

June 6, 2014

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: May 2014 Drinking Water Systems Monthly Summary Report



Please find attached the May 2014 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 2014 report as presented.

Respectfully submitted,
Operations & Facilities Division

Doug Brown

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

Council approval of this report will accept the May 2014 Drinking Water Systems Monthly Summary Report and approve the report prior to it being made available to the general public.

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

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RECOMMENDED
JUN 18 2014
DIV. MNG. *Dug 2*
EXECUTIVE COMM. *R. White*

May, 2014

**Monthly Summary Report
Water Systems**

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

Dated: June 03, 2014

1) **Introduction:**

This report contains the major maintenance activities and operational events that occurred during the month of May 2014 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 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.

4) **Microbiological (Health Related) Water Analysis – Airport Groundwater Well No. 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 purposes 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
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. 26002736:**

Signs posted, exempt from testing.

7) Maintenance Activities at the WTP:

- May 01st
 - cleaned the top and bottom tank on the poly unit.
 - cleaned the four (4) check valves on the poly unit.
 - worked on Sunny Cove water system on line.
- May 02nd
 - worked on Sunny Cove water system.
- May 05th
 - worked on Sunny Cove water system.
- May 06th
 - worked on Sunny Cove water system.
- May 07th
 - annual calibrations done by Cleartech at plant on lab equipment.
 - worked on Sunny Cove water system.
- May 12th
 - flushed poly lines out to clarifiers.
- May 14th
 - took grab samples of filter turbidity meters.
- May 22nd
 - did backflow preventers.
- May 26th
 - checked Sunny Cove water system.
 - calibrated distribution chlorine analyzer.
- May 28th
 - flushed Sunny Cove water system.
- May 29th
 - cleaned the top and bottom tank on the poly unit.
 - cleaned the four (4) check valves on the poly unit.
 - calibrated alum and soda ash feeder.

8) Water Complaints:

- Poor Pressure – 0 complaint.
- Water quality – 1 complaint.

Water complaint at 811 Armit Ave. smell in water chlorine sample
1.25 mg/l took sample with weekly routine came back good.

9) Other Miscellaneous Information:

- May 05th - took weekly routine bacti samples.
 - sample taken on thawed water line at 201 Sixth St. W.
- May 07th - took micro samples at Sunny Cove – 1st set.
- May 08th - took micro samples at Sunny Cove – 2nd set.
- May 12th - took weekly routine bacti samples.
 - water main repair samples at 400 Sinclair Ave. – 1st set.
 - water service repair samples at 535 Church St. – 1st set.
- May 13th - took 5 year samples at Sunny Cove - Organics & Inorganics.
 - water main repair samples at 400 Sinclair Ave. – 2nd set.
 - water service repair samples at 353 Church St. – 2nd set.
 - water service repair samples at 700 Scott St. – 1st set.
 - seasonal samples taken at St. Frances Ball Field.
- May 14th - seasonal samples taken at Sorting Gap Marina.
 - water service repair samples at 700 Scott St. – 2nd set.
- May 15th - seasonal samples (six) taken at the following sites: Point Park,
 Lions Park and Legion Park.
- May 20th - took weekly routine bacti samples.
- May 21st - took quarterly samples at the Water Treatment Plant and Water
 Tower.
 - took T.S.S. samples on Filter # 2.
- May 26th - took weekly routine bacti samples.
 - water main repair samples at 302 Minnie Ave. – 1st set.
- May 27th - water main repair samples at 302 Minnie Ave. – 2nd set.

May 28th - water main repair samples at 429 Third St. W. – 1st set.
 - sample taken on thawed water line at 362 Daniel Ave. – 1st set.
 - sample taken on thawed water line at 281 Second St. E. – 1st set.

May 29th - water main repair samples at 429 Third St. W. – 2nd set.
 - sample taken on thawed water line at 362 Daniel Ave. – 2nd set.
 - sample taken on thawed water line at 281 Second St. E. – 2nd 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:

- Randy White, ORO, Senior WTP Operator: Randy White
- Doug Herr, Environmental & Facilities Supt.: DH
- Doug Brown, Manager of Operations & Facilities: Doug Brown
- Mark McCaig, CAO: Mark McCaig
- Rick Wiedenhoef, Chair O & F Exec Committee: R. Wiedenhoef
- Roy Avis, Mayor: Roy Avis
- Paul Ryan, Councillor: Paul Ryan
- John Albanese, Councillor: _____
- Andrew Hallikas, Councillor: _____
- Doug Kitowski, Councillor: _____
- Ken Perry, Councillor: Ken Perry

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 2014

Flow Data	MAY	Units	2012		2013		2014	
			Day of the Month		Day of the Month		Day of the Month	
Total Raw Water		m ³		158280		142840		167920
Raw Maximum Day		m ³	Saturday 19th	5480		6170	Tuesday 27th	6440
Raw Minimum Day		m ³	Tuesday 8th	3290		4050	Sunday 25th	4590
Raw Average Daily Consumption		m ³		5110		4610		5420
Total Treated Water		m ³		121110		118680		142970
Treated Water Maximum Day Consumption		m ³	Saturday 19th	4900	Friday May 17	4270	Monday 26th	5390
Treated Water Minimum Day Consumption		m ³	Saturday 12th	3200	Monday May 20	3410	Saturday 17th	4030
Treated Water Average Day Consumption		m ³		3910		3830		4610
Daily Average Per Household Consumption Rate		m ³		1.03		1.01		1.22
* Daily Average Per Person Consumption Rate		m ³		0.49		0.48		0.58
Monthly Averages - Operating Parameters WTP:								
FAC Residual - Treated Water		mg/L		1.75		1.78		1.48
Total Chlorine Residual - Treated Water		mg/L		2.03		2.08		1.76
Aluminum Sulphate - Raw Water		mg/L		34.4		34		34.5
Aluminum Sulphate - Treated Water Residual		mg/L		0.05		0.06		0.04
Fluoride - Treated Water		mg/L		0.63		0.63		0.59
Soda Ash - Raw Water		mg/L		34.1		34		34.9
PH - Adjusted		mg/L		7.31		7.2		7.18
Temperature		C		11.8		6.5		6.5
Quantity of Chemical Used:								
Aluminum Sulphate		kg		5437.4		4856.6		5793.2
Polyelectrolyte		kg		50.0		37.5		62.5
Chlorine Gas		kg		539		450		520
Soda Ash - Used for PH Adjustment		kg		5391.8		4856.6		5860.3
Fluoride		kg		392		350		358

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

* Population is 7986

* Number of Households is 3783

Operating Data		Units	*MAC or Range	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
Flow rates																																				
Raw Water	10³ M³	17	5.61	5.45	5.81	5.69	5.51	5.48	5.36	5.69	5.13	5.13	5.52	5.08	5.20	5.25	5.15	5.33	5.09	5.15	4.89	5.97	5.07	5.19	4.97	5.20	4.59	5.21	6.44	6.02	6.21	6.09	5.44	187.92	5.42	
Peak Instantaneous - Raw Water	L/s		65.45	66.19	68.34	66.29	65.05	65.51	64.84	60.81	61.21	61.36	61.40	61.29	61.32	60.74	60.43	60.60	60.67	60.24	60.19	59.31	59.58	59.72	60.01	59.58	59.72	80.01	76.84	74.52	71.22	71.09	70.94	1965.92	65.53	
Treated Water	10³ M³	17	5.18	4.90	5.11	4.89	4.67	4.42	4.65	4.68	4.32	4.16	4.87	4.40	4.47	4.49	4.12	4.57	4.03	4.24	4.30	4.61	4.47	4.79	4.78	4.65	4.22	5.39	4.97	4.63	4.95	4.57	4.49	142.97	4.61	
Peak Instantaneous - Treated Water	L/s		85.49	86.31	89.29	86.45	84.24	83.14	86.10	80.90	81.80	80.97	81.59	80.45	80.97	81.59	80.45	79.72	84.75	81.29	79.89	79.89	82.67	81.41	83.81	110.30	83.81	82.53	83.27	86.23	82.24	83.08	85.29	2425.70	83.64	
Backwash Water	10³ M³	n/a	0.239	0.230	0.562	0.241	0.230	0.300	0.259	0.471	0.284	0.268	0.241	0.233	0.281	0.265	0.242	0.231	0.262	0.221	0.305	0.307	0.298	0.262	0.242	0.229	0.219	0.248	0.258	0.231	0.220	0.208	0.181	8.266	0.207	
Fluoride Information																																				
Fluoride Residual - Treated Water	mg/l		0.5 to 0.8	0.70	0.71	0.75	0.71	0.75	0.53	0.60	0.50	0.51	0.53	0.51	0.62	0.60	0.54	0.56	0.65	0.60	0.62	0.61	0.63	0.61	0.60	0.50	0.58	0.61	0.60	0.51	0.47	0.42	0.63	0.61	18.37	0.59
Turbidity Information																																				
Raw Water	NTU		n/a	0.69	0.65	0.67	0.60	0.63	0.62	0.71	0.81	0.80	0.86	0.83	0.88	0.91	0.85	0.91	1.06	1.09	1.05	2.11	1.60	1.47	1.49	1.43	1.45	1.37	1.41	1.18	1.17	1.16	1.00	1.25	32.71	1.08
Settled Water	NTU		n/a	0.14	0.14	0.12	0.11	0.15	0.20	0.20	0.15	0.15	0.15	0.16	0.18	0.13	0.16	0.14	0.18	0.14	0.12	0.13	0.14	0.13	0.13	0.13	0.12	0.11	0.10	0.15	0.14	0.13	0.15	0.14	4.47	0.14
Treated Water	NTU		1	0.12	0.09	0.08	0.09	0.08	0.10	0.14	0.14	0.12	0.13	0.14	0.13	0.11	0.12	0.10	0.14	0.11	0.10	0.09	0.10	0.10	0.09	0.11	0.08	0.08	0.07	0.11	0.11	0.11	0.09	0.10	3.20	0.11
Other Operating Parameters																																				
pH - Treated Water	no units		6.5 to 6.5	7.45	7.40	7.35	7.27	7.15	6.88	7.04	7.02	7.00	7.10	7.10	7.05	7.19	7.30	7.26	7.08	7.16	7.18	7.24	7.15	7.13	7.15	7.02	7.12	7.15	7.25	7.12	7.33	7.16	7.41	7.42	222.63	7.18
pH - Settled Water	no units		n/a	6.49	6.40	6.47	6.40	6.37	6.7	6.40	6.53	6.43	6.56	6.66	6.56	6.45	6.41	6.47	6.46	6.49	6.46	6.52	6.46	6.50	6.47	6.44	6.39	6.47	6.45	6.56	6.46	6.62	6.39	6.61	201.07	6.49
pH - Raw Water	no units		n/a	6.94	6.99	7.10	7.08	7.10	6.71	6.82	6.83	6.80	6.76	6.62	6.80	7.00	7.07	7.04	6.90	6.98	7.02	7.00	7.08	6.96	7.01	6.81	7.00	6.99	7.01	6.81	6.76	6.87	6.76	6.85	214.67	6.92
FAC - Treated Water	mg/l	0.2 to 0.4	1.40	1.37	1.41	1.52	1.37	1.31	1.33	1.27	1.39	1.44	1.40	1.42	1.62	1.74	1.71	1.46	1.35	1.30	1.55	1.53	1.61	1.65	1.43	1.61	1.63	1.80	1.62	1.51	1.42	1.48	1.31	45.96	1.48	
Total Chlorine Residual Treated	mg/l	0.3 to 0.7	1.62	1.52	1.67	1.72	1.55	1.67	1.63	1.59	1.70	1.66	1.62	1.72	1.94	2.02	2.11	1.83	1.74	1.68	1.93	1.69	1.79	1.80	1.74	1.79	1.81	2.01	2.05	1.87	1.74	1.79	1.67	54.67	1.76	
Temperature	C	15	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Fluoride used (Total Daily Consumption)	kg		n/a	10.0	11.0	10.0	10.0	10.0	10.0	11.0	11.0	10.0	11.0	12.0	11.0	11.0	12.0	13.0	11.0	12.0	10.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	11.0	13.0	12.0	13.0	350.0	6.5	
Chlorine used (Total Daily Consumption)	kg		n/a	15.0	15.0	18.0	16.0	16.0	15.0	16.0	15.0	14.0	17.0	16.0	14.0	15.0	17.0	15.0	17.0	15.0	16.0	17.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0	16.0
Soda ash (Total Daily Consumption)	kg		n/a	196.4	185.3	197.5	193.5	192.9	191.8	197.6	199.2	179.6	179.8	193.2	177.8	182.0	183.8	180.3	186.6	178.2	180.3	171.2	209.0	177.5	181.7	174.0	182.0	160.7	182.4	225.4	210.7	217.4	213.2	190.4	5860.3	186.9
Soda ash - Dosage	mg/l		n/a	193.5	188.0	200.4	196.3	190.1	189.1	194.9	196.3	177.0	177.0	190.4	175.3	179.4	181.1	177.7	183.9	175.6	177.7	168.7	206.0	174.9	179.1	171.5	179.4	168.4	176.7	222.2	207.2	214.2	210.1	187.7	5793.2	186.9
Alum residual - (Total Daily Consumption)	mg/l		n/a	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5
Alum residual - Dosage	mg/l		n/a	193.5	188.0	200.4	196.3	190.1	189.1	194.9	196.3	177.0	177.0	190.4	175.3	179.4	181.1	177.7	183.9	175.6	177.7	168.7	206.0	174.9	179.1	171.5	179.4	168.4	176.7	222.2	207.2	214.2	210.1	187.7	5793.2	186.9
Alum residual - Treated Water	mg/l		n/a	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5	34.5
Poly bags added (25 kg bags)	kg		0.1	0.06	0.06	0.05	0.04	0.06	0.09	0.03	0.03	0.03	0.03	0.02	0.02	0.02	0.06	0.04	0.02	0.04	0.02	0.02	0.01	0.06	0.04	0.07	0.08	0.05	0.02	0.02	0.03	0.04	0.02	1.22	0.04	0.04