



**GREEN VALLEY SEWAGE TREATMENT
Annual Report
2021**

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**The Corporation of the Township of South Glengarry
Green Valley Sewage Treatment
(Sewage Plant)
2021 Annual Performance Report**

In accordance with the Certificate of Approval, Number 3-2012-88-896, Issue date August 1, 1989 the Water Pollution Control Plant (WPCP) is required to prepare an annual performance report. This document covers the reporting year January 01 to December 31, 2021; the facility performance report summarizes important information regarding the quality of the effluent wastewater, analytical test results, maintenance operations, and relevant activities of the WPCP.

Description of Works

Capacity of Works	300 m ³ /day (average daily flow)
Service Area	Hamlet of Green Valley
Service Population	Approximately 475
Effluent Receiver	Beaudette River
Major Process	Twin cell waste stabilization pond, with annual alum dosing for phosphorus and solids removal.

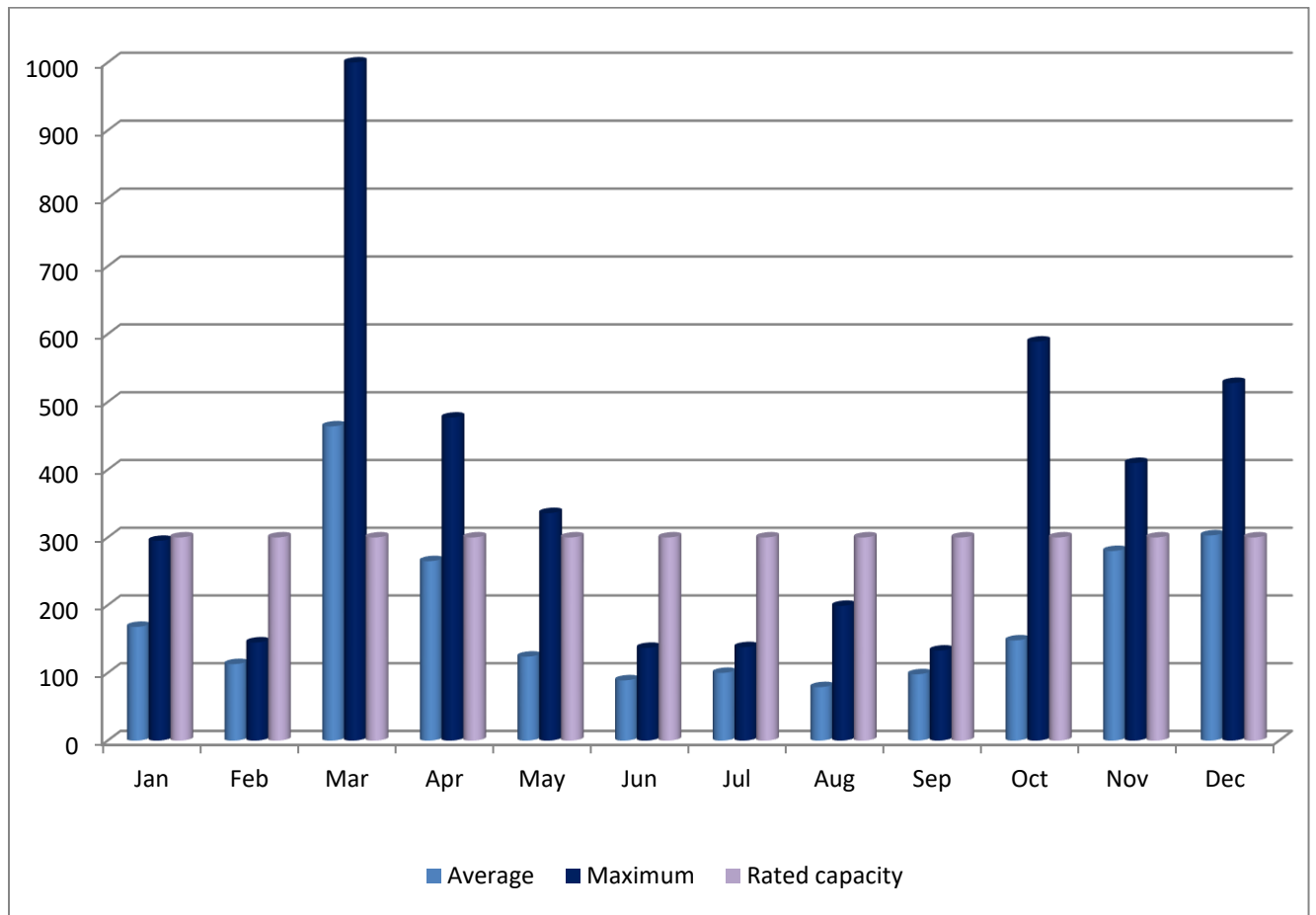
The Green Valley WPCP received and operates its operation under *Certificates of Approval (now referred to as Environmental Compliance Approval [ECA])* Number 3-2012-88-896, in accordance with Section 53 of the Ontario Water Resources Act. The Certificate of Approval outlines the terms and conditions, and, the report captures these terms and conditions in the following sections.

Rated Capacity

For the purposes of the ECA and the terms and conditions specified, the following definition applies: “*Rated Capacity*” means the *Average Daily Flow* for which the *Works* are approved to handle.

The rated capacity of the Green Valley WPCP is 300 cubic meters per day (m³/day); that is raw influent (flow) into the lagoon for treatment. During the reporting year 2021, the Green Valley WPCP exceeded the rated average capacity of 300 m³/day, fifty-eight (58) days.

Monthly Average and Maximum Daily Flows for 2021 (Rated capacity 300 m³/day)



EFFLUENT LIMITS

The *Owner* shall operate and maintain the *Works* such that the concentrations and waste loadings of the materials named in Table 1 as effluent parameters are not exceeded in the effluent from the *Works*.

Effluent Limits as per C of A, conditions 10 (1) Table 1

Effluent Parameter	Average Concentration (milligrams per litre unless otherwise indicated)	Average Loading Objective (kilograms per day unless otherwise indicated)
Column 1	Column 2	Column 3
<i>CBOD₅</i>	30	214.3
Total Suspended Solids	30	214.3
Total Phosphorus	1.0	7.1

MONITORING AND RECORDING

The *Owner* shall, upon commencement of operation of the *Works*, carry out the following the monitoring program.

Effluent Monitoring - (samples to be collected at the outlet of the disinfection facilities or at the outfall sewer as close as possible at the treatment plant)

Effluent Monitoring

Parameters	Sample Type	Frequency
<i>CBOD₅</i>	Grab	Every 0.5 meters
Total Suspended Solids	Grab	Every 0.5 meters
Total Phosphorus	Grab	Every 0.5 meters

LABORATORY

Caduceon Environmental laboratories is contracted to conduct the required analytical tests of the influent (raw) and effluent samples, as per the ECA.

2021 ANNUAL EFFLUENT QUALITY:

Parameters	Average Concentration mg/L	Criteria Concentration mg/L	Average Loading, kg/d	Loading Criteria, kg/d
CBOD ₅	6.80	30	29.20	214.3
**Total Suspended Solids	8.00	30	41.82	214.3
Total Phosphorus	0.29	1.0	1.27	7.1

In the reporting year 2021, the *Works* were operated and maintained such that the concentrations and waste loadings for CBOD₅, Total Suspended Solids and Total Phosphorus named in Table 2 as effluent parameters were not exceeded in the effluent from the *Works*; in compliance with the ECA requirements for the effluent limits parameters.

INVENTORY

Chemical	Annual Status	Units
Alum	14	Cubic meters

MAINTENANCE

The operators performed the routine operations and maintenance at the treatment plant and pumping stations in accordance with the preventative maintenance program (report on file at plant). The activities are highlighted as follows:

MONTHLY

- Checked operations and performance of sewage pumps.

QUARTERLY

- N/A

SEMI-ANNUALLY

- N/A

ANNUALLY

- Annual calibration of monitoring equipment
- Annual calibration of flow meters
- Re-grease grey-line unit probes in sewage pump stations

MAJOR MAINTENANCE

- Clean pump stations (May/June)
- New pump station level sensor installed (May)
- Rebuilt sewage pump #1 south station (Dec)

OPERATIONAL ISSUES

- The facility did meet all operational requirements for the fiscal year January 01 – December 31, 2021.

COMPLAINTS

- No complaints were lodged in the fiscal year January 01 – December 31, 2021.

BY-PASS REPORT(S)

- By-pass Records
 - March 11, 2021
 - March 26, 2021
 - December 11, 2021

GREEN VALLEY WASTEWATER TREATMENT LAGOON PERFORMANCE 2021

On April 21st, 2021, the Township of South Glengarry Wastewater Department dosed the twin celled lagoon system with 14,000 litres of Alum for phosphorus removal. Each cell is equipped with a level marker which read 1.3 meters, that is equal to approximately 78,000 cubic meters of raw sewage.

On April 27th, 2021, at approximately 10:00, the lagoon discharge commenced, and the first set of samples were collected. The flow was set at approximately 5,200 cubic meters per day. On May 13th, 2021, the discharge was terminated as per C of A 3-2012-88-896 which states: the sewage works shall be operated on an annual discharge basis with the effluent discharge commencing not earlier than March 15th or terminating not later than May 25th of each year. A total of 72,545 cubic meters have been recorded on the Manta Ray Level Velocity Logger.

Lab Results

Attached you will find the laboratory results of samples collected for the lagoon discharge period. (See Appendix. A)

REPORTS

Appendix A – Green Valley Sewage Annual Performance Report 2021 (Attached)

Caduceon Environmental Laboratories Analytical Reports - (on-file at plant)

Green Valley Daily/Monthly Report Summary - (on-file at plant)

Green Valley Bypass Incident – (on-file at plant)

APPENDIX – A –
Green Valley Lagoons
Sewage Annual Performance Report
2021

Municipality: Township of South Glengarry
Project: Green Valley Lagoons

Annual Report Data
2021

Water Course: Beaudette River
Design Capacity: 0.300 x 1000 m3/D

Description: 2 Sewage Pumping Stations - 2 Faculative Cells - Annual Discharge

	Influent Flow			Effluent	Biochemical Oxygen Demand		Suspended Solids - Total			Phosphorus		Waste Loadings			Alum	
	Total X 1000 m3	Average X 1000 m3	Maximum Daily X 1000 m3	Flow - Total X 1000 m3/D	Average Influent mg/L	Average Effluent mg/L	Average Influent mg/L	Average Effluent mg/L	Average Influent mg/L	Average Effluent mg/L	BOD Kg/D	TSS Kg/D	TP Kg/D	m3 Used		
January	5.225	0.168	0.295	0	87	0	140	0	4.11	0	0.00	0.00	0.00	0		
February	3.189	0.113	0.145	0	103	0	90	0	4.62	0	0.00	0.00	0.00	0		
March	14.390	0.464	1.234	0	128	0	150	0	3.80	0	0.00	0.00	0.00	0		
April	7.969	0.265	0.477	19.455	69	6.0	104	6.5	2.25	0.26	29.18	31.61	1.26	16		
May	3.858	0.124	0.336	52.030	90	7.3	12	13.0	4.98	0.32	29.21	52.03	1.28	0		
June	2.697	0.089	0.137	0	198	0	206	0	5.30	0	0.00	0.00	0.00	0		
July	3.111	0.100	0.138	0	235	0	200	0	7.68	0	0.00	0.00	0.00	0		
August	2.456	0.079	0.199	0	175	0	150	0	5.55	0	0.00	0.00	0.00	0		
September	2.957	0.098	0.133	0	177	0	170	0	4.05	0	0.00	0.00	0.00	0		
October	4.593	0.148	0.589	0	212	0	440	0	5.93	0	0.00	0.00	0.00	0		
November	8.423	0.280	0.410	0	36	0	64	0	2.16	0	0.00	0.00	0.00	0		
December	9.415	0.303	0.528	0	121	0	195	0	5.84	0	0.00	0.00	0.00	0		
Total	68.283			71.485							58.39	83.64	2.55	0		
Average	5.690	0.186	0.385	5.957	135.9	6.7	160.1	10	4.69	0.29	29.20	41.82	1.27	0		
Criteria		0.300				30		30		1.0	214.3	214.3	7.10			
Maximum						7.3		13		0.32	29.21	52.03	1.28			
Compliance	Yes				Yes		Yes			Yes		Yes	Yes	Yes		
	Influent				Effluent	Sample Date:	Effluent									
	BOD Average mg/L	TKN Average mg/L	TP Average mg/L	NH3 Average mg/L	Average Flow X1000 m3/D		BOD mg/L	TSS mg/L	TP mg/L	NH3 mg/L	pH	TKN mg/L	NO2 mg/L	NO3 mg/L	E. Coli cfu/100ml	T. Coli cfu/100ml
January	87	40.70	4.11	21.80	0.000	April 27th, 2021	7	4	0.25	3.46	7.85	6.5	0.1	0.9	230	12000
February	103	39.60	4.62	26.30	0.000	April 30th, 2021	5	9	0.26	3.49	7.85	6.3	0.1	0.7	10	42
March	128	30.60	3.80	15.90	0.000	May 3rd, 2021	7	10	0.37	3.06	7.98	6.9	0.1	0.5	230	1020
April	69	18.50	2.25	9.54	4.863	May 7th, 2021	10	10	0.3	3.3	7.92	6.4	0.1	0.2		
May	90	44.30	4.98	25.40	4.002	May 13th, 2021	5	7	0.28	4.8	7.96	6.4	0.1	0.1	12	28
June	198	41.90	5.30	29.70	0.000											
July	235	58.20	7.68	35.90	0.000											
August	175	46.70	5.55	30.00	0.000											
September	177	31.10	4.05	29.20	0.000											
October	212	50.50	5.93	44.40	0.000											
November	36	18.00	2.16	7.64	0.000											
December	121	42.70	5.84	21.80	0.000											
Average	135.92	38.57	4.69	24.80	4.433		6.80	8.00	0.29	3.62	7.91	6.50	0.10	0.48	121	3273

