April 17, 2015, 2015

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: March 2015 Drinking Water Systems Monthly Summary Report

Please find attached the March 2015 Summary Report on the drinking water systems, prepared by Randy White, Senior WTP Operator.

Your Administration recommends that Operations & Facilities Executive Committee accept the March 2015 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 March 2015 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

03CouncilwaterreportMarch 2015

March, 2015

Monthly Summary Report
Water Systems

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

Dated: April 13, 2015

1) **Introduction -**

This report contains the major maintenance activities and operational events that occurred during the month of March 2015 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): 5 samples taken no adverse results
Water Treatment Plant (raw): 5 samples taken no adverse results
Water Distribution System: 20 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 # 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**

March 02nd - changed filters in soda ash dust collector.

March 03rd - greased the clarifier gears and chains.
- calibrated all chemical feeders at plant, including chlorine analyzer
- took grab samples off each filter.
- changed west chlorine tank.

March 05th - cleaned all four (4) check valves on poly unit.
- cleaned the top and bottom tank on the poly unit.
- greased the low lift pumps.

March 06th - put Clear Well #2 back on line after test results came back with no adverse to report.

March 18th - recalibrated soda ash feeder.
- flushed poly lines to clarifiers.

March 20th - calibrated the alum pump.

March 24th - took grab samples off each filter.
- changed input out put card on Delta V system.

March 25th - installed a new auto blow down valve on Compressor #1.
- Honeywell here but can't get new high lift pumps to work.

March 26th - greased the low lift pumps and soda ash feeder.

March 27th - worked on sample pumps.
- cleaned the top and bottom tank on the poly unit.
- cleaned all four (4) check valves on poly unit.

March 30th - installed a new circulation pump on boiler.
- flushed and pumped Clear Well #1.

March 31st - flushed poly lines to clarifiers.

8) **Water Complaints –**

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

9) **Other Miscellaneous Information:**

March 02nd - took weekly routine bacti samples.

March 09th - took weekly routine bacti samples.
- annual samples taken at the Water Treatment Plant and Water Tower.
- took bacti samples (thawed frozen service with Pulse De-icer) at 861 King's Hwy. (North American Lumber) - 1st set.
- took bacti samples, water main break in front of 1330 Colonization Rd. W. - 1st set.

March 10th - took bacti samples, water main break in front of 1330 Colonization Rd. W. - 2nd set.
- took bacti samples (thawed frozen service with Pulse De-icer) at 861 King's Hwy. (North American Lumber) – 2nd set.
- took bacti samples (thawed frozen service with Pulse De-icer) at 825 Crowe Ave. – 1st set.

March 11th - took bacti samples (thawed frozen service with Pulse De-icer) at 825 Crowe Ave. – 2nd set.
- took bacti samples, water main break repair – Sinclair St. (400 blk.) by the Hospital - 1st set.

March 12th - took bacti samples, service repair - 415 Third St. W. - 1st set.
- took bacti samples, water main break repair – Sinclair St. (400 blk.) by the Hospital – 2nd set.

March 16th - took weekly routine bacti samples.
- took bacti samples, service repair - 415 Third St. W. – 2nd set.

March 19th - received a load of Alum.
- Q.M.S. meeting.

March 23rd - took weekly routine bacti samples.

March 26th - Q.M.S. meeting (Internal Audit Kick-off meeting).

March 30th - took weekly routine bacti samples.
- took bacti samples - seasonal service - Fort Frances Cemetery.

March 31st - Q.M.S. overview.

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.

Town of Fort Frances - WTP - 220000978
March 2013/2014 vs. March 2015

Flow and Operating Data

Flow Data MARCH	Units	2013		2014		2015	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		132180		254410		168790
Raw Maximum Day	m^3	Sunday 24th	4460	Saturday 22nd	11360	Saturday 14th	5970
Raw Minimum Day	m^3	Saturday 23rd	4080	Sunday 09th	5710	Sunday 01st	4890
Raw Avgerage Daily Consumption	m^3		4260		8210		5440
* Daily Instantaneous Peak Flow	L/min.						
Total Treated Water	m^3		112290		226450		126450
Treated Water Maximim Day Consumption	m^3	Sunday 03rd	4010	Friday 21st	10020	Tuesday 10th	5230
Treated Water Minimim Day Consumption	m^3	Wednesday 13th	3360	Monday 10th	4780	Sat. 28th & Tues. 31st	3630
Treated Water Average Day Consumption	m^3		3620		7300		4080
Daily Average Per Household Consumption Rate	m^3		0.96		1.93		1.08
* Daily Average Per Person Consumption Rate	m^3		0.45		0.91		0.51
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		1.75		1.97		1.91
Total Chlorine Residual - Treated Water	mg/L		2.05		2.28		2.21
Aluminum Sulphate - Raw Water	mg/L		34.0		34.3		35.6
Aluminum Sulphate - Treated Water Residual	mg/L		0.06		0.07		0.06
Fluoride - Treated Water	mg/L		0.61		0.63		0.60
Soda Ash - Raw Water	mg/L		34.0		34.6		36.4
PH - Adjusted	mg/L		7.23		7.12		7.13
Temperature	C		2.2		2.0		2.6
Quantity of Chemical Used:							
Aluminum Sulphate	kg		4494.1		8733		6000.6
Polyelectrolyte	kg		50.0		137.5		75.0
Chlorine Gas	kg		393		1023		614
Soda Ash - Used for PH Adjustment	kg		4494.1		8816		6144.7
Fluoride	kg		329		912		363

* The Canadian Average is 450 Litres (0.45 m^3) 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	31	Total	Average
		or Range																																	
Flow rates																																			
Raw Water	10^3 M^3	17	4.89	5.36	5.11	5.30	5.01	5.36	5.16	5.14	5.06	5.16	5.12	5.52	5.65	5.97	5.54	5.34	5.60	5.61	5.58	5.64	5.53	5.70	5.57	5.60	5.62	5.61	5.59	5.54	5.68	5.61	5.62	168.79	5.44
Peak Instantaneous - Raw Water	L/s	n/a	60.94	60.97	60.86	60.85	60.86	60.76	60.74	60.77	60.65	60.57	60.46	**66.03**	66.01	65.72	65.84	65.66	65.67	65.64	65.57	65.65	65.61	65.59	65.66	65.67	65.61	65.68	65.95	65.64	65.60	65.58	64.98	1981.79	63.93
Treated Water	10^3 M^3	17	3.79	3.96	4.21	4.17	3.90	4.75	4.40	4.43	4.43	5.23	4.41	4.12	4.18	4.40	3.86	4.04	3.80	4.10	4.02	3.82	3.80	3.71	4.11	3.92	4.04	3.67	3.80	3.63	4.02	4.10	3.63	126.45	4.08
Peak Instantaneous - Treated Water	L/s	n/a	68.61	64.75	70.88	101.8	83.45	83.85	83.91	83.4	83.55	85.94	88.4	84.2	82.98	82.65	84.7	80.83	82	81.44	82.78	80.82	79.97	80.9	82.86	83.2	82.3	81.6	**104**	81.9	81.26	83	80.82	2562.70	82.67
BackWash Water	10^3 M^3	n/a	0.218	0.243	0.217	0.229	0.240	0.214	0.229	0.236	0.217	0.216	0.226	0.236	0.213	0.229	0.234	0.215	0.233		0.234	0.216	0.231			0.234	0.214	0.230	0.229	0.216	0.226	0.237	0.215	6.327	0.226
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.56	0.54	0.58	0.59	0.60	0.61	0.60	0.61	0.60	0.60	0.62	0.59	0.59	0.61	0.60	0.55	0.61	0.56	0.69	0.51	0.58	0.61	0.54	0.64	0.64	0.65	0.65	0.62	0.55	0.62	0.55	18.47	0.60
Turbidity Information																																			
Raw Water	NTU	n/a	0.49	0.40	0.44	0.47	0.49	0.46	0.41	0.49	0.51	0.55	0.51	0.55	0.47	0.51	0.55	0.59	0.56	0.62	0.65	0.51	0.49	0.46	0.64	0.56	0.63	0.60	0.53	0.54	0.52	0.56	0.64	16.40	0.53
Settled Water	NTU	n/a	0.17	0.16	0.11	0.12	0.10	0.09	0.10	0.12	0.14	0.12	0.10	0.14	0.12	0.10	0.14	0.12	0.11	0.14	0.10	0.15	0.12	0.11	0.14	0.12	0.14	0.12	0.13	0.19	0.12	0.14	0.11	3.89	0.13
Treated Water	NTU	1	0.03	0.08	0.05	0.04	0.04	0.04	0.04	0.05	0.05	0.07	0.06	0.08	0.06	0.04	0.08	0.07	0.05	0.06	0.05	0.10	0.08	0.06	0.06	0.05	0.05	0.05	0.06	0.08	0.03	0.03	0.05	1.74	0.06
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.07	7.07	7.09	7.11	7.22	7.26	7.05	7.16	7.24	7.19	7.15	7.10	7.12	7.17	7.12	7.19	7.16	6.98	7.13	7.14	7.16	7.21	7.04	7.11	7.15	7.19	7.09	6.83	7.22	7.18	7.08	220.98	7.13
pH - Settled water	no units	n/a	6.62	6.51	6.47	6.55	6.49	6.52	6.56	6.49	6.54	6.45	6.41	6.37	6.41	6.45	6.51	6.42	6.47	6.57	6.64	6.93	6.87	6.61	6.65	6.58	6.56	6.52	6.49	6.71	6.95	6.91	6.72	203.95	6.58
pH - Raw Water	no units	n/a	6.84	6.74	6.82	6.99	7.04	7.00	6.97	6.94	6.96	6.91	6.91	6.95	7.01	7.10	6.99	6.87	6.92	6.73	6.73	6.73	6.86	6.88	6.69	6.81	6.96	6.86	6.94	6.44	6.65	6.60	6.75	212.59	6.86
FAC - Treated Water	mg/l	0.2 to 4	1.80	2.05	1.86	1.89	2.02	1.96	2.03	1.93	1.88	1.86	2.10	1.86	1.85	1.89	1.75	1.92	1.83	2.06	2.08	2.01	1.74	1.71	1.95	1.94	1.94	1.80	1.86	1.96	1.88	1.75	1.95	59.11	1.91
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.28	2.38	2.17	2.23	2.28	2.24	2.42	2.16	2.12	2.10	2.25	2.10	2.09	2.12	1.99	2.19	2.14	2.42	2.44	2.40	2.06	2.11	2.16	2.17	2.23	2.09	2.16	2.28	2.30	2.06	2.30	68.44	2.21
Temperature	C	15	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	3.0	3.0	3.0	3.0	3.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	81.0	2.6
Fluoride used (Total Daily Consumption)	kg	n/a	10.0	11.0	10.0	11.0	10.0	11.0	12.0	11.0	12.0	12.0	12.0	13.0	13.0	13.0	12.0	12.0	12.0	12.0	13.0	12.0	12.0	12.0	11.0	12.0	11.0	12.0	12.0	11.0	12.0	12.0	12.0	363.0	11.7
Chlorine used (Total Daily Consumption)	kg	n/a	18.0	20.0	18.0	18.0	18.0	20.0	19.0	19.0	19.0	19.0	21.0	20.0	21.0	21.0	21.0	19.0	21.0	20.0	20.0	21.0	19.0	21.0	21.0	20.0	20.0	20.0	20.0	21.0	20.0	20.0	19.0	614.0	19.8
Soda ash (Total Daily Consumption)	kg	n/a	178.5	195.6	186.5	193.5	182.9	195.6	188.3	187.6	184.7	188.3	186.9	201.5	206.2	217.9	202.2	194.9	204.4	200.8	199.8	201.9	198.0	204.1	199.4	200.5	206.8	206.4	205.7	198.3	210.7	208.1	208.5	6144.7	198.2
Soda Ash - Dosage	mg/l	n/a	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	36.5	35.8	35.8	35.8	35.8	35.8	35.8	35.8	36.8	36.8	36.8	35.8	37.1	37.1	37.1	1128.6	36.4
Alum residual - (Total Daily Consumption)	kg	n/a	174.6	191.4	182.4	189.2	178.9	191.4	184.2	183.5	180.6	184.2	182.8	197.1	201.7	213.1	197.8	190.6	199.9	200.3	199.2	198.5	194.7	200.6	196.1	197.1	197.8	197.5	196.8	195.6	203.3	199.7	200.1	6000.6	193.6
Alum residual - Dosage	mg/l	n/a	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.7	35.2	35.2	35.2	35.2	35.2	35.2	35.20	35.20	35.30	35.80	35.60	35.60	1102.2	35.6
Alum residual - Treated Water	mg/l	0.1	0.07	0.08	0.06	0.07	0.06	0.07	0.06	0.06	0.06	0.05	0.04	0.04	0.04	0.05	0.06	0.03	0.04	0.05	0.05	0.08	0.06	0.04	0.06	0.04	0.06	0.06	0.07	0.06	0.06	0.06	0.05	1.74	0.06
Poly bags added (25 kg bags)	kg			0.5							0.5							0.5				0.5				0.5					0.5			75.0	