<0.0010	mg/L	
Raw Water	Sept 17.19	<0.0010	mg/L	NONE
Treated Water		<0.0010	mg/L	
Monochlorobenzene	Standard -	MAC 0.080 AO < or = 0.030	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Pentachlorophenol	Standard -	IMAC 0.06	mg/L	
Raw Water	Jan 17.19	<0.0002	mg/L	NONE
Treated Water		<0.0002	mg/L	
Raw Water	Sept 17.19	<0.0002	mg/L	NONE
Treated Water		<0.0002	mg/L	
Toluene	Standard -	IMAC 0.06	mg/L	
Raw Water	Jan 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
Raw Water	Sept 17.19	<0.0005	mg/L	NONE
Treated Water		<0.0005	mg/L	
THM (Total)	Standard -	CDWQG 0.100 HAL 0.100	mg/L	
TW (Jan 17.19)	Jan 17.19	0.0137	mg/L	NONE
TW (Sept 17.19)	Sept 17.19	0.0362	mg/L	NONE



Drinking-Water Systems Annual Report 2019

TOC	Standard-	<i>None</i>	mg/L	
Combined Filter Effluent (Jan 17.19)	Jan 17.19	2.3	mg/L	NONE
Combined Filter Effluent (Sept 17.19)	Sept 17.19	1.9	mg/L	NONE
Tetrachloroethylene	Standard –	MAC 0.010	mg/L	
Raw Water Treated Water	Jan 17.19	<0.0005 <0.0005	mg/L mg/L	NONE
Raw Water Treated Water	Sept 17.19	<0.0005 <0.0005	mg/L mg/L	NONE
Trichloroethylene	Standard –	MAC 0.005	mg/L	
Raw Water Treated Water	Jan 17.19	<0.0005 <0.0005	mg/L mg/L	NONE
Raw Water Treated Water	Sept 17.19	<0.0005 <0.0005	mg/L mg/L	NONE
Vinyl Chloride	Standard –	MAC 0.002	mg/L	
Raw Water Treated Water	Jan 17.19	<0.0020 <0.0020	mg/L mg/L	NONE
Raw Water Treated Water	Sept 17.19	<0.0020 <0.0020	mg/L mg/L	NONE
Xylenes	Standard –	MAC 0.090	mg/L	
Raw Water Treated Water	Jan 17.19	<0.0005 <0.0005	mg/L mg/L	NONE
Raw Water Treated Water	Sept 17.19	<0.0005 <0.0005	mg/L mg/L	NONE

List any Inorganic or Organic parameter(s) that exceeded MAC, IMAC or over half MAC of the CDWQG, NBDWG or HAL limits in Water Quality Standards.

Parameter	Sample Date	Result Value	Unit of Measure	Exceedance
NONE				

Summary of Public Relations (Notifications & Public Education & Tours) during this reporting period (January 1st, 2019 – December 31st, 2019).

Tour City Staff (Leadership)	City leadership group tour April 12, 7 people
Tour City Staff (Leadership)	City leadership group tour May 28, 3 people
Grand Opening Event WTP	Local leaders, council members, regulators, Provincial and Federal representatives along with media. June 10, 50 people
Engineering Conference Tour	Local conference Engineering requested by SJW August 9, 25 people
Engineering Conference Tour	Local conference Canadian municipal employees association requested by SJW. October 3, 35 people
School Group Tour	Local NBCC educators (Professors for courses) tour to discuss co-op options and where students may find employment. November 5, 2 people



Drinking-Water Systems Annual Report 2019

Summary of Backflow prevention activities during this reporting period (January 1st, 2019 – December 31st, 2019).

Device Tag/Name	Date Inspected	Certified Pass/Fail	Information
Custodial Room#25537	Aug 23, 2019	Pass	
Custodial Room#169682	Aug 23, 2019	Pass	
Custodial Room#169716	Aug 23, 2019	Pass	
Chemical Room#154128	Aug 23, 2019	Pass	New replacement of #B186055 failed
Chemical Room#051815	Aug 23, 2019	Pass	
Chemical Room#090043	Aug 23, 2019	Pass	
Water Entrance#111713	Aug 23, 2019	Pass	
Laundry Room#096106	Aug 23, 2019	Pass	
Laundry Room#156478	Aug 23, 2019	Pass	
Fire Closet#Q1-1242	Sept 12, 2019	Pass	
Fire Pump House#1150040717	Sept 12, 2109	Pass	
Spare (Out of service)#096097	N/A	N/A	Out of service spare

List of Abbreviations:

CDWQG = Canadian Drinking Water Quality Guidelines
NBDWG = New Brunswick Drinking Water Guidelines
HAL = Health advisory level
RW = Raw Water
TW = Treated Water
FW = Finished Water (Before final chlorination)
NTU = Nephelometric turbidity unit
mg/L = milligram per litre
MAC = Maximum acceptable concentration
IMAC = Interim maximum acceptable concentration
AO = Asthetic objective
MLD = Mega liters per day
ML = Mega Litres (Million Litres)
UV = Ultraviolet
DAF = Dissolved air floatation
UVT = Ultraviolet transmittance
ug/L = Microgram per litre
THM = Trihalomethane (Chlorination disinfection byproduct)
TDS = Total dissolved solids
N/A = Not Applicable
DOH = Department of Health
NBDELG = New Brunswick Department of Environment and Local Government
TDG = Transportation of Dangerous Goods
LOTO = Lock Out, Tag Out (Electrical safety)
WHMIS = Workplace Hazardous Materials Information System
BPV = Backflow Prevention Valve/device
TNTC = Too Numerous To Count
Cfu = Coliform forming units (Count)