

September 2021

**Monthly Summary Report
Water Systems**

**Prepared by: Greg Wiedenhoeft, ORO
Senior Water Treatment Plant Operator**

Dated: October 04, 2021

1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of September 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 monthly. 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 September Usage	6.3 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 3 rd St. E.	2. 401 King's Hwy	3. 900 Wright Ave.	4. W. Tower
5. 601 Read Ave.	6. 218 3 rd St. E.	7. 900 Wright Ave	8. W. Tower
9. 1017 Cornwall Ave.	10. 900 Wright Ave.	11. 401 King's Hwy.	12. W. Tower
13. 943 3 rd St. E.	14. 740 6 th St. W.	15. 835 McKenzie Ave.	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 September 21, 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:

Sept 02nd - Cleaned all 4 check valves on the poly unit.
- Cleaned top and bottom tanks on the poly unit.

Sept 03rd – Greased clarifiers 1 and 2, chain and sprockets.

Sept 04th - Flushed Poly lines to clarifiers.

Sept 08th - Ran generator for 1 hr, and tested generator transfer switch.

Sept 09th – Cleaned the Soda Ash line.
- Cleaned all 4 check valves on the poly unit.
- Cleaned top and bottom tanks on the poly unit.

Sept 10th - Calibrated distribution chlorine analyzer.

Sept 11th – Cannect Electric replaced backwash pump reset switch in the M.C.C. panel.

Sept 12th – Replaced Soda Ash transfer pump with rebuilt pump.

Sept 15th – Replaced membrane on chlorine analyzer.

Sept 16th - Cleaned all 4 check valves on the poly unit.
- Cleaned top and bottom tanks on the poly unit.

Sept 22nd – Removed motor on High Lift pump #1, too send away for rebuild.
- Replaced filtered water sample pump.
- Calibrated chlorine analyzer.

Sept 24th - Cleaned all 4 check valves on the poly unit.
- Cleaned top and bottom tanks on the poly unit.

Sept 27th – Flushed and cleaned Poly line for Clarifier #1.
- Calibrated fluoride analyzer.

Sept 28th - Took grab samples off the filters.
- Flushed and cleaned Poly line for Clarifier #2.
- Received a load of Alum.

Sept 29th – Changed backwash pump motor.

Sept 30th – Calibrated distribution chlorine analyzer.

8) **Water Complaints:**

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

9) **Other Miscellaneous Information:**

Sept 01st – New water main Tie-in micro samples Armit Ave. second set.
-Service repair micro sample at 806 Portage Ave. second set.

Sept 02nd – New service micro sample at 1530 King's Hwy.

Sept 03rd - New water main Tie-in micro samples Armit Ave. re-sample first set
-Service repair micro sample at 806 Portage Ave. re-sample first set
-First set did not make it to the lab in time because of shipping.

Sept 07th - Routine micro sample collection.

Sept 13th - Routine micro sample collection.

Sept 14th – Temp service micro sample at 602 Fourth St. W.

Sept 20th - Routine micro sample collection.

Sept 21st - Did Quarterly samples at W.T.P. and Tower.

- Did T.S.S. and cl2 samples off filter # 4.

- Did Airport samples.

Sept 23rd – Took micro samples for Wright Ave. lined water main, first set.

Sept 27th - Routine micro sample collection.

- Took micro samples for Wright Ave. lined water main, second set.

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, Overall Responsible 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 Craig Miller or Greg Wiedenhoeft at 807-274-2325.

Flow Data	SEPTEMBER	Units	2019	2020	2021
Total Raw Water	m ³		151480	160540	180800
Raw Maximum Day	m ³		5890	5850	6840
Raw Minimum Day	m ³		4300	4870	5460
Raw Average Daily Consumption	m ³		5050	5350	6030
Total Treated Water	m ³		100160	107690	99820
Treated Water Maximim Day Consumption	m ³		3990	4190	4120
Treated Water Minimim Day Consumption	m ³		2810	2930	2800
Treated Water Average Day Consumption	m ³		3340	3590	3333
Daily Average Per Household Consumption Rate	m ³		0.883	0.949	0.881
* Daily Average Per Person Consumption Rate	m ³		0.418	0.450	0.417
Monthly Averages - Operating Parameters WTP:					
FAC Residual - Treated Water	mg/L		2.26	2.25	2.34
Total Chlorine Residual - Treated Water	mg/L		2.53	2.55	2.68
Aluminum Sulphate - Raw Water	mg/L		35.0	34.0	38.0
Aluminum Sulphate - Treated Water Residual	mg/L		0.03	0.03	0.02
Fluoride - Treated Water	mg/L		0.75	0.58	0.56
Soda Ash - Raw Water	mg/L		35.0	3.7	37.0
pH - Adjusted	mg/L		7.34	7.38	7.35
Temperature	°C		16.7	16.4	18.5
Quantity of Chemical Used:					
Aluminum Sulphate	kg		5301.7	5458.4	6870.4
Polyelectrolyte	kg		62.5	62.5	87.5
Chlorine Gas	kg		726	797	837
Soda Ash - Used for pH Adjustment	kg		5301.7	5940	6689.6
Fluoride	kg		724	724	573

* The Canadian Average is 450 litres (0.45 m³) per day.

* Population is 7986


* Number of Households is 3783

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	1000 m ³	17	6.43	6.48	6.50	6.50	6.84	5.80	6.52	6.42	6.42	6.06	5.91	6.04	6.12	6.03	6.03	5.88	5.90	5.82	5.95	6.19	6.25	6.01	5.61	5.60	5.62	5.57	5.66	5.58	5.60	5.46	180.80	6.03	
Peak Instantaneous - Raw Water	l/s	n/a	75.46	75.55	75.51	75.36	75.31	75.19	75.19	75.03	75.08	74.91	74.68	70.50	70.55	79.96	70.39	70.34	70.30	69.97	70.05	70.23	70.13	70.21	70.11	69.87	65.64	65.56	65.51	65.52	65.50	65.42		71.43	
Treated Water	1000 m ³	17	3.81	3.44	4.12	3.07	3.22	2.80	3.34	3.81	3.07	3.19	3.78	3.06	3.54	3.28	3.23	3.33	2.92	3.27	2.94	3.56	3.26	3.34	2.99	3.41	2.95	3.37	3.26	3.41	3.47	3.58	99.82	3.33	
Peak Instantaneous - Treated Water	l/s	n/a	92.67	84.68	81.21	83.52	79.82	81.02	79.01	86.12	81.22	80.34	80.66	####	63.09	62.70	63.71	63.97	62.90	62.50	62.85	63.28	62.71	63.44	63.99	62.98	63.54	64.32	64.30	65.77	63.22	63.39		71.90	
BackWash Water	1000 m ³	n/a	0.27	0.26	0.28	0.27	0.26	0.26	0.27	0.26	0.49	0.27	0.26	0.11	0.00	0.21	0.19	0.28	0.29	0.27	0.28	0.27	0.26	0.28	0.26	0.26	0.28	0.27	0.26	0.08	0.00	0.223	7.151	0.238	
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.53	0.55	0.52	0.52	0.51	0.57	0.50	0.50	0.54	0.62	0.63	0.63	0.48	0.45	0.53	0.57	0.62	0.62	0.62	0.63	0.55	0.60	0.63	0.59	0.56	0.60	0.59	0.49	0.50	0.52		0.56	
Turbidity Information																																			
Raw Water	NTU	n/a	1.63	1.57	1.66	1.57	1.35	1.38	1.59	1.54	1.47	1.41	1.49	1.52	2.19	1.70	1.63	1.67	1.42	1.69	1.22	1.68	1.62	1.69	1.61	1.46	1.35	1.59	1.31	1.34	1.37	1.41		1.54	
Settled Water	NTU	n/a	0.14	0.11	0.11	0.09	0.06	0.10	0.13	0.11	0.11	0.11	0.11	0.11	0.09	0.12	0.12	0.08	0.06	0.07	0.12	0.12	0.10	0.14	0.11	0.12	0.07	0.07	0.11	0.13	0.08	0.11		0.10	
Treated Water	NTU	1	0.09	0.11	0.08	0.11	0.01	0.07	0.09	0.10	0.10	0.11	0.10	0.10	0.10	0.10	0.12	0.10	0.03	0.06	0.11	0.09	0.10	0.10	0.07	0.08	0.07	0.07	0.10	0.09	0.08	0.08		0.09	
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.42	7.35	7.43	7.36	7.31	7.30	7.28	7.38	7.28	7.39	7.30	7.42	7.32	7.32	7.31	7.30	7.37	7.38	7.38	7.51	7.38	7.40	7.34	7.31	7.36	7.36	7.34	7.33	7.27	7.42		7.35	
pH - Settled water	no units	n/a	6.37	6.38	6.35	6.31	6.35	6.38	6.38	6.41	6.39	6.38	6.39	6.44	6.35	6.34	6.38	6.34	6.40	6.43	6.42	6.41	6.29	6.34	6.31	6.29	6.25	6.28	6.31	6.28	6.33		6.35		
pH - Raw Water	no units	n/a	7.39	7.17	7.20	7.28	7.26	7.27	7.26	7.28	7.21	7.25	7.27	7.21	7.09	7.11	7.29	7.24	6.99	7.05	7.06	7.01	7.06	7.25	7.26	7.27	7.22	7.20	7.26	7.25	7.21	7.03		7.20	
FAC - Treated Water	mg/l	0.2 to 4	2.14	2.30	2.21	2.22	2.21	2.30	2.30	2.24	2.17	2.28	2.22	2.24	2.42	2.35	2.48	2.40	2.31	2.38	2.24	2.37	2.42	2.43	2.33	2.46	2.37	2.57	2.52	2.46	2.37	2.42		2.34	
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.40	2.64	2.55	2.54	2.54	2.52	2.61	2.63	2.58	2.60	2.64	2.58	2.82	2.73	2.86	2.84	2.67	2.61	2.67	2.76	2.79	2.81	2.74	2.85	2.73	2.87	2.90	2.64	2.56	2.60		2.68	
Temperature	°C	15	20.0	20.0	20.0	20.0	20.0	20.0	19.0	20.0	19.0	19.0	19.0	19.0	19.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	17.0		18.5	
Fluoride used (Total Daily Consumption)	kg	n/a	21.0	22.0	21.0	20.0	21.0	18.0	19.0	20.0	19.0	18.0	18.0	17.0	19.0	17.0	19.0	21.0	20.0	20.0	20.0	21.0	21.0	21.0	18.0	18.0	18.0	18.0	17.0	17.0	17.0	17.0	17.0	573.00	19.1
Chlorine used (Total Daily Consumption)	kg	n/a	29.0	30.0	31.0	30.0	32.0	28.0	30.0	30.0	30.0	28.0	28.0	28.0	29.0	28.0	28.0	27.0	28.0	27.0	28	29	29	29	25	26	25	26	25	26	24	24	837.00	27.9	
Soda Ash (Total Daily Consumption)	kg	n/a	237.9	239.8	240.5	240.5	253.1	214.6	241.2	237.5	237.5	224.2	218.7	223.5	226.4	223.1	223.1	217.6	218.3	215.3	220.2	229.0	231.3	222.4	207.6	207.2	207.9	206.1	209.4	206.5	207.2	202.0	6689.60	223.0	
Soda Ash - 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		
Alum residual - (Total Daily Consumption)	kg	n/a	244.3	246.2	247.0	247.0	259.9	220.4	247.8	244.0	244.0	230.3	224.6	229.5	232.6	229.1	229.1	223.4	224.2	221.2	226.1	235.2	237.5	228.4	213.2	212.8	213.6	211.7	215.1	212.0	212.8	207.5	6870.40	229.0	
Alum residual - Dosage	mg/l	n/a	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0	38.0		38.0	
Alum residual - Treated Water	mg/l	0.1	0.01	0.02	0.01	0.01	0.09	0.02	0.01	0.02	0.02	0.02	0.01	0.02	0.01	0.01	0.01	0.04	0.02	0.04	0.03	0.02	0.01	0.01	0.02	0.01	0.02	0.01	0.01	0.03	0.01		0.02		
Poly bags added (25 kg bags)	kg	n/a	0.5								0.5					0.5			0.5			0.5				0.5					0.5		87.5		

* MAC - maximum acceptable range

Signature: 
Greg Wiedenhoeft (Oct 4, 2021 14:27 CDT)
Email: gwiedenhoeft@fortfrances.ca

Signature: 
Email: cmiller@fortfrances.ca

Signature: 
Email: trob@fortfrances.ca

Minimum	Maximum
5.46	6.84
65.42	79.96
2.80	4.12
62.50	104.12












WTP September 2021 Report

Final Audit Report

2021-10-04

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