September 17, 2015

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: August 2015 Drinking Water Systems Monthly Summary Report

Please find attached the August 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 August 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 August 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

August, 2015

Monthly Summary Report
Water Systems

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

Dated: September 14, 2015

1) **Introduction -**

This report contains the major maintenance activities and operational events that occurred during the month of August 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 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 – #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**

August 02nd - calibrated distribution chlorine analyzer.

August 06th - cleaned top and bottom tanks on poly unit.
- cleaned all four (4) check valves on the poly unit.
- greased motors and chains on clarifiers.

August 07th - took Soda Ash feeder apart and cleaned put back on line.

August 15th - calibrated distribution chlorine analyzer.

August 18th - cleaned the plant.

August 19th - worked on distribution chlorine analyzer.

August 26th - annual calibrations completed by Lakeside Controls.

August 27tt - annual calibrations completed by Lakeside Controls.

August 28th - annual calibrations completed by Lakeside Controls.
- cleaned top and bottom tanks on poly unit.
- cleaned all four (4) check valves on the poly unit.

August 29th - worked on low Filter No. 2 effluent valve.

8) **Water Complaints:**

- Poor Pressure – 0 complaints.

- Water quality – 0 complaints.

9) **Other Miscellaneous Information:**

August 04th - routine micro sample collection.
- took D.W.S.P. samples at plant and Tower.
- water main break repair - Fourth St. W. (100 blk.) - bacti water samples – 2nd set.

August 10th - routine micro sample collection.

August 17th - routine micro sample collection.
- hydrant replacement (HYD124) - water samples - Webster Ave. (500 blk.) - 1st set.

August 18th - hydrant replacement (HYD124) - water samples - Webster Ave. (500 blk.) - 2nd set.

August 19th - King's Hwy. reconstruction project - new water main - bacti samples - 1st set.

August 20th - King's Hwy. reconstruction project - new water main - bacti samples - 2nd set.

August 24th - routine micro sample collection.

August 25th - 103 Sixth St. W. - new customer service - bacti sample - 1st set.

August 26th - 103 Sixth St. W. - new customer service - bacti sample – 2nd set.
- 740 Sixth St. W. and 801 Eighth St. W. - customer service repair - bacti sample - 1st set.

August 27th - 740 Sixth St. W. and 801 Eighth St. W. - customer service repair - bacti sample - 2nd set.

August 28th - King's Hwy. reconstruction project - new water main tie-in at Lillie Ave. and Webster Ave. - bacti samples - 1st set.

August 31st - routine micro sample collection.
- King's Hwy. reconstruction project - new water main tie-in at Lillie Ave. and Webster Ave. - bacti samples – 2nd set.
- 740 Sixth St. W. and 801 Eighth St. W. - customer service repair - bacti sample - 1st 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: _____ For Randy White.
- Doug Herr, Environmental & Facilities Supt.: _____
- Doug Brown, Manager of Operations & Facilities: _____
- Mark McCaig, CAO: _____
- Rick Wiedenhoeft, Chair O& F Exec Committee: _____
- Roy Avis, Mayor: _____
- Paul Ryan, Councillor: _____
- John Albanese, Councillor: _____
- Andrew Hallikas, 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
August 2013/2014 vs. August 2015
Flow and Operating Data

Flow Data August	Units	2013		2014		2015	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		161980		184830		195880
Raw Maximum Day	m^3	Sunday 25th	5920	Friday 22nd	6860	Tuesday 4th & Sunday 23rd	6620
Raw Minimum Day	m^3	Wednesday 14th	4460	Wednesday 27th	4960	Monday 31st	5370
Raw Avgerage Daily Consumption	m^3		5230		5960		6320
Total Treated Water	m^3		129740		129750		130290
Treated Water Maximim Day Consumption	m^3	Friday 23rd	5130	Thursday 28th	5080	Sunday 16th	5030
Treated Water Minimim Day Consumption	m^3	Sunday 04th	3430	Monday 25th	3480	Sunday 23rd	3510
Treated Water Average Day Consumption	m^3		4190		4190		4200
Daily Average Per Household Consumption Rate	m^3		1.11		1.11		1.11
* Daily Average Per Person Consumption Rate	m^3		0.52		0.52		0.53
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		1.83		1.78		2.10
Total Chlorine Residual - Treated Water	mg/L		2.15		2.09		2.38
Aluminum Sulphate - Raw Water	mg/L		34.0		36.0		35.0
Aluminum Sulphate - Treated Water Residual	mg/L		0.06		0.06		0.03
Fluoride - Treated Water	mg/L		0.60		0.57		0.56
Soda Ash - Raw Water	mg/L		34.0		36.0		35.0
PH - Adjusted	mg/L		7.11		7.29		7.20
Temperature	C		20.0		22.3		20.1
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		5507.3		6653.9		6855.8
Polyelectrolyte	kg		87.5		75.0		62.5
Chlorine Gas	kg		716		933		947
Soda Ash - Used for PH Adjustment	kg		5507.3		6653.9		6855.8
Fluoride	kg		458		441		600

* The Canadian Average is 450 Litres (0.45 m^3) 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	10^3 M^3	17	6.38	6.53	6.47	6.62	6.52	6.54	6.53	6.45	6.40	6.40	6.56	6.55	6.54	6.54	6.51	6.52	6.47	6.49	6.49	6.49	6.49	6.48	6.62	6.21	6.46	5.68	5.61	5.63	5.67	5.66	5.37	195.88	6.32
Peak Instantaneous - Raw Water	L/s	n/a	76.23	76.52	76.19	76.32	76.17	76.26	76.33	76.37	76.44	76.80	76.77	76.54	76.74	76.87	76.38	76.36	75.84	75.66	75.88	76.02	75.81	75.70	75.64	75.17	75.15	74.96	65.32	76.53	65.32	65.46	65.29	2317.04	74.74
Treated Water	10^3 M^3	17	4.48	4.65	3.87	4.09	4.23	4.53	4.05	3.74	3.75	3.83	4.56	4.53	4.53	4.52	4.65	5.03	4.46	4.58	4.50	3.81	3.91	3.96	3.51	3.69	4.03	3.89	4.30	4.70	3.98	3.95	3.98	130.29	4.20
Peak Instantaneous - Treated Water	L/s	n/a	80.08	97.26	86.98	81.32	73.28	83.57	75.08	76.57	72.01	72.72	72.68	73.95	73.13	74.77	73.78	76.48	75.20	74.48	73.47	72.50	72.95	73.14	72.65	71.94	73.87	72.38	81.43	76.18	75.58	73.43	72.95	2355.81	75.99
BackWash Water	10^3 M^3	n/a	0.155	0.245	0.260		0.468	0.219	0.256	0.238		0.257	0.226	0.257	0.619	0.486	0.468	0.238	0.220	0.478	0.218	0.291	0.237	0.215	0.249	0.242	0.218	0.249	0.246	0.221	0.253	0.218	0.255	8.202	0.283
Fluoride Information																																			
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.56	0.54	0.56	0.51	0.54	0.56	0.55	0.56	0.54	0.51	0.61	0.64	0.58	0.57	0.63	0.57	0.55	0.64	0.58	0.59	0.54	0.55	0.54	0.56	0.57	0.54	0.56	0.54	0.55	0.57	0.53	17.44	0.56
Turbidity Information																																			
Raw Water	NTU	n/a	1.38	1.41	1.40	1.45	1.17	1.23	1.17	1.19	1.16	0.96	0.97	0.98	0.95	0.95	0.94	0.96	1.13	1.05	1.15	1.31	1.25	1.17	1.20	1.16	1.45	1.41	1.37	1.45	1.51	1.47	1.48	37.83	1.22
Settled Water	NTU	n/a	0.11	0.09	0.08	0.09	0.14	0.20	0.14	0.11	0.11	0.13	0.14	0.15	0.23	0.13	0.18	0.14	0.10	0.12	0.19	0.12	0.13	0.11	0.11	0.09	0.12	0.11	0.12	0.12	0.15	0.11	0.09	3.96	0.13
Treated Water	NTU	1	0.04	0.03	0.03	0.04	0.05	0.03	0.07	0.09	0.08	0.07	0.09	0.10	0.08	0.08	0.08	0.08	0.07	0.07	0.07	0.07	0.08	0.06	0.06	0.04	0.07	0.06	0.05	0.09	0.09	0.06	0.08	2.06	0.07
Other Operating Parameters																																			
pH - Treated Water	no units	6.5 to 8.5	7.14	7.13	7.26	7.09	7.25	7.29	7.05	7.12	7.15	7.17	7.11	7.28	7.29	7.21	7.19	7.21	7.26	7.27	7.32	7.30	7.25	7.19	7.15	7.22	7.23	7.22	7.17	7.25	7.17	7.12	7.25	223.31	7.20
pH - Settled water	no units	n/a	6.01	6.06	5.99	6.24	6.21	6.15	6.06	6.10	6.01	6.20	6.19	6.19	6.10	6.08	6.22	6.27	6.12	6.08	6.31	6.24	6.30	6.27	6.20	6.11	6.15	6.19	6.15	6.20	6.17	6.21	6.22	191.00	6.16
pH - Raw Water	no units	n/a	6.99	6.94	6.97	6.98	7.01	6.95	7.15	7.13	7.19	6.98	6.99	6.95	7.03	6.98	6.96	6.95	6.95	6.86	6.99	7.02	7.00	7.05	7.15	7.16	7.12	7.10	7.19	7.10	7.03	7.10	7.09	218.06	7.03
FAC - Treated Water	mg/l	0.2 to 4	2.15	2.20	2.15	2.20	2.26	2.05	2.11	1.99	1.86	2.06	2.17	2.16	2.32	2.14	2.10	2.09	2.10	2.11	2.24	2.06	1.96	2.00	2.20	2.06	1.85	2.10	1.98	1.99	1.91	2.32	2.20	65.09	2.10
Total Chlorine Residual Treated	mg/l	0.3 to 7	2.44	2.48	2.44	2.50	2.48	2.54	2.34	2.17	2.15	2.34	2.42	2.52	2.60	2.46	2.52	2.50	2.42	2.42	2.38	2.38	2.20	2.25	2.47	2.37	2.15	2.25	2.19	2.20	2.17	2.60	2.52	73.87	2.38
Temperature	C	15	21.0	21.0	21.0	21.0	20.0	21.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	21.0	22.0	21.0	21.0	20.0	20.0	20.0	20.0	20.0	20.0	20.0	19.0	19.0	19.0	19.0	19.0	19.0	19.0	623.0	20.1
Fluoride used (Total Daily Consumption)	kg	n/a	21.0	19.0	19.0	20.0	20.0	19.0	19.0	21.0	18.0	19.0	19.0	21.0	22.0	21.0	22.0	21.0	22.0	21.0	20.0	20.0	20.0	20.0	21.0	19.0	20.0	16.0	17.0	16.0	16.0	16.0	15.0	600.0	19.4
Chlorine used (Total Daily Consumption)	kg	n/a	30.0	33.0	32.0	33.0	32.0	31.0	31.0	34.0	31.0	31.0	32.0	32.0	32.0	32.0	31.0	32.0	32.0	32.0	31.0	32.0	31.0	31.0	32.0	28.0	30.0	27.0	27.0	26.0	27.0	26.0	26.0	947.0	30.5
Soda ash (Total Daily Consumption)	kg	n/a	223.3	228.6	226.5	231.7	228.2	228.9	228.6	225.8	224.0	224.0	229.6	229.3	228.9	228.9	227.9	228.2	226.5	227.2	227.2	227.2	227.2	226.8	231.7	217.4	226.1	198.8	196.4	197.1	198.5	198.1	188.0	6855.8	221.2
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	223.3	228.6	226.5	231.7	228.2	228.9	228.6	225.8	224.0	224.0	229.6	229.3	228.9	228.9	227.9	228.2	226.5	227.2	227.2	227.2	227.2	226.8	231.7	217.4	226.1	198.8	196.4	197.1	198.5	198.1	188.0	6855.8	221.2
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	0.04	0.02	0.04	0.02	0.04	0.04	0.04	0.03	0.05	0.02	0.02	0.02	0.03	0.04	0.02	0.01	0.04	0.02	0.02	0.03	0.04	0.03	0.04	0.04	0.04	0.04	0.02	0.04	0.02	0.04	0.98	0.03
Poly bags added (25 kg bags)	kg							0.5						0.5		0.5										0.5				0.5				62.5	