

January 30, 2025

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*Water Inspector – Provincial Officer*

Ministry of the Environment, Conservation and Parks

**Subject:**

**2024 - Performance Report for the St- Isidore Wastewater Facility**

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The following document includes the 2024 Performance Report for the St-Isidore Wastewater Facility.

There is no specific Certificate of Approval for this facility. The operations follow the MECP guidelines for specific effluent limits. The guidelines are as follow:

- ❖ *Guideline F-5-1 Table I for Lagoon effluent compliance limits*
- ❖ *Guideline F-10 for sampling requirements*
- ❖ *Guideline F-10-1 Procedures for sampling and Analysis*

In this Performance Report a summary of the St-Isidore 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.

Sincerely,

*Sébastien Cadieux*

(Prepared by)

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## 2024 Annual Performance Report for the St-Isidore Wastewater Facility

### **a) Summary and interpretation of raw sewage and final effluent monitoring data and comparison to effluent objectives**

The average daily flow of wastewater entering the St-Isidore facility was 357 m<sup>3</sup>/day in 2024.

The average treated Effluent daily flow was 6207 m<sup>3</sup>/day during the 29 days period of discharge from May 6<sup>th</sup> to June 3<sup>rd</sup>, 2024. Totalizing 179994 m<sup>3</sup>.

The Wastewater Lagoon Treatment Facility did not encounter any major challenges during 2024. Respected the effluent limits for Carbonaceous BOD<sub>5</sub> and TSS.

### **B) Analytical parameters- Raw sewage & Effluent**

#### 1) Total Nitrogen (kjeldahl)

The concentration of raw sewage varied from 25.8 mg/L in March to 46.2 mg/L in January. The monthly average concentration was 37.38 mg/L.

The Ammonia average concentration for treated effluent was 2.89 mg/L for 2024.

#### 2) Total Phosphorus

The concentration of raw sewage varied from 2.5 in March mg/L 5.1 mg/L in November. The monthly average concentration was 3.99 mg/L.

The Total phosphorus average concentration for treated effluent was 0.98 mg/L.

#### 3) Carbonaceous Biological Oxygen Demand (CBOD5)

The concentration of raw sewage varied from 84 mg/L in September to 749 mg/L in January. The monthly average concentration was 244 mg/L.

The CBOD5 average concentration for treated effluent was 8.8 mg/L.

#### 4) Suspended Solids

The concentration of raw sewage varied from 78 mg/L in September to 760 mg/L in March. The monthly average concentration was 251 mg/L.

The TSS average concentration for treated effluent was 9.4 mg/L.

#### 5) E Coli

The E Coli average concentration for treated effluent was 366 mg/L.

**c) Summary of raw and effluent quality assurance control measures**

Monitoring and recording of raw sewage were taken during each month in 2024. Effluent samples were taken during period of discharge.

Results are in the St-Isidore Wastewater –Analytical survey table at the end of this report in Appendix I. The Effluent results are shown in Appendix II.

**d) Summary of maintenance carried out on major structure, equipment, apparatus and mechanism**

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

- **January**  
-Replace electrical contactor on both submersible pumps.
- **April,**  
- Batch treatment of 25 000 Kg of PAS 8 into the St-Isidore Lagoon.
- **May,**  
-Flushed and cleaned Sanitary collection system by Nation personnel and hydrovac.  
- Clean the Sanitary pumping station with Nation's personnel and hydrovac.
- **October,**  
- Calibration of Flow Meter by Capital Control.
- **November**  
- Clean the Sanitary pumping station with Nation's personnel and hydrovac.

**e) A description of any operating challenges encountered, and corrective actions taken**

The operating challenge for this facility is the nearing capacity of the lagoon cells. In order to help and guide us in the upcoming years, a Master plan was started in 2024 and is predicted to be completed in the summer of 2025.

**Appendix I: St-Isidore WASTEWATER FACILITY - ANALYTICAL SURVEY – 2024**

**Appendix II: St-Isidore WASTEWATER FACILITY – Discharge results – 2024**

# APPENDIX I

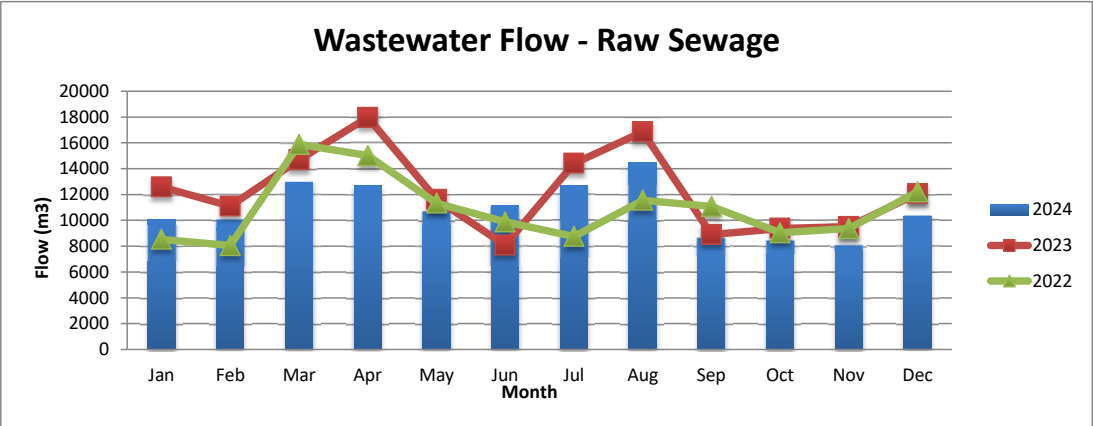
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Waste Water - Analytical survey



St-Isidore

2024		Limit	Limit	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
RAW SEWAGE		C of A	Federal													
Total Flow	m <sup>3</sup>			10039	10106	13081	12720	10760	11120	12702	14439	8688	8463	8134	10450	130701
Daily Ave. Flow	m <sup>3</sup> /d			324	348	422	424	347	371	410	466	290	273	271	337	357
Max. Flow	m <sup>3</sup> /d			413	396	550	496	379	466	475	608	346	289	287	399	608
Min. Flow	m <sup>3</sup> /d			289	312	318	318	309	310	293	293	261	258	258	267	258
BOD <sub>5</sub>	mg/l			749	110	228	267	302	232	217	116	84	179	258	187	244
TSS	mg/l			114	520	760	358	280	215	190	112	78	182	125	80	251
pH	pH units			7.76	7.60	7.37	7.75	7.64	7.6	7.64	7.72	7.7	7.71	7.61	7.56	7.64
TKN	mg/l			38.1	40.0	25.8	43.7	30.8	41.1	30.1	34.0	34.4	46.2	44.0	40.4	37.38
Ptot	mg/l			4.2	4.6	2.5	4.6	4.1	4.3	3.1	3.3	3.5	4.6	5.1	3.91	3.99
EFFLUENT																
Total Flow	m <sup>3</sup>							160071	19923							179994
Daily Ave. Flow	m <sup>3</sup> /d							6157	6641							6399
BOD <sub>5</sub>	mg/l	25.0	25.0					8.2	14							11.10
TSS	mg/l	25.0	25.0					9.6	8							8.80
Ptot	mg/l							0.84	2.27							1.56
Unionized ammonia	mg/l		1.25					0.08	0.11							0.10
Ammonia	mg/l							2.83	3.38							3.11
E. Coli	cfu/100mL							212.2	1750							981.10



## APPENDIX II

**THE NATION - ST-ISIDORE LAGOON DISCHARGE - 2024**

Effluent Samples	Date	BOD5 mg/l	TSS mg/l	TP mg/l	T Ammonia mg/l	H2S	Unionized Ammonia	pH	TKN	E Coli cfu/100mL
Pre-liminary	24-Apr-24	11	17	0.57	0.08	0	0	8.01	3.4	80
Opening	6-May-24	5	10	0.66	0.62	0	0.02	7.83	2.9	66
1	9-May-24	5	10	0.75	0.79	0	0.04	7.96	3.2	46
2	13-May-24	4	0	0.76	1.22	0	0.04	7.75	2.6	6
3	16-May-24	8	14	1.23	2.90	0	0.04	7.36	6.2	6
4	21-May-24	5	13	0.76	3.88	0	0.2	7.97	5.5	4
5	24-May-24	4	5	0.84	4.45	0	0.09	7.58	5.9	22
6	27-May-24	16	9	1.04	5.82	0	0.03	7.95	9.4	550
7	30-May-24	16	8	0.94	5.72	0	0.28	7.95	11.1	1130
Closing	3-Jun-24	14	8	2.27	3.38	0	0.11	7.79	8.6	1750

<b>Discharge average</b>	<b>8.8</b>	<b>9.4</b>	<b>0.98</b>	<b>2.89</b>	<b>0.0</b>	<b>0.09</b>	<b>7.82</b>	<b>5.88</b>	<b>366.0</b>
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<b>Loading</b>	BOD5	TSS	TP	TAN	H2S
Volume (m3)	<b>179994</b>	<b>179994</b>	<b>179994</b>	<b>179994</b>	<b>179994</b>
Load (Kg)	<b>1584</b>	<b>1692</b>	<b>177</b>	<b>519</b>	<b>0</b>

	March	April	May	June
March				
April			0.00 kg	
May			140 kg	
June			45 kg	

<b>Limits</b>	Average (mg/l)	25	25
Average (mg/l)	25	25	

<b>Effluent Flow</b>	
March	April
0	0
May	June
160071	19923
<b>179994</b>	<b>Total</b>

<b>UP STREAM</b>						
Samples	Date	CDBO5	TSS	TP	T Ammonia	pH
		mg/l	mg/l	mg/l	mg/l	
1	5/06/24	0	34	0.70	0.68	8.2
2	6/03/24	0	18	0.12	0.07	8.24
Average		0	26	0.41	0.375	8.22

<b>DOWN STREAM</b>						
Samples	Date	CDBO5	TSS	TP	T Ammonia	pH
		mg/l	mg/l	mg/l	mg/l	
1	5/06/24	0	36	0.79	0.63	8.19
2	6/03/24	0	17	0.12	0.07	8.25
Average		0	26.5	0.455	0.35	8.22