

**CSO INTERIM WATER QUALITY MONITORING**  
**2015 RED RIVER MONITORING REPORT**

Survey Date : July 5, 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	23.6	23.6	23.7	23.5	23.4	23.5	23.3	23.3	23.4	23.4	23.3	23.5	23.6	23.9	24	24	24
Dissolved Oxygen	mg/L	6.8	6.66	6.6	6.68	6.6	6.38	6.78	6.8	6.78	7.04	6.95	6.58	6.36	6.5	6.4	5.85	5.84
Conductivity	mS/cm	871	869	830	874	864	846	878	880	876	1095	972	878	955	950	949	954	964
pH	units	8.55	8.52	8.55	8.39	8.42	8.39	8.42	8.44	8.5	8.5	8.4	8.22	8.46	8.42	8.39	8.48	8.42
Biochemical Oxygen Demand	mg/L	2.6	2.1	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.2	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.3
Carbonaceous BOD	mg/L	< 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
Total Suspended Solids	mg/L	257	290	199	153	229	186	201	396	201	228	218	163	82	105	115	80	117
Ammonia Nitrogen	mg/L N	< 0.01	< 0.01	< 0.01	0.051	0.051	0.048	0.062	0.095	0.063	< 0.01	0.035	0.062	0.113	0.113	0.09	0.115	0.099
Nitrate Nitrogen	mg/L N	0.63	0.625	0.616	0.59	0.594	0.592	0.637	0.645	0.631	0.255	0.451	0.641	0.567	0.579	0.556	0.572	0.559
Nitrite Nitrogen	mg/L N	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.010	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.013	0.011	< 0.01	0.011	0.01
Nitrate-Nitrite Nitrogen	mg/L N	0.63	0.625	0.616	0.59	0.594	0.592	0.637	0.645	0.631	0.255	0.451	0.641	0.579	0.59	0.556	0.583	0.569
Total Kjeldahl Nitrogen	mg/L N	1.52	1.51	1.38	1.5	1.51	1.4	1.35	1.9	1.5	1.15	1.1	1.29	1.18	1.14	1.08	1.19	1.17
Total Nitrogen <sup>1</sup>	mg/L N	2.15	2.14	2	2.09	2.1	1.99	1.99	2.55	2.13	1.41	1.55	1.93	1.76	1.73	1.64	1.77	1.74
Total Phosphorus	mg/L P	0.346	0.359	0.314	0.289	0.296	0.255	0.216	0.482	0.32	0.247	0.218	0.281	0.201	0.2	0.205	0.205	0.196
Escherichia Coliform	MPN/100 mL	185	189	97	97	189	161	374	298	235	723	443	275	909	1220	663	1050	1010
Fecal Coliform	MPN/100 mL	*	388	*	*	262	*	*	561	*	*	1570	*	*	1850	*	2060	2250
		2:30 PM	2:30 PM	2:30 PM	10:30 AM	10:30 AM	10:30 AM	11:30 AM	11:30 AM	11:30 AM	12:15 PM	12:15 PM	12:15 PM	3:45 PM	3:45 PM	3:45 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  
3) Analysed by contract laboratory

Client File No: 3205.00

**CSO INTERIM WATER QUALITY MONITORING**  
**2015 RED RIVER MONITORING REPORT**

Survey Date : July 6, 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	22.1	22	22.1	21.7	21.7	21.7	21.2	21.9	21.9	20.9	21.3	21.8	22.3	22.2	21.9	22.5	22.4
Dissolved Oxygen	mg/L	6.66	6.7	6.62	7.6	7.55	7.01	7.35	6.66	6.5	7.5	7.14	6.5	6.54	6.24	6.43	5.49	5.98
Conductivity	mS/cm	850	851	851	851	850	851	882	876	875	1075	960	875	965	967	969	975	975
pH	units	8.49	8.53	8.52	8.41	8.4	8.42	8.44	8.45	8.43	8.72	8.56	8.22	8.52	8.5	8.53	8.54	8.46
Biochemical Oxygen Demand	mg/L	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	2.3	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	< 2.0	3	< 2.0
Carbonaceous BOD	mg/L	< 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
Total Suspended Solids	mg/L	268	268	217	211	303	275	288	330	236	220	287	209	132	135	123	147	71
Ammonia Nitrogen	mg/L N	< 0.01	< 0.01	< 0.01	0.027	0.027	0.026	0.044	0.044	0.042	< 0.01	0.032	0.062	0.126	0.104	0.076	0.085	0.074
Nitrate Nitrogen	mg/L N	0.663	0.7	0.717	0.647	0.643	0.642	0.647	0.651	0.645	0.318	0.512	0.638	1.09	0.523	0.499	0.563	0.559
Nitrite Nitrogen	mg/L N	< 0.01	< 0.1	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	0.013	0.011
Nitrate-Nitrite Nitrogen	mg/L N	0.663	0.7	0.717	0.647	0.643	0.642	0.647	0.651	0.645	0.318	0.512	0.638	1.09	0.523	0.499	0.576	0.57
Total Kjeldahl Nitrogen	mg/L N	1.45	1.51	1.31	1.26	1.39	1.27	1.51	1.38	1.3	1.26	1.53	1.42	1.4	1.4	1.3	1.53	1.26
Total Nitrogen <sup>1</sup>	mg/L N	2.11	2.21	2.03	1.91	2.03	1.91	2.16	2.03	1.95	1.58	2.04	2.06	2.49	1.92	1.8	2.11	1.83
Total Phosphorus	mg/L P	0.42	0.411	0.353	0.306	0.33	0.315	0.412	0.377	0.373	0.286	0.357	0.352	0.267	0.286	0.261	0.274	0.22
Escherichia Coliform	MPN/100 mL	291	291	194	579	727	613	219	172	141	326	345	225	236	328	613	1550	687
Fecal Coliform	MPN/100 mL	*	780	*	*	3280	*	*	3450	*	*	4110	*	*	3260	*	9800	4610
		12:00 PM	12:00 PM	12:00 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	2:15 PM	2:15 PM	2:15 PM	1:30 PM	1:30 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 7, 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	21.7	21.6	21.6	21.3	21.1	21	21.5	21.5	21.4	20.9	21.3	21.8	21.9	22	22	22.1	21.9
Dissolved Oxygen	mg/L	7.08	7.17	7.1	6.56	6.13	6.13	5.95	5.97	6.22	6.79	6.43	5.92	5.82	6	6	5.77	5.95
Conductivity	mS/cm	885	884	879	888	887	889	869	874	860	1079	1000	872	936	933	929	932	934
pH	units	8.55	8.51	8.56	8.42	8.42	8.4	8.41	8.38	8.41	8.67	8.55	8.4	8.45	8.43	8.47	8.45	8.5
Biochemical Oxygen Demand	mg/L	3	< 2.0	< 2.0	< 2.0	2	2.7	2.9	3.8	3.7	< 2.0	< 2.0	< 2.0	3.2	2.4	2.7	4.8	2.4
Carbonaceous BOD	mg/L	< 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
Total Suspended Solids	mg/L	278	148	154	91	166	234	202	336	309	415	272	261	123	221	162	435	98
Ammonia Nitrogen	mg/L N	0.012	0.014	< 0.01	0.049	0.051	0.049	0.073	0.069	0.072	0.025	0.04	0.065	0.09	0.123	0.085	0.096	0.105
Nitrate Nitrogen	mg/L N	0.775	0.77	0.783	0.757	0.765	0.763	0.736	0.746	0.748	0.445	0.568	0.786	0.6	0.602	0.633	0.611	0.599
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	< 0.01	< 0.01	< 0.01	0.011	< 0.01
Nitrate-Nitrite Nitrogen	mg/L N	0.775	0.77	0.783	0.757	0.765	0.763	0.736	0.746	0.748	0.445	0.568	0.786	0.6	0.602	0.633	0.621	0.599
Total Kjeldahl Nitrogen	mg/L N	1.1	0.99	0.92	1.05	1.11	1.17	1.15	1.05	1.02	1.04	1.18	1.21	1.01	1.11	1.06	0.95	1.04
Total Nitrogen <sup>1</sup>	mg/L N	1.88	1.76	1.7	1.81	1.87	1.93	1.89	1.8	1.77	1.49	1.75	2	1.61	1.71	1.69	1.57	1.64
Total Phosphorus	mg/L P	0.243	0.246	0.242	0.267	0.268	0.262	0.283	0.256	0.27	0.163	0.218	0.289	0.235	0.244	0.231	0.209	0.208
Escherichia Coliform	MPN/100 mL	111	119	105	82	77	127	96	130	142	157	185	236	214	160	236	727	272
Fecal Coliform	MPN/100 mL	*	1990	*	*	830	*	*	980	*	*	2420	*	*	2420	*	5480	2420
		8:00 AM	8:00 AM	8:00 AM	9:30 AM	9:30 AM	9:30 AM	10:30 AM	10:30 AM	10:30 AM	11:20 AM	11:20 AM	11:20 AM	2:00 PM	2:00 PM	2:00 PM	1:00 PM	1:00 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