August 19, 2013

Report To: Mayor & Council

From: Doug Brown, Manager of Operations & Facilities

SUBJECT: July 2013 Drinking Water Systems Monthly Summary Report

Please find attached the July 2013 Summary Report on the drinking water systems, prepared by Randy White, Senior WTP Operator.

Your Administration recommends that Operations & Facilities Executive Committee accept the July 2013 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 July 2013 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

07 Council Water Report July 2013.doc

RECOMMENDED

AUG 21 2013

DIV. MNG: Doug Brown

EXECUTIVE COMM.:

July, 2013

Monthly Summary Report
Water Systems

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

Dated: August 15, 2013

1) **Introduction -**

This report contains the major maintenance activities and operational events that occurred during the month of May 2013 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.

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**

July 3	- greased both clarifiers
July 4	- cleaned top and bottom tanks on the poly unit - cleaned all 4 check valves on the poly unit
July 8	- checked filter turbidity meter
July 15	- flushed poly lines to the clarifier
July 16	- calibrated chlorine analyzer - washed troughs and filter flumes
July 23	- calibrated chlorine analyzer - cleaned soda ash line to the contact chamber - changed filters on the dust collector
July 25	- cleaned all 4 check valves on the poly unit - cleaned top and bottom tanks on the poly unit
July 29	- annual calibrations
July 30	- annual calibrations
July 31	- annual calibrations

8) **Water Complaints :**

- Poor Pressure – 0 complaint.

- Water quality – 3 complaints.

1214 Fifth Street East – poor water quality – temporary water line

1146 Fourth Street East – water quality is very poor – brown water and no pressure – cant even flush the toilet – turned hydrant midblock down to reduce the demand – flushing operation is clearing main.

1124 Fourth Street East – discoloured water – has a very strong algie smell – flushed hydrant midblock – asked 1136 Fourth Street East to leave sprinkler on until main looped again.

9) **Other Miscellaneous Information:**

July 2
- routine micro sample collection
- hydrant replacement samples – Sunset Country Ford – 1st set

July 3
- hydrant replacement samples – Green's Furniture – 1st set
- hydrant replacement samples – Sunset Country Ford – 2nd set

July 4
- hydrant replacement samples – Green's Furniture – 2nd set
- hydrant replacement samples – 3rd Street & Wright Ave. – 1st set
- temporary main samples – Fifth Street East – 1st set
- temporary main samples – General Supply – 1st set

July 5
- temporary main samples – General Supply – 2nd set

July 8
- temporary main samples – Fifth Street East – 2nd set
- routine micro sample collection

July 9
- water main valve replacement Waste Water Plant – 1st set
- water main valve replacement samples – 1st & Wright – 1st set
- changed chlorine tank
- hauled potassium bags to Sunny Cove

July 10
- water main valve replacement samples – Waste Water Plant – 2nd set

July 11
- resample on adverse hydrant 131 – 1st set
- adverse water sample reported on a water main – completed all reports to M.O.H. and SAC and NWDH and flushed and resampled

July 12
- resample on adverse hydrant 131 – 2nd set

July 15
- routine micro sample collection

July 16
- water main valve replacement samples – 244 2nd St. East – 1st set

July 17 - water main valve replacement samples – 244 2nd St. East – 2nd set

July 22 - routine micro sample collection

July 23 - water main valve replacement samples – hydrant 288 – 1st set

July 25 - water main valve replacement samples – hydrant 288 – 2nd set

July 29 - routine micro sample collection

July 31 - received a load of soda ash

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: Doug Brown
- 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: 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.

Town of Fort Frances - WTP - 220000978
July 2011/2012 vs. July 2013
Flow and Operating Data

Flow Data JULY	Units	2011		2012		2013	
		Day of the Month		Day of the Month		Day of the Month	
Total Raw Water	m^3		209750		246920		180670
Raw Maximum Day	m^3	Wednesday 20th	8090	Monday 16th	8910	Sunday 04th	7320
Raw Minimum Day	m^3	Wednesday 06th	5740	Monday 09th	6660	Tuesday 27th	3790
Raw Avgerage Daily Consumption	m^3		6770		7970		5830
Total Treated Water	m^3		168940		176020		134850
Treated Water Maximim Day Consumption	m^3	Tuesday 19th	7150	Friday 13th	7740	Sunday 04th	5780
Treated Water Minimim Day Consumption	m^3	Sunday 10th	4050	Saturday 07th	4040	Tuesday 27th	2360
Treated Water Average Day Consumption	m^3		5450		5680		4350
Daily Average Per Household Consumption Rate	m^3		1.44		1.50		1.15
* Daily Average Per Person Consumption Rate	m^3		0.68		0.71		0.54
Monthly Averages - Operating Parameters WTP:							
FAC Residual - Treated Water	mg/L		2.05		2.07		1.83
Total Chlorine Residual - Treated Water	mg/L		2.41		2.29		2.12
Aluminum Sulphate - Raw Water	mg/L		34		34.1		34.0
Aluminum Sulphate - Treated Water Residual	mg/L		0.06		0.06		0.06
Fluoride - Treated Water	mg/L		0.58		0.64		0.61
Soda Ash - Raw Water	mg/L		34.5		34		34
PH - Adjusted	mg/L		7.18		7.17		7.12
Temperature	C		20.9		23.4		21.4
Quantity of Chemical Used:	kg						
Aluminum Sulphate	kg		7131.5		8431.8		6142.8
Polyelectrolyte	kg		75		75		75
Chlorine Gas	kg		908		1068		800
Soda Ash - Used for PH Adjustment	kg		7236.4		8395.3		6142.8
Fluoride	kg		554		690		453

* The Canadian Average is 450 Litres (0.45 m^3) per day.
* Population is 7986
* Number of Households is 3783

Town of Fort Frances - Water treatment Plant - Water Works # 220000978
Monitoring Record
July 2013

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
Flow rates																																		
Raw Water	10^3 M^3	17	5.20	5.26	6.14	7.32	7.28	6.96	6.62	6.50	6.34	6.53	6.38	6.25	6.34	7.00	6.15	6.36	5.96	5.21	5.42	5.16	5.31	6.16	5.13	5.08	5.20	6.02	3.79	4.84	4.57	5.13	5.06	180.67
Peak Instantaneous -Raw Water	L/s	n/a	61.02	60.85	71.89	86.21	86.52	**86.91**	81.18	76.51	76.24	75.44	74.58	74.18	75.99	76.31	76.16	75.84	70.91	61.26	65.53	65.56	60.50	75.62	60.86	61.18	60.82	60.76	60.27	59.73	59.73	60.05	76.23	2174.84
Treated Water	10^3 M^3	17	4.14	5.24	5.78	5.78	4.63	5.12	3.69	3.87	4.60	3.50	3.98	5.71	4.88	4.72	4.28	4.41	4.37	4.10	4.39	3.92	3.86	3.78	3.92	4.43	4.06	5.69	2.36	3.95	3.89	4.07	3.73	134.85
Peak Instantaneous - Treated Water	L/s	n/a	62.97	64.68	**131.04**	87.47	87.46	84.74	83.01	82.94	95.10	87.09	86.93	87.97	87.73	83.09	83.97	86.03	88.40	82.93	86.08	91.85	82.53	82.26	86.22	87.04	84.31		65.55	75.73	75.73		62.78	2433.63
BackWash Water	10^3 M^3	n/a	0.220	0.201		0.219	0.225	0.200	0.215	0.224	0.200	0.212	0.225	0.199	0.215	0.227	0.199	0.217	0.417		0.209	0.219	0.197	0.669		0.210	0.177	0.202	0.190	0.218		0.253	0.220	6.379
Fluoride Information																																		
Fluoride Residual - Treated Water	mg/l	0.5 to 0.8	0.53	0.60	0.60	0.58	0.56	0.55	0.57	0.60	0.61	0.63	0.61	0.59	0.58	0.61	0.70	0.50	0.51	0.50	0.52	0.53	0.52	0.59	0.62	0.63	0.66	0.70	0.74	0.76	0.72	0.71	0.76	18.89
Turbidity Information																																		
Raw Water	NTU	n/a	1.40	1.49	1.52	1.64	1.56	1.61	1.55	1.00	1.35	1.31	1.37	1.40	1.44	1.35	1.03	1.02	1.30	1.31	1.10	1.39	1.35	1.13	1.18	1.21	1.22	1.26	1.35	1.54	1.48	1.49	1.61	41.96
Settled Water	NTU	n/a	0.08	0.08	0.07	0.08	0.07	0.08	0.09	0.10	0.11	0.09	0.09	0.08	0.09	0.09	0.13	0.14	0.10	0.13	0.15	0.19	0.19	0.15	0.09	0.11	0.09	0.08	0.08	0.09	0.09	0.10	0.09	3.20
Treated Water	NTU	1	0.06	0.05	0.05	0.04	0.04	0.04	0.05	0.05	0.07	0.06	0.06	0.05	0.06	0.06	0.06	0.06	0.06	0.08	0.09	0.09	0.12	0.11	0.06	0.07	0.06	0.05	0.05	0.06	0.07	0.06	0.07	1.96
Other Operating Parameters																																		
pH - Treated Water	no units	6.5 to 8.5	7.22	7.26	7.23	7.18	7.20	7.08	7.04	6.98	7.00	7.10	7.15	7.06	7.04	7.12	7.01	7.10	7.06	7.10	7.23	7.17	7.04	7.23	7.21	7.14	7.10	7.16	7.10	7.18	7.15	7.10	7.00	213.52
pH - Settled water	no units	n/a	6.12	6.06	6.14	6.17	6.11	6.06	6.17	6.21	6.15	6.12	6.19	6.22	6.17	6.15	6.00	6.12	6.01	6.11	6.11	6.16	5.95	6.09	6.04	6.00	5.92	5.90	5.93	6.12	6.10	6.05	6.00	188.65
pH - Raw Water	no units	n/a	7.12	7.09	7.11	7.10	7.09	7.14	7.08	7.05	7.10	7.05	7.10	7.11	7.08	7.10	7.06	7.16	6.75	6.86	6.90	6.92	7.10	7.14	7.10	7.07	7.09	7.07	7.09	7.00	7.05	7.10	7.11	218.89
FAC - Treated Water	mg/l	0.2 to 4	1.58	2.00	2.11	2.12	1.96	1.96	1.99	2.06	2.09	2.19	2.19	1.92	1.98	2.00	1.88	1.69	1.61	1.47	1.56	1.72	1.43	1.45	1.69	1.67	1.71	1.74	1.73	1.70	1.61	1.99	1.96	56.76
Total Chlorine Residual Treated	mg/l	0.3 to 7	1.91	2.19	2.38	2.44	2.31	2.26	2.23	2.34	2.20	2.31	2.35	2.19	2.17	2.20	2.31	2.10	2.00	1.81	1.91	1.75	1.77	1.82	1.93	1.96	2.06	2.12	2.14	2.18	2.10	2.19	2.18	65.81
Temperature	C	15	21.0	21.0	21.0	21.0	20.0	21.0	21.0	23.0	24.0	22.0	24.0	22.0	22.0	22.0	22.0	23.0	23.0	23.0	23.0	22.0	22.0	22.0	20.0	21.0	21.0	20.0	20.0	20.0	19.0	19.0	19.0	664.0
Fluoride used (Total Daily Consumption)	kg	n/a	12.0	12.0	14.0	17.0	18.0	16.0	15.0	15.0	13.0	17.0	16.0	13.0	12.0	21.0	15.0	16.0	14.0	13.0	13.0	14.0	13.0	15.0	13.0	14.0	16.0	16.0	16.0	13.0	13.0	13.0	15.0	453.0
Chlorine used (Total Daily Consumption)	kg	n/a	21.0	22.0	26.0	33.0	33.0	31.0	30.0	29.0	29.0	29.0	28.0	28.0	28.0	31.0	28.0	28.0	26.0	21.0	23.0	21.0	22.0	27.0	22.0	26.0	28.0	27.0	18.0	21.0	20.0	22.0	22.0	800.0
Soda ash (Total Daily Consumption)	kg	n/a	176.8	178.8	208.8	248.9	247.5	236.6	225.1	221.0	215.6	222.0	216.9	212.5	215.6	238.0	209.1	216.2	202.6	177.1	184.3	175.4	180.5	209.4	174.4	172.7	176.8	204.7	128.9	164.6	155.4	174.4	172.0	6142.8
Soda Ash - Dosage	mg/l	n/a	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	1054.0
Alum residual - (Total Daily Consumption)	kg	n/a	176.8	178.8	208.8	248.9	247.5	236.6	225.1	221.0	215.6	222.0	216.9	212.5	215.6	238.0	209.1	216.2	202.6	177.1	184.3	175.4	180.5	209.4	174.4	172.7	176.8	204.7	128.9	164.6	155.4	174.4	172.0	6142.8
Alum residual - Dosage	mg/l	n/a	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	34.0	1054.0
Alum residual - Treated Water	mg/l	0.1	0.05	0.04	0.06	0.06	0.06	0.07	0.06	0.07	0.06	0.05	0.06	0.04	0.06	0.07	0.08	0.05	0.06	0.05	0.06	0.06	0.07	0.09	0.07	0.05	0.04		0.06	0.06	0.06	0.05	0.06	1.78
Poly bags added (25 kg bags)	kg		0.5				0.5							0.5						0.5				0.5						0.5				75.0