



2022
Annual Wastewater Report
Green Valley Sewage Treatment
Version 2.0

Prepared by:

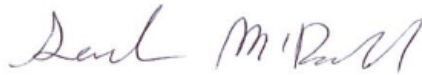


Dillen Seguin
Director of Water and Wastewater

February 14, 2023

Date

Approved by:



Sarah McDonald, P. Eng.
General Manager, Infrastructure Services

February 14, 2023

Date

Table of Contents

1. Description of the Works	3
2. Effluent Limits	5
3. Monitoring And Recording	5
4. Laboratory	5
5. 2022 Annual Effluent Quality	5
6. Inventory	6
7. Maintenance	6
8. Operational Issues	6
9. Complaints	7
10. By-Pass Report(s)	7
11. Lagoon Performance	7

Revision History

Date	Description	Revision	Author
February 6, 2023	Initial Issue for Council Receipt	1.0	D. Seguin
February 14, 2023	Final for Approval	2.0	D. Seguin

Green Valley Sewage Treatment Plant

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, 2022; 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.

1. Description of the Works

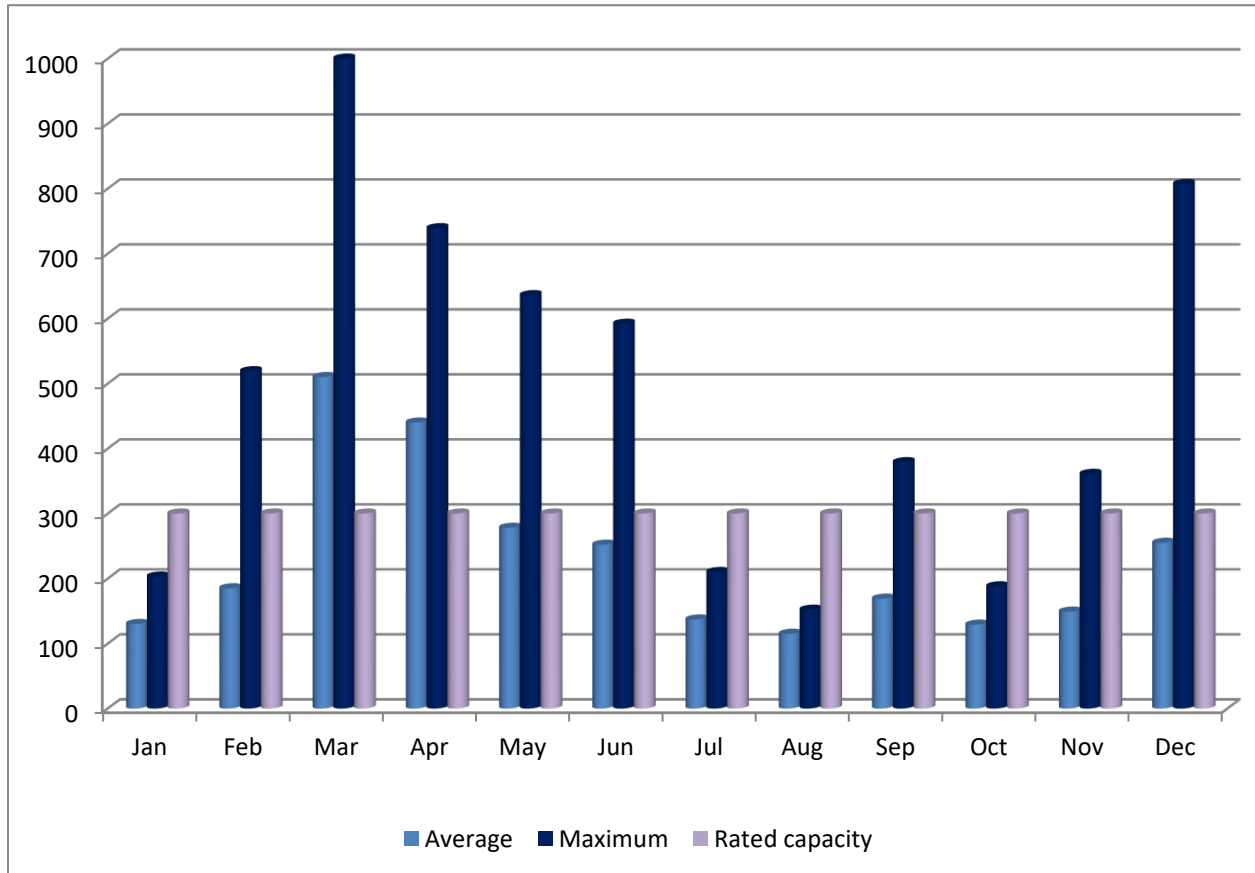
Capacity of Works	300 m ³ /day (average daily flow)
Service Area	Hamlet of Green Valley
Service Population	Approximately 475
Effluent Receiver	Beaudette River
Major Process	Twin cell waste stabilization pond, with annual alum dosing for phosphorus and solids removal.

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 2022, the Green Valley WPCP exceeded the rated average capacity of 300 m³/day, eighty-three (83) days.

Monthly Average and Maximum Daily Flows for 2022 (Rated capacity 300 m³/day)



2. 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*.

Table 1. Effluent Limits as per C of A, conditions 1.4

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
CBOD ₅	30	214.3
Total Suspended Solids	30	214.3
Total Phosphorus	1.0	7.1

3. 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).

Parameters	Sample Type	Frequency
CBOD ₅	Grab	Every 0.5 metres
Total Suspended Solids	Grab	Every 0.5 metres
Total Phosphorus	Grab	Every 0.5 metres

4. Laboratory

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

5. 2022 Annual Effluent Quality

In the reporting year 2022, the *Works* were operated and maintained such that the concentrations and waste loadings of the materials 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.

Parameters	Average Concentration mg/L	Criteria Concentration mg/L	Average Loading kg/d	Loading Criteria kg/d
CBOD ₅	9.13	30	50.39	214.3
Total Suspended Solids	19.75	30	123.72	214.3
Total Phosphorus	0.29	1.0	1.62	7.1

**Total Suspended Solids - CofA 3-2012-88-896

As per condition(s) 10. (1) and (2) of the CofA

The effluent average concentration for 3 consecutive samples have averaged greater than the Effluent parameter for Suspended Solids of 30mg/L

Reported to SAC at the End of the Discharge
Reported: June 7, 2022

In attempt to lower the effluent discharge to the natural environment, township staff switched from discharging from the East to the West Cell, as clarity appears too visually be better.

The average concentration for the entire discharge has been calculated at 20 mg/L, below the effluent criteria.

6. Inventory

Chemical	Annual Status	Units
Alum	14	Cubic meters

7. 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	<ul style="list-style-type: none"> Checked operations and performance of sewage pumps (<i>weekly</i>)
Quarterly	<ul style="list-style-type: none"> N/A
Semi-Annually	<ul style="list-style-type: none"> N/A
Annually	<ul style="list-style-type: none"> Annual calibration of monitoring equipment Annual calibration of flow meters Re-grease grey-line unit probes in sewage pump stations Manhole inspections completed
Major Maintenance	<ul style="list-style-type: none"> Rebuild and Install pump number 2 at South Station and inspect well (Feb) Coil Replaced on Sewage pump 1 South Station (Apr) Clean pump stations (Sep.) Pulled South pump station pump and removed debris (Nov)

8. Operational Issues

There were no operational issues noted during 2022.

9. Complaints

No complaints reported during the 2022 operational year.

10. By-Pass Report(s)

The by-pass records for 2022 are:

- February 17th, 2022
- March 20th, 2022
- March 24th, 2022
- April 8th, 2022
- December 24th, 2022
- December 31, 2022

11. Lagoon Performance

On April 26th, 2022, 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 1.7 meters(Avg.), that is equal to approximately 110,000 cubic meters of raw sewage.

On April 27th, 2022, at approximately 11:00, the lagoon discharge commenced, and the first set of samples were collected. The flow was set at approximately 5,000 cubic meters per day. On May 24th, 2022, 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 101,275 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 2022 (Attached)
- Caduceon Environmental Laboratories Analytical Reports - (on-file at plant)
- Green Valley Daily/Monthly Report Summary - (on-file at plant)
- Green Valley Bypass Incident Report – (on-file at plant)

APPENDIX – A –
Green Valley Lagoons
Sewage Annual Performance Report
2022

Municipality: Township of South Glengarry
Project: Green Valley Lagoons

Annual Report Data
2022

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	4.015	0.130	0.203	0	146	0		132	0		4.90	0		0.00	0.00	0.00	0
February	5.192	0.185	0.519	0	200	0		195	0		4.78	0		0.00	0.00	0.00	0
March	15.822	0.510	1.091	0	47	0		44	0		1.43	0		0.00	0.00	0.00	0
April	13.193	0.440	0.739	24.015	138	12.5		240	33		5.35	0.4		75.04	198.10	2.40	14
May	8.609	0.278	0.636	77.260	69	8		88	15.33		2.57	0.26		25.75	49.35	0.84	0
June	7.567	0.252	0.592	0	118	0		105	0		3.45	0		0.00	0.00	0.00	0
July	4.245	0.137	0.210	0	226	0		265	0		5.64	0		0.00	0.00	0.00	0
August	3.580	0.115	0.152	0	893	0		820	0		22.3	0		0.00	0.00	0.00	0
September	5.056	0.169	0.379	0	319	0		400	0		9.53	0		0.00	0.00	0.00	0
October	4.003	0.129	0.188	0	120	0		146	0		4.41	0		0.00	0.00	0.00	0
November	4.476	0.149	0.361	0	116	0		105	0		7.67	0		0.00	0.00	0.00	0
December	7.915	0.255	0.807	0	62	0		118	0		2.96	0		0.00	0.00	0.00	0
Total	83.673			101.275										100.79	247.45	3.24	0
Average	6.973	0.229	0.490	8.440	204.5	10.3		221.5	24		6.25	0.33		50.39	123.72	1.62	0
Criteria		0.300				30			30			1.0		214.3	214.3	7.10	
Maximum												0.32		25.75	49.35	0.84	
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	146	40.40	4.90	25.40	0.000	April 27 2022	11	34	0.41	1.27	7.94	5.9	0.1	1	358	370	
February	200	41.10	4.78	25.30	0.000	April 29 2022	14	32	0.39	0.06	7.93	5.7	0.1	1.1	1280	8200	
March	47	13.90	1.43	7.16	0.000	May 2 2022	14	41	0.34	1.12	8.3	5.1	0.1	1.2	6200	24000	
April	138	24.50	5.35	6.74	6.003	May 5 2022	7	17	0.28	1.36	8	4.5	0.1	0.9	4000	5000	
May	69	22.30	2.57	13.00	3.219	May 9 2022	3	9	0.11	1.17	7.96	2.9	0.1	0.4	10	70	
June	118	27.80	3.45	20.30	0.000	May 13 2022	3	4	0.14	2.5	7.83	4.6	0.1	0.1	1000	23000	
July	226	34.90	5.64	19.00	0.000	May 18 2022	13	14	0.36	2.65	7.46	6.4	0.1	0.1	100	8000	
August	893	106.00	22.30	41.00	0.000	May 24 2022	8	7	0.31	2.26	8	6.2	0.1	0.1	100	9000	
September	319	54.90	9.53	37.00	0.000												
October	120	36.00	4.41	20.60	0.000												
November	116	75.90	7.67	49.90	0.000												
December	62	27.80	2.96	17.40	0.000												
Average	204.50	42.13	6.25	23.57	4.611		9.13	19.75	0.29	1.55	7.93	5.16	0.10	0.61	1631	9705	