

June 17, 2016

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: May 2016 Drinking Water Systems Monthly Summary Report

Please find attached the May 2016 Summary Report on the drinking water systems, prepared by Randy White, Senior WTP Operator.

Your Administration recommends that Operations & Facilities Executive Committee accept the May 2016 report as presented.

Respectfully submitted,
Operations & Facilities Division



Doug Brown, P. Eng.
Manager of Operations & Facilities

<p>Council approval of this report will accept the May 2016 Drinking Water Systems Monthly Summary Report and approve the report prior to it being made available to the general public.</p>

c.c. – Doug Herr, Environmental & Facilities Supt.
Randy White, Senior WTP Operator

03CouncilwaterreportMarch 2015

May, 2016

**Monthly Summary Report
Water Systems**

**Prepared by: Randy White, ORO
Senior Water Treatment Plant Operator**

Dated: June 16, 2016

1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of May 2016 at the Water Treatment Plant - Water Works # 220000978 and the Airport Groundwater Well Water Works # 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.

2) **Flow Data:**

Water Treatment Plant: See attached spreadsheet. No flow data for Airport groundwater well.

3) **Microbiological (Health Related) Water Analysis - Main Water System # 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. 1036 Victoria Ave.	2. 740 Sixth St. W.	3. 810 King's Hwy.	4. W. Tower
5. 740 Scott St.	6. 1150 Portage Ave.	7. 901 Wright Ave.	8. W. Tower
9. 1111 First St. E.	10. 1036 Victoria Ave.	11. 810 King's Hwy.	12. W. Tower
13. 401 Nelson St.	14. 901 Wright Ave.	15. 810 King's Hwy.	16. W. Tower

4) **Microbiological (Health Related) Water Analysis - Airport Groundwater Well # 26002736:**

No samples taken.

The Airport has signs posted in the men's and women's washroom stating that the water has not been tested or treated for drinking purpose in accordance with the Health Protection and Promotion Act – Section 7 of the Small Drinking Water Systems Regulation, O. Reg. 318/08 (*Amended to Safe Drinking Water Act, 2002 - Section 6 of Ontario Regulation 252/05*). The operators do a visual inspection of the warning notices at a minimum of once per week to ensure that they are legible and comply with Ontario Regulation 318/08, Section 7(5).

**5) Free Available Chlorine Residual (FAC) - Main Water System -
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
26002736:**

Signs posted, exempt from testing.

7) Maintenance Activities at the WTP:

- May 03rd - calibrated distributor chlorine analyzer
 - calibrated Fluoride analyzer
- May 4th - set up analyzers so the each have their own power supply.
- May 5th - worked on Clear Well No. 2.
- May 7th - calibrated distribution chlorine analyzer
- May 10th - ran generator for 1 hour.
- May 16th - filled Clear Well No. 2 and sent samples to lab. - 1st set
- May 17th - left Clear Well No. 2 isolated and sent samples to lab. - 2nd set
- May 19th - calibrated distribution chlorine analyzer
- May 21st - put Clear Well No. 2 back on line after micros cleared.
- May 25th - worked on tower chlorine system.
- May 26th - Clear Tech here doing calibrations.
- May 27th - cleaned top and bottom tanks on poly unit.
 - cleaned all 4 checks valves on poly pumps

8) **Water Complaints:**

- Poor Pressure – 0 complaints
- Water Quality – 5 complaints

May 16, 2016 - 1312 Emo Rd. - Chlorine residual: 0.91 mg/L. Took water sample for bacti testing – clear.

May 24, 2016 – 944, 930, 936 and 900 Crowe Ave. – Discoloured water. Flushed hydrant (HYD235) in front of 920 Crowe Ave. until clear.

9) **Other Miscellaneous Information:**

- May 02nd - setting up Sunny Cove Water System.
 - took weekly routine bacti samples.
- May 03rd - took grab samples off the filters.
 - water main break repair - water samples - First St. W. (700 blk.) - 1st set.
- May 04th - water main break repair - water samples - First St. W. (700 blk.) - 2nd set.
- May 05th - water main break repair - water samples - Colonization Rd. W. at Armstrong Pl. - 1st set.
- May 09th - took the D.W.S.P. samples at plant.
 - took weekly routine bacti samples.
 - water main break repair - water samples –Colonization Rd. W at Armstrong Pl. - 2nd set.
- May 10th - water samples taken at Sunny Cove - 1st set.
 - seasonal samples at Point Park, Legion Park, and ball fields
- May 11th - water samples taken at Sunny Cove 2nd - set.
 - Q.M.S. internal audit.
 - took micro samples at 1312 Emo Rd. - customer complaint
- May 12th - seasonal samples at Vanjura and Sorting Gap.
- May 16th - took weekly routine bacti samples.
- May 18th - seasonal samples at point Park showers
 - temporary water main samples (Bay City) - Phair Ave.
 - did quarterly samples at the Plant and Tower
 - seasonal samples at Point Washroom and Lions Park.

- May 24th - took weekly routine bacti samples.
- May 25th - Q.M.S. meeting
- May 26th - new water main samples (Makkinga) - Lillie Ave. - 1st set.
- May 27th - new Water main samples (Makkinga) - Lillie Ave. - 2nd set.
- May 30th - took weekly routine bacti samples.
- temporary water main samples (Makkinga) - 1217 Scott St. and Harbourage

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:

- Randy White, ORO, Senior WTP Operator: _____
- Doug Herr, Environmental & Facilities Supt.: _____
- Doug Brown, Manager of Operations & Facilities: _____
- Mark McCaig, CAO: _____
- Paul Ryan, Chair O& F Exec Committee: _____
- Roy Avis, Mayor: _____
- June Caul, Councillor: _____
- John Albanese, Councillor: _____
- Wendy Brunetta, Councillor: _____
- Doug Kitowski, Councillor: _____
- Ken Perry, 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 Randy White, Senior WTP Operator at 274-2325.

Monthly Report May 2016

Town of Fort Frances - Water treatment Plant - Water Works # 220000978
Monitoring Record
May 2016

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	10³ M³	17	5.28	5.35	5.20	5.19	5.16	5.20	5.26	5.21	5.09	5.23	5.23	5.25	5.23	5.26	5.32	5.28	5.30	5.34	5.18	5.18	5.48	5.13	5.50	5.26	5.36	5.32	5.52	5.28	5.27	5.38	163.49	5.27			
Peak Instantaneous - Raw Water	L/s	n/a	60.54	60.6	61.07	60.55	60.64	60.80	60.54	60.60	60.60	61.20	61.30	61.14	61.54	61.74	61.46	61.63	61.80	61.82	62.05	62.00	62.05	62.22	62.18	61.81	62.05	62.12	62.39	62.59	62.68	62.82	63.08	1909.61	61.60		
Treated Water	10³ M³	17	3.63	4.03	4.01	3.55	4.15	4.15	3.73	3.87	3.77	3.72	3.64	3.57	3.76	4.10	3.25	3.38	3.24	3.49	3.73	4.02	4.05	4.18	3.92	3.86	4.26	4.32	3.94	4.00	3.34	3.58	4.34	118.58	3.83		
Peak Instantaneous - Treated Water	L/s	n/a	68.91	67.28	86.66	67.99	72.69	78.52	70.73	66.33	67.47	72.66	68.29	73.90	69.72	108.40	62.92	64.63	71.09	67.34	69.00	76.36	73.76	67.35	69.86	62.64	74.60	102.75	80.93	85.90	81.01	79.72	83.73	2313.14	74.62		
BackWash Water	10³ M³	n/a	0.267	0.225	0.240	0.264	0.223	0.236		0.265	0.229	0.238	0.257	0.238	0.234	0.260	0.230	0.247	0.260	0.230	0.228	0.244	0.249	0.228	0.244	0.251	0.226	0.245	0.213	0.226	0.242	0.159	0.226	7.124	0.237		
Fluoride Information																																					
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.64	0.78	0.80	0.63	0.70	0.60	0.62	0.65	0.51	0.65	0.56	0.59	0.54	0.61	0.63	0.63	0.58	0.73	0.77	0.72	0.70	0.72	0.69	0.59	0.69	0.70	0.53	0.71	0.70	0.61	0.68	20.26	0.65		
Turbidity Information																																					
Raw Water	NTU	n/a	0.77	0.75	0.82	0.78	0.81	0.86	0.89	0.88	1.11	1.13	1.02	1.09	0.98	1.10	1.07	1.13	1.11	1.13	1.16	0.92	0.99	1.02	1.19	1.17	1.21	1.29	1.10	1.15	1.12	1.17	1.15	32.07	1.03		
Settled Water	NTU	n/a	0.19	0.22	0.31	0.27	0.26	0.23	0.19	0.15	0.15	0.18	0.17	0.20	0.23	0.21	0.26	0.21	0.18	0.23	0.27	0.31	0.20	0.18	0.16	0.19	0.17	0.16	0.13	0.12	0.12	0.12	0.15	6.12	0.20		
Treated Water	NTU	1	0.11	0.09	0.12	0.09	0.09	0.11	0.10	0.09	0.08	0.08	0.10	0.08	0.09	0.08	0.11	0.10	0.11	0.09	0.09	0.11	0.09	0.08	0.08	0.09	0.08	0.08	0.10	0.08	0.07	0.08	0.07	2.82	0.09		
Other Operating Parameters																																					
pH - Treated Water	no units	6.5 to 8.5	7.39	7.49	7.49	7.50	7.50	7.4	7.37	7.25	7.41	7.46	7.55	7.56	7.59	7.49	7.48	7.48	7.63	7.57	7.66	7.65	7.41	7.46	7.4	7.51	7.53	7.15	7.50	7.41	7.40	7.34	7.40	231.43	7.47		
pH - Settled water	no units	n/a	6.26	5.99	6.17	6.35	6.34	6.41	6.35	6.41	6.45	6.52	6.53	6.63	6.68	6.62	6.62	6.63	6.60	6.73	6.69	6.59	6.29	6.34	6.37	6.66	6.50	6.31	5.97	5.91	5.95	5.96	5.93	197.76	6.38		
pH - Raw Water	no units	n/a	7.29	7.44	7.42	7.41	7.42	7.41	7.40	7.45	7.49	7.42	7.45	7.43	7.47	7.49	7.47	7.47	7.47	7.43	7.46	7.49	7.41	7.40	7.33	7.45	7.44	7.17	7.26	7.19	7.21	7.16	7.15	228.95	7.39		
FAC - Treated Water	mg/l	0.2 to 4	2.24	2.22	2.24	2.19	2.10	2.15	1.92	2.05	2.05	1.95	2.00	1.99	2.00	2.08	2.00	1.95	2.05	2.04	2.05	1.97	2.05	2.11	2.10	2.08	2.08	2.02	1.99	2.01	2.00	2.01	1.97	63.66	2.05		
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.64	2.72	2.58	2.34	2.46	2.42	2.17	2.20	2.34	2.24	2.36	2.32	2.34	2.48	2.52	2.46	2.36	2.28	2.36	2.42	2.44	2.48	2.52	2.32	2.48	2.30	2.44	2.20	2.21	2.28	2.34	74.02	2.39		
Temperature	C	15	7.0	7.0	7.0	7.0	7.0	7.0	7.0	8.0	9.0	10.0	10.0	10.0	10.0	9.0	9.0	9.0	9.0	10.0	11.0	10.0	12.0	14.0	15.0	10.0	12.0	14.0	14.0	14.0	15.0	15.0	16.0	324.0	10.5		
Fluoride used (Total Daily Consumption)	kg	n/a	20.0	19.0	19.0	19.0	19.0	19.0	18.0	18.0	18.0	17.0	18.0	18.0	17.0	17.0	17.0	18.0	17.0	16.0	17.0	16.0	18.0	19.0	18.0	20.0	18.0	18.0	18.0	16.0	15.0	14.0	16.0	547.0	17.6		
Chlorine used (Total Daily Consumption)	kg	n/a	22.0	22.0	21.0	21.0	22.0	21.0	22.0	22.0	21.0	21.0	22.0	22.0	22.0	22.0	22.0	22.0	23.0	22.0	22.0	22.0	22.0	24.0	22.0	23.0	23.0	23.0	24.0	23.0	23.0	22.0	688.0	22.2			
Soda ash (Total Daily Consumption)	kg	n/a	184.8	187.3	182.0	181.7	180.6	182.0	184.1	182.4	178.2	183.1	183.1	183.8	183.8	183.1	184.1	186.2	184.8	185.5	186.9	181.3	181.3	191.8	179.6	192.5	184.1	187.6	186.2	193.2	184.8	184.5	188.3	5722.2	184.6		
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	35.0	1085.0	35.0		
Alum residual - (Total Daily Consumption)	kg	n/a	184.8	187.3	182.0	181.7	180.6	182.0	184.1	182.4	178.2	183.1	183.1	183.8	183.8	183.1	184.1	186.2	184.8	185.5	186.9	181.3	181.3	191.8	179.6	192.5	184.1	187.6	186.2	193.2	184.8	184.5	188.3	5722.2	184.6		
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	35.0	1085.0	35.0		
Alum residual - Treated Water	mg/l	0.1	0.04	0.08	0.07	0.09	0.05	0.04	0.02	0.03	0.02	0.03	0.03	0.03	0.02	0.02	0.02	0.03	0.02	0.03	0.04	0.03	0.03	0.04	0.06	0.06	0.03	0.04	0.06	0.02	0.02	0.03	0.03	0.02	0.02	1.15	0.04
Poly bags added (25 kg bags)	kg				0.5							0.5		0.5					0.5		0.5					0.5		0.5						87.5			

Town of Fort Frances - WTP - 220000978
May 2014/2015 vs 2016 Flow and Operating Data

Flow Data MAY	Units	2014		2015		2016	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m ³		167920		175810		163490
Raw Maximum Day	m ³	Tuesday 27th	6440	Saturday 02nd	5940	Saturday 28th	5520
Raw Minimum Day	m ³	Sunday 25th	4590	Friday 01st	5260	Monday 09th	5090
Raw Average Daily Consumption	m ³		5420		5670		5270
Total Treated Water	m ³		142970		12010		118580
Treated Water Maximum Day Consumption	m ³	Monday 26th	5390	Sunday 03rd	4380	Tuesday 31st	4340
Treated Water Minimum Day Consumption	m ³	Saturday 17th	4030	Monday 18th	3450	Tuesday 17th	3240
Treated Water Average Day Consumption	m ³		4610		3870		3830
Daily Average Per Household Consumption Rate	m ³		1.22		1.02		1.01
* Daily Average Per Person Consumption Rate	m ³		0.58		0.48		0.48
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		1.48		2.05		2.05
Total Chlorine Residual - Treated Water	mg/L		1.76		2.28		2.39
Aluminum Sulphate - Raw Water	mg/L		34.5		35.1		35.0
Aluminum Sulphate - Treated Water Residual	mg/L		0.04		0.05		0.04
Fluoride - Treated Water	mg/L		0.59		0.62		0.65
Soda Ash - Raw Water	mg/L		34.9		35.5		35.0
PH - Adjusted	mg/L		7.18		7.17		7.47
Temperature	C		6.5		10.4		10.5
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		5793.2		6182.4		5722.1
Polyelectrolyte	kg		62.5		50.0		87.5
Chlorine Gas	kg		520		709		688
Soda Ash - Used for PH Adjustment	kg		5860.3		6255.1		5722.1
Fluoride	kg		358		427		547

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

* Population is 7986

* Number of Households is 3783