

CSO INTERIM WATER QUALITY MONITORING
2015 RED RIVER MONITORING REPORT

Survey Date : July 2, 2015		Red River Sampling Locations																
Parameter	Unit	SOUTH FLOODWAY CONTROL			FORT GARRY BRIDGE			NORWOOD BRIDGE			PROVENCHER BRIDGE			NORTH PERIMETER BRIDGE			LOCKPORT BRIDGE	
		(R5)			(R7)			(R8)			(RX2)			(R10)			(R11)	
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	C
Temperature	° C	24.3	24.1	24.2	23.9	24	24	24.1	23.9	24	24	23.9	24	23.9	23.9	24	23.9	24
Dissolved Oxygen	mg/L	6.31	6.66	6.56	7.2	7.25	7.22	6.9	7.05	6.93	7.55	7.7	6.7	6.68	6.8	6.6	6.8	7.2
Conductivity	mS/cm	872	872	873	856	857	858	867	864	866	1110	1035	865	950	945	952	945	940
pH	units	8.43	8.44	8.45	8.33	8.33	8.34	8.26	8.33	8.3	8.58	8.6	8.3	8.31	8.39	8.2	8.43	8.45
Biochemical Oxygen Demand	mg/L	< 2.0	< 2.0	2	< 2.0	< 2.0	< 2.0	2.3	2.5	< 2.0	< 2.0	< 2.0	2.4	2.5	3.2	< 2.0	2.9	< 2.0
Carbonaceous BOD	mg/L	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total Suspended Solids	mg/L	462	332	258	122	201	132	173	171	264	236	232	238	136	131	162	176	79
Ammonia Nitrogen	mg/L N	< 0.01	< 0.01	< 0.01	0.025	0.033	0.03	0.059	0.049	0.061	0.012	0.027	0.053	0.153	0.185	0.184	0.047	0.034
Nitrate Nitrogen	mg/L N	0.68	0.685	0.68	0.678	0.68	0.676	0.696	0.694	0.7	0.249	0.386	0.696	0.554	0.555	0.604	0.591	0.591
Nitrite Nitrogen	mg/L N	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.011	0.012	0.015	< 0.01	< 0.01
Nitrate-Nitrite Nitrogen	mg/L N	0.68	0.685	0.68	0.678	0.68	0.676	0.696	0.694	0.7	0.249	0.386	0.696	0.565	0.567	0.619	0.591	0.591
Total Kjeldahl Nitrogen	mg/L N	0.95	0.95	1	0.94	0.91	0.91	0.98	0.95	1.06	1	1.02	1.07	0.99	1.09	1.17	0.92	0.91
Total Nitrogen ¹	mg/L N	1.63	1.64	1.68	1.61	1.59	1.59	1.68	1.64	1.76	1.25	1.41	1.77	1.56	1.66	1.79	1.51	1.5
Total Phosphorus	mg/L P	0.169	0.167	0.161	0.164	0.167	0.165	0.18	0.163	0.179	0.158	0.158	0.165	0.176	0.179	0.186	0.177	0.167
Escherichia Coliform	MPN/100 mL	19	25	12	13	23	10	32	17	18	56	86	19	77	108	91	102	115
Fecal Coliform	MPN/100 mL	*	572	*	*	1200	*	*	2420	*	*	3780	*	*	2280	*	687	613
		1:45 PM	1:45 PM	1:45 PM	10:15 AM	10:15 AM	10:15 AM	11:30 AM	11:30 AM	11:30 AM	2:15 PM	2:15 PM	2:15 PM	4:00 PM	4:00 PM	4:00 PM	3:00 PM	3:00 PM

Notes: 1) Calculated values
2) * - Fecal coliform testing performed only at Sample B locations to compare with historical data. Not a requirement of the Environment Act Licence No. 3042
3) Analysed by contract laboratory

Client File No: 3205.00

CSO INTERIM WATER QUALITY MONITORING
2015 RED RIVER MONITORING REPORT

Survey Date : July 3, 2015		Red River Sampling Locations																
Parameter	Unit	SOUTH FLOODWAY CONTROL			FORT GARRY BRIDGE			NORWOOD BRIDGE			PROVENCHER BRIDGE			NORTH PERIMETER BRIDGE			LOCKPORT BRIDGE	
		(R5)			(R7)			(R8)			(RX2)			(R10)			(R11)	
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	C
Temperature	° C	24.1	24	24.2	24.2	24.1	24.2	24.7	24.2	24.7	23.7	23.9	24.2	24.1	24	24.2	23.9	23.7
Dissolved Oxygen	mg/L	5.74	5.62	5.72	6.25	6.24	6.22	6.06	6.46	6.48	7.01	7.25	6.21	6.51	6.6	6.42	6.42	6.41
Conductivity	mS/cm	818	820	820	890	892	890	856	850	855	1096	1029	892	952	954	950	947	947
pH	units	8.4	8.4	8.42	8.4	8.34	8.4	8.31	8.4	8.35	8.59	8.57	8.32	8.47	8.42	8.5	8.41	8.42
Biochemical Oxygen Demand	mg/L	< 2.0	2.5	< 2.0	2	2.3	< 2.0	3.4	2.9	2.5	< 2.0	< 2.0	2.6	2.7	2.4	2.5	3.1	2.1
Carbonaceous BOD	mg/L	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total Suspended Solids	mg/L	516	370	300	130	135	55	170	181	179	192	242	203	97	106	130	119	59
Ammonia Nitrogen	mg/L N	< 0.01	< 0.01	< 0.01	0.044	0.051	0.05	0.073	0.073	0.074	0.023	0.039	0.071	0.117	0.093	0.075	0.135	0.122
Nitrate Nitrogen	mg/L N	0.687	0.701	0.688	0.661	0.717	0.707	0.725	0.727	0.726	0.339	0.471	0.731	0.555	0.552	0.552	0.657	0.651
Nitrite Nitrogen	mg/L N	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.01	0.01	0.01	< 0.01	< 0.01	0.011	0.015	0.012	0.011	0.029	0.023
Nitrate-Nitrite Nitrogen	mg/L N	0.687	0.701	0.688	0.661	0.717	0.707	0.735	0.737	0.736	0.339	0.471	0.742	0.57	0.565	0.563	0.686	0.674
Total Kjeldahl Nitrogen	mg/L N	0.93	0.99	1.08	0.86	0.89	0.91	1.06	1.08	1.08	1.05	0.96	0.93	1	0.92	1.12	1.03	0.96
Total Nitrogen ¹	mg/L N	1.61	1.69	1.77	1.52	1.61	1.62	1.79	1.82	1.82	1.39	1.43	1.67	1.57	1.48	1.68	1.72	1.63
Total Phosphorus	mg/L P	0.18	0.184	0.184	0.177	0.179	0.169	0.181	0.178	0.184	0.173	0.165	0.175	0.172	0.169	0.17	0.179	0.175
Escherichia Coliform	MPN/100 mL	41	40	21	26	16	16	23	31	30	80	44	26	62	44	60	145	121
Fecal Coliform	MPN/100 mL	*	1850	*	*	687	*	*	53	*	*	961	*	*	344	*	959	437
		12:30 PM	12:30 PM	12:30 PM	11:00 AM	11:00 AM	11:00 AM	10:00 AM	10:00 AM	10:00 AM	12:00 PM	12:00 PM	12:00 PM	1:00 PM	1:00 PM	1:00 PM	2:00 PM	2:00 PM

Notes: 1) Calculated values
2) * - Fecal coliform testing performed only at Sample B locations to compare with historical data. Not a requirement of the Environment Act Licence No. 3042
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CSO INTERIM WATER QUALITY MONITORING
2015 RED RIVER MONITORING REPORT

Survey Date : July 4, 2015		Red River Sampling Locations																
Parameter	Unit	SOUTH FLOODWAY CONTROL			FORT GARRY BRIDGE			NORWOOD BRIDGE			PROVENCHER BRIDGE			NORTH PERIMETER BRIDGE			LOCKPORT BRIDGE	
		(R5)			(R7)			(R8)			(RX2)			(R10)			(R11)	
		A	B	C	A	B	C	A	B	C	A	B	C	A	B	C	A	C
Temperature	° C	24.5	24.4	24.6	24.1	24.1	24.1	24.4	24.1	24.5	23.9	23.9	24	24	23.9	24	23.3	23.4
Dissolved Oxygen	mg/L	6.01	6.1	5.96	6.24	6.25	6.23	6.5	6.45	6.42	7.12	7.19	6.33	6.6	6.57	6.48	6.52	6.4
Conductivity	mS/cm	901	905	902	874	891	887	853	851	852	1098	1024	880	950	949	949	952	947
pH	units	8.49	8.47	8.49	8.38	8.33	8.36	8.3	8.35	8.33	8.6	8.49	8.38	8.45	8.43	8.46	8.4	8.42
Biochemical Oxygen Demand	mg/L	NR	NR	NR	2	2.4	2.3	2.8	2.5	2.6	NR	NR	3.1	NR	NR	NR	NR	NR
Carbonaceous BOD	mg/L	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Total Suspended Solids	mg/L	321	242	227	214	208	219	269	247	243	178	191	223	125	134	120	80	77
Ammonia Nitrogen	mg/L N	< 0.01	< 0.01	< 0.01	0.035	0.04	0.039	0.067	0.056	0.057	0.023	0.024	0.057	0.132	0.145	0.135	0.057	0.053
Nitrate Nitrogen	mg/L N	0.677	0.66	0.725	0.722	0.724	0.726	0.733	0.729	0.722	0.366	0.373	0.721	0.542	0.544	0.54	0.552	0.553
Nitrite Nitrogen	mg/L N	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.017	0.018	0.017	0.014	0.015
Nitrate-Nitrite Nitrogen	mg/L N	0.677	0.66	0.725	0.722	0.724	0.726	0.733	0.729	0.722	0.366	0.373	0.721	0.559	0.561	0.557	0.566	0.568
Total Kjeldahl Nitrogen	mg/L N	0.95	0.95	0.98	1	0.89	0.92	0.85	1.17	0.97	1.12	1.02	1.31	1.14	1	1.02	1.02	1.09
Total Nitrogen ¹	mg/L N	1.63	1.61	1.71	1.72	1.61	1.64	1.58	1.9	1.69	1.49	1.39	2.03	1.7	1.56	1.58	1.59	1.66
Total Phosphorus	mg/L P	0.189	0.17	0.168	0.172	0.158	0.186	0.163	0.17	0.168	0.256	2.02	0.283	0.182	0.164	0.167	0.164	0.193
Escherichia Coliform	MPN/100 mL	15	1	22	53	26	10	62	20	44	69	59	49	105	124	142	770	517
Fecal Coliform	MPN/100 mL	*	34	*	*	122	*	*	1120	*	*	637	*	*	816	*	1110	1350
		12:30 PM	12:30 PM	12:30 PM	9:30 AM	9:30 AM	9:30 AM	10:30 AM	10:30 AM	10:30 AM	11:30 AM	11:30 AM	11:30 AM	2:30 PM	2:30 PM	2:30 PM	1:30 PM	1:30 PM

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