

July 29, 2020

Report To: Mayor & Council

From: Travis Rob, P.Eng., Manager of Operations & Facilities

SUBJECT: April 2020 Drinking Water Systems Monthly Summary Report

Please find attached the April 2020 Summary Report on the drinking water systems, prepared by Brad Webb, Senior WTP Operator.

Your Administration recommends that Operations & Facilities Executive Committee accept the April 2020 report as presented.

Respectfully submitted,
Operations & Facilities Division



Travis Rob, P.Eng.
Manager of Operations & Facilities

Council approval of this report will accept the April 2020 report prior to it being made available to the general public.
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c.c. – Craig Miller, P.Eng., Environmental Superintendent
Brad Webb, ORO, Senior WTP Operator

RECOMMENDED
AUG 05 2020
DAS/MNC
EXECUTIVE COMM.

April 2020

**Monthly Summary Report
Water Systems**

**Prepared By: Brad Webb, ORO
Senior Water Treatment Plant Operator**

Dated: May 13, 2020

1) Introduction:

This report contains the major maintenance activities and operational events that occurred during the month of April 2020 at the Water Treatment Plant - Water Works # 220000978 and the Airport Groundwater Well Water Works No. 849N7DGE0 (Precedes Airport Groundwater Well Water Works No. 26002736). This information report has been prepared for Council to better understand how the water systems they own and operate are maintained on a monthly basis. Also, this report will assist Council as Directors of the Corporation in exercising its obligation to meet a reasonable Standard of Care as outlined in Section 19 of the Safe Drinking Water Act. The water treatment plant falls under the requirements of Ontario Regulation 170/03 – Drinking Water Systems.

The Airport Small Drinking Water System, System No. 849N7DGE0, was put into service August 01, 2017. The system falls under the requirements of Ontario Regulation 319/08 – Small Drinking Water Systems.

2) Flow Data:

Water Treatment Plant: See attached spreadsheet.

Airport Groundwater Well:

Estimated Daily Usage	0.21 m3
Estimated April Usage	6.30 m3

3) Microbiological (Health Related) Water Analysis - Main Water System No. 220000978:

Water Treatment Plant (treated): 4 samples taken no adverse results

Water Treatment Plant (raw): 4 samples taken no adverse results

Water Distribution System: 16 samples taken where 25% of samples were tested for heterotrophic plate count (HPC) - no adverse results.

We take microbiological samples on a weekly basis, which includes 1 raw sample, 1 treated sample and 4 distribution samples. The 4 distribution samples are taken at different locations throughout the distribution system.

Water distribution samples taken at the following locations:

1. 1111 First St. E.	2. 401 King's Hwy.	3. 1319 Colonization W.	4. W. Tower
5. 1036 Victoria Ave.	6. 401 King's Hwy	7. 1319 Colonization W.	8. W. Tower
9. 1017 Cornwall Ave.	10. 401 King's Hwy.	11. 1319 Colonization W.	12. W. Tower
13. 940 Third ST.E.	14. 401 King's Hwy.	15. 1319 Colonization W.	16. W. Tower

4) Microbiological (Health Related) Water Analysis - Airport Groundwater Well No. 849N7DGE0:

New drinking water system put online August 01, 2017. No treatment required as the Airport groundwater tested negative for bacteria.

The Airport drinking water system is to be sampled and tested for bacteria once every three (3) months in accordance with Section 25 – Microbiological Sampling and Testing of the Small Drinking Water Systems Regulation, O. Reg. 319/08.

Water distribution sample taken February 5, 2020 – no adverse results.

5) Free Available Chlorine Residual (FAC) - Main Water System No. 220000978:

FAC residuals are taken at a minimum daily at both the Water Treatment Plant and within the Water Distribution System.

6) Free Available Chlorine Residual (FAC) - Airport Groundwater Well System No. 849N7DGE0:

New drinking water system put online August 01, 2017. No treatment required as the Airport groundwater well tested negative for bacteria.

7) Maintenance Activities at the WTP:

April 02nd Cleaned top and bottom tanks on the poly unit.
Cleaned all 4 Check Valves on the poly unit.

April 9th Cleaned top and bottom tanks on the poly unit.
Cleaned all 4 Check Valves on the poly unit.

April 16th Cleaned top and bottom tanks on the poly unit.
Cleaned all 4 Check Valves on the poly unit.

April 17th Did Calibration Check on Dist. Cl2 Analyzer

April 21st Changed positioner on filter #3.

April 23rd Cleaned top and bottom tanks on the poly unit
Cleaned all 4 Check Valves on the poly unit

April 28th Ran the Standby Generator for 1 hour
Shut down low lift pumps and cleaned raw water well.
Took grab samples off filters

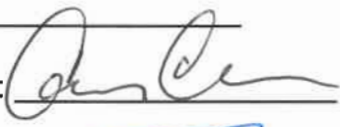

8) Water Complaints:

- Poor Pressure – 0 complaints.
- Water quality – 0 complaints.

9) Other Miscellaneous Information:

April 1 st	Painted floor by Poly unit. Installed automatic towel dispenser in lunchroom.
April 2 nd	Finished painting upstairs hallway. Installed new fire hose reel by clarifiers.
April 3 rd	installed new bins in blower room and filled with parts.
April 6 th	Installed automatic towel dispenser at poly unit. Routine Micro samples. Samples on Colonization Road West water main repair 1 st set.
April 7 th	Samples on Colonization Road West water main repair 2 nd set.
April 13 th	Routine Micro samples.
April 20 th	Routine Micro samples.
April 27 th	Routine Micro samples.

10) In order to acknowledge that all levels of responsibility within the Corporation of the Town of Fort Frances have received and reviewed this monthly report, it is necessary to sign-off in the appropriate location below:

- Brad Webb, ORO, Senior WTP Operator: _____
- Craig Miller, P.Eng. Environmental Superintendent: _____
- Travis Rob, P.Eng. Manager of Operations & Facilities: _____
- Doug Brown, P.Eng. CAO: _____
- Rick Wiedenhoeft, Chair O & F Exec Committee: _____
- June Caul, Mayor: _____
- John McTaggart, Councillor: _____
- Mike Behan, Councillor: _____
- Wendy Brunetta, Councillor: _____
- Doug Judson, Councillor: _____
- Andrew Hallikas, Councillor: _____

Note: Once all signatures have been obtained, the report will be distributed and made available to the public. If you have any questions, please feel free to contact myself or Brad Webb, Senior WTP Operator at 274-2325.

Town of Fort Frances - WTP - 220000978
 April 2018 v 2019 v 2020

Flow and Operating Data

Flow Data	APRIL	Units	2018	2019	2020
Total Raw Water		m ³	153240	146840	149220
Raw Maximum Day		m ³	7070	6220	5770
Raw Minimum Day		m ³	4940	4060	3820
Raw Average Daily Consumption		m ³	5280	5060	5150
Total Treated Water		m ³	117850	106270	96350
Treated Water Maximim Day Consumption		m ³	6460	4330	3640
Treated Water Minimim Day Consumption		m ³	3230	2910	2730
Treated Water Average Day Consumption		m ³	3930	3540	3210
Daily Average Per Household Consumption Rate		m ³	1.04	0.94	0.85
* Daily Average Per Person Consumption Rate		m ³	0.49	0.44	0.40
Monthly Averages - Operating Parameters WTP:					
FAC Residual - Treated Water		mg/L	2.14	2.13	2.20
Total Chlorine Residual - Treated Water		mg/L	2.37	2.36	2.28
Aluminum Sulphate - Raw Water		mg/L	35.00	35.00	35.00
Aluminum Sulphate - Treated Water Residual		mg/L	0.03	0.03	
Fluoride - Treated Water		mg/L	0.66	0.63	0.72
Soda Ash - Raw Water		mg/L	35.00	35.00	35.00
pH - Adjusted			7.08	6.99	6.94
Temperature		°C	3.20	4.10	5.40
Quantity of Chemical Used:		kg			
Aluminum Sulphate		kg	5544.7	5312.3	5399.8
Polyelectrolyte		kg	87.5	75.0	62.5
Chlorine Gas		kg	609	579	605
Soda Ash - Used for pH Adjustment		kg	5544.7	5312.3	5399.8
Fluoride		kg	645	442	736

* The Canadian Average is 450 Litres (0.45 m³) per day.
 * Population is 7986
 * Number of Households is 3783

Town of Fort Frances - Water treatment Plant - Water Works # 220000978
Monitoring Record
April 2020

Operating Data	Units	*MAC	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	Total	Average
		or Range																																
Flow rates																																		
Raw Water	10^3 M^3	17	5.06	5.05	5.16	5.30	5.17	5.05	5.18	5.21	5.19	5.08	5.19	5.20	5.30	5.17	5.22	5.19	4.99	5.08	4.94	5.77	5.18	5.23	5.18	5.23	5.30	5.11	5.19	5.20	3.82	5.34	149.22	5.15
Peak Instantaneous - Raw Water	L/s	n/a	59.16	59.20	60.55	60.59	60.59	60.36	60.51	60.51	60.54	60.69	60.64	60.64	60.66	60.66	60.71	60.68	60.69	60.77	60.84	60.80	60.84	60.86	60.89	60.93	60.94	60.95	60.89	60.94	63.62	62.17	1822.82	60.76
Treated Water	10^3 M^3	17	3.13	3.12	3.24	3.63	2.90	3.19	3.63	3.40	3.14	3.12	2.89	3.26	3.03	3.26	3.19	3.01	2.73	3.35	3.10	3.64	3.13	3.22	3.30	2.96	3.41	3.27	3.40	3.22	3.08	3.40	96.35	3.21
Peak Instantaneous - Treated Water	L/s	5	62.94	62.40	62.33	61.86	63.07	62.14	62.39	64.04	62.41	62.16	62.46	62.88	63.14	63.17	63.38	62.75	62.69	62.42	63.28	62.28	61.97	63.06	61.85	63.27	63.54	62.98	62.19	62.42	62.83	62.89	1881.19	62.71
BackWash Water	10^3 M^3	n/a	0.260	0.244	0.278	0.259	0.243	0.297	0.263	0.243	0.279	0.263	0.248	0.279	0.261	0.248	0.278	0.261	0.246	0.279	0.238	0.238	0.278	0.263	0.249	0.279	0.260	0.237	0.279	0.262	0.000	0.249	7.561	0.252
Fluoride Information																																		
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.71	0.73	0.69	0.71	0.69	0.68	0.68	0.68	0.69	0.70	0.70	0.71	0.74	0.71	0.71	0.71	0.72	0.72	0.72	0.73	0.72	0.72	0.70	0.71	0.73	0.75	0.76	0.76	0.77	0.76	21.51	0.72
Turbidity Information																																		
Raw Water	NTU	n/a	0.55	0.57	0.59	0.61	0.66	0.59	0.63	0.61	0.55	0.58	0.63	0.64	0.59	0.74	0.98	0.77	0.81	0.83	0.83	0.98	0.88	0.84	0.97	0.89	0.94	0.83	0.78	0.79	0.96	1.08	22.70	0.76
Settled Water	NTU	n/a	0.19	0.17	0.16	0.15	0.14	0.16	0.14	0.14	0.15	0.16	0.15	0.15	0.14	0.30	0.27	0.24	0.23	0.21	0.19	0.19	0.26	0.23	.15	17.00	0.23	0.23	0.28	0.28	0.26	0.29	22.69	0.78
Treated Water	NTU	1	0.15	0.12	0.12	0.11	0.12	0.11	0.11	0.10	0.10	0.11	0.10	0.10	0.11	0.16	0.19	0.17	0.21	0.13	0.19	0.20	0.26	0.28	0.26	0.32	0.32	0.25	0.25	0.29	0.59	0.36	5.89	0.20
Other Operating Parameters																																		
pH - Treated Water	no units	6.5 to 8.5	7.00	7.04	7.07	7.09	7.05	7.01	7.03	7.03	7.06	7.05	7.01	7.02	7.03	7.03	6.79	6.76	6.74	6.77	6.76	6.93	6.77	6.83	6.82	6.98	6.85	6.75	6.84	7.07	7.12	7.04	208.34	6.94
pH - Settled water	no units	n/a	6.45	6.44	6.45	6.41	6.49	6.44	6.44	6.40	6.43	6.45	6.41	6.44	6.41	6.22	6.28	6.10	6.26	6.27	6.20	6.25	6.12	6.06	6.20	6.20	6.15	6.27	6.20	6.25	6.19	6.25	189.13	6.30
pH - Raw Water	no units	n/a	6.91	6.99	7.01	7.00	7.01	7.00	7.02	7.00	6.99	6.98	7.01	7.00	7.01	6.77	6.74	6.73	6.73	6.73	6.80	6.71	6.61	6.59	6.61	6.84	6.65	6.75	6.82	6.83	6.78	7.09	205.71	6.86
FAC - Treated Water	mg/l	0.2 to 4	2.00	2.02	2.01	2.10	2.11	2.10	6.16	2.08	2.00	2.15	2.14	2.13	2.11	1.98	2.01	2.01	2.03	1.96	1.99	2.12	2.02	2.06	2.09	2.02	2.07	2.00	2.06	2.00	2.12	2.22	65.87	2.20
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.15	2.19	2.17	2.22	2.20	2.22	2.30	2.28	2.32	2.30	2.28	2.32	2.36	2.34	2.36	2.30	2.38	2.28	2.18	2.28	2.20	2.26	2.20	2.36	2.17	2.46	2.19	2.2	2.58	2.42	68.47	2.28
Temperature	C	15	3.0	3.0	3.0	3.0	3.0	3.0	3.0	4.0	3.0	3.0	3.0	3.0	4.0	3.0	4.0	4.0	4.0	5.0	7.0	7.0	7.0	8.0	7.0	7.0	10.0	11.0	10.0	9.0	9.0	9.0	162.0	5.4
Fluoride used (Total Daily Consumption)	kg	n/a	23.0	25.0	25.0	26.0	25.0	24.0	25.0	23.0	24.0	23.0	23.0	23.0	23.0	22.0	22.0	21.0	25.0	25.0	29.0	26.0	24.0	26.0	25.0	25.0	24.0	24.0	35.0	24.0	736.0	24.5		
Chlorine used (Total Daily Consumption)	kg	n/a	19.0	20.0	19.0	21.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	21.0	20.0	22.0	19.0	20.0	20.0	20.0	19.0	23.0	20.0	20.0	21.0	21.0	20.0	21.0	20.0	21.0	17.0	21.0	605.0	20.2
Soda ash (Total Daily Consumption)	kg	n/a	177.1	176.8	180.6	185.5	181.0	176.8	181.3	182.4	181.7	177.8	181.7	182.0	185.5	181.0	182.7	181.7	174.7	177.8	172.9	202.0	181.3	183.1	181.3	183.1	185.5	178.9	181.7	182.0	133.7	186.9	5399.8	180.0
Soda Ash - Dosage	mg/l	n/a	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	1050.0	35.0
Alum residual - (Total Daily Consumption)	kg	n/a	177.1	176.8	180.6	185.5	181.0	176.8	181.3	182.4	181.7	177.8	181.7	182.0	185.5	181.0	182.7	181.7	174.7	177.8	172.9	202.0	181.3	183.1	181.3	183.1	185.5	178.9	181.7	182.0	133.7	186.9	5399.8	180.0
Alum residual - Dosage	mg/l	n/a	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	35.0	1050.0	35.0
Alum residual - Treated Water	mg/l	0.1		0.03	0.05	0.03	0.04	0.05	0.04	0.04	0.04	0.03	0.04	0.04	0.04	0.04	0.05	0.06	0.07	0.09	0.06	0.06	0.06	0.06	0.07	0.05	0.05	0.06	0.05	0.05	0.09	0.05	1.49	0.05
Poly bags added (25 kg bags)	kg			0.5								0.5																0.5					62.5	