

January 30, 2025

M. Jean-François Durocher

Water Inspector – Provincial Officer

Ministry of the Environment, Conservation and Parks

Subject:

2024 - Performance Report for the St-Albert Wastewater Facility

M. Durocher,

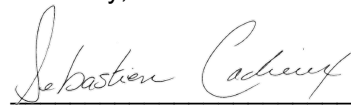
The following document includes the 2024 Performance Report for the St-Albert Wastewater Facility, 2024 inclusive.

In this Performance Report a summary of the St Albert Wastewater Facility will be discussed.

- Volumes and daily flow rates of wastewater
- Results of raw sewage and final effluent parameters
- Summary of operation and environmental challenges
- Maintenance and calibration of monitoring equipment.

This document follows condition 10 of Amended Environmental Compliance Approval # 0098-A6XKFP, approved on February 19th, 2016.

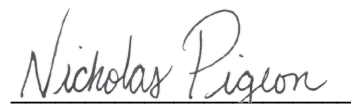
Sincerely,



(Prepared by)

Sébastien Cadieux,

Senior Water & Wastewater Operator/Compliance Officer



(Reviewed & Approved)

Nicholas Pigeon,

Director of Water & Wastewater

2024 Annual Performance Report for the St-Albert Wastewater Facility

a) A summary and interpretation of all monitoring data and a comparison to the effluent limits outlined in Condition 6, including an overview of the success and adequacy of the works;

The average daily flow (ADF) of wastewater entering the St Albert Wastewater facility was 473 m³/Day. This represents 66% of the average day design capacity rated at 720m³/day. The maximum daily flow of wastewater entering the St Albert facility was 906 m³/day during month of January and the minimum was 177 m³/day in October.

During the Spring Discharge a total of 172 173 m³ of Effluent was discharged for a period of 41 days.

The wastewater treatment at the St-Albert Wastewater Facility did not encounter any major problem during the year 2024.

Monitoring and analytical parameters

1) Total Nitrogen (Kjeldahl)

The TKN concentration of the raw sewage varied from 13.3 mg/L in January to 51.0 mg/L in October. The monthly average concentration of raw sewage is 36.6 mg/L.

2) Total Ammonia

The Ammonia average concentration for the Treated Effluent was 0.23 mg/L.

The Annual loading of total Ammonia average during the 2024 discharge was 40 Kg. This is below the loading limit of 2628 Kg/month specified in the ECA.

3) Total Phosphorus

The Total Phosphorus concentration of the raw sewage varied from 1.24 mg/L in January to 6.14 mg/L in October. The monthly average concentration was 4.0 mg/L.

The Treated Effluent concentration of Total Phosphorus averaged 0.39 mg/L. The Effluent limit is 1.0 mg/L.

The annual loading of total phosphorus during discharge was 67 Kg. This is below the loading limit of 131 Kg/month specified in the ECA.

4) Biological Oxygen Demand (BOD5)

BOD5 average concentration of raw sewage varied from 61 mg/L in July to 468 mg/L in August with an average of 159.2 mg/L.

4) Carbonaceous Biological Oxygen Demand (CBOD5)

The Treated Effluent concentration averaged 0 mg/L, which is below the Effluent limit of 30 mg/L.

The annual loading of CBOD5 during the 2024 discharge period was 0 Kg. This is below the loading limit of 3942 Kg/month specified in the ECA.

5) Suspended Solids

The TSS concentration in the raw sewage varied from 66 mg/L in May to 400 mg/L in October with a monthly average concentration of 166.9 mg/L.

The annual loading of TSS during the 2023 discharge period was 581 Kg in March and 1201 Kg in April. This is below the loading limit of 3942 Kg/month specified in the ECA.

6) H₂S

The treated effluent concentration of H₂S averaged 0.01 mg/L, during discharge.

The annual loading of hydrogen sulphide for the treated effluent was 1 Kg during the month of March and 1 Kg in April. This is below the loading limits of 42 Kg in March and 117 Kg in April, specified in the ECA.

b) A description of any operating problems encountered, and corrective actions taken.

No operating challenges occurred during the 2024 period.

c) A summary of all maintenance carried out on any major structure, equipment, apparatus, mechanism or thing forming part of the works;

In addition to regular preventative maintenance, the following operational duties were performed.

- **May,**
 - Cleaning of sanitary pump station with Nation's personnel.
 - Repair pipe in between Cell #3 and Cell #4
- **June**
 - Clean and flush Sanitary Collection System with Nation's personnel and Hydrovac truck
- **August,**
 - Clean discharge pipe in Cell #4 at St-Albert Lagoon.
- **October,**
 - Flow meter calibration performed by Capital Control.
- **November,**
 - Cleaning of sanitary pump station with Nation's personnel.
 - Flush Force Main with Nation Personnel

d) A summary of any Effluent Quality assurance or control measures undertaken in the reporting period;

Monitoring and recording of raw sewage and final effluent during discharge were taken during 2024. The results are presented in the Analytical survey 2024, see Appendix I.

e) A summary of the calibration and the maintenance carried out on all effluent monitoring equipment;

- **October,**
 - Annual Calibration of all Flow meters by Capital Control.

f) A description of efforts made and results achieved in meeting the Effluent Limits of Condition 6;

The Effluent limits are presented in table 1, with an average concentration limit and an average of waste Loadings in Kg for each Effluent parameter. All the results for those sampling and the amount of Loadings in Kg are presented in Appendix I.

To help maintain a compliant effluent, a flow based dosage of 318 mg/L of coagulant “Aluminum Sulfate” was injected at the inlet of the lagoon.

Prior to discharge we also start the Blower for the aeration system of Cell “D”. The aeration helps to thaw the ice cover and provide off gassing of sulfide, which results in a better effluent.

g) A tabulation of the volumes of sludge generated in the reporting period, an outline of anticipated volumes to be generated in the next reporting period and a summary of the locations where the sludge was disposed;

No Haulage of waste was brought to St-Albert lagoon in the 2024 period.

As for the volumes of sludge generated please see the table below;

<i>Parameters</i>	<i>Alum. (mg/L)</i>	<i>TSS (mg/L)</i>	<i>Flow (m3)</i>	<i>Total KG</i>	
2024	335	162	172845		
KG	12739	28145		40884	Sludge

These numbers were calculated using the average results of the monthly wastewater samples taken during each month with the total of cubic meter that entered the lagoon. See Appendix II.

A total of 40884 Kg as per analytical tabloid of sludge was produced in 2024.

As for the next reporting period, the anticipated volume of sludge should remain around the same, as we do not allow for any haulage to the lagoon. The volume of sludge produce will vary depending on the total of Wastewater Influent.

h) A summary of any complaints received during the reporting period and any steps taken to address the complaints;

No complaints received in 2024.

i) A summary of all *By-pass*, spill or abnormal discharge events;

There was no by-pass or spill during the year 2024.

j) A copy of all Notice of Modifications submitted to the Water Supervisor as a result of Schedule 'A', Section 1, with a status report on the implementation of each modification;

None.

k) A report summarizing all modifications completed as a result of Schedule 'A', Section 3; and

No modification was performed during 2024.

l) Any other information the Water Supervisor requires from time to time;

None.

Appendix I: Annual discharge Effluent concentration and loadings

Appendix II: Analytical Survey

APPENDIX I

THE NATION - ST-ALBERT LAGOON DISCHARGE - 2024

Effluent Samples	Date	CDBO5 mg/l	TSS mg/l	TP mg/l	T Ammonia mg/l	H2S
Pre	3/06/24	0.00	0.00	0.05	0.00	0.01
Opening	3/21/24	0.00	5.00	0.05	0.00	0.01
1	3/22/24	0.00	3.00	0.06	0.23	0.01
2	3/25/24	0.00	0.00	0.07	0.18	0.01
3	3/27/24	0.00	4.00	0.07	0.46	0.01
4	4/03/24	0.00	5.00	0.08	0.42	0.01
5	4/05/24	0.00	3.00	3	0.46	0.01
6	4/10/24	0.00	0.00	0.05	0.16	0.01
Closing	4/30/24	0.00	3.00	0.06	0.16	0.01

Discharge average	0.0	2.56	0.39	0.23	0.01
March	0.0	2.40	0.06	0.17	0.01
April	0	2.75	0.80	0.30	0.01

Loading

Volume (m3)	March	72912	72912	72912	72912	72912
Load (Kg)		0	186	28	17	1

Volume (m3)	April	99461	99461	99461	99461	99461
Load (Kg)		0	254	39	23	1

TOTAL		0	441	67	40	2
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Limits

Average (mg/l)	30	30	1	20	(0.32mg/L in March) (0.89mg/L in April)
March load (Kg/Month)	3942	3942	131	2628	42
April load (Kg/Month)	3942	3942	131	2628	117

UP STREAM Samples	Date	CDBO5 mg/l	TSS mg/l	TP mg/l	T Ammonia mg/l	pH
1 (open)	3/21/22	0	10	0.05	0.19	8.21
2 (close)	4/30/24	0	29	0.1	0.08	8.19
Average		0	19.5	0.075	0.135	8.2

DOWN STREAM Samples	Date	CDBO5 mg/l	TSS mg/l	TP mg/l	T Ammonia mg/l	pH
1 (open)	3/21/22	0	9	0.06	0.18	8.21
2 (close)	4/30/24	0	29	0.11	0.08	8.28
Average		0	19	0.085	0.13	8.245

Appendix II

Waste Water - Analytical survey



St-Albert

2024		Limit	Limit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
RAW SEWAGE		<i>C of A</i>	<i>Federal</i>													
Total Flow	m^3			15783	17606	19202	19227	19362	17040	16417	17178	9043	6615	6649	8723	172845
Daily Ave. Flow	m^3/d	720		509	607	619	641	625	568	530	554	301	213	222	281	473
Max Flow	m^3/d			606	688	667	715	674	906	592	701	489	226	246	376	906
Min Flow	m^3/d			271	556	562	539	587	587	393	393	177	177	204	238	177
BOD ₅	mg/l			75	182	119	86	83	157	61	468	122	226	101	230	159.2
TSS	mg/l			98	175	100	115	122	170	518	370	75	78	68	65	162.8
pH	pH units			7.71	7.71	7.73	7.9	8.02	8.05	7.83	7.45	7.58	7.43	7.58	7.56	7.7
TKN	mg/l			13.3	40.7	29.8	38.6	24.6	51	35	46.5	38.1	46.2	37.7	38	36.6
Ptot	mg/l			1.24	6.12	3.25	3.58	2.53	5.37	4.56	6.14	4.12	4.16	3.7	3.5	4.0
EFFLUENT																
Total Flow	m^3					72912	99261									172173
Daily Ave. Flow	m^3/d					7264	3309									5286.5
CBOD ₅	mg/l	30.0				3	0									1.50
TSS	mg/l	30.0				4	2.75									3.38
Ptot	mg/l	1.0				0.06	0.8									0.43
H2S	mg/l	March (0.32) April (0.89)				0.01	0.01									0.01
Unionized Ammonia	mg/l					0.072	0.01									0.04
Ammonia	mg/l	20.0				0.17	0.3									0.24

