Bayshore Village Sewage Works

Annual Wastewater Performance Report

Prepared For: The Township of Ramara

Reporting Period of January 1st – December 31st, 2023

Issued: March 28, 2024

Revision: 0

Operating Authority:

OCWA

ONTARIO CLEAN WATER AGENCY
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Background:

The Ontario Clean Water Agency (OCWA) operates and maintains the Bayshore Village Sewage Works behalf of the Township of Ramara. During the reporting period January 1st, 2023-December 31st, 2023 the Ontario Clean Water Agency was the operating authority.

The facility is a Class 1 Wastewater Treatment Plant.

The facility's allowable average daily flow is 399m^3/day. The average day raw flow for the year 2023 was 270.73 m^3/day.

The Bayshore Village Sewage Works complies with all requirements of the regulating authorities and operates under:

- Certificate of Approval (C of A)) No. 3-1337-81-968 issued July 17, 1996
- Environmental Compliance Approval (CLI-ECA) No. 147-W601 issued April 5, 2023

Certificate of Approval (C of A) No. 3-1337-81-968 issued July 17, 1996 Section 4(2) requires the Performance Report to contain the following:

a) *A summary of all monitoring data, including an overview of the success and adequacy of the sewage treatment program;*

b) *a tabulation of all monitoring and analytical results obtained during the reporting period, including sampling/monitoring location and date;*

c) *a record of the operation of the spray irrigation system, including dates and hours of operation, irrigation system, including dates and hours of operations, irrigation areas utilized, rates of effluent application, and volumes of effluent applied;*

d) *an account of any environmental and operating problems encountered at the site and the mitigative measures taken during the reporting period.*

Environmental Compliance Approval (CLI-ECA) No. 147-W601 issued April 5, 2023 Section 4.6 requires the Performance Report to contain the following:

a) *A summary of all required monitoring data along with an interpretation of the data and any conclusion drawn from the data evaluation about the need for future modifications to the Authorized System or system operations.*

b) *A summary of any operating problems encountered and corrective actions taken.*

c) *A summary of all calibration, maintenance and repairs carried out on any major structure, Equipment, apparatus, mechanism, or thing forming part of the Municipal Sewage Collection System.*

d) *A summary of complaints related to the Sewage Works received during the reporting period and nay steps taken to address the complaints.*

e) *A summary of Alterations to the Authorized System within the reporting period that are authorized by this Approval including a list of Alterations that pose a Significant Drinking Water Threat.*

f) A summary of all Collection System Overflow(s) and Spill(s) of Sewage, including:
i) Dates;
ii) Volumes and durations
iii) If applicable, loading for total suspended solids, BOD, total phosphorus, and total Kjeldahl nitrogen, and sampling results for E. coli;
iv) Disinfection, if any; and
v) Any adverse impact(s) and corrective actions, if applicable.

g) A summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including items, as applicable:
i) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.
ii) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.
iii) An assessment of the effectiveness of each action taken.
iv) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.
v) Public reporting approach including proactive efforts.

Bayshore Sewage Works consists of two irrigation spray field where the effluent from the lagoons is sprayed at a maximum rate of 55 m^3/ha/day from May 18 to October 28 for each calendar year. The timeframe of the spray irrigation may be extended each year upon written request. Relief was granted for Conditions 1.2 and 1.3 of the Certificate of Approval (C of A) No. 3-1337-81-968 for the 2023 spray irrigation season by the Ministry of the Environment Conservation and Parks as per the letter from the Environmental Permissions Branch sent on September 26, 2023. Within the relief, the spray season was extended until December 15, 2023. See Appendix I: Regulatory Relief and Extension Approval Letters.

This report will show that the Ontario Clean Water Agency has made every attempt to achieve its goals through its operational performance. This performance was enhanced through the use of an electronic process data collection database, an electronic maintenance and work order database, an electronic operational excellence database, a training program focused on providing the right skills to staff - also captured and tracked by the use of an electronic database and a multi-skilled, flexible workforce.

This report will show that the requirements of the facility C of A including effluent monitoring and reporting requirements were consistently met and that effluent quality was consistently within C of A requirements.

Summary of Influent Flow Data

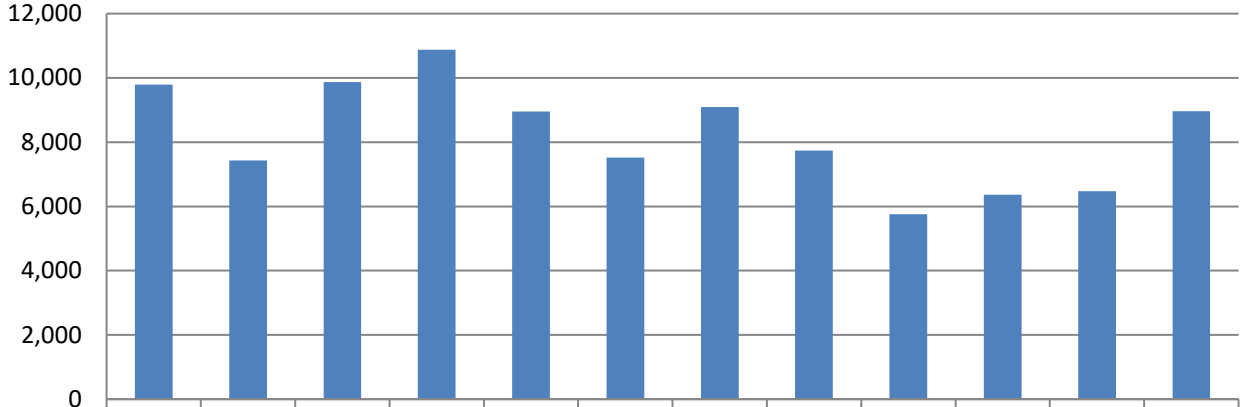
Condition 1.1 of the (C of A) No. 3-1337-81-968 *indicates "The Owner Shall ensure that the flow of sewage into the sewage treatment plant foes not exceed the average daily flow of 399 m^3/day for any part of time greater than one (1) calendar year."* The annual average daily influent flow was 270.73 m^3/day or 67.9 % of the rated capacity in 2023.

The total Influent flow in 2023 was 98, 817.02 m^3

The extended spray season was requested in 2023. During the summer months, the weather conditions were consistently poor for spray irrigation to be carried out. Due the factor mentioned above, as well as a bypass event in Spring 2023 and high cell levels, regulatory relief was obtained for spray application rate for the 2023

season and an extension was granted to extend the length of the spray season to bring down the level in the lagoons to accommodate the flows expected in the winter months.

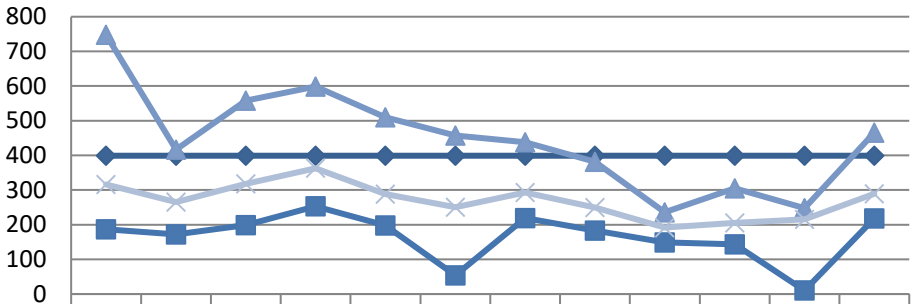
Graph 1: 2023 Influent Flow Monthly Totals



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Flow (m^3)	9,786	7,430	9,868	10,880	8,951	7,517	9,094	7,742	5,755	6,361	6,469	8,965

Note: The above flows are calculated based upon manual flow meter readings and was averaged.

Graph 2: Influent Daily Minimum, Maximum and Average Flows



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Rated Capacity (m^3/day)	399	399	399	399	399	399	399	399	399	399	399	399
Min (m3/day)	187	172	199	253	197	54	219	183	149	143	10	218
Max (m^3/day)	748	417	558	599	510	457	438	382	236	305	248	466
Avg(m^3/day)	316	265	318	363	289	251	293	250	192	205	216	289

Note: Seasonally a significant fluctuation in flow trends shows higher sewage flows which indicates there is ongoing infiltration into the sewer systems. The Ontario Clean Water Agency has maintenance schedules/programs to inspect service laterals, new connections and manholes.

Bayshore Village Sewage Works Historical Flows

Historical sewage flows and sewage generation rates for Bayshore Village Sewage Works are summarized in Table 1.

Table 1: Historical Sewage Flows and Generation Rates

Year	Number of Connections	Average Daily Flow (m^3/day)	Sewage Generation Rate (L/cap/day)
2013	319	315	379
2014	319	334	402
2015	320	338	406
2016	322	358	428
2017	328	387	454
2018	335	365	419
2019	340	374	423
2020	342	401	451
2021	342	370	416
2022	342	251	282
2023	342	271	305
3 Year Average		297	334

*Based on 2.6 people per dwelling
Note: This calculation was completed based on current connections in the system, growth within the collection system has not been considered.

System Reserve Capacity

In accordance with the MECP Procedure D-5-1, the hydraulic reserve capacity is calculated by the following formula:

Hydraulic Reserve Capacity= Design Flow- Committed Flow

The design flow is equal to the maximum permissible flow approved by the Certificate of Approval. (C of A) No. 3-1337-81-968 maximum permissible flow is: 399 m^3/day. The committed flow is equal to the total expected flow by the existing and proposed connections based on the previous 3-year average daily flow.

The built-out service area of the Bayshore Village Sewage Works has a total of 382 units. The three-year (2021-2023) average sewage generation rate is: 334 L/cap/day. With the committed population of 993, there is a projection of 332 m^3/day of sewage at full build out.

As a result, the reserve capacity at this system is 67 m^3/day.

Effluent Spray Irrigation

Effluent spray irrigation was carried out between May 18 and November 6, 2023. Each day while utilizing the spray irrigation system logs were kept for: weather conditions, which field was being utilized and the volume of effluent that was applied each day.

During the spray irrigation season, approximately 14 ha from the South fields were utilized from May 24-26, and approximately 26 ha from the North and South fields were utilized on May 18 and from May 27 through the remainder of the spray season 61 days for a total of 64 days. From May 24 - 26 an effluent volume of 1,

619 m³ was applied to the South fields (14 ha). On May 18 and from May 27 - November 6, an effluent volume of 91, 862 m³ was applied to both the North and South fields (26 ha).

A total effluent volume of 93, 481 m³ was applied to the spray fields. The average effluent application rate for the reporting period was:

- 38.55 m³/ha/day on the 14 ha utilized for 3 days
- 57.92 m³/ha/day on 26 ha utilized for 61 days*
- 56.18 m³/ha/day on 26 ha utilized for the total 64 days*

*These values exceed the Certificate of Approval limit of 55 m³/ha/day, although relief was given from Conditions 1.2 and 1.3 during the 2023 spray season. See Appendix I: Regulatory Relief and Extension Approval Letters.

The average effluent application rate has been calculated as per the definition in the (C of A) No. 3-1337-81-968: *"Average Effluent Application rate" means the total volume of effluent applied to a spray irrigation field during a particular spray irrigation season divided by the number of days within that season during which effluent was actually applied to that field."*

Granted relief from Conditions 1.2 and 1.3 in (C of A) No. 3-1337-81-968 were subject to the following conditions:

- The relief is only applicable during the 2023 spray season;
- Spray can only occur when wind speeds are less than 15 km/hour;
- The Township shall submit a progress report to the MECP on or before January 15, 2024, updating the following:
    - Efforts made to reduce inflow and infiltrations in the collection system;
    - Monitoring records documenting enhanced spray practices (e.g. shorter periods of spraying and longer drying periods);
    - Efforts and plans undertaken by Council to develop a permanent long term solution needed to prevent future exceedances of the spray application rate.

The Township of Ramara sent the progress report with the above information to the MECP on January 10, 2024, see Appendix II: Progress Report for Extension Approval.

The operation of the spray irrigation system consists of the following seasonally:

- Seasonal spray irrigation piping and spray nozzles are installed and pressure tested prior to the beginning of the spray season.
- The spray irrigation fields are inspected daily along with weather conditions (i.e. no rain and wind velocity less than 15 km/hr) to determine if conditions are favourable for spray irrigation.
- If spray irrigation is favourable, the operator starts the effluent pump. The operator verifies the sprinkler heads are operational. If issues arise such as broken pipes, clogged sprinkler heads, surface ponding and aerosol drift, then the spray operation is modified, discontinued or repaired as required.
- Operations staff maintains daily logs during the spray irrigation operation.

Lagoon Cell Content Removal

As a result of the poor weather conditions limiting sprayfield operation and high cell levels at the end of the spray season, lagoon cell contents were removed to allow sufficient storage for the estimated volume of sewage that would accumulate prior to the start of the 2024 spray season. From December 11, 2023 to February 7, 2024 a total volume of 54, 972m3 was removed from the large cell at the Bayshore Village Sewage Works and taken to the Brechin and Lagoon City Wastewater Treatment Facility.

Summary of Sampling Frequency

(C of A) No. 3-1337-81-968 Condition 2.1 (b) describes the requirement for sample collection at the following locations, frequencies and by means of the specified sample type and analyzed for each parameter listed and all results recorded:

Table 2: Minimum Raw Sewage Sampling Requirements

Influent Sampling Point		
Parameters	**Sample Type**	**Frequency**
BOD5	Grab	Monthly
Total Suspended Solids	Grab	Monthly
Total Phosphorus	Grab	Monthly
Total Kjeldahl Nitrogen	Grab	Monthly

Table 3: Minimum Lagoon Effluent Sampling Requirements

Influent Sampling Point		
Parameters	**Sample Type**	**Frequency**
BOD5	Grab	Annually
Total Suspended Solids	Grab	Annually
Total Phosphorus	Grab	Annually
Total Kjeldahl Nitrogen	Grab	Annually
(Ammonia + Ammonium) Nitrogen	Grab	Annually

Note: The annual sampling of the lagoons effluent shall take place at the beginning of each spray irrigation season.

Table 4: Minimum Surface Water Parameter Sampling Requirements

Final Effluent Sampling Point		
Parameters	**Sample Type**	**Frequency**
BOD5	Grab	3 per season
Total Suspended Solids	Grab	3 per season
Total Phosphorus	Grab	3 per season
Total Kjeldahl Nitrogen	Grab	3 per season
(Ammonia + Ammonium) Nitrogen	Grab	3 per season
Nitrates	Grab	3 per season
Nitrites	Grab	3 per season
pH	Grab	3 per season
Temperature	Grab	3 per season

Note: The surface water sampling shall take place prior to, in the middle, and after each spray irrigation season, provided that there is flow in the stream.

Table 5: Minimum Soil Parameter Sampling Requirements

Final Effluent Sampling Point		
Parameters	**Sample Type**	**Frequency**
Total Organic Carbon	Core	Annually
Total Phosphorus	Core	Annually
Total Kjeldahl Nitrogen	Core	Annually
(Ammonia + Ammonium) Nitrogen	Core	Annually
Nitrite and Nitrate Nitrogen	Core	Annually

Chlorides	Core	Annually
Sodium	Core	Annually
Conductivity	Core	Annually
pH	Core	Annually

Note: The annual soil sampling shall take place prior to each spray irrigation season.

Sewage and Effluent Quality

Raw Sewage Characteristics

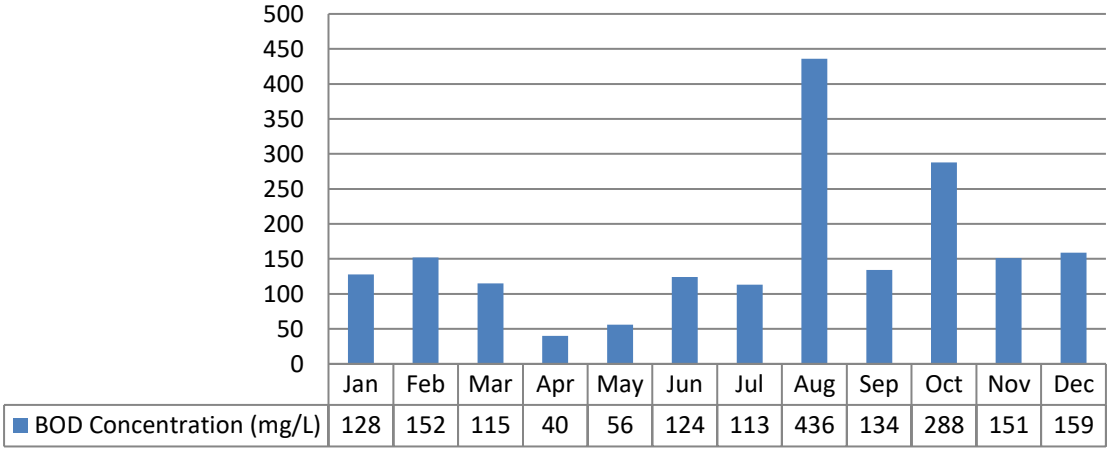
Detailed below are raw sewage characteristics for the 2023 reporting period.

A summary of the 2023 Raw Sewage monitoring data is contained in Appendix II of this report.

Biochemical Oxygen Demand (BOD5)

BOD5 Monthly Average Concentration

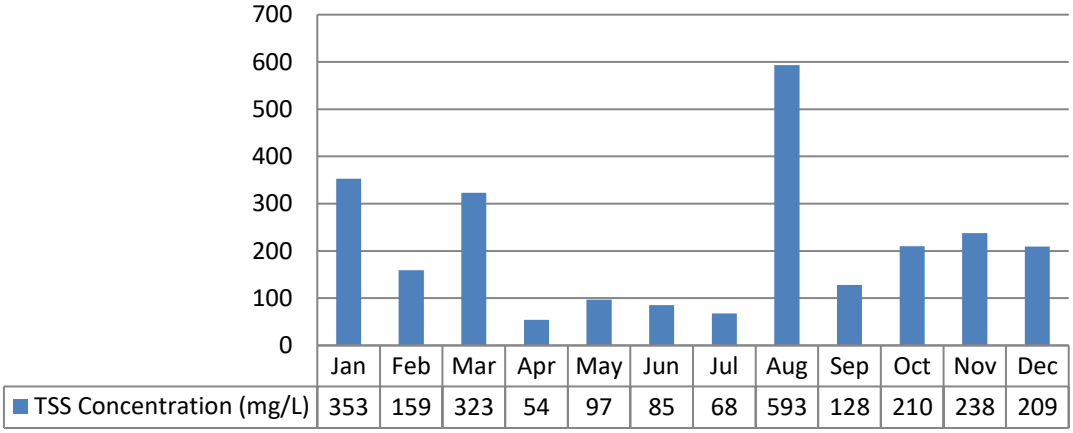
Graph 3: 2023 Monthly BOD5 Raw Sewage Concentration



Total Suspended Solids (TSS)

Total Suspended Solids Monthly Average Concentration

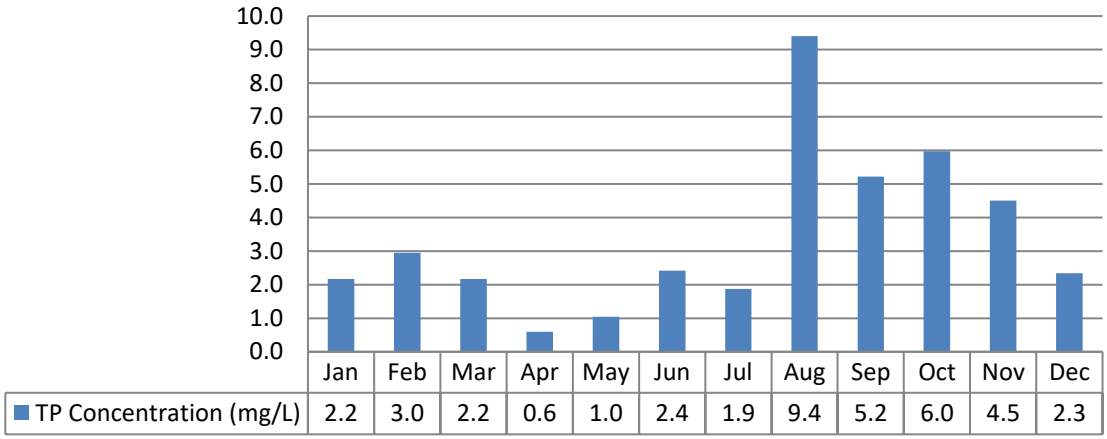
Graph 4: 2023 Monthly TSS Raw Sewage Concentration



Total Phosphorus (TP)

Total Phosphorus Monthly Average Concentration

Graph 5: 2023 Monthly Total Phosphorus Raw Sewage Concentration

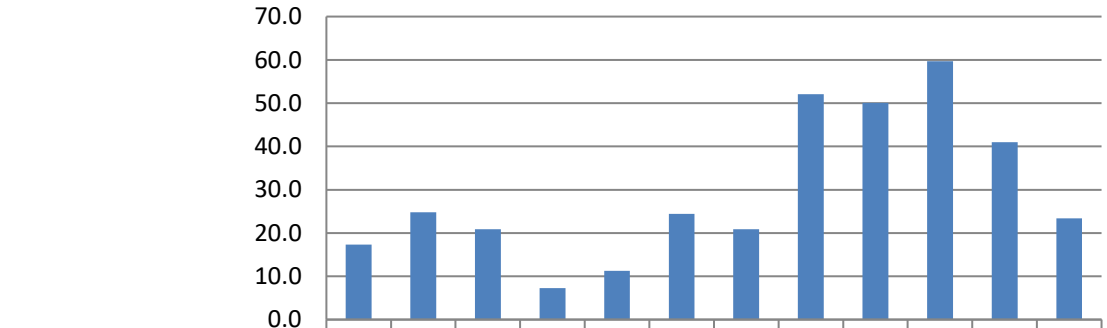


	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TP Concentration (mg/L)	2.2	3.0	2.2	0.6	1.0	2.4	1.9	9.4	5.2	6.0	4.5	2.3

Total Kjeldahl Nitrogen TKN (mg/L)

Total Kjeldahl Nitrogen (TKN) Monthly Raw Average Concentration

Graph 6: 2023 Monthly Total Kjeldahl Nitrogen (TKN) Monthly Raw Sewage Concentration Comparison



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
TKN Concentration (mg/L)	17.3	24.8	20.9	7.3	11.3	24.4	20.9	52.1	50.1	59.7	41.0	23.4

Effluent Quality

Grab samples were collected from each lagoon prior to the start of the spray irrigation season on May 03, 2023. The samples were collected as per the Certificate of Approval No. 3-1337-81-968 Condition 2.1 (b). The laboratory results are summarized in Table 6.

There are no effluent limits or objectives in the Certificate of Approval.

Table 6: Lagoon Content Characteristics

Parameter	May		
	Large Lagoon (Cell A-West Location)	*Large Lagoon (Cell A- Dock Location)*	*Small Lagoon (Cell B)*
BOD5 (mg/L)	8	11	16
Total Suspended Solids (mg/L)	10	12	62

Total Phosphorus (mg/L)	1.33	1.26	2.08
TKN (mg/L)	6.7	6.5	13.4
TAN (mg/L)	5.6	5.7	12.0

Effluent Spray Irrigation

Groundwater Monitoring

Groundwater samples were collected in May, August and November for groundwater monitoring in six boreholes in and around the North and South spray irrigation fields. The results for the ground water monitoring samples are summarized below in Tables 7-12. The results were compared with the Ontario Drinking Water Standards, Objectives and Guidelines (ODWS). Chloride concentrations ranged from 16 mg/L to 200 mg/L, which is slightly higher than levels measured in 2022. Nitrate levels were low, comparable to samples collected in 2022, with one exception to one sample results being higher taken in November 2023. Most other parameters measured (nitrogen, TKN and TAN) were typically undetectable. The results received indicate the low impact the spray irrigation fields are having on the groundwater.

Table 7: Groundwater Monitoring - 1-1 (East South Field)

Parameter	Location	May 02	August 01	November 07
Diss. Organic Carbon (mg/L)	1-1 (East South Field)	2	2	2
Nitrite (mg/L)	1-1 (East South Field)	<0.03	<0.03	<0.03
Nitrate (mg/L)	1-1 (East South Field)	<0.06	<0.06	<0.06
Chloride (mg/L)	1-1 (East South Field)	200	160	160
TKN (mg/L)	1-1 (East South Field)	<0.5	0.9	1.6
TAN (mg/L)	1-1 (East South Field)	<0.1	<0.1	1.2
Total Phosphorus (mg/L)	1-1 (East South Field)	<0.03	0.04	0.04

Table 8: Groundwater Monitoring - 1-3 (South Field)

Parameter	Location	May 02	August 01	November 07
Diss. Organic Carbon (mg/L)	1-3 (South Field)	2	2	2
Nitrite (mg/L)	1-3 (South Field)	<0.03	<0.03	<0.03
Nitrate (mg/L)	1-3 (South Field)	<0.06	<0.06	0.17
Chloride (mg/L)	1-3 (South Field)	68	150	99
TKN (mg/L)	1-3 (South Field)	<0.5	<0.5	0.7
TAN (mg/L)	1-3 (South Field)	0.2	<0.1	<0.1
Total Phosphorus (mg/L)	1-3 (South Field)	<0.03	0.04	0.40

Table 9: Groundwater Monitoring - 1-4 (North Field)

Parameter	Location	May 02	August 01	November 07
Diss. Organic Carbon (mg/L)	1-4 (North Field)	2	2	2
Nitrite (mg/L)	1-4 (North Field)	<0.03	<0.03	<0.03
Nitrate (mg/L)	1-4 (North Field)	<0.06	<0.06	<0.06
Chloride (mg/L)	1-4 (North Field)	58	59	70
TKN (mg/L)	1-4 (North Field)	<0.5	<0.5	<0.5
TAN (mg/L)	1-4 (North Field)	<0.1	<0.1	0.1
Total Phosphorus (mg/L)	1-4 (North Field)	<0.03	<0.03	0.03

Table 10: Groundwater Monitoring - 1-5 (North Field)

Parameter	Location	May 02	August 01	November 07
Diss. Organic Carbon (mg/L)	1-5 (North Field)	2	2	2
Nitrite (mg/L)	1-5 (North Field)	<0.03	<0.03	<0.03
Nitrate (mg/L)	1-5 (North Field)	<0.06	0.09	<0.06
Chloride (mg/L)	1-5 (North Field)	18	16	43
TKN (mg/L)	1-5 (North Field)	<0.05	<0.5	<0.5
TAN (mg/L)	1-5 (North Field)	<0.1	<0.1	<0.1
Total Phosphorus (mg/L)	1-5 (North Field)	<0.03	0.06	0.05

Table 11: Groundwater Monitoring - 1-7 (North Field)

Parameter	Location	May 02	August 01	November 07
Diss. Organic Carbon (mg/L)	1-7 (North Field)	3	6	14
Nitrite (mg/L)	1-7 (North Field)	<0.03	<0.03	<0.03
Nitrate (mg/L)	1-7 (North Field)	<0.06	<0.06	<0.06
Chloride (mg/L)	1-7 (North Field)	71	83	96
TKN (mg/L)	1-7 (North Field)	1.4	3.9	40.2
TAN (mg/L)	1-7 (North Field)	1.3	3.6	40.5
Total Phosphorus (mg/L)	1-7 (North Field)	0.14	0.57	2.74

Table 12: Groundwater Monitoring - 1-1 (West North Field)

Parameter	Location	May 02	August 01	November 07
Diss. Organic Carbon (mg/L)	1-1 (West North Field)	2	3	2
Nitrite (mg/L)	1-1 (West North Field)	<0.03	0.18	<0.03
Nitrate (mg/L)	1-1 (West North Field)	0.07	<0.06	<0.06
Chloride (mg/L)	1-1 (West North Field)	33	53	59
TKN (mg/L)	1-1 (West North Field)	<0.5	<0.5	<0.5
TAN (mg/L)	1-1 (West North Field)	<0.1	<0.1	0.2
Total Phosphorus (mg/L)	1-1 (West North Field)	<0.03	0.06	0.11

Surface Water Monitoring

The surface water monitoring takes place at Wainman Creek, upstream and downstream of the spray fields**.** Samples were taken in May, August and November of 2023. All samples were taken as per (C of A) No. 3-1337-81-968 Condition 2.1 (b).

The sample results from Wainman's Creek are shown in Tables 13 and 14. The upstream and downstream sample location results show water quality is consistent, signifying little to no impact from the spray irrigation process.

Table 13: Surface Water Monitoring- Wainman's Creek (Upstream)

Parameter	Location	May 02 & 03	August 01 & 02	November 07
BOD5 (mg/L)	Wainman's Creek (Upstream)	<4	<4	<4
Total Suspended Solids (mg/L)	Wainman's Creek (Upstream)	10	5	6
pH	Wainman's Creek (Upstream)	8.23	7.94	7.87

Total Kjeldahl Nitrogen (as N mg/L)	Wainman's Creek (Upstream)	<0.05	0.6	0.6
Ammonia+Ammonium (N) (as N mg/L)	Wainman's Creek (Upstream)	<0.1	<0.1	<0.1
Nitrite (mg/L)	Wainman's Creek (Upstream)	<0.03	<0.03	<0.3
Nitrate (mg/L)	Wainman's Creek (Upstream)	1.21	0.46	1.16
Nitrite + Nitrate (mg/L)	Wainman's Creek (Upstream)	1.21	0.46	1.16
Phosphorus (total) (mg/L)	Wainman's Creek (Upstream)	0.026	0.038	0.029
E.coli (cfu/100mL)	Wainman's Creek (Upstream)	38	340	30
Total Coliforms (cfu/100mL)	Wainman's Creek (Upstream)	960	1240	2500

Table 14: Surface Water Monitoring- Wainman's Creek (Downstream)

Parameter	Location	May 01 & 02	August 01 & 02	November 07
BOD5 (mg/L)	Wainman's Creek (Downstream)	<4	<4	<4
Total Suspended Solids (mg/L)	Wainman's Creek (Downstream)	11	6	8
pH	Wainman's Creek (Downstream)	8.12	7.94	8.06
Total Kjeldahl Nitrogen (as N mg/L)	Wainman's Creek (Downstream)	0.6	1.1	0.7
Ammonia+Ammonium (N) (as N mg/L)	Wainman's Creek (Downstream)	<0.1	<0.1	<0.1
Nitrite (mg/L)	Wainman's Creek (Downstream)	<0.03	<0.03	<0.03
Nitrate (mg/L)	Wainman's Creek (Downstream)	1.21	0.36	0.60
Nitrite + Nitrate (mg/L)	Wainman's Creek (Downstream)	1.21	0.36	0.60
Phosphorus (total) (mg/L)	Wainman's Creek (Downstream)	0.30	0.038	0.027
E.coli (cfu/100mL)	Wainman's Creek (Downstream)	36	400	44
Total Coliforms (cfu/100mL)	Wainman's Creek (Downstream)	360	1460	2800

Soil Core Monitoring

The soil core monitoring samples are taken in the North and South spray fields. All samples were taken as per (C of A) No. 3-1337-81-968 Condition 2.1 (b) during the 2023 reporting period.

Table 15: Soil Core Monitoring- North Field Upper

Parameter	Location	May 02
pH	North Field Upper	5.98
Conductivity (µS/cm)	North Field Upper	31
Chloride (µg/g)	North Field Upper	22
Nitrate + Nitrite as N (µg/g)	North Field Upper	0.1
TKN (µg/g)	North Field Upper	0.15
TAN (µg/g)	North Field Upper	<0.01
Total Organic Carbon (µg/g)	North Field Upper	2.7
Phosphorus (µg/g)	North Field Upper	320
Sodium (µg/g)	North Field Upper	330

Table 16: Soil Core Monitoring-- North Field Lower

Parameter	Location	May 02
pH	North Field Lower	7.48
Conductivity (µS/cm)	North Field Lower	109
Chloride (µg/g)	North Field Lower	8.2
Nitrate + Nitrite as N (µg/g)	North Field Lower	0.5
TKN (µg/g)	North Field Lower	0.13
TAN (µg/g)	North Field Lower	<0.01
Total Organic Carbon (µg/g)	North Field Lower	1.9
Phosphorus (µg/g)	North Field Lower	500
Sodium (µg/g)	North Field Lower	380

Table 17: Soil Core Monitoring- South Field

Parameter	Location	May 02
pH	South Field	7.20
Conductivity (µS/cm)	South Field	135
Chloride (µg/g)	South Field	7.3
Nitrate + Nitrite as N (µg/g)	South Field	<0.2
TKN (µg/g)	South Field	0.39
TAN (µg/g)	South Field	<0.01
Total Organic Carbon (µg/g)	South Field	5.4
Phosphorus (µg/g)	South Field	960
Sodium (µg/g)	South Field	120

Description of Operating Problems

The following details describe all operating problems encountered at the Bayshore Sewage Works and Collection System during the reporting period and the corrective actions taken:

Table 18: Bayshore Village Sewer Works Operational Challenges

Month	Challenges	Corrective Actions
April	Elevated pond levels	Bypass small cell and plug overflow pipe to allow large cell to fill.
May	Pipe leak	Isolate and repair.
June	Pipe leak	Isolate and repair.
	Bypass ended	Remove plug from cross culvert.
	East station backup	Call contractor, replace wetwell level sensor.
July	Pipe leak	Isolate and repair.
August	Pipe leaks	Isolate and repair.
September	Pipe leak	Isolate and repair.
October	Leaking connection south of Wainmans Creek	Pump shut down, connection repaired and pressure tested. Leak reported when it was identified flow had entered creek.
November	East Station bell line issues.	Contact tech for testing and repair.

Summary of Maintenance

Routine maintenance and operation of the Bayshore Village Sewage Works and Collection System in 2023 consisted of the following:

- Install and inspect intake
- Install and inspect bridge and pipe to north field
- Pressure test field piping
- Attended Hydro failures
- Install new wet end on effluent pump
- Replaced damaged bearings in electrical motor
- Collected samples as per the C of A
- Inflow and infiltration repairs completed in collection system
- Exercised, tested and performed maintenance on East Station generator
- Cleaned pumping stations
- Monitored levels in lagoons
- Monitored weather conditions
- Repaired leaks in pipes
- Repair plugged sprinkler heads
- Replace east station milltronics
- Reinstate laterals for new build connections

Summary of Effluent Quality Assurance or Control Measures Undertaken

All final effluent samples collected during the reporting period to meet C of A sampling requirements were submitted to SGS Lakefield Research Ltd. laboratory for analysis. SGS Lakefield Research has been deemed accredited by the Canadian Association for Laboratory Accreditation (CALA), meeting strict provincial

guidelines including an extensive quality assurance/quality control program. By choosing this laboratory, the Ontario Clean Water Agency is ensuring appropriate control measures are undertaken during sample analysis.

Effluent quality assurance is maintained in several ways. Laboratory samples are sent to an accredited laboratory (SGS Canada Inc. - Lakefield) for analysis of all effluent parameters. Sampling calendars issued to the operator which denote frequency of sampling. Calendars are used as a tracking mechanism throughout the month to ensure all required samples are collected. These calendars are submitted to the Process Compliance Technician at the end of each month for review. Raw and effluent samples are collected as per the Amended C of A and the results are reviewed on a regular basis to ensure compliance.

Work orders illustrating all scheduled and preventative maintenance to be completed are issued to the operator and/or mechanic. OCWA conducts internal audits of the facility and develops Action Plans to ensure deficiencies are identified.

Summary of Calibration and Maintenance

Calibrations on effluent monitoring equipment were performed by Flowmetrix Technical Services Inc. on June 21, 2023 for equipment located at the Bayshore Village Sewage Works and relevant Collection System Components. Please see Appendix III: Calibration Report.

Table 19: Calibration and Maintenance

Table 19: Bayshore Village Sewage Works – Summary of Calibration and Maintenance – 2023	
Influent Monitoring Equipment	Date of Completion
Influent Flow Meter	June 21, 2023
Final Effluent Monitoring Equipment	Date of completion
Final Effluent Spray Fields Flow Meter	June 21, 2023
Bayshore Village East Pump Station	Date of completion
Flow Meter	June 21, 2023

Sludge Accumulation

Sludge measurements were completed on the small and large lagoons through a biosolids volume modeling and distribution survey in April 2022. The average depth of biosolids sludge throughout the Ramara biosolids Cell #1 in April 2022 was approximately 6.2 inches. The average depth of biosolids sludge throughout the Ramara biosolids Cell #2 in April 2022 was approximately 5.9 inches. A few locations within the Cells were a bit higher, there was no recommendation for required cleaning during the time of this survey.

Community Complaints

Date	Issue	Actions Taken
April 24, 2023	Concern of CofA not being met	Responded to customer via email to clarify any concerns
May – October	Multiple concerns of pipe leaks in sprayfields	Investigated on-site. If leak identified, isolated and repaired pipe.
August	Two complaints of effluent pooling/running	Investigated on-site. Sprayfields shut off in one case due to rainfall.

Summary of Bypass, Spills or Abnormal Discharge Events

Table 20 summarizes all Bypasses, spills and abnormal discharge events that occurred at the Bayshore Village Sewage Works and Collection System in 2023. All were reported to MOH and MECP. Copies of these reports are provided in Appendix IV.

Table 20: 2023 Summary of Events:

Date 2021	Type of Event	Total Estimated Volume (m^3)	Disinfect (Y/N)	Samples Collected (Y/N)	Reason
April 05 – June 22	Bypass	~22, 818	N	N *Not required as per the C of A*	High flows causing Cells A & B to equalize putting Cell B's berms at risk of being breached. The overflow pipe for Cell B was plugged and influent flow directed straight to Cell A until Cell A was lowered enough through Sprayfield operation to remove the plug.
June 26	Spill	~5" of sewage in basement	N	N	Miltronics level sensor failed at the East Pump Station causing the pumps to not operate when they should have. Pumps were run in hand to decrease the level in the pump chamber and a new miltronics controller was installed.
October 2	Spill	~5	N	N	Leak in the effluent spray irrigation system. System was shut down and leaks repaired before resuming normal operations.

Summary of Efforts Made to Reduce Overflows, Spills and Bypasses – *ECA 147-W601*

a) A description of projects undertaken and completed in the Authorized System that result in overall overflow reduction or elimination including expenditures and proposed projects to eliminate overflows with estimated budget forecast for the year following that for which the report is submitted.

- Disconnected two sump pumps and one downspout connection to the sanitary sewers.
- Repaired infiltration points in three sewer laterals.
- Repaired 11 sections of mainline with active infiltration or offset joints.
- Grouted 18 manholes with active infiltration.
- Weekly inspections of the lagoon cells.

- Completed a lagoon capacity assessment in November 2023 to estimate storage volume in the lagoons for the 2023/2024 winter season.
- Approved budget to haul required effluent from the lagoons as required based on the lagoon capacity assessment in order to prevent a spill or bypass from the lagoons prior to the 2024 spray season.

b) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.
The Ramara Sanitary Sewage Collection system does not contain combined sewers and therefore is not required to complete a Pollution Prevention and Control Plan (PPCP).

c) An assessment of the effectiveness of each action taken.
Nothing to report at this time.

d) An assessment of the ability to meet Procedure F-5-1 or Procedure F-5-5 objectives (as applicable) and if able to meet the objectives, an overview of next steps and estimated timelines to meet the objectives.
Not applicable.

e) Public reporting approach including proactive efforts.
The Township of Ramara utilizes their website and social media platforms to post Media Releases. Residents have the ability to subscribe to receive Media Releases from the Township of Ramara to an email address. They Township of Ramara also distributes a quarterly publication as well as randomized campaigns that bring awareness to the Sewer Use Bylaw and other information related to municipal sewer use such as sump pump connections.

MECP Inspections

The Bayshore Village Sewage Works was inspected by the Ministry of Environment, Conservation and Parks on November 14, 2023 and the final report was received on March 4, 2024. Table 21 summarizes the non-compliances identified in the inspection.

Table 21: Non-Compliance Identified in a Ministry Inspection

Requirement(s) system failed to meet	Required Action	Status
NC-1: All required verbal notifications of spills were not provided forthwith as per O. Reg. 675/98 section 13. Actions Required; 1) Uncontrolled effluent discharge from the spray irrigation system that enters the natural environment (ie. flows off the spray irrigation fields) is considered a spill and must be reported as per the Environmental Protection Act and its regulations. Training was provided to ensure all staff are aware of what constitutes a spill and when and how to report it to the Ministry. Confirmation was provided that OCWA operations staff have participated in OCWA's EC101 training which covers spills and overflows. As well at OCWA monthly cluster meeting spills was a topic of conversation. 2)The drainage piping that appears to be draining the low lying area between the two north fields was not part of the original design of the spray fields.	Provide details of this pipe's purpose to the Provincial Officer	In progress

For Lagoon Systems, the owner is not in compliance with the freeboard and/or supernatant cover conditions prescribed by the Environmental Compliance Approval or an Order.	Restore freeboard to the 0.6 m height required by the Environmental Compliance Approval. Starting immediately and continuing until such time as freeboard is restored to 0.6 m, conduct weekly inspections of the berm to ensure structural integrity is being maintained and that there are no breaches.	In progress
The works, related equipment and appurtenances were not being operated and maintained to achieve compliance prescribed by the Environmental Compliance Approval.	The holes in the pipe between the two north fields need to be plugged in such a manner as to prevent the discharge of effluent at all times before the start-up of 2024 season and the Provincial Officer notified of its completion. As well prior to the start-up of the spray irrigation system for the 2024 season, inspect all the piping and ensure any holes/leaks are repaired. Routine inspections should be regularly conducted while the spray irrigation system is operating to ensure that leaks are identified and repaired immediately.	In progress
The operator-in-charge had not ensured that all equipment used in the processes was monitored, maintained, inspected, tested and evaluated.	To conduct inspections of the spray irrigation equipment and piping network each day that the equipment is operated to ensure it is in good working order and to conduct regular inspections during and after spray irrigating to ensure the application rate is appropriate and no run off or ponding is occurring. Any issues identified during the daily inspections should be promptly addressed. Documentation should be carried out in the logbooks, or other record-keeping mechanism.	In progress

Appendix I

Regulatory Relief and Extension Approval Letters

Ontario

Ministry of the Environment, Conservation and Parks

Environmental Permissions Branch

1st Floor
135 St. Clair Avenue W
Toronto ON M4V 1P5
Tel.: 416 314-8001
Fax.: 416 314-8452

Ministère de l'Environnement, de la Protection de la nature et des Parcs

Direction des permissions environnementales

Rez-de-chaussée
135, avenue St. Clair Ouest
Toronto ON M4V 1P5
Tél. : 416 314-8001
Téléc. : 416 314-8452

May 4, 2023

Township of Ramara
2297 Highway 12
PO Box 130
Brechin, Ontario
L0K 1B0

Dear Mr Kavanagh,

RE: Bayshore Village Sewage Works
Temporary Relief - Township of Ramara C of A #3-1337-81-968

We are in receipt of the Township's May 3, 2023 request for relief from Condition 1.2 of the above-mentioned Certificate of Approval dated July 17, 1996. The conditions 1.2 and 1.3 limit the application spray rate to 55 m^3/ha/day during frost free period ending September 28th , at wind speeds of less than 15 km/hour.

Temporary relief is granted from Conditions 1.2 and 1.3 until October 29, 2023 subject to the following conditions:

1) The relief is only applicable during the 2023 spray season;

2) Spraying can only occur when wind speeds are 15 km/hour or less;

3) The Township shall submit a progress report to the Barrie District office of MECP on or before January 15, 2024, updating the following;

    - Efforts made to reduce inflow and infiltrations in the collection system;

- Monitoring records documenting enhanced spray practices (e.g. shorter periods of spraying and longer drying periods);
- Efforts and plans undertaken by Council to develop a permanent long - term solution needed to prevent future exceedances of the spray application rate.

We trust this relief will be sufficient for your purposes.

Sincerely,

Aziz Ahmed, P.Eng.
Director, appointed for the purposes of Part II.1 of the EPA
cc: Sheri Broeckel , DWECD – Barrie District Office

Ministry
of the Environment,
Conservation and Parks
1201-54 Cedar Pointe Drive
Barrie ON L4N 5R7
Tel: (705) 739-6441
1-800-890-8511
Fax: (705) 739-6440

Ministère
de l'Environment de la Protection de la nature et des Parcs
1201-54 chemin Cedar Pointe
Barrie ON L4N 5R7
Tél: (705) 739-6441
1-800-890-8511
Téléc: (705) 739-6440

Ontario

September 26, 2023

Josh Kavanagh
Director of Infrastructure
Township of Ramara
JKavanagh@ramara.ca

Dear Josh Kavanagh:

Re: Request to extend effluent spray irrigation period for Bayshore Village Sewage Works

I have received your request dated September 21, 2023 in which you request an extension to the effluent spray irrigation period for the Bayshore Village Sewage Works.

As a result, I have considered your request to extend the fall spray irrigation period and have decided to approve an extension to the 2023 fall irrigation period per your request to allow for emergency disposal of effluent until weather conditions such as frost or snow arrive.

Please accept this letter as permission to extend the period of effluent spray irrigation at the works until December 15, 2023. During the period of October 30, 2023 to December 15, 2023, all conditions of Environmental Compliance Approval #3-1337-81-968 (ECA) will continue to apply to the operations of the sewage works and the spray irrigation system. In addition to the existing conditions within the ECA, the effluent spray irrigation system must also be operated in accordance with the following conditions during this period:

1. The application of effluent to the spray irrigation field shall not be conducted during a precipitation event;
2. The application of effluent to the spray irrigation field shall not be conducted when there is frost in the ground or when there is snow cover.

Please feel free to contact Sheri Broeckel, Water Compliance Supervisor at (705) 716-3712 with any questions or concerns.

Yours truly,

Chris Hyde
District Manager

Appendix II

Progress Report for Extension Approval

TOWNSHIP OF RAMARA

2297 Highway 12,
PO Box 130
Brechin, Ontario L0K 1B0
p.705-484-5374
f. 705-484-0441

January 10, 2024

Sheri Broeckel
Drinking Water Program Supervisor
Barrie District Office
Ministry of the Environment, Conservation and Parks
54 Cedar Point Drive, Unit 1201
Barrie, ON L4N 5R7

RE: Bayshore Village Sewage Works – Township of Ramara C of A #3-1337-81-968

The Township of Ramara applied for, and was granted, temporary relief from Conditions 1.2 and 1.3 of the above mentioned Certificate of Approval on May 4, 2023. Relief was granted until October 29, 2023 subject to the following conditions:

1. The relief is only applicable during the 2023 spray season;
2. Spraying can only occur when wind speeds are 15 km/hour or less;
3. The Township shall submit a progress report to the Barrie District office of MECP on or before January 15, 2024, updating the following;
    - Efforts made to reduce inflow and infiltrations in the collection system;
    - Monitoring records documenting enhanced spray practices (e.g. shorter periods of spraying and longer drying periods);
    - Efforts and plans undertaken by Council to develop a permanent long term solution needed to prevent future exceedances of the spray application rate.

We are hereby submitting a progress report, as required, to update the MECP on the above mentioned points.

The Township of Ramara retained the Ontario Clean Water Agency to develop a program to reduce inflow and infiltration in the Bayshore Village sewage collection system. CCTV inspections, property inspections and manhole inspections were completed between May and September, 2022. Analysis of data and recommendations for repairs and rehabilitation was received in March 2023. Recommended repairs were completed throughout the summer 2023 that included disconnecting two sump pumps and one downspout connection and repairing infiltration points in three private sewer laterals. Rehabilitation activities included repairing 11

sections of mainline (either active infiltration or offset joints) and grouting 18 manholes with active infiltration. Manhole grade adjustments will be completed as roads are re-surfaced.

Effluent spray irrigation was carried out between May 18 and November 6, 2023. The Ontario Clean Water Agency made every attempt to achieve compliance through its operational performance. Logs were kept for weather conditions, which field was being utilized and the volume of effluent that was applied each day. Enhanced practices for the 2023 season included spraying 7 days a week, when weather permitted. A major limiting factor during the 2023 spray season was rain. A complete 2023 Performance Report will be submitted to the MECP by March 31, 2024.

In regards to the ongoing Class EA, an updated list of alternative solutions was prepared and presented to Council along with the MECP for discussion. The Township purchased land directly adjacent to the sewage works that could be used for either an additional spray field or a subsurface disposal system. The following studies are complete or underway: air quality assessment, geotechnical investigations and archaeological assessments. Next steps will be to agree on a preferred solution, public consultation, finalize report and issue a notice of study completion.

We trust this information is satisfactory, but we are more then happy to provide additional information to satisfy your needs. We thank you for your continued support with this project and we look forward to completing required work in 2024 to finish the EA process in order to implement a permanent long term solution to our effluent disposal needs in Bayshore Village.

Yours truly
Township of Ramara

Josh Kavanagh
Director of Infrastructure

cc: Zach Drinkwalter, CAO – Township of Ramara
Nick Leroux, Senior Operations Manager, OCWA Kawartha Lakes West Cluster

Appendix III

Performance Assessment Report

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

From 1/1/2023 to 12/31/2023

1616 BAYSHORE VILLAGE LAGOONS 120002264

	1 / 2023	2/ 2023	3/ 2023	4/ 2023	5/ 2023	6/ 2023	7/ 2023	8/ 2023	9/ 2023	10/ 2023	11/ 2023	12/ 2023	<--Total-->	<--Avg-->	<--Max-->	<-Criteria->
Flows																
Raw Flow: Total - Raw Sewage m³/d	9,786.49	7,429.77	9,867.94	10,879.71	8,951.02	7,517.06	9,093.76	7,742.48	5,754.70	6,360.57	6,468.84	8,964.68	98,817.02			0.00
Raw Flow: Avg - Raw Sewage m³/d	315.69	265.35	318.32	362.66	288.74	250.57	293.35	249.76	191.82	205.18	215.63	289.18		270.73		
Raw Flow: Max - Raw Sewage m³/d	747.59	417.04	557.83	598.95	510.23	457.41	437.84	381.91	235.91	304.82	247.94	465.65			747.59	0.00
Raw Flow: Count - Raw Sewage m³/d	31.00	28.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	365.00			0.00
Eff. Flow: Total - Final Effluent m³/d	0.00	0.00	0.00	0.00	8,243.00	24,499.00	13,678.00	17,032.00	23,210.00	8,242.00	0.00	0.00	94,904.00			0.00
Eff. Flow: Avg - Final Effluent m³/d	0.00	0.00	0.00	0.00	915.89	1,531.19	1,519.78	1,419.33	1,934.17	1,030.25	0.00	0.00		718.97		
Eff. Flow: Max - Final Effluent m³/d	0.00	0.00	0.00	0.00	1,748.00	2,447.00	2,029.00	2,086.00	2,626.00	1,870.00	0.00	0.00			2,626.00	0.00
Eff Flow: Count - Final Effluent m³/d	0.00	0.00	0.00	0.00	18.00	32.00	18.00	24.00	24.00	16.00	0.00	0.00	132.00			0.00
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw Sewage mg/L	128.00	152.00	115.00	40.00	56.00	124.00	113.00	436.00	134.00	288.00	151.00	159.00		158.00	436.00	0.00
Raw: # of samples of BOD5 - Raw Sewage	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Percent Removal: BOD5 - Raw Sewage %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw Sewage mg/L	353.00	159.00	323.00	54.00	97.00	85.00	68.00	593.00	128.00	210.00	238.00	209.00		209.75	593.00	0.00
Raw: # of samples of TSS - Raw Sewage	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Percent Removal: TSS - Raw Sewage %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Total Phosphorus: TP																
Raw: Avg TP - Raw Sewage mg/L	2.17	2.95	2.17	0.60	1.04	2.42	1.87	9.40	5.22	5.97	4.50	2.34		3.39	9.40	0.00
Raw: # of samples of TP - Raw Sewage	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00
Percent Removal: TP - Raw Sewage %	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00		0.00		0.00
Nitrogen Series																
Raw: Avg TKN - Raw Sewage mg/L	17.30	24.80	20.90	7.30	11.30	24.40	20.90	52.10	50.10	59.70	41.00	23.40		29.43	59.70	0.00
Raw: # of samples of TKN - Raw Sewage	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	12.00			0.00

Appendix IV

Calibration Reports

SCG FLOWMETRIX

ABB

ABB MEASUREMENT & ANALYTICS | TEST REPORT

ABB Ability™
Verification for measurement devices

Verification Report for:

WaterMaster

Measurement made easy

Measurement & Analytics Service

Installation Details	
Meter Owner	OCWA Ramara
Machine Name	
Medium	

Customer Details	
Site Address	Bayshore Village PS
Telephone	
Email	

Operator Details	
Date and Time	21-06-2023 16:07:42
Operator's Name	Admin
Operator's Signature	

Overall Status - Passed

Sensor Information	
Sensor Serial No.	1
Sensor SAP/ERP No.	3K620000157278
Sensor Type	WM Full Bore
Sensor Size	DN 150
Q3	166.685 l/s
Calibration Accuracy	OIML Class 2
Sensor Calibration Factors	136.200 %, 0.000 mm/s
Date of Manufacture	12:12:57 2014/06/26
Run Hours	76527hrs 30mins
Sensor User Span/Zero	100.000 %; 0.000 mm/s
User Flow Cutoff/Hysteresis	1.000 %; 20.000 %
Coil Current	180.000 mA
Coil Inductance	157.484 mH
Coil / Loop Resistance	35.546 Ohm

Transmitter Information	
Transmitter Serial No	47810
Transmitter SAP/ERP No.	3K620000157278
Application Version	V01.05.00 12/07/12
MSP Version	00.00.04
Date of Manufacture	03:52:15 2014/02/08
Run Hours	100750hrs 17mins
Tx Gain Adjustment	0.172 %
OIML Accuracy Alarms	OFF
Mains Freq	60.000 Hz
Qmax	166.685 l/s
Pulses/Unit	30.000
FS Freq	5.001 Hz
Pulses Limit Freq	1200.000 Hz
Meter Mode	Forward And Reverse

Summary Verification of the Sensor

Summary of Results	
Coil Group	PASS
Electrode Group	PASS
Sensor Group	PASS
Transmitter Signal	PASS
Transmitter Driver	PASS
Configuration	PASS

Sensor Data	
Coil Inductance Shift	-0.254 %
Cable Length	0 m
Electrode Backoff Voltage	0.006 V
Electrode Differential Voltage	-0.001 V

Pipe Status	Full Pipe

Summary Verification of the Transmitter

Output Group

Current Output 31/32 — **PASS**

Applied	Measured	Result
4 mA	3.993 mA	PASS
12 mA	11.976 mA	PASS
20 mA	19.990 mA	PASS

Pulse Output 41/42 — **NOT EXECUTED**

Applied	Measured	Result
5250 Hz		
2625 Hz		

Pulse Output 51/52 — **NOT EXECUTED**

Applied	Measured	Result
5250 Hz		
2625 Hz		

Totalizer Information

	Start	End	Difference
Forward	1129638.533 m³	1129639.596 m³	1.063 m³
Reverse	13390.110 m³	13390.110 m³	0.000 m³
Net	1116254.761 m³	1116255.906 m³	1.145 m³

Comments (Installation, Grounding etc.)

Verified current using DMM-22

Verification Certificate has been generated by ABB Ability™ Verification for measurement devices "Licensed software testing" variant (ABB WaterMaster VDF Version 03.19).

ABB Ability™ Verification for measurement devices Version 03.94.05

SCG FLOWMETRIX

AS FOUND CERTIFICATION

PASS

CLIENT DETAIL		EQUIPMENT DETAIL	
CUSTOMER	OCWA – Kawartha Lakes Hub	[MUT] MANUFACTURER	Greyline
CONTACT	Nick Leroux	MODEL	DFM 6.1
	Senior Operations Manager	CONVERTER SERIAL NUMBER	N/A
	123 East St S		
	Bobcaygeon ON, K0M 1A0		
	P: 705-623-7278	PLANT ID	Bayshore Village
	E: nleroux@ocwa.com	METER ID	Bayshore Spray Fields
		FIT ID	NA
		CLIENT TAG	NA
		OTHER	NA
VER. BY - FM	Art Pencilo	GPS COORDINATES	N 44°33.467 W 079°12.436

Quality Management Standards Information - Reference equipment and instrumentation used to conduct this verification test is found in our AC-QMS document at the time this test was conducted.

VERIFICATION DATE	June 21st 2023		
CAL. FREQUENCY	Annual		
CAL. DUE DATE	June 2024		

Chart Recorder/Data Recorder Details

Manufacturer	Greyline	Comparative Readings Check	[Y/N] y
Model	DFM 6.1	Display Readings Check	[Y/N] y
Converter S/N	N/A	Chart Readings Check	[Y/N] y

CHANNEL INFORMATION	
Meter Input	Raw Flow
Engineering Parameter	M3/h
Display Max. Range	973.276
Chart Max. Range	973.28

COMPARATIVE READINGS				
Meter Input Reading	0.00			
Chart/ Recorder Display Readin	0.00			
Difference Reading	0.00	#DIV/0!	#DIV/0!	#DIV/0!
PASS/FAIL	PASS	#DIV/0!	#DIV/0!	#DIV/0!

DISPLAY READINGS					mA OUTPUT READINGS		CHANNEL 1					
Test No.	% Max. Range	Calc.	Actual	% Error	Test No.	% Max. Range	Calc.	Actual	% Error			
1	0%	0	0	n/a	1	0%	4.000	3.991	n/a	n/a	0	n/a
2	25%	243.32	n/a	n/a	2	25%	8.000	7.989	-0.14	-101.72	0	#DIV/0!
3	50%	486.64	n/a	n/a	3	50%	12.000	11.987	-0.11	-100.90	0	#DIV/0!
4	75%	729.96	n/a	n/a	4	75%	16.000	15.985	-0.09	-100.59	0	#DIV/0!
5	100%	973.28	n/a	n/a	5	100%	20.000	19.983	-0.08	-100.43	0	#DIV/0!
Average % Error				n/a	Average % Error				-0.11	-100.91		#DIV/0!
PASS/FAIL				PASS	PASS/FAIL				PASS	FAIL		#DIV/0!

Results based on simulation not on actual flow.

This verification sheet either identifies exact 0 - 100% signal input comparison or a comparative review between a calibrated field instrument [i.e. flow meter] readings and the chart recorder/data recorder readings.

Appendix V

Bypass and Spill Event Reporting

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

West Cluster Operations Event Form

Project: Bayshore Village Spray Irrigation Lagoons, 120002264
Location: 3820 Side Road 20, Ramara
Date: April 05, 2023

Nature of Event: Treatment Process Component Bypass

Details of Event: Under normal operation at the Bayshore Village Lagoons, flow is directed to Cell B from the East Pump Station in Bayshore Village. Once Cell B is full, the flow travels by gravity through an oveflow pipe into Cell A, the larger storage cell. The berms on Cell A are higher than Cell B, but as the cells are connected by an overflow pipe, the storage volume of Cell A is limited by the berm height of Cell B. The height of the berms on Cell B are approximately 0.5m less than Cell A. Due to a high amount of snow and rainfall, the two Cells have equalized and the Cell B berms are currently at risk of being breached.

In order to prevent an overflow of Cell B, an emergency bypass was initiated. The overflow pipe was plugged with two expandable plugs to prevent flow between the Cells. The Cell B isolation valve was closed and the Cell A isolation valve was opened to direct flow from the East Pump Station in Bayshore Village directly into Cell A.

The hope is that this will provide enough storage capacity to prevent lagoon overflow. Once the spray season begins, the plant will draw from Cell A (normal operation) until the cell is low enough to permit the removal of the plug. At that time the valves will be placed back in their original position and the Cell B bypass will stop.

Call SAC: 1-800-268-6060 **Time SAC notified:** 15:15 **SAC Incident Number:** 1-34ITD3

Name of Person at SAC: Mark Harris

MECP District Manager Barrie Notified 705-309-5874 (time): Notified MECP Inspector Brian Stuhlemmer at 15:36

District Health Unit Notified (time): Left voicemail at 15:51 **Name of Person at Health Unit:** N/A

All Other Notifications (Managers, Client, MECP, MOH):

OCWA: N. Leroux Sr. Ops. Mgr., R. Smith Team Lead/ORO, E. Campbell PCT, D. O'Connell Operator, W. Henneberry SPC Mgr, G. Redden General Manager, K. Lorente Regional Mgr, & R. Junkin VP Operations.
Township of Ramara: D. Marks Resources Technician & J. Kavanagh Director of Infrastructure / Drainage Superintendent.

Volume of By-pass or Spill: ~ 22,818m^3 (Calculated using flow data from the East Pump Station)

Bypass Time:

Start: April 5th, 2023 at 14:27 **Finish:** June 22, 2023 at 9:00

Duration: 1866 hours 33 minutes

Samples Taken? (BOD,TSS,Phos,NH3+NH4, e-coli): Sampling is not required as per the C of A however regularly monthly sampling was conducted that morning.

Samples collected on April 4, May 2 and June 7, 2023. Certificates of Analysis are attached.

Corrective Action Taken:

The overflow pipe between Cell A and Cell B was plugged on April 5, 2023 to prevent flow between the two cells. Once the plug was installed, flow was directed from the East Pump Station in East Village directly to Cell A. The drawdown of Cell A began on May 18, 2023 with the commencement of spray irrigation. The level in Cell A had sufficiently reduced to allow the plug to be removed from the overflow pipe between Cell A and Cell B on June 22, 2023 at 9:00 ending the bypass of Cell B. Normal operation of the Bayshore Village Spray Irrigation Lagoons has resumed.

Date of Resolution Notification: June 26th, 2023

Call SAC: 1-800-268-6060 **Time SAC Notified:** 13:10 **Name of Person at SAC:** Aaron Daya

MECP District Manager Barrie Notified 705-309-5874 (time): Left voicemail with MECP Inspector Carly Munce at 14:08

District Health Unit Notified (time): Left voicemail at 13:52 **Name of Person at Health Unit:** N/A

All Other Notifications (Managers, Client, MECP, MOH):

OCWA: N. Leroux Sr. Ops. Mgr., R. Smith Team Lead/ORO, E. Campbell PCT, D. O'Connell Operator, W. Henneberry SPC Mgr, G. Redden General Manager, K. Lorente Regional Mgr, & R. Junkin VP Operations.
Township of Ramara: D. Marks Resources Technician & J. Kavanagh Director of Infrastructure / Drainage Superintendent.
A follow up email summarizing resolution of the bypass was sent to MECP staff C. Munce Inspector, S. Broeckel Supervisor, Drinking Water Inspection Program, B. Struhlemmer Inspector and SMDHU staff R. Blackwell Senior Public Health Inspector and hc.phi@smdhu.org.

Prepared By: Ellen Campbell

Updated By: Julie Mulligan

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

West Cluster Operations Event Form

Project: Bayshore Village Spray Irrigation Lagoons, 120002264
Location: 211 Bayshore Drive, Ramara
Date: June 26, 2023

Nature of Event: Sewage Backup (Spill)

Details of Event: At 12:07pm, Nick Leroux, Senior Operations Manager at OCWA, received a call from a resident reporting a sewage back up on behalf of the owner of 211 Bayshore Drive. The operations team was notified and responded to the East Pump Station to investigate. Based on their observations, it was suspected that there was an issue with pump station controls. The pumps were run in manual at 12:25pm to prevent further damage from spills and an electrician was called in.

Call SAC: 1-800-268-6060 **Time SAC notified:** 15:36 **SAC Incident Number:** 1-3KUJPM

Name of Person at SAC: Jeremy Weiss

MECP District Manager Barrie Notified 705-309-5874 (time): Notified Barrie District Duty Officer Mark Bailey at 15:44 (MECP Inspector Carly Munce on vacation)

District Health Unit Notified (time): 15:52 **Name of Person at Health Unit:** Pauline Loo

All Other Notifications (Managers, Client, MECP, MOH):

OCWA: N. Leroux Sr. Ops. Mgr., R. Smith Team Lead/ORO, E. Campbell PCT, D. O'Connell Operator, J. Mulligan SPC Mgr., G. Redden General Manager, W. Henneberry Regional Mgr., & R. Junkin VP Operations.

Township of Ramara: D. Marks Resources Technician & J. Kavanagh Director of Infrastructure / Drainage Superintendent.

Volume of By-pass or Spill: ~ 5" of sewage in the resident's basement (as per the resident)

Bypass Time:

Start: **Finish:**

Duration:

Samples Taken? (BOD,TSS,Phos,NH3+NH4, e-coli): Not practical to collect a grab sample.

Corrective Action Taken:

After the pumps had been turned on manually, the affected resident stopped by the pump station to let the operations team know that the sewage was draining from their home. There had been approximately 5" of sewage in the resident's basement. The resident is connected to the municipal water system and does not receive their water from a private well. No additional reports of sewage spills have been received by OCWA or the Township and there have been no reports of spills outside of the affected home.

The Township has sent an email out to the Home Owner's Association and posted information about the incident on their website.

The electrician determined that the Miltronics (level sensor) had failed and the value was frozen. The Miltronics control when the pumps turn on/off and the high level alarm. At 4:00pm, the level in the pump chamber had been reduced to a sufficient level to allow for the station to be shut down. The power was isolated and a new Miltronics controller was installed. At 4:20pm, the power was restored to the station and the pumps were run until 7:00pm to bring the level in the chamber to regular operating level. The Miltronics controller was then commissioned and tested along with the station alarms. At 8:30pm the station was returned to normal operation.

Date of Resolution Notification: June 27th, 2023

Call SAC: 1-800-268-6060 **Time SAC Notified:** 15:46 **Name of Person at SAC:** Stephanie McGill

MECP District Manager Barrie Notified 705-309-5874 (time): Provided update to MECP Inspector Carly Munce during MECP inspection of Parklane DWS and Somerset DS.

District Health Unit Notified (time): 15:53 **Name of Person at Health Unit:** Pauline Loo

All Other Notifications (Managers, Client, MECP, MOH):

OCWA: N. Leroux Sr. Ops. Mgr., R. Smith Team Lead/ORO, E. Campbell PCT, D. O'Connell Operator, J. Mulligan SPC Mgr., G. Redden General Manager, W. Henneberry Regional Mgr., & R. Junkin VP Operations.

Township of Ramara: D. Marks Resources Technician & J. Kavanagh Director of Infrastructure / Drainage Superintendent.

A follow up email summarizing the incident and corrective actions was sent to C. Munce MECP Inspector and SMDHU (hc.phi@smdhu.org).

Prepared By: Ellen Campbell

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

West Cluster Operations Event Form

Project: Bayshore Spray Irrigation System
Location: 3820 Side Road 20, Ramara
Date: October 02, 2023

Nature of Event: Spill

Details of Event: Operator turned on spray field at approximately 08:23AM and ramped it up to full running speed at 09:48AM. Operator received a call at 10:11AM from Josh Kavanagh with the Township of Ramara to notify of a leak in the effluent spray system near the dock area that crosses the Wainman Creek. Operator responded and turned spray fields off at 11:29AM.

Call SAC: 1-800-268-6060

Time SAC notified: 14:35 (Oct 3/23) **SAC Incident Number:** 1-3WC3FB

Name of Person at SAC: Grace S.

MECP Local Inspector Carly Munce: October 3/23 @ 15:02 (voicemail left)

District Health Unit Notified (time): 14:57 (voicemail left)

Name of Person at Health Unit: Call returned at 15:03, Oct 3 – Pauline Loo, phi

All Other Phone calls placed (Managers, Client, MECP, MOH): Emailed Sr. Operations Manager N. Leroux, Owner Township of Ramara, appropriate OCWA staff, MECP inspector.

Volume of Spill: Estimated volume based upon total flow of final effluent from sprayfield for duration of run plus visual quantity coming from leaking area: ~5 m^3

Start: October 2/23 @ ~10:10AM **Finish:** October 3/23 @ ~11:29AM **Duration:** ~1 hour, 20 minutes

Corrective Action Taken:
- repair leak location

Prepared By: Megan Lockwood
