

December 2021

**Monthly Summary Report
Water Systems**

**Prepared by: Greg Wiedenhoeft
Overall Responsible Operator**

Dated: January 04, 2022

1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of December 2021 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 December Usage	6.51 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. 218 Third St. E.	2. 740 Sixth St. W.	3. 320 Portage Ave.	4. W. Tower
5. 1509 School Rd.	6. 835 McKenzie Ave.	7. 130 Second St. E.	8. W. Tower
9. 943 3 rd St. E.	10. 1309 King's Hwy.	11. 218 Third St. E.	12. W. Tower
13. 1017 Cornwall Ave.	14. 900 Wright Ave	15. 1227 Fifth St. E.	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 December 20, 2021 – 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:

Dec 01st - Calibrated distribution chlorine analyzer.
- Calibrated fluoride analyzer.

Dec 02nd - Cleaned top and bottom tanks on the Poly Unit.
-Cleaned all 4 check valves on the Poly Unit.

Dec 03rd - Calibrated distribution chlorine analyzer.

Dec 04th - Calibrated distribution chlorine analyzer.

Dec 05th - Calibrated distribution chlorine analyzer.

Dec 06th - Calibrated fluoride analyzer.

Dec 09th - Cleaned top and bottom tanks on the Poly Unit.
-Cleaned all 4 check valves on the Poly Unit.
-Calibrated the distribution chlorine analyzer.

Dec 13th – Replaced the distribution chlorine analyzer probe membrane.
- Calibrated the distribution chlorine analyzer.

Dec 14th – Flushed the poly line for Clarifier # 2.

Dec 15th – Cleaned and repaired Soda Ash Line.

Dec 16th -Cleaned top and bottom tanks on the Poly Unit.
-Cleaned all 4 check valves on the Poly Unit.

Dec 17th – Calibrated fluoride analyzer.

Dec 21st – Ran emergency generator for 1 hour.

Dec 22nd -calibrated distribution chlorine analyzer.

Dec 23rd - Cleaned top and bottom tanks on the Poly Unit.
-Cleaned all 4 check valves on the Poly Unit.

Dec 29th – Calibrated the fluoride analyzer.

Dec 30th - Cleaned top and bottom tanks on the Poly Unit.
-Cleaned all 4 check valves on the Poly Unit.

8) **Water Complaints:**

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

9) **Other Miscellaneous Information:**

Dec 06th - Routine micro Sample collection.

Dec 07th - Re-sample Routine micro. Dec 6th samples froze in shipping.

Dec 09th – Jamie Davis Plumbing replaced the two toilets and flush valve at WTP.
- Pryde's Plumbing replaced gas valves on the boilers at the water tower.

Dec 13th - Routine micro sample collection.
- Service repair sample at 621 First St. E.
- QMS external audit.

Dec 20th - Quarterly samples at Plant and Water Tower.
- TSS samples taken off the filters.
- Airport micro sample collection.
-Routine micro sample collection.

Dec 28th -Routine micro sample collection.

Dec 29th - Took grab samples off the filters.

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:

- Greg Wiedenhoeft, ORO, Senior WTP Operator: Greg Wiedenhoeft
- Craig Miller, P.Eng. Environmental Superintendent: Craig Miller
- Travis Rob, P.Eng., Manager of Operations & Facilities: Travis Rob
- Faisal Anwar, 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 Greg Wiedenhoeft, Senior WTP Operator at 807-274-2325.

Flow Data	DECEMBER	Units	2019	2020	2021
Total Raw Water	m ³		155250	157090	156010
Raw Maximum Day	m ³		5410	5370	5340
Raw Minimum Day	m ³		4700	4750	4680
Raw Average Daily Consumption	m ³		5010	5070	5030
Total Treated Water	m ³		102220	104350	102560
Treated Water Maximim Day Consumption	m ³		3680	3790	3700
Treated Water Minimim Day Consumption	m ³		2770	2780	2850
Treated Water Average Day Consumption	m ³		3300	3370	3310
Daily Average Per Household Consumption Rate	m ³		0.872	0.891	0.875
* Daily Average Per Person Consumption Rate	m ³		0.413	0.422	0.414
Monthly Averages - Operating Parameters WTP:					
FAC Residual - Treated Water	mg/L		2.2	2.12	2.1
Total Chlorine Residual - Treated Water	mg/L		2.44	2.39	2.4
Aluminum Sulphate - Raw Water	mg/L		35.0	34.0	37.0
Aluminum Sulphate - Treated Water Residual	mg/L		0.06	0.05	0.03
Fluoride - Treated Water	mg/L		0.74	0.71	0.70
Soda Ash - Raw Water	mg/L		35.0	35.0	36.0
pH - Adjusted	mg/L		7.14	7.26	7.11
Temperature	°C		1.8	2.4	2.2
Quantity of Chemical Used:					
Aluminum Sulphate	kg		5433.8	5341.1	5772.37
Polyelectrolyte	kg		62.5	62.5	75.0
Chlorine Gas	kg		672	585	542
Soda Ash - Used for pH Adjustment	kg		5433	5812.3	5616.36
Fluoride	kg		705	530	664

* 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
Dec-21

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	31	Total	Average
		or Range																																	
Flow rates																																			
Raw Water	1000 m³	17	5.06	5.04	5.04	4.93	5.05	5.14	4.83	5.06	4.98	5.03	4.94	5.11	5.09	5.34	5.02	5.07	5.01	4.68	5.26	5.21	4.99	5.02	5.06	5.02	4.92	5.08	5.01	4.75	5.16	5.12	4.99	156.01	5.03
Peak Instantaneous - Raw Water	l/s	n/a	58.98	58.99	58.98	58.84	58.96	58.93	58.98	58.88	58.91	58.96	58.92	58.92	58.42	58.88	58.85	58.85	58.80	58.94	58.90	58.90	58.83	58.35	58.96	58.85	58.79	58.80	58.83	58.77	58.80	58.78	58.64		58.84
Treated Water	1000 m³	17	3.45	3.01	3.24	3.20	3.02	3.38	3.11	3.52	3.24	3.43	3.28	3.23	3.70	3.55	3.56	3.15	3.39	2.85	3.56	3.38	3.42	3.21	3.23	3.57	3.10	3.37	3.14	3.36	3.09	3.25	3.57	102.56	3.31
Peak Instantaneous - Treated Water	l/s	n/a	63.02	62.44	62.92	62.20	62.63	61.36	61.96	62.96	63.13	62.71	62.48	62.73	62.57	64.27	63.16	63.19	62.68	63.28	62.85	63.06	62.08	63.12	62.30	62.46	62.85	62.26	62.97	61.90	62.98	62.44	62.14		62.68
BackWash Water	1000 m³	n/a	0.28	0.26	0.25	0.54	0.25	0.28	0.27	0.25	0.28	0.26	0.25	0.28	0.26	0.26	0.28	0.26	0.25	0.28	0.26	0.25	0.28	0.26	0.25	0.28	0.26	0.25	0.28	0.26	0.25	0.278	0.258	8.503	0.274
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.68	0.58	0.55	0.58	0.53	0.73	0.72	0.73	0.73	0.73	0.74	0.74	0.73	0.73	0.74	0.74	0.75	0.70	0.70	0.70	0.71	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.70	0.71		0.70	
Turbidity Information																																			
Raw Water	NTU	n/a	1.19	1.15	1.14	1.17	1.15	1.17	1.14	1.41	1.22	1.42	1.39	1.39	1.49	1.03	0.94	1.53	1.06	1.26	0.90	0.76	0.81	0.90	0.87	0.90	0.94	0.98	1.03	0.94	0.65	0.79	0.69		1.08
Settled Water	NTU	n/a	0.11	0.10	0.10	0.10	0.09	0.09	0.12	0.18	0.14	0.08	0.14	0.13	0.14	0.14	0.19	0.18	0.19	0.15	0.15	0.19	0.17	0.17	0.16	0.16	0.17	0.17	0.16	0.12	0.12	0.12	0.11		0.14
Treated Water	NTU	1	0.08	0.08	0.09	0.08	0.08	0.09	0.06	0.06	0.07	0.08	0.11	0.08	0.06	0.12	0.11	0.08	0.08	0.10	0.12	0.08	0.09	0.09	0.08	0.08	0.07	0.07	0.07	0.09	0.01	0.01	0.07		0.08
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.14	7.04	7.06	7.04	7.01	7.07	7.12	7.12	7.13	7.15	7.18	7.17	7.16	7.14	7.12	7.16	7.14	7.10	7.11	7.08	7.14	7.10	7.07	7.00	7.09	7.02	7.09	7.26	7.12	7.11	7.04		7.11
pH - Settled water	no units	n/a	6.55	6.47	6.28	6.31	6.35	6.64	6.44	6.38	6.70	6.61	6.63	6.38	6.60	6.59	6.56	6.46	6.59	6.65	6.55	6.35	6.39	6.36	6.44	6.41	6.49	6.38	6.44	6.59	6.65	6.46	6.44		6.49
pH - Raw Water	no units	n/a	7.03	6.90	6.84	6.92	6.93	6.99	7.13	7.13	7.11	7.16	7.15	7.16	7.15	7.17	7.01	7.18	7.16	7.14	7.00	6.97	7.03	7.01	7.01	7.00	7.04	7.01	6.96	7.11	7.14	7.00	6.96		7.05
FAC - Treated Water	mg/l	0.2 to 4	2.22	2.23	2.17	2.28	2.15	2.16	2.15	2.11	1.99	2.17	2.07	2.07	2.15	2.15	2.21	2.07	2.11	2.05	2.07	2.14	2.04	2.17	2.13	2.07	2.02	1.95	1.97	1.97	1.98	2.03	2.02		2.10
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.47	2.30	2.39	2.48	2.40	2.55	2.51	2.38	2.39	2.44	2.34	2.38	2.43	2.38	2.23	2.41	2.38	2.47	2.28	2.49	2.54	2.60	2.48	2.46	2.35	2.40	2.38	2.31	2.29	2.31	2.29		2.40
Temperature	°C	15	3.0	3.0	3.0	3.0	3.0	3.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0		2.2	
Fluoride used (Total Daily Consumption)	kg	n/a	26.0	24.0	28.0	31.0	28.0	22.0	22.0	22.0	21.0	21.0	21.0	22.0	21.0	22.0	20.0	23.0	24.0	21.0	23.0	23.0	19.0	19.0	18.0	19.0	18.0	18.0	17.0	18.0	18.0	17.0	17.0	664.00	21.4
Chlorine used (Total Daily Consumption)	kg	n/a	18.0	17.0	18.0	17.0	18.0	17.0	17.0	18.0	18.0	17.0	17.0	18.0	18.0	18.0	18.0	17.0	18.0	16.0	19.0	18.0	18.0	17.0	18.0	17.0	17.0	17.0	18.0	16.0	17.0	18.0	17.0	542.00	17.5
Soda Ash (Total Daily Consumption)	kg	n/a	182.2	181.4	181.4	177.5	181.8	185.0	173.9	182.2	179.3	181.1	177.8	184.0	183.2	192.2	180.7	182.5	180.4	168.5	189.4	187.6	179.6	180.7	182.2	180.7	177.1	182.9	180.4	171.0	185.8	184.3	179.6	5616.36	181.2
Soda Ash - Dosage	mg/l	n/a	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36		36.0
Alum residual - (Total Daily Consumption)	kg	n/a	187.2	186.5	186.5	182.4	186.9	190.2	178.7	187.2	184.3	186.1	182.8	189.1	188.3	197.6	185.7	187.6	185.4	173.2	194.6	192.8	184.6	185.7	187.2	185.7	182.0	188.0	185.4	175.8	190.9	189.4	184.6	5772.37	186.2
Alum residual - Dosage	mg/l	n/a	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0	37.0		37.0
Alum residual - Treated Water	mg/l	0.1	0.02	0.04	0.05	0.04	0.04	0.03	0.03	0.01	0.05	0.03	0.04	0.03	0.04	0.05	0.03	0.08	0.03	0.01	0.02	0.02	0.01	0.01	0.01	0.01	0.01	0.01	0.04	0.03	0.04	0.02		0.03	
Poly bags added (25 kg bags)	kg	n/a						0.5				0.5					0.5				0.5			0.5							0.5			75.0	

Minimum	Maximum
4.68	5.34
58.35	58.99
2.85	3.70
61.36	64.27

* MAC - maximum acceptable range

Signature: Greg Wiedenhoeft
Greg Wiedenhoeft (Feb 3, 2022 15:30 CST)
Email: gwiedenhoeft@fortfrances.ca

Signature: Carly Miller
Email: cmiller@fortfrances.ca

Signature: Tim Robb
Email: trob@fortfrances.ca












WTP December 2021 Report Complete

Final Audit Report

2022-02-03

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By:	Craig Miller (cmiller@fortfrances.ca)
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