



April 13, 2023

Mr. Don Turner
Environmental Project Officer
Water Security Agency
Suite 300 – 2365 Albert Street
Regina, SK S4P 4K1

Dear Mr. Turner:

RE: Monthly Report: **March 2023**

In compliance with the City of Regina “Permit to Operate a Sewage Works” # 0050853-07-00 please find attached the monthly report for March 2023.

I trust this meets with your approval, should you have any questions please do not hesitate to contact me directly at (306) 519-9054 or Justin Allan at (306) 551-3180.

Yours truly,

A handwritten signature in blue ink, appearing to read "Joe Zimmer", with a long horizontal flourish extending to the right.

Joe Zimmer, P. Eng.
Manager, Regina Operations
EPCOR Water Services

City of Regina - Wastewater Treatment Plant

City of Regina - Wastewater Treatment Plant															
March 2023			Final Effluent Results								Permit# 00050853-07-00				
Date	Flow to Creek	Total Coliform	<i>E. coli</i>	Enterococci	Dissolved Oxygen (Field Test)	Temp. (Field Test)	Chloride (Field Test)	Total Phosphorus	pH @15±1°C	Total Suspended Solids	CBOD	Ammonia Nitrogen	Unionized Ammonia @15±1°C	Total Kjeldahl Nitrogen	Total Nitrogen
	(ML)	(MPN /100mL)			(mg/L)	(°C)	(mg/L)	(mg P/L)	(SU)	(mg/L)	(mg/L)	(mg N/L)	(mg N/L)	(mg N/L)	(mg N/L)
01	62.63	36	3		7.23	12.9	194	0.58	7.23	11.0	2.9	0.31	< 0.030	3.1	11.2
02	62.48	34	4		7.58	13.3	190	0.40	7.32	7.4	2.8	0.67	< 0.030	3.1	10.4
03	62.93	86	3		7.02	13.6		0.42		7.8		0.87		3.3	10.3
04	63.83				7.22	13.6		0.41		8.0		0.64		2.9	10.5
05	65.12				7.37	13.4	206	0.49	7.40	9.2	3.0	0.62	< 0.030	3.4	9.6
06	64.53	50	5		7.29	13.2	204	0.58	7.22	12.8	3.3	< 0.30	< 0.030	3.4	10.5
07	62.02	61	12	17	7.28	12.6	199	0.65	7.36	13.4	3.9	0.46	< 0.030	3.6	11.4
08	70.53	64	6		7.24	12.5	216	0.52	7.41	10.4	2.5	1.92	< 0.030	5.3	11.9
09	69.70	187	8		6.45	12.1	232	0.62	7.34	12.0	3.7	3.10	< 0.030	6.5	13.4
10	66.22	345	4		6.46	12.1		0.96		20.4		0.93		5.2	12.8
11	64.77				7.67	12.3		0.61		12.4		1.27		4.8	12.0
12	65.00				7.72	12.6	222	0.50	7.44	8.4	3.9	0.94	< 0.030	4.0	10.8
13	65.11	67	9		6.84	11.9	217	1.04	7.43	22.4	7.1	1.04	< 0.030	5.1	11.6
14	64.29	172	8	22	5.68	12.2	224	0.76	7.42	14.6	5.4	1.02	< 0.030	4.6	12.4
15	65.13	49	6		7.19	12.8	219	0.52	7.33	8.8	6.4	1.34	< 0.030	4.5	12.6
16	64.82	66	11		7.62	12.8	224	0.57	7.28	10.0	5.7	1.09	< 0.030	3.8	11.6
17	66.32	165	11		7.86	12.6		0.55		9.2		0.84		3.9	9.8
18	67.12				7.86	12.5		0.89		10.4		2.29		5.6	12.9
19	68.41				7.27	12.9	219	0.70	7.76	12.6	4.5	1.54	< 0.030	4.6	10.9
20	67.19	58	4	16	7.21	12.7	227	0.72	7.28	12.4	5.6	< 0.30	< 0.030	3.3	9.7
21	65.51	61	5		7.41	12.6	226	0.57	7.42	10.4	4.5	< 0.30	< 0.030	3.4	9.9
22	66.16	219	11		7.38	12.9	219	0.56	7.35	10.8	3.3	< 0.30	< 0.030	3.4	10.6
23	67.67	57	3		6.89	12.9	231	0.63	7.32	8.8	3.7	5.88	0.033	8.8	12.5
24	60.60	72	15		7.33	12.9		0.41		7.4		8.92		11.5	19.3
25	74.20				7.37	12.7		0.22		9.4		1.25		3.6	12.3
26	67.60				7.81	12.8	243	0.23	7.50	6.4	2.2	1.04	< 0.030	3.2	9.9
27	65.80	14	4	5	7.93	13.0	246	0.17	7.33	4.4	2.3	0.83	< 0.030	2.4	8.2
28	63.80	18	1		7.40	12.9	242	0.16	7.34	3.5	< 2.0	0.90	< 0.030	2.7	8.2
29	65.90	24	4		8.03	13.0	238	0.18	7.14	4.4	2.0	1.59	< 0.030	3.7	8.4
30	67.00	201	3		7.16	13.2	242	0.18	7.28	3.4	2.1	1.41	< 0.030	2.7	5.8
31	64.10	33	2		7.17	12.8		0.18		3.7		0.87		2.8	7.9
Sum	2036.49														
Avg	65.69				7.29	12.8	222	0.52	7.36	10	4	1	0.030	4.3	11
Min	60.60				5.68	11.9	190	0.16	7.14	3.4	< 2.0	< 0.30	< 0.030	2.4	5.8
Max	74.20		15		8.03	13.6	246	1.04	7.76	22.4	7.1	8.92	0.033	11.5	19.3
Permit Limits			≤1,000					≤0.75		≤15	≤15	≤10	≤1.24		≤14

E. coli Geometric Mean = 5 MPN/100mL, Limit = 200 MPN/100mL

Plant Notes:

Mar 23 - The nitrifying bacteria were inhibited by an unknown contaminant in the influent. This resulted in elevated ammonia concentration in the final effluent on March 23 and 24. The upset condition was reported to the Water Security Agency. All Permit to Operate requirements were still achieved.

Mar 24 – The biological process was supplemented with coagulant and flocculent to the end of the month.

Mar 24 to 25 - Flow was diverted to the lagoons to mitigate the effects of the upset condition.

WSA Notes:

Mar 6 and 7 - CBOD results qualified. Blank exceeded acceptance criteria.

Mar 21 - Final effluent was tested for acute toxicity at an external accredited laboratory and passed.

Creek Monthly Report to Water Security Agency

Tuesday, March 14, 2023

Permit# 00050853-07-00

Test Description	Riske's Crossing	Final Effluent	Sidmar Crossing	Wascana above the Qu'Appelle	Qu'Appelle above the Wascana	Lumsden
Dissolved Oxygen (Field Test)	2.35	5.68	10.8	13.4	11.1	8.97
pH (Field Test for Creek Samples)	6.92	7.42	7.21	7.36	7.12	6.94
Temperature (Field Test)	1.8	12.2	3.4	1.4	2.2	2.4
Total Suspended Solids	73.7	14.6	9.0	43.0	13.1	11.2
Carbonaceous Biochemical Oxygen Demand	7.1	5.4	<2.0	3.2	<2.0	<2.0
Total Phosphorus	1.18	0.76	0.30	0.32	<0.05	0.18
Total Kjeldahl Nitrogen	7.6	4.6	4.5	6.3	0.8	6.4
Ammonia Nitrogen	6.01	1.02	1.78	3.53	<0.30	4.26
Nitrate Nitrogen	<0.13	7.46	7.31	4.41	0.90	4.08
Total Nitrogen	7.7	12.4	12.2	10.8	1.7	10.5
Phenol Alkalinity	0	0	0	0	0	0
Total Alkalinity	221	192	209	240	255	223
Carbonate	0	0	0	0	0	0
Bicarbonate	270	234	254	293	311	272
Chloride (Field Test)	738	224	200	295	57.5	185
Total Coliform	24,200	172	2,420	167	162	228
<i>E. coli</i>	11,200	8	1,200	5	14	25
Enterococci	1,550	22	435	11	8	8
Total Hardness*	298	337	358	414	345	354
Calcium*	70	79	84	97	74	81
Magnesium*	30	34	36	42	39	37
Potassium*	23	19	18	22	8.8	15
Sodium*	430	174	186	217	96	155
Sulfate*	120	220	220	280	210	230
Total Dissolved Solids*		932				
Conductivity at 25°C*		1540				
Phenolics*		0.012				
Mercury*		0.000004				
Aluminum*		0.037				
Antimony*		0.0007				
Arsenic*		0.0010				
Barium*		0.060				
Beryllium*		<0.0001				
Boron*		0.28				
Cadmium*		0.00002				
Chromium*		0.0008				
Cobalt*		0.0003				
Copper*		0.021				
Iron*		0.10				
Lead*		0.0013				
Manganese*		0.17				
Molybdenum*		0.0092				
Nickel*		0.0026				
Selenium*		0.0040				
Silver*		<0.00005				
Strontium*		0.52				
Thallium*		<0.0002				
Uranium*		0.0009				
Vanadium*		0.0004				
Zinc*		0.046				

Notes:

* Tests conducted by an external accredited laboratory.

Results are in mg/L except total coliforms, *E. coli*, enterococci (MPN/100mL), temperature (°C), conductivity (µS/cm) and pH (SU).

Riske's Crossing, Wascana above the Qu'Appelle, Qu'Appelle above the Wascana, and Lumsden sampled on 28 Mar 2023.

Mar 7 - Primary influent BOD result qualified. Blank exceeded acceptance criteria.

Primary Influent BOD Results (mg/L)

Mar 2 - 213; Mar 7 - 226; Mar 9 - 224; Mar 14 - 216; Mar 16 - 168; Mar 21 - 226; Mar 23 - 236; Mar 28 - 229; Mar 30 - 230