

City of Weyburn

Public Water Treatment System

Annual Report

2024

Shabbir Sakrani, P.Eng.
Superintendent Water Plant

Jenna Borys
Municipal Engineer-In-Training



Introduction

The City of Weyburn's report "Public Water Treatment System Annual Report" summarizes the City's waterworks ability to produce safe potable water and comply with provincial regulations.

This report has been developed to provide consumers supplied by the waterworks with a notification that the City of Weyburn's water treatment system fulfilled its obligation in 2024 in compliance with *The Waterworks and Sewage Works Regulations* (EMPA 2010).

This report is available for the public to review and is located at www.weyburn.ca or paper copies are available at City Hall.

Background

Description of the Water System

The City of Weyburn Water Treatment Plant (WTP) facility provides potable drinking water to a population of approximately 12,247 (2021 census) residents, a number of business units and 330 rural connections. The City of Weyburn Water Treatment Facility with two trains (Plant 100 and Plant 200; Appendix A), is a large municipal Residential Class 4 chemically assisted filtration plant capable of delivering approximately 10,000 cubic meters of treated water to the community each day.

Water Supply Source & Process

The City of Weyburn currently operates a surface water treatment system to meet the potable water requirements of its residents. The raw water source is Nickle Lake, approximately 11 km southeast of the City. Nickle Lake is the impoundment on the Souris River formed by the Abe Douglas Dam, which was constructed in 1982. Raw water is pumped from the intake structure via a high lift pump through a 450 mm PVC pipeline to the City of Weyburn Water Treatment Plant which is located in the south east quadrant of the City. Treatment is achieved by the conventional method of addition of chemicals (oxidation), coagulation and flocculation, clarification, filtration, fluoridation and disinfection processes. There are two treatment trains at the Water Treatment Plant, denoted as Plant 100 and Plant 200. There are 3 cast in place concrete below ground potable water storage reservoirs with a total capacity of 20 million liters. The City added a 13 million liter reservoir adjacent to the existing 5 million liter storage reservoir and distribution system west of water plant in 2019. The First Avenue reservoir has a capacity of 2.2 million liters and is located in the City's northwest (First Avenue Storage Reservoir and Pumping Station). Vertical turbine pumps located at the Water Treatment Plant convey water to the distribution system and to the First Avenue Reservoir.

Parameters and Testing

The WTP treats surface water that focuses on the removal of suspended solids and the inactivation of pathogenic organisms through a multiple barrier approach (i.e. chemical aided settling, filtration and disinfection). Water samples collected as required by the permit throughout the process, at varying frequencies, are tested for different parameters to evaluate treatment efficiency and to ensure finished water quality is in compliance with the Environmental Protection Act 2002 and associated regulations to that Act.

Test parameters can be found on the following website www.saskh20.ca and include:

1. Critical indicators related to potential acute health effects such as *E. Coli*.
2. Trace contaminants typically associated with chronic long term effects such as heavy metals and synthetic organic compounds.
3. Non-health related parameters that aid in assessing process efficiency or the aesthetic quality of the drinking water such as alkalinity or p-H.

The sampling schedule including the 2024 performance results are shown in Table 1. The sampling reports summarizing analytical results from the 2024 sampling are provided in Appendix B of this report.

Table 1: Waterworks Monitoring Schedule and 2024 Performance Report

Parameters	Testing Required by Permit	Samples Collected	Water Plant Performance
Bacteriological	Three (3) samples every week from representative location of the distribution system	159	100%
Turbidity	Continuous monitoring and data recording	24 hours per day, 365 days	100%
Chlorine Residual	Continuous monitoring and data recording	24 hours per day, 365 days	100%
Fluoride	Twice per day at water plant	730	100%
	One (1) sample per week sent to accredited lab	52	
Chemical- General	One (1) sample every 3 months from the treated water at the water plant	4	100%
Chemical- Health	One (1) sample every year from the water plant	3	100%
Pesticides	Once (1) every 2 years from treated water at plant	1	100%
Tri halo methane (THMs)	Two (2) samples every 3 months from extremities of the distribution system	12	100%
Halo acetic Acids (HAAs)	Two (2) samples every 3 months from extremities of the distribution system	8	100%
Cyanide and Mercury	One (1) sample every year from treated water	1	100%
Organics	One (1) sample every 2 years	1	100%
Microcystin LR	One (1) every month, May to October treated water and raw water	5	100%
Giardia and Cryptosporidium	One (1) every 6 months raw water	2	100%

Annual Distribution

The City has a population of 12,247 according to the 2021 census, based on 2021 data. In 2024, the yearly average estimated daily volume was 4,004.88 m³/day. The peak daily flow was recorded up to 7,750 m³/per day in the summer and the minimum daily flow recorded in the winter was 2,770 m³/per day in 2024. The daily and monthly water distribution data for the year 2024 is shown in Table 2 and Figure 1, Figure 2 and Figure 3.

Table 2: 2024 Monthly Treated (Distributed) and Raw Water Volumes

Month	Raw Water Inflow (m ³)	Treated Water Outflow (m ³)	Daily Average (m ³)
January	106587	105594	3406.26
February	100787	91565	3457.41
March	109548	98340	3172.26
April	118443	104911	3497.03
May	126863	122237	3943.13
June	161284	141973	4732.43
July	198293	189278	6105.74
August	185894	147026	5250.93
September	152652	125356	4178.53
October	122319	107762.35	3476.20
November	112014	102795	3426.50
December	116436	105778	3412.19
2024 Total	1611120	1442615.35	4004.88

Figure 1: 2024 Daily Treated (Distributed) and Raw Water Volumes

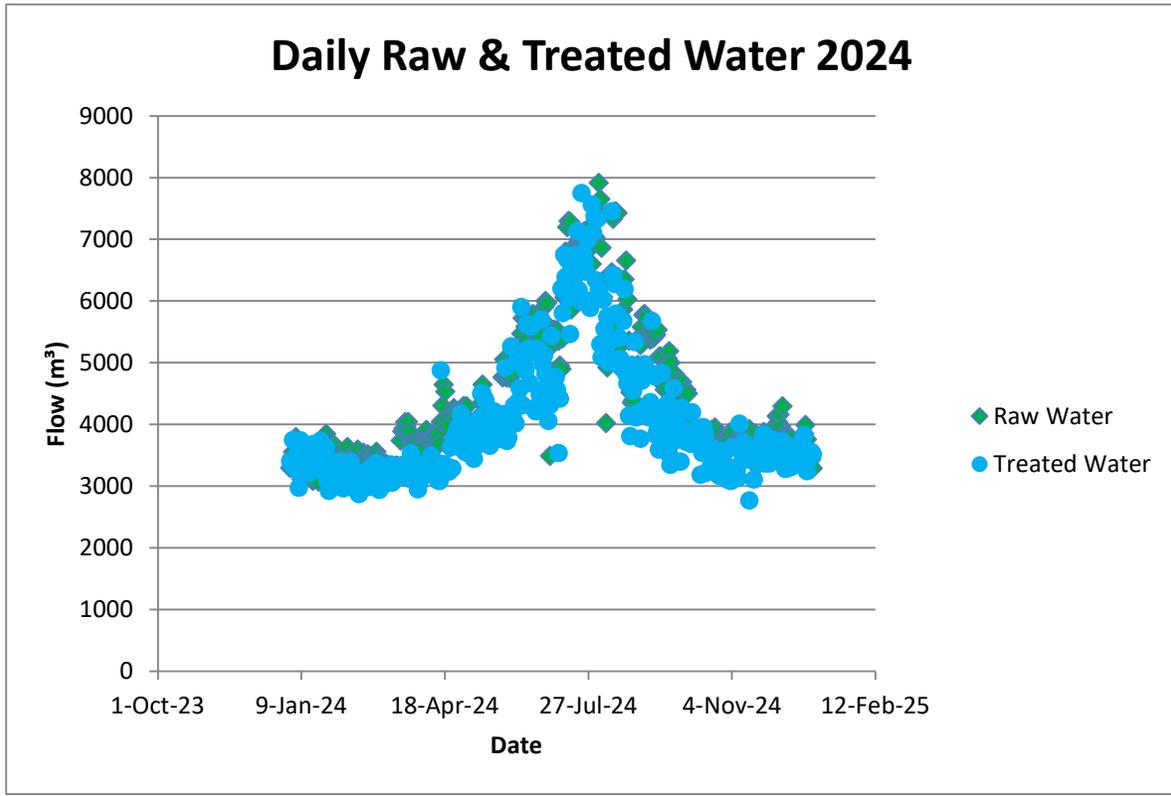


Figure 2: 2024 Average Daily Treated (Distributed) Water Outflow

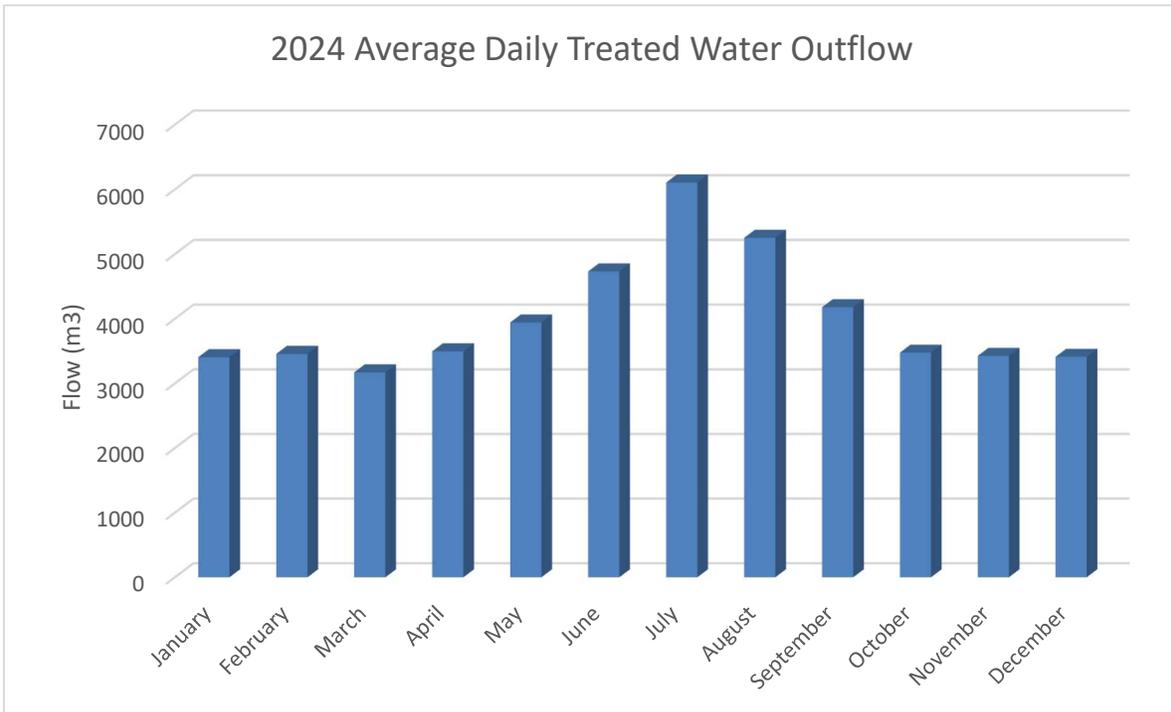
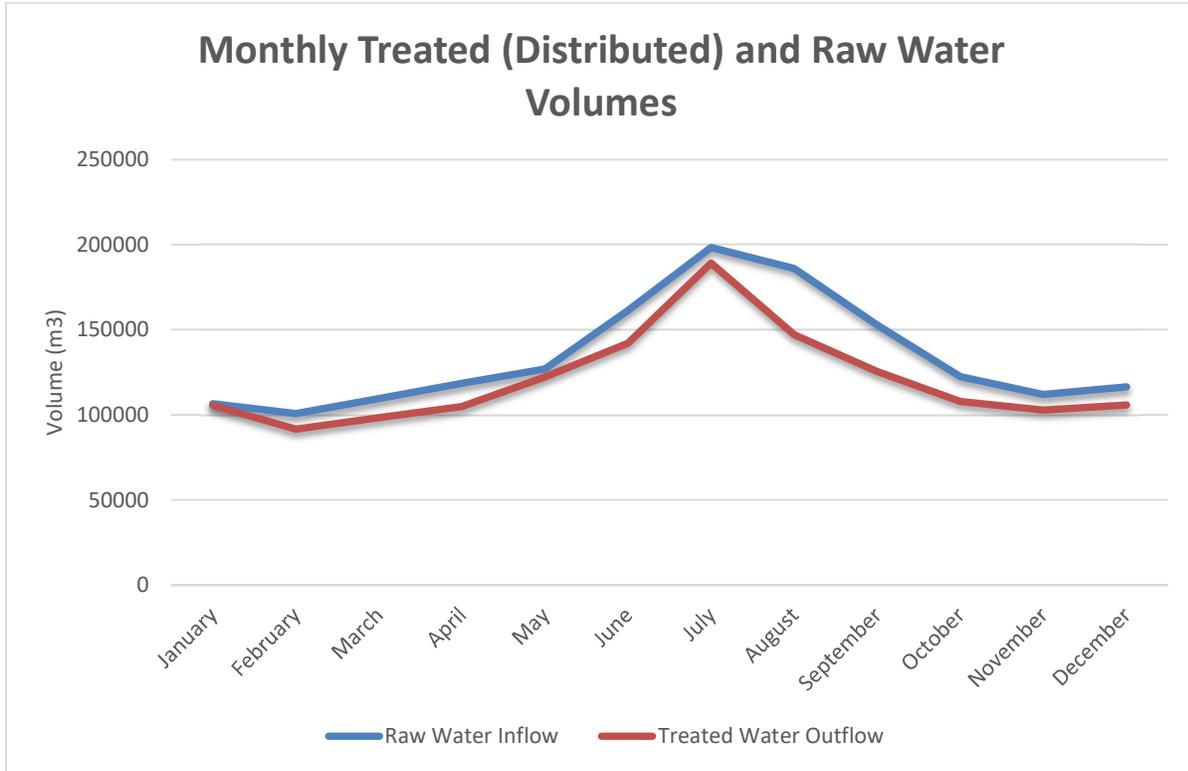


Figure 3: 2024 Monthly Treated (Distributed) and Raw Water Volumes



Summary

- There were no difficulties encountered in meeting the treated water demand of the City of Weyburn in 2024.
- With the exception of marginal exceedance of the drinking water standards for Tri Halo Methane (THMs) and Halo acetic acid (HAAs) concentrations in 2024, all other test results from 2024 met the stringent requirements of the Saskatchewan Drinking Water Quality Standards.
- The City is continuing improvements on the ammonia modifications in the plant in 2025 and had intentions of introducing a Powder Activated Carbon (PAC) feed system. Due to budget constraints the PAC system is being deferred but still remains a future capital plan for the City.

Appendix B

2024 Sampling Reports

2024 Bacteriological Sampling Report

Sample No.	Month	Day	Year	Collected By	Location	Free Chlorine	Total Chlorine	Turbidity	COMMENTS	Provincial Lab Results		
										Total Coli-Form/100ml	E. Coli / 100ml	Fluoride mg/l
1	Jan	2	2024	JK	Coop Gas bar	-	2.34	0.25	Regular	NDO	NDO	0.17
2	Jan	2	2024	JK	Citi Hall	-	2.28	0.23	Regular	NDO	NDO	
3	Jan	2	2024	JK	Ford	-	2.15	0.27	Regular	NDO	NDO	
4	Jan	9	2024	NG	Weyburn Dodge	—	2.22	0.25	Regular	NDO	NDO	0.15
5	Jan	9	2024	NG	Leisure Center	—	2.06	0.26	Regular	NDO	NDO	
6	Jan	9	2024	NG	Tim Hortons	—	1.92	0.34	Regular	NDO	NDO	
7	Jan	16	2024	HM	Coop Gas bar		2.29	0.23	Regular	NDO	NDO	0.16
8	Jan	16	2024	HM	MacDonalds		2.05	0.26	Regular	NDO	NDO	
9	Jan	16	2024	HM	7 Eleven		2.10	0.17	Regular	NDO	NDO	
10	Jan	23	2024	NG	Leisure Center	-	2.04	0.28	Regular	NDO	NDO	0.20
11	Jan	23	2024	NG	Subway	-	2.24	0.29	Regular	NDO	NDO	
12	Jan	23	2024	NG	Tim Hortons	-	2.00	0.35	Regular	NDO	NDO	
13	Jan	30	2024	HM	Coop Gas bar	-	2.06	0.37	Regular	NDO	NDO	0.18
14	Jan	30	2024	HM	Citi Hall	-	1.95	0.30	Regular	NDO	NDO	
15	Jan	30	2024	HM	Tim Hortons	-	1.81	0.43	Regular	NDO	NDO	
16	Feb	6	2024	FM	Leisure center		1.77	0.55	Regular	NDO	NDO	
17	Feb	6	2024	FM	7 Eleven		1.00	0.36	Regular	NDO	NDO	
18	Feb	6	2024	FM	Library		2.16	0.41	Regular	NDO	NDO	0.18
19	Feb	13	2024	JK	Weyburn Dodge		2.31	0.20	Regular	NDO	NDO	0.18
20	Feb	13	2024	JK	Citi Hall		2.32	0.20	Regular	NDO	NDO	
21	Feb	13	2024	JK	Ford		2.22	0.24	Regular	NDO	NDO	
22	Feb	20	2024	FM	Subway		1.90	0.31	Regular	NDO	NDO	
23	Feb	20	2024	FM	Esso station		1.95	0.29	Regular	NDO	NDO	0.18
24	Feb	20	2024	FM	Schell station		2.03	0.21	Regular	NDO	NDO	
25	Feb	27	2024	HM	Coop Gas bar		2.03	0.27	Regular	NDO	NDO	
26	Feb	27	2024	HM	7-Eleven		1.93	0.30	Regular	NDO	NDO	
27	Feb	27	2024	HM	Tim Hortons		1.73	0.25	Regular	NDO	NDO	0.18
28	March	5	2024	FM	Subway		2.08	0.29	Regular	NDO	NDO	
29	March	5	2024	FM	Library		2.18	0.30	Regular	NDO	NDO	0.17
30	March	5	2024	FM	Leisure Center		1.94	0.29	Regular	NDO	NDO	
31	March	12	2024	JK	Coop Gas bar		2.33	0.24	Regular	NDO	NDO	0.19
32	March	12	2024	JK	Citi Hall		2.19	0.21	Regular	NDO	NDO	

2024 Bacteriological Sampling Report

Sample No.	Month	Day	Year	Collected By	Location	Free Chlorine	Total Chlorine	Turbidity	COMMENTS	Provincial Lab Results		
										Total Coli-Form/100ml	E. Coli / 100ml	Fluoride mg/l
33	March	12	2024	JK	Ford		2.22	0.24	Regular	NDO	NDO	
34	March	19	2024	JK	Weyburn Dodge		2.37	0.21	Regular	NDO	NDO	0.19
35	March	19	2024	JK	Public Library		2.29	0.27	Regular	NDO	NDO	
36	March	19	2024	JK	Shell Gas station		2.28	0.22	Regular	NDO	NDO	
37	March	26	2024	FM	7 Eleven		2.38	0.25	Regular	NDO	NDO	0.17
38	March	26	2024	FM	Subway		2.41	0.28	Regular	NDO	NDO	
39	March	26	2024	FM	Esso station		2.28	0.31	Regular	NDO	NDO	
40	April	2	2024	HM	Coop Gas bar		2.43	0.32	Regular	NDO	NDO	
41	April	2	2024	HM	Public Library		2.30	0.31	Regular	NDO	NDO	0.18
42	April	2	2024	HM	Tim Hortons		2.16	0.35	Regular	NDO	NDO	
43	April	9	2024	FM	Leisure Center		1.94	0.35	Regular	NDO	NDO	0.18
44	April	9	2024	FM	Subway		2.03	0.28	Regular	NDO	NDO	
45	April	9	2024	FM	Schell station		2.35	0.38	Regular	NDO	NDO	
46	April	16	2024	JK	Weyburn Dodge		2.76	0.24	Regular	NDO	NDO	0.15
47	April	16	2024	JK	Citi Hall		2.61	0.27	Regular	NDO	NDO	
48	April	16	2024	JK	Ford		2.67	0.25	Regular	NDO	NDO	
49	April	23	2024	HM	Coop Gas bar		2.08	0.28	Regular	NDO	NDO	
50	April	23	2024	HM	7-Eleven		2.18	0.39	Regular	NDO	NDO	0.17
51	April	23	2024	HM	Tim Hortons		2.15	0.22	Regular	NDO	NDO	
52	April	30	2024	HM	Leisure Center		2.07	0.279	Regular	NDO	NDO	
53	April	30	2024	HM	Public Library		1.64	0.36	Regular	NDO	NDO	0.16
54	April	30	2024	HM	MacDonalds		2.13	0.316	Regular	NDO	NDO	
55	May	7	2024	HM/KD	Tim Hortons		2.20	0.19	Regular	NDO	NDO	0.16
56	May	7	2024	HM/KD	7-Eleven		1.34	0.29	Regular	NDO	NDO	
57	May	7	2024	HM/KD	Coop Gas bar		2.22	0.24	Regular	NDO	NDO	
58	May	14	2024	KD	Leisure Center		2.27	0.28	Regular	NDO	NDO	
59	May	14	2024	KD	Subway		2.25	0.22	Regular	NDO	NDO	0.17
60	May	14	2024	KD	Mcdonalds		2.37	0.20	Regular	NDO	NDO	
61	May	21	2024	HM	Coop Gas bar		2.28	0.14	Regular	NDO	NDO	0.19
62	May	21	2024	HM	Public Library		2.21	0.13	Regular	NDO	NDO	
63	May	21	2024	HM	Tim Hortons		2.12	0.33	Regular	NDO	NDO	
64	May	28	2024	FM	7 Eleven		1.75	0.183	Regular	NDO	NDO	

2024 Bacteriological Sampling Report

Sample No.	Month	Day	Year	Collected By	Location	Free Chlorine	Total Chlorine	Turbidity	COMMENTS	Provincial Lab Results		
										Total Coli-Form/100ml	E. Coli / 100ml	Fluoride mg/l
65	May	28	2024	FM	Esso Station		2.15	0.09	Regular	NDO	NDO	0.20
66	May	28	2024	FM	Schell station		2.14	0.09	Regular	NDO	NDO	
67	June	4	2024	HM	Tim Hortons		2.12	0.16	Regular	NDO	NDO	
68	June	4	2024	HM	Public Library		1.82	0.13	Regular	NDO	NDO	
69	June	4	2024	HM	Coop Gas bar		2.39	0.09	Regular	NDO	NDO	0.17
70	June	11	2024	HM	Mcdonalds		2.14	0.14	Regular	NDO	NDO	
71	June	11	2024	HM	Subway		2.17	0.15	Regular	NDO	NDO	
72	June	11	2024	HM	Leisure Center		1.91	0.24	Regular	NDO	NDO	0.16
73	June	18	2024	JK	Weyburn Dodge		2.26	0.23	Regular	NDO	NDO	
74	June	18	2024	JK	Public Library		2.39	0.26	Regular	NDO	NDO	
75	June	18	2024	JK	Ford		2.29	0.10	Regular	NDO	NDO	0.15
76	June	25	2024	HM	Coop Gas bar		2.21	0.32	Regular	NDO	NDO	
77	June	25	2024	HM	Leisure Center		2.13	0.13	Regular	NDO	NDO	0.17
78	June	25	2024	HM	Tim Hortons		2.23	0.16	Regular	NDO	NDO	
79	july	2	2024	FM	7 Eleven		1.43	0.16	Regular	NDO	NDO	
80	july	2	2024	FM	Library		2.41	0.24	Regular	NDO	NDO	0.17
81	july	2	2024	FM	Schell Station		2.38	0.186	Regular	NDO	NDO	
82	July	9	2024	JK	Weyburn Dodge		2.52	0.14	Regular	NDO	NDO	0.17
83	July	9	2024	JK	Subway		2.37	0.15	Regular	NDO	NDO	
84	July	9	2024	JK	Ford		2.39	0.15	Regular	NDO	NDO	
85	July	16	2024	HM	Coop Gas bar		2.29	0.19	Regular	NDO	NDO	
86	July	16	2024	HM	Subway		2.06	0.14	Regular	NDO	NDO	0.20
87	July	16	2024	HM	Tim Hortons		1.86	0.15	Regular	NDO	NDO	
88	July	23	2024	JK	I-zan tire		2.38	0.15	Regular	NDO	NDO	
89	July	23	2024	JK	Citi Hall		2.18	0.17	Regular	NDO	NDO	0.17
90	July	23	2024	JK	Shell Gas station		2.38	0.10	Regular	NDO	NDO	
91	July	30	2024	FM	7 ELEVEN		1.43	0.16	Regular	NDO	NDO	
92	July	30	2024	FM	Library		2.41	0.24	Regular	NDO	NDO	0.18
93	July	30	2024	FM	Schell station		2.38	0.19	Regular	NDO	NDO	
94	August	6	2024	HM	Tim Hortons		1.98	0.22	Regular	NDO	NDO	
95	August	6	2024	HM	Subway		2.18	0.29	Regular	NDO	NDO	
96	August	6	2024	HM	Coop Gas bar		2.37	0.18	Regular	NDO	NDO	

2024 Bacteriological Sampling Report

Sample No.	Month	Day	Year	Collected By	Location	Free Chlorine	Total Chlorine	Turbidity	COMMENTS	Provincial Lab Results		
										Total Coli-Form/100ml	E. Coli / 100ml	Fluoride mg/l
97	August	13	2024	FM	Leisure Center		2.78	0.18	Regular	NDO	NDO	0.18
98	August	13	2024	FM	7 Eleven		1.48	0.30	Regular	NDO	NDO	
99	August	13	2024	FM	Subway		2.81	0.23	Regular	NDO	NDO	
100	August	20	2024	HM	Vortex		2.06	0.27	Regular	NDO	NDO	
101	August	20	2024	HM	Public Library		1.95	0.24	Regular	NDO	NDO	0.20
102	August	20	2024	HM	Coop Gas bar		2.45	0.27	Regular	NDO	NDO	
103	August	27	2024	JK	Weyburn Dodge		2.54	0.14	Regular	NDO	NDO	0.21
104	August	27	2024	JK	Citi Hall		2.52	0.13	Regular	NDO	NDO	
105	August	27	2024	JK	Ford		2.56	0.18	Regular	NDO	NDO	
106	Sept	3	2024	HM	Tim Hortons		2.10	0.21	Regular	NDO	NDO	
107	Sept	3	2024	HM	Public Library		2.05	0.16	Regular	NDO	NDO	0.23
108	Sept	3	2024	HM	Coop Gas bar		2.20	0.15	Regular	NDO	NDO	
109	Sept	10	2024	JK	I-zan tire		2.41	0.14	Regular	NDO	NDO	
110	Sept	10	2024	JK	Citi Hall		2.09	0.16	Regular	NDO	NDO	0.22
111	Sept	10	2024	JK	Shell Gas station		2.20	0.16	Regular	NDO	NDO	
112	Sept	17	2024	FM	Library		2.37	0.21	Regular	NDO	NDO	0.25
113	Sept	17	2024	FM	Esso station		1.87	0.21	Regular	NDO	NDO	
114	Sept	17	2024	FM	Subway		1.92	0.27	Regular	NDO	NDO	
115	Sept	24	2024	HM	Coop Gas bar		2.38	0.18	Regular	NDO	NDO	
116	Sept	24	2024	HM	7-Eleven		0.76	0.18	Regular	NDO	NDO	0.23
117	Sept	24	2024	HM	Tim Hortons		0.98	0.20	Regular	NDO	NDO	
118	Oct	1	2024	HM	Vortex		1.56	0.13	Regular	NDO	NDO	
119	Oct	1	2024	HM	Subway		1.41	0.36	Regular	NDO	NDO	0.26
120	Oct	1	2024	HM	Public Library		1.73	0.20	Regular	NDO	NDO	
121	Oct	8	2024	JK	Weyburn Dodge		2.53	0.11	Regular	NDO	NDO	0.21
122	Oct	8	2024	JK	Citi Hall		2.10	0.13	Regular	NDO	NDO	
123	Oct	8	2024	JK	Ford		1.72	0.15	Regular	NDO	NDO	
124	Oct	15	2024	FM	7 Eleven		1.52	0.19	Regular	NDO	NDO	
125	Oct	15	2024	FM	Esso Station		1.65	0.17	Regular	NDO	NDO	0.23
126	Oct	15	2024	FM	Schell station		1.47	0.25	Regular	NDO	NDO	
127	Oct	22	2024	HM	Coop Gas bar		2.35	0.17	Regular	NDO	NDO	
128	Oct	22	2024	HM	Public Library		2.07	0.20	Regular	NDO	NDO	0.21

2024 Bacteriological Sampling Report

Sample No.	Month	Day	Year	Collected By	Location	Free Chlorine	Total Chlorine	Turbidity	COMMENTS	Provincial Lab Results		
										Total Coli-Form/100ml	E. Coli / 100ml	Fluoride mg/l
129	Oct	22	2024	HM	Tim Hortons		1.24	0.26	Regular	NDO	NDO	
130	oct	29	2024	FM/HS	7 eleven		0.69	0.25	Regular	NDO	NDO	
131	Oct	29	2024	FM/HS	Esso station		1.75	0.29	Regular	NDO	NDO	
132	Oct	29	2024	FM/HS	Shell Station		2.03	0.217	Regular	NDO	NDO	0.21
133	Nov	5	2024	JK/HS	Coop Gas bar		2.39	0.22	Regular	NDO	NDO	0.19
134	Nov	5	2024	JK/HS	Citi Hall		1.96	0.29	Regular	NDO	NDO	
135	Nov	5	2024	JK/HS	Ford		1.95	0.37	Regular	NDO	NDO	
136	Nov	12	2024	FM/HS	7 eleven		1.02	0.162	Regular	NDO	NDO	
137	Nov	12	2024	FM/HS	Public library		1.77	0.121	Regular	NDO	NDO	0.21
138	Nov	12	2024	FM/HS	Esso station		1.65	0.181	Regular	NDO	NDO	
139	Nov	20	2024	HM	Coop Gas bar		2.1	0.187	Regular	NDO	NDO	
140	Nov	20	2024	HM	7-Eleven		1.85	0.231	Regular	NDO	NDO	0.24
141	Nov	20	2024	HM	Subway		1.79	0.287	Regular	NDO	NDO	
142	Nov	27	2024	JK	Weyburn Dodge		2.21	0.2	Regular	NDO	NDO	0.21
143	Nov	27	2024	JK	Citi Hall		1.85	0.26	Regular	NDO	NDO	
144	Nov	27	2024	JK	Ford		1.92	0.29	Regular	NDO	NDO	
145	Dec	3	2024	HS	7 Eleven		1.85	0.26	Regular	NDO	NDO	
146	Dec	3	2024	HS	Public library		2.07	0.19	Regular	NDO	NDO	
147	Dec	3	2024	HS	Subway		2.06	0.19	Regular	NDO	NDO	0.22
148	Dec	11	2024	JK	Coop Gas bar		1.78	0.25	Regular	NDO	NDO	0.19
149	Dec	11	2024	JK	Citi Hall		1.16	0.26	Regular	NDO	NDO	
150	Dec	11	2024	JK	Shell		1.78	0.28	Regular	NDO	NDO	
151	Dec	17	2024	HM	Coop Gas bar		1.94	0.295	Regular	NDO	NDO	
152	Dec	17	2024	HM	Subway		1.91	0.228	Regular	NDO	NDO	0.21
153	Dec	17	2024	HM	Tim Hortons		1.64	0.31	Regular	NDO	NDO	
154	Dec	23	2024	HS	7 Eleven		0.62	0.287	Regular	NDO	NDO	
155	Dec	23	2024	HS	Library		2.03	0.295	Regular	NDO	NDO	0.21
156	Dec	23	2024	HS	Esso pump		1.97	0.3	Regular	NDO	NDO	
157	Dec	30	2024	FM	7 ELEVEN		2.16	0.3	Regular	NDO	NDO	
158	Dec	30	2024	FM	Subway		2.15	0.33	Regular	NDO	NDO	
159	Dec	30	2024	FM	Schell station		1.7	0.27	Regulal	NDO	NDO	0.21

2024 Chemical General Sampling Report

Sample Description		Raw Water	Treated Water	MAC/AO						
Date Sampled		17-Jan-24		15-May-24		13-Aug-24		8-Oct-24		
Parameters	Units	Results	Results	Results	Results	Results	Results	Results	Results	
Alkalinity, Total (as CaCO ₃)	mg CaCO ₃ /L	202	181	136	112	167	97	189	140	AO-500
Bicarbonate (HCO ₃)	mg/L	246	221	166	137	165	118	229	171	
Dissolved Calcium	mg/L	46.6	45.6	34.4	33.6	36.4	37.8	35.6	37.5	
Carbonate (CO ₃)	mg/L	<1.0	<1.0	<1.0	<1.0	19.2	<1.0	<1.0	<1.0	
Chloride	mg/L	13.3	20.1	12.9	18.6	13.4	19.8	13.3	19.1	AO-250
Conductivity	uS/cm	594	739	437	561	444	527	519	595	
Fluoride	mg/L	0.262	0.278	0.147	0.124	0.180	0.152	0.178	0.190	MAC- 1.5
Hardness	mg CaCO ₃ /L	194	192	146	142	151	157	158	160	AO-800
Dissolved Magnesium	mg/L	18.9	18.9	14.5	14.2	14.6	15.3	16.7	16.1	
Nitrate-N	mg/L	0.187	0.214	0.260	0.361	0.050	0.100	0.089	0.088	
Nitrite-N	mg/L	<0.010	<0.020	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	
pH	pH	8.11	7.48	8.14	7.47	9.12	7.08	8.34	7.79	AO- 7.0-10.5
Dissolved Sodium	mg/L	39.5	66.5	32.6	54.5	34.3	41.8	35.5	50.7	
Sulphate (SO ₄)	mg/L	86	160	66.2	138	65.1	151	71.4	149	AO-500
Total Dissolved Solids	mg/L	371	463	278	362	300	359	329	399	AO-1500

2024 Pesticides and Herbicides Sampling Report

Date Sampled		15-May-24		
Sample Description		Treated Water	MAC	Other Values
Parameter	Units			
Atrazine	µg/L	<0.050	N/A	IMAC- 5
Diclofop-methyl	µg/L	<0.100	9	AO- 6.1
Trifluralin	µg/L	<0.10	N/A	AO- 0.20, IMAC- 45
Acetic acid, 2-methyl-4-chlorophenoxy- [MCPA]	µg/L	<0.050	100	N/A
Bromoxynil	µg/L	<0.0500	N/A	AO- 5, IMAC- 5
Dicamba	µg/L	<0.500	120	AO- 10
Dichlorophenoxyacetic acid, 2,4- [2,4-D]	µg/L	<0.0500	N/A	AO- 4, IMAC- 100
Picloram	µg/L	<0.100	N/A	AO- 29, IMAC- 190
Carbofuran	µg/L	<0.0250	90	N/A
Chlorpyrifos	µg/L	<0.10	90	AO- 0.0035
Dimethoate	µg/L	<0.050	N/A	AO- 6.2, IMAC- 20
Malathion	µg/L	<0.0250	190	N/A
Pentachlorophenol	µg/L		60	AO- 0.5

Comments: MAC - Maximum Allowable Concentration
 N/A- No guideline-provided value
 IMAC - Interm Maximum Acceptable Concentration

2024 Trihalomethane Sampling Report

		Parameter	Bromodichloromethane	Bromoform	Chloroform	Dibromochloromethane	4-Bromofluorobenzene	1,4-Difluorobenzene	Total Trihalomethanes
		Unit	µg/L	µg/L	µg/L	µg/L	%	%	µg/L
Date Sampled	Location								
23-Jan-24	Subway		17.2	<1.0	129	<1.0	91	102	146
	Leisure Center		17.1	<1.0	126	<1.0	92.7	102	143
	7-Eleven		17.1	<1.0	127	<1.0	92.7	102	144
24-May-24	Subway		9.3	<1.0	72	1.1	102	90.2	82.4
	Leisure Center		10.5	<1.0	82.7	1.2	103	89.4	94.4
	7-Eleven		10.4	<1.0	79.1	1.1	99.3	89.6	90.6
13-Aug-24	Subway		11.7	<1.0	75.3	3	113	93	90
	Leisure Center		12.2	<1.0	80.3	2.9	116	93	95.4
	7-Eleven		13.2	<1.0	85.6	3.8	116	93.2	103
8-Oct-24	Subway		12.2	<1.0	73.5	<1.0	92.7	105	85.7
	Leisure Center		13	<1.0	75.3	<1.0	99.2	104	88.3
	7-Eleven		12.2	<1.0	71.9	<1.0	97.3	106	84.1
Average 2024 Trihalomethanes=									103.9

2024 Haloacetic Acids Sampling Report

Date Sampled	Location	Parameter	2,3-Dibromopropionic Acid	Bromochloroacetic Acid	Dibromoacetic Acid	Dichloroacetic Acid	Monobromoacetic Acid	Monochloroacetic Acid	Trichloroacetic Acid	Total Haloacetic Acids
		Unit	%	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L	µg/L
23-Jan-24	Subway	-	5.26	<1.00	51.6	<1.00	4.15	65.4	121	
	7-Eleven	-	5.51	<1.00	50	<1.00	4.28	66.3	120	
24-May-24	Subway	-	4.66	<1.00	43.1	<1.00	3.34	54.9	101	
	7-Eleven	-	4.6	<1.00	43.3	<1.00	3.41	55.3	102	
13-Aug-24	Subway	-	4.8	<1.00	40.1	<1.00	4.51	52.9	97.5	
	7-Eleven	-	4.95	<1.00	43	<1.00	3.72	54.3	101	
8-Oct-24	Subway	-	4.37	<1.00	37.4	<1.00	3.18	44.2	84.8	
	7-Eleven	-	4.15	<1.00	36.7	<1.00	<1.00	45.4	82.1	
Average 2024 Haloacetic Acids=									101.2	

2024 Organics Sampling Report

Date Sampled		15-May-24		
Parameters	Unit	Results	MAC	Other Value
Benzene	µg/L	<0.50	5	
Benzo(a)pyrene	µg/L	<0.0050	0.04	
Carbon Tetrachloride	µg/L	<0.50		
1,2-Dichlorobenzene	µg/L	<0.50	200	AO: ≤3
1,4-Dichlorobenzene	µg/L	<0.50	5	AO: ≤1
1,2-Dichloroethane	µg/L	<0.50	5	
1,1-Dichloroethene	µg/L	<0.5		
Methylene Chloride	µg/L			
2,4-Dichlorophenol	µg/L	<0.050		
Ethylbenzene	µg/L	<0.50	140	AO: ≤1.6
Chlorobenzene	µg/L	<0.50		
Perfluorooctane Sulfonic Acid (PFOS)	µg/L	<0.020	0.6	
Perfluorooctanoic Acid (PFOA)	µg/L	<0.020	0.2	
Tetrachloroethene	µg/L	<0.50		
2,3,4,6-Tetrachlorophenol	µg/L	<0.10	100	AO: ≤1
Toluene	µg/L	<0.50	60	AO: ≤24
Trichloroethene	µg/L	<0.50		
2,4,6-Trichlorophenol	µg/L	<0.10	5	AO: ≤2
Vinyl Chloride	µg/L	<0.50		ALARA- 2
o-Xylene	µg/L	<0.30		
m+p-Xylenes	µg/L	<0.40		

Comments: MAC - Maximum Allowable Concentration
 ALARA - As Low As Reasonably Achievable
 AO - Aesthetic Objective

2024 Cyanide and Mercury Sampling Report

Sample Description		Treated Water		
Date Sampled		15-May-24		
Parameter	Unit	Results	MAC	AO
Cyanide	mg/L	<0.0050	0.2	0.005
Mercury	mg/L	<0.0000050	0.001	0.000026

2024 Microcystin Sampling Report

Parameter	Microcystin LR	
	Raw Water	Treated Water
Same Description	ug/L	ug/l
Date Sampled		
15-May-24	<0.20	<0.20
12-Jun-24	<0.20	<0.20
9-Jul-24	<0.20	<0.20
13-Aug-24	<0.20	<0.20
10-Sep-24	<0.20	<0.20

2024 Cryptosporidium & Giardia Sampling Report

Sample Description			Raw Water	Raw Water
Date Sampled			12-Jun-24	4-Nov-24
Parameter	Units	Lowest Detection Limit	Results	Results
Volume Filtered (Cryptosporidium and Giardia)	L	0.1	10.0	10.0
Cryptosporidium (nonviable)	oocysts/L	0.1	<0.1	<0.1
Cryptosporidium (viable)	oocysts/L	0.1	<0.1	<0.1
Giardia (nonviable)	cysts/L	0.1	<0.1	<0.1
Giardia (viable)	cysts/L	0.1	<0.1	<0.1
Cryptosporidium, total	oocysts/L	0.1	<0.1	<0.1
Giardia, Total	cysts/L	0.1	<0.1	<0.1