Omemee Sewage Lagoon

Works # 110001630

Annual Wastewater Performance Report

Prepared For: The City of Kawartha Lakes

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

Issued: March 28, 2024

Revision: 0

Operating Authorities:

Kawartha Lakes

OCWA

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

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2023 Performance Report for the Omemee Sewage Lagoon

The Omemee Sewage Works, unless noted within this report, complies with all requirements of the regulating authorities and operates under:

- Environmental Compliance Approval (ECA) No. 2737-B4DH46 issued September 28, 2018
- Environmental Compliance Approval (ECA) No. 141-W601 issued June 20, 2023

Amended Environmental Compliance Approval 2737-B4DH46, Section 11(4) requires the Performance Report to contain the following:

a) a summary and interpretation of all Influent monitoring data, and a review of the historical trend of the sewage characteristics and flow rates;

b) a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rates, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works;

c) a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting year;

d) a summary of all operating issues encountered and corrective actions taken;

e) a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works;

f) a summary of any effluent quality assurance or control measures undertaken;

g) a summary of the calibration and maintenance carried out on all Influent and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of that equipment as required in this Approval or recommended by the manufacturer;

h) a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

   i. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;

   ii. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

i) an estimate of the volume of sludge in the lagoon cells. Sludge volume is to be measured every five (5) years, but may be estimated in the interim years. A summary of disposal locations and volumes of sludge disposed of must also be provided if sludge was disposed of during the reporting period;

j) a summary of any complaints received and any steps taken to address the complaints;

k) a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

l) a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

m) a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.

The Environmental Compliance Approval Number 141-W601 for the City of Kawartha Lakes Wastewater Collection System, including the Omemee Sewage Collection System, stipulates that the Owner shall prepare an annual performance report for the Authorized System that includes:

Schedule E – Reporting (4.6)

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 any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.
e) a summary of all 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, loadings 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 any corrective actions, if applicable.

g) a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following 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

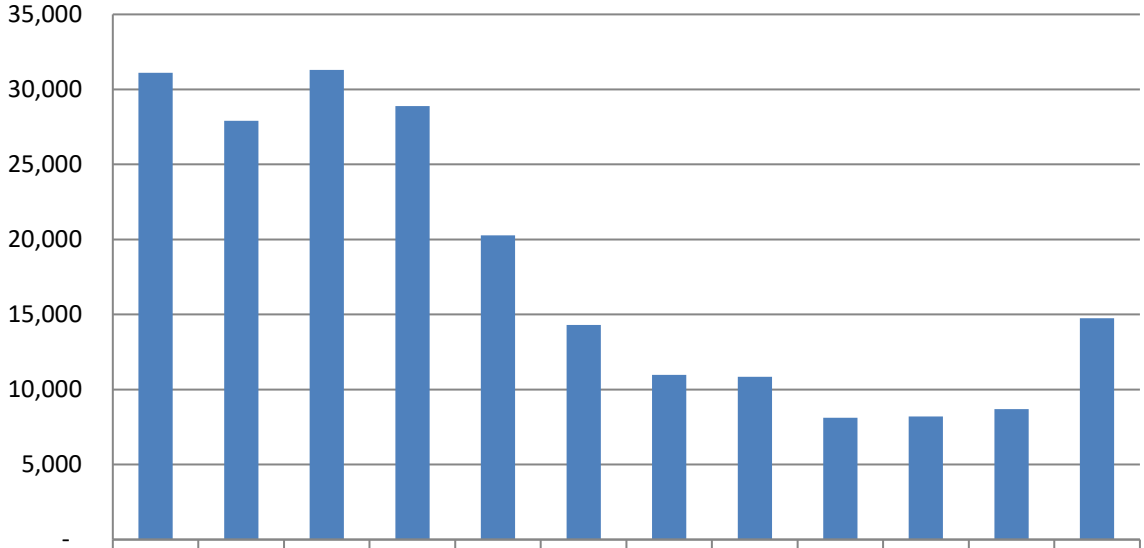
Environmental Compliance Approval (ECA) No. 2737-B4DH46

The following is a report from the records maintained by the Ontario Clean Water Agency for the Omemee Sewage Lagoon for the year 2023.

(a) Environmental Compliance Approval Number 2737-B4DH46 requires a summary and interpretation of all Influent monitoring data, and a review of the historical trend of the sewage characteristics and flow rates.

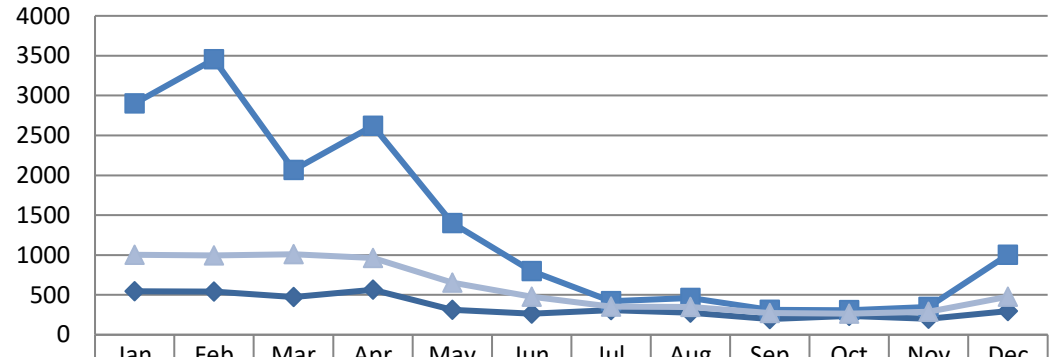
The Environmental Compliance Approval requires that everything practicable be undertaken to operate the Sewage Treatment Plant so that the annual average daily influent is within the Rated Capacity. The Rated Capacity of the Omemee Sewage Lagoon is 1,353 m^3/day and the 2023 annual average daily influent flow was 590.00 m^3/day or 43.6% of the Rated Capacity. The total Influent flow in 2023 was 215,349.33 m^3.

Graph 1: 2023 Influent Monthly Flow Totals



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Influent Flow (m^3)	31,112	27,906	31,292	28,883	20,270	14,300	10,979	10,848	8,111	8,205	8,699	14,745

Graph 2: 2023 Influent Daily Minimum, Maximum and Average Flows



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min (m^3/day)	545	540	474	564	314	263	309	275	197	235	200	296
Max (m^3/day)	2,900	3,455	2,067	2,619	1,399	800	419	461	314	307	348	1,005
Avg(m^3/day)	1,004	997	1,009	963	654	477	354	350	270	265	290	476

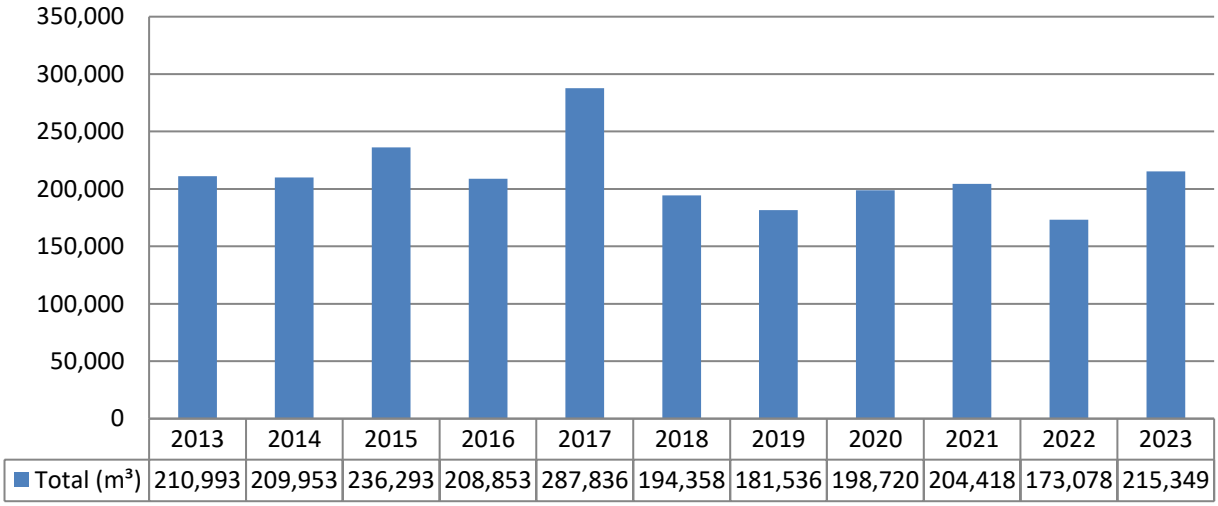
Table 1 reviews the historical trend of the influent sewage characteristics for the Omemee Sewage Lagoon, as required by Environmental Compliance Approval 2737-B4DH46, Condition 10 (4) (a).

Table 1: 2013 – 2023 Historical Average Influent Sewage Characteristics for the Omemee Sewage Lagoon

Year	BOD (mg/L)	TSS (mg/L)	Phosphorus (mg/L)	TKN (mg/L)
2013	105.25	530.68	3.15	28.07
2014	122.91	107.08	2.48	22.13
2015	134.63	133.81	2.42	21.71
2016	187.66	218.58	3.36	28.15
2017	117.08	168.75	2.09	18.15
2018	157.18	267.45	3.49	28.10
2019	117.42	138.92	2.23	21.18
2020	122.42	134.75	2.15	21.53
2021	130.29	195.46	2.94	25.22
2022	167.08	169.33	2.47	24.37
2023	193.17	164.75	2.76	25.13

Table 1 shows that Biochemical Oxygen Demand annual average has been increasing from 2019 to 2023. The 2023 annual average for Total Suspended Solids has decreased slightly from the 2022 annual average, while Phosphorus has increased slightly from the 2022 annual average.

Graph 3: 2013 – 2023 Historical Influent Flows for the Omemee Sewage Lagoon



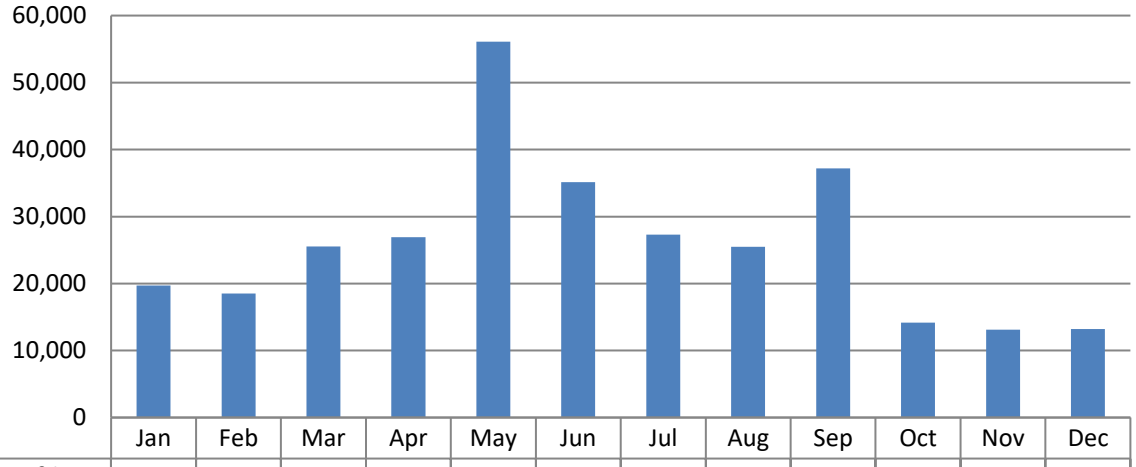
Graph 3 shows the historical influent flows for the Omemee Sewage Lagoon from 2013 to 2023. Since 2017, the influent flows have remained consistent. The increased influent flow in 2017 can be attributed to the extremely wet spring season.

(b) Environmental Compliance Approval 2737-B4DH46 requires a summary and interpretation of all Final Effluent monitoring data, including concentration, flow rate, loading and a comparison to the design objectives and compliance limits in this Approval, including an overview of the success and adequacy of the Works.

The Performance Assessment Report (PAR) Wastewater/Lagoon is attached in **Appendix I**.

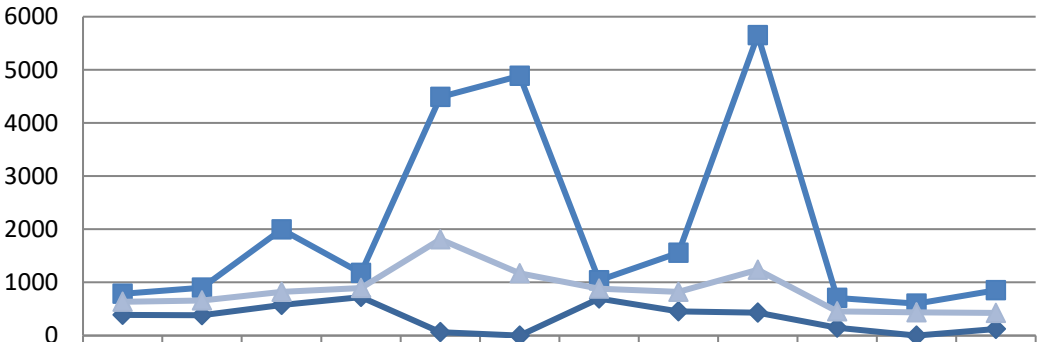
The following graphs provide final effluent flows for 2023 at the Omemee Sewage Lagoon. Final effluent is directed to the subsurface sewage disposal system during the winter months and to the spray irrigation system, typically during the warmer months, when all conditions were met. During the reporting period, final effluent was directed to the subsurface sewage disposal system and to the spray irrigation system.

Graph 4: 2023 Effluent Monthly Flow Totals



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly Total (m³/day)	19,709	18,514	25,539	26,924	56,124	35,114	27,278	25,475	37,206	14,174	13,094	13,216

Graph 5: 2023 Effluent Daily Minimum, Maximum and Average Flows



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Min (m³/day)	386	384	574	724	61	0	697	455	433	145	0	122
Max (m³/day)	787	899	1994	1176	4,488	4,885	1,042	1,558	5653	706	601	852
Avg (m³/day)	636	661	824	897	1,810	1,170	880	822	1240	457	436	426

Table 2 outlines the effluent criteria limits as set out in Section 7(1), Schedule C of Environmental Compliance Approval Number 2737-B4DH46 as follows:

Table 2: Omemee Sewage Lagoon - Final Effluent Compliance Limits - 2023

Effluent Parameters	Average Effluent Concentration Limit (mg/L)	Actual Monthly Average Effluent Concentration (mg/L)	Compliant (Y/N)
$CBOD_5$	30.0	14.21	Y*
Total Suspended Solids	40.0	21.10	Y*
Total Phosphorus	1.0	Annual Avg. = 0.26	Y

*For the reporting period, the monthly average of $CBOD_5$ exceeded the limit in September 2023. This limit is 30.0 mg/L and the actual monthly effluent concentration was 31.25 mg/L. The contributing factor for the monthly $CBOD_5$ exceedance was the low effluent levels within the lagoons.

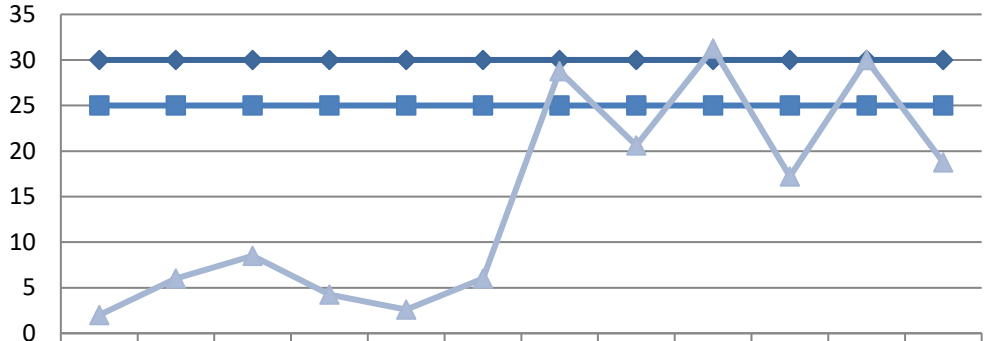
*For the reporting period, the monthly average of Total Suspended Solids exceeded the limit in November 2023. This limit is 40.0 mg/L and the actual monthly effluent concentration was 55.4 mg/L. The contributing factors for the monthly TSS exceedance was seasonal turnover within the lagoons and the low effluent levels within the lagoons.

Overall during the reporting period of 2023, the Omemee Sewage Lagoon final effluent generally met the compliance requirements as prescribed in the Environmental Compliance Approval Number 2737-B4DH46, other than the two monthly exceedances noted above.

Carbonaceous Biochemical Oxygen Demand ($CBOD_5$)

ECA Number 2737-B4DH46 (issued September 28, 2018) set the $CBOD_5$ monthly average concentration limit at 30.0 mg/L and the monthly average concentration objective at 25.0 mg/L. For 2023, the CBOD5 monthly average concentration was 14.21 mg/L.

Graph 6: 2023 Monthly $CBOD_5$ Final Effluent Concentration Comparisons



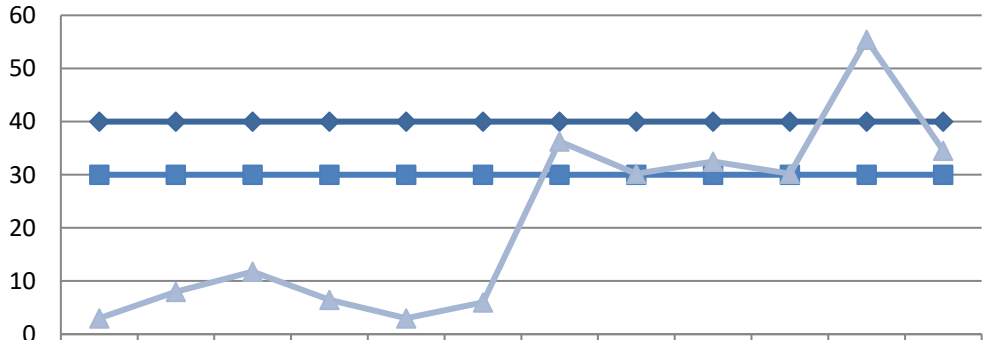
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (mg/L)	30	30	30	30	30	30	30	30	30	30	30	30
Objective (mg/L)	25	25	25	25	25	25	25	25	25	25	25	25
Avg (mg/L)	2.0	6.0	8.5	4.3	2.6	6.0	28.8	20.6	31.3	17.2	30.0	18.8

For the reporting period, the monthly average of $CBOD_5$ exceeded the limit in September 2023. This limit is 30.0 mg/L and the actual monthly effluent concentration was 31.25 mg/L. The contributing factor for the monthly $CBOD_5$ exceedance was the low effluent levels within the lagoons.

Total Suspended Solids (TSS)

ECA Number 2737-B4DH46 set the Total Suspended Solids (TSS) monthly average concentration limit at 40.0 mg/L and the monthly average concentration objective at 30.0 mg/L. For 2023, the TSS monthly average concentration was 21.10 mg/L.

Graph 7: 2023 Monthly TSS Final Effluent Concentration Comparisons



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (mg/L)	40	40	40	40	40	40	40	40	40	40	40	40
Objective (mg/L)	30	30	30	30	30	30	30	30	30	30	30	30
Avg (mg/L)	3.0	8.0	11.75	6.5	3	6.0	36.3	30.2	32.5	30.2	55.4	34.5

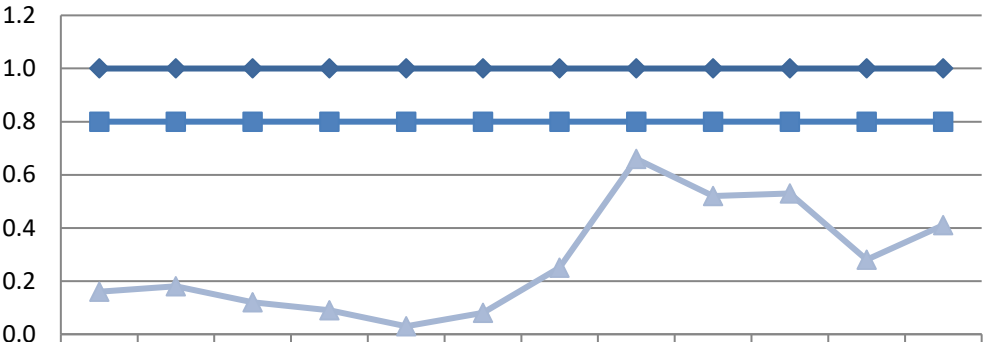
For the reporting period, the monthly average of Total Suspended Solids exceeded the limit in November 2023. This limit is 40.0 mg/L and the actual monthly effluent

concentration was 55.4 mg/L. The contributing factor for the monthly TSS exceedance was seasonal turnover and the low effluent levels within the lagoons.

Total Phosphorus (TP)

ECA Number 2737-B4DH46 set the Total Phosphorus annual average concentration limit at 1.0 mg/L and the annual average concentration objective at 0.8 mg/L. For 2023, the Total Phosphorus annual average concentration was 0.26 mg/L.

Graph 8: 2023 Annual Total Phosphorus Final Effluent Concentration Comparisons



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Limit (mg/L)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Objective (mg/L)	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
Avg (mg/L)	0.16	0.18	0.12	0.09	0.03	0.08	0.25	0.66	0.52	0.53	0.28	0.41

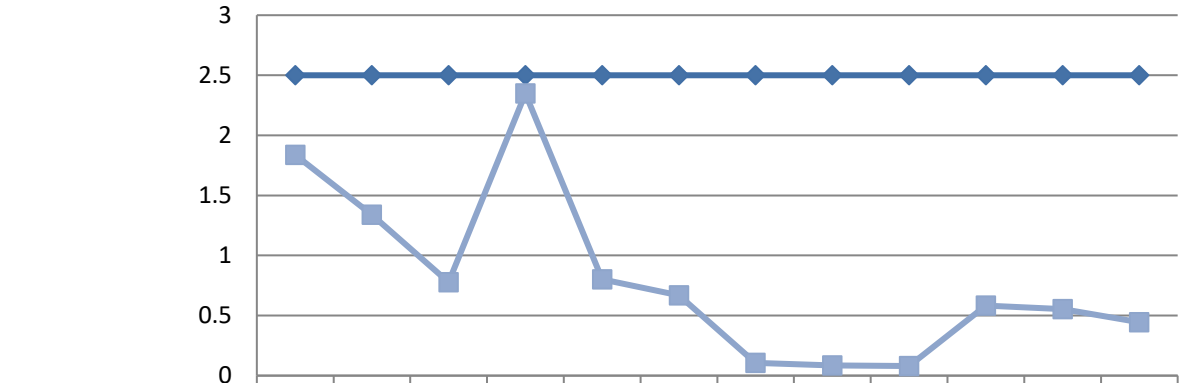
Additional Parameter

The following parameter was sampled as a requirement of ECA Number 2737-B4DH46. A monthly average concentration objective is indicated in the ECA but no monthly average concentration limit is indicated.

Nitrite and Nitrate as Nitrogen

ECA Number 2737-B4DH46 set the Nitrite and Nitrate as Nitrogen monthly average concentration objective at 2.5 mg/L. For 2023, the Nitrite and Nitrate as Nitrogen monthly average concentration was 0.804 mg/L.

Graph 9: 2023 Monthly Nitrite and Nitrate as Nitrogen Final Effluent Concentration Comparison



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Objective (mg/L)	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5	2.5
Avg (mg/L)	1.84	1.34	0.78	2.35	0.80	0.67	0.11	0.08	0.08	0.58	0.55	0.45

(c) a summary of any deviation from the monitoring schedule and reasons for the current reporting year and a schedule for the next reporting period.

The 2023 Omemee Sewage Lagoon Sampling Calendar was established and the sample day was Tuesday. There was one (1) deviation from the sample plan during the reporting period.

Sample Date	Deviation	Alternate Sample Date
Dec. 26, 2023	Stat Holiday – Boxing Day	Dec. 27, 2023

The Sample Plan for 2024 has been established and the sample day is on Wednesday. A copy of the 2024 Omemee Sewage Lagoon Sampling Calendar is included in **Appendix II**.

(d) a summary of all operating issues encountered and corrective actions taken.

The following details describe all operating problems encountered during the reporting period and the corrective actions taken.

Table 3: 2023 Sewage Lagoon Operational Challenges

Month	Challenges	Corrective Actions
January	Chemical Pump 2 Head, failure	Replace head on Alum pump #2
February	Submersible Pump 4, pump faulting on low flow	Pull pump, clean, remove boot, reinstall, test
March	Air Blower Hose, Failing	Hose from blower to external cool

Month	Challenges	Corrective Actions
		developed a leak. Replace hose and test
April	Booster Pump 3, packing gland replacement	Replace the packing gland
May	Submersible Pump 3, Flow decreasing	Replace pump
May	Pump and Motor Submersible Pump 1 Fail	Pump tripping on overload, replace pump
June	Spray Head 3 Fail on spray irrigation system	Replace with new head, test and operate
September	Pump 4 Piping, Flushing	Flow decreasing, pump required to be back flushed

(e) a summary of all normal and emergency repairs and maintenance activities carried out on any major structure, equipment, apparatus or mechanism forming part of the Works.

OCWA uses a Work Maintenance System (WMS). WMS is a maintenance tracking system that can generate work orders as well as give summaries of completed and scheduled work. During the year, the operating authority at the facility generates scheduled work orders on a weekly, monthly and annual basis. The service work is recorded in the work order history. This ensures routine and preventive maintenance is carried out and assets are maintained to manufacturer's and/or industry standards. Emergency and capital repair maintenance is completed and added to the system.

Refer to **Appendix III: WMS Workorder Summary**

(f) a summary of any effluent quality assurance or control measures undertaken.

Effluent quality assurance is maintained in several ways. All final effluent samples collected during the reporting period to meet ECA 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. Sampling calendars issued to the operators denoting frequency of sampling and these calendars are submitted to the Process Compliance Technician at the end of each month. Raw and effluent samples are collected as per the Environmental Compliance Approval and the results are reviewed on a regular basis to ensure compliance with the site's objectives and limits.

(g) a summary of the calibration and maintenance carried out on all Influent and Final Effluent monitoring equipment to ensure that the accuracy is within the tolerance of the equipment as required in this Approval or recommended by the manufacturer.

Calibrations on influent and effluent monitoring equipment were performed by Franklin Empire in October 2023 for equipment located at the Sewage Lagoon and Sewage Pump Stations. Refer to **Appendix IV: Calibration Report**.

(h) a summary of efforts made to achieve the design objectives in this Approval, including an assessment of the issues and recommendations for pro-active actions if any are required under the following situations:

i. when any of the design objectives is not achieved more than 50% of the time in a year, or there is an increasing trend in deterioration of Final Effluent quality;
ii. when the Annual Average Daily Influent Flow reaches 80% of the Rated Capacity;

Table 4 provides continuous efforts made to meet the Effluent Objectives at the Omemee Sewage Lagoon.

Table 4: Efforts Made to Meet the Effluent Objectives of Condition 6

1. Sampling effluent as per the ECA.
2. Visual Inspection of the effluent while performing rounds and sampling.
3. Inspection of lagoon berms.
4. Inspection of subsurface disposal area.
5. Ensuring that Alum is being dosed.
6. Annual calibration of the flow meters.
7. Performing preventative maintenance activities in accordance with work order schedules.
8. Monitoring treatment processes through review of lab results.
9. Inspection of Sewage Pump Stations.
10. Visual Inspection of wet wells.
11. Inspection of spray irrigation system and fields.
12. Inspection of monitoring wells.

Additional Reporting Requirements:

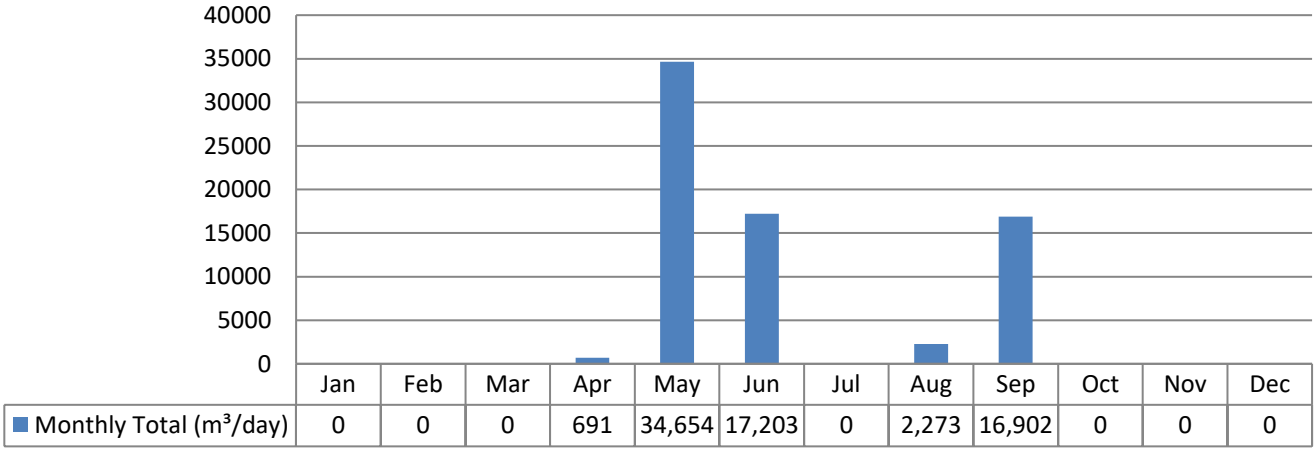
The spray irrigation system was in operation in 2023 under the authority of Provincial Officer's Order Number 1-L4E0C issued on May 8, 2019 and amended on April 26,

2021. ECA Number 2737-B4DH46 does not require any information pertaining to the spray irrigation be included in the Omemee Sewage Lagoon annual performance report.

The spray irrigation system commenced operations on April 17, 2023. The spray irrigation system ceased operation on October 17, 2023 after the winterization process was completed. Notifications were provided to all stakeholders as required by the Provincial Officer's Order.

The following information has been included in this report as a substantial amount of final effluent was disposed of via spray irrigation in 2023.

Graph 10: 2023 Monthly Effluent Flow to Spray Irrigation System



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Monthly Total (m^3/day)	0	0	0	691	34,654	17,203	0	2,273	16,902	0	0	0

Groundwater Monitoring Program

During the reporting period, ECA Number 2737-B4DH46, stipulates that the two (2) groundwater monitoring wells down-gradient of the subsurface disposal system and collect samples at the frequency specified, by means of the specified sample type and analyzed for each parameter outline in Schedule D. Each monitoring well was sampled or attempt made where the well was found to be dry, on a quarterly basis. The samples were analyzed for the parameters required. Please see attached **Appendix V: Monitoring Wells**, which provides the results of the two groundwater monitoring wells.

Additionally, as per Provincial Officer's Order 1-L4E0C issued on May 8, 2019 and amended on April 26, 2021, an additional fifteen (15) groundwater monitoring wells were identified to be sampled on a quarterly basis, and analyzed for each parameter identified in the Order. Please see attached **Appendix V: Monitoring Wells**, which provides the results of these groundwater monitoring wells.

Sewage Pump Station (SPS) Capacity Assessments:

The Church St. SPS rated capacity is 64 L/s which equals 5,530 m^3/day. The maximum influent daily flow in 2023 was 1,746 m^3, which does not exceed the SPS rated capacity.

Table 5: 2023 Influent Flows at Church St. SPS

Month	Max Daily Flow (m^3/day)	Average Daily Flow (m^3/day)
January	1,746	331
February	1,076	283
March	630	288
April	810	262
May	408	180
June	202	118
July	94	83
August	132	89
September	413	79
October	94	71
November	99	78
December	358	150

The Sturgeon St. SPS was upgraded under Environment Compliance Approval 6602-8X8FXB and the rated capacity is 122 L/s which equals 10,500 m^3/day. The maximum influent daily flow in 2023 was 4,005 m^3 which does not exceed the raw rated capacity.

Table 6: 2023 Influent Flows at Sturgeon St. SPS

Month	Max Daily Flow (m^3/day)	Average Daily Flow (m^3/day)
January	2,900	1,004
February	3,455	997
March	2,067	1,009
April	2,619	963
May	1,399	654
June	800	477
July	419	354
August	461	350
September	314	270
October	307	265
November	348	288
December	4,005	573

(i) an estimate of the volume of sludge in the lagoon cells. Sludge volume is to be measured every five (5) years, but may be estimated in the interim years. A summary of disposal locations and volumes of sludge disposed of must also be provided if sludge was disposed of during the reporting period.

The estimated volume of sludge in the lagoon cells in 2023 was 5861m^3. During the reporting period, no sludge was disposed of from the Omemee Sewage Lagoon.

(j) A summary of any complaints received and any steps taken to address the complaints.

Table 7: Complaints Received Summary for 2023

Date	Issue	Actions Taken
Summer 2023	Odour concern regarding Sturgeon Street SPS	Investigate concern and replace air filters at the SPS. Monitor for odour.

(k) a summary of all Bypasses, Overflows, other situations outside Normal Operating Conditions and spills within the meaning of Part X of EPA and abnormal discharge events;

Bypasses

There were no bypasses at the Omemee Sewage Lagoon in 2023.

Overflows

There were no overflows at the Omemee Sewage Lagoon in 2023.

Situations outside Normal Operation Conditions

Normal Operating Conditions was a new condition which became applicable to the Omemee Sewage Lagoon with the issuance of ECA 2737-B4DH46 (September 28, 2018). All unit processes operated within their design capacity between January 1 and December 31, 2023.

Spills

There was one spill within the sewage collection system at the Omemee Sewage Lagoon in 2023. The spill occurred on May 16, 2023 at the air release chamber north of 95 Surgeon Road, Omemee. This portion of the sewage collection system is the forcemain from Sturgeon Street Sewage Pump Station to the Omemee Lagoons. Approximately 10 gallons of sewage was released. Corrective actions included pumping out the chamber and disinfecting the area with a mild chlorine solution. The air relief valve was replaced by the Owner and placed back into service on June 20, 2023

Abnormal Discharge Events

There were no abnormal discharge events at the Omemee Sewage Lagoon in 2023.

(l) a summary of all Notice of Modifications to Sewage Works completed under Paragraph 1.d. of Condition 10, including a report on status of implementation of all modification.

There were no Notice of Modification to Sewage Works initiated, worked on or completed in 2023 for the Omemee Sewage Lagoon.

(m) a summary of efforts made to achieve conformance with Procedure F-5-1 including but not limited to projects undertaken and completed in the sanitary sewer system that result in overall Bypass/Overflow elimination including expenditures and proposed projects to eliminate Bypass/Overflows with estimated budget forecast for the year following that for which the report is submitted.

During the 2023 reporting period there were no incidents of a bypass or overflow within the sanity sewer system.

The City of Kawartha Lakes continues to work on a Master Servicing Study and Capacity Assessment for all facilities analyzing existing capacity and future growth requirements. Sanitary sewer flushing is conducted on an annual basis (3 years of dead ends/trouble areas and 4th year is full system flush). During this program, any manholes with infiltration issues are identified and are included in operational maintenance contracts for grouting, frame and cover replacements, etc. One (1) manhole was rehabilitated with new moduloc sections, frame and covers and one (1) manhole was grouted. Forecasted for the 2024 reporting period for the Omemee Sewage Lagoon, collection system maintenance: dead end collection system flushing - $5,000, and manhole maintenance and repairs - $20,000.

Environmental Compliance Approval (ECA) No. 141-W601

4.6 (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.

The Omemee Sewage Collection System consists of works for the collection and transmission of sewage, comprising approximately 8.2 km in total linear length of gravity sewers discharging to two sewage pumping stations, eventually leading to the Omemee Sewage Lagoons.

Raw sewage flow data from the Sturgeon St. and Church St. pumping stations, along with an interpretation of the data and any conclusions drawn from the data evaluation, are captured in ECA No. 2737-B4DH46 sections a and h.

4.6 (b) a summary of any operating problems encountered and corrective actions taken.

Below is a summary of any operating problems encountered in the collection system and correction actions taken.

Table 8: Summary of Operating Problems in Collection System and Corrective Actions (not including pumping stations)

Date	Operational Issue	Corrective Action Taken
May 16, 2023	Air release valve in MH623 on Sturgeon Rd failed, and release sewage into the	The air release valve was removed, and replaced with a new one. The spill was cleaned

Date	Operational Issue	Corrective Action Taken
	chamber. The release of sewage was reported as a spill and information is included in section (k) above.	up by a licensed sewage hauler and was disinfected with a mild chlorine solution.

4.6 (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.

A regular scheduled calibration and maintenance program has been kept up to date as scheduled on a daily, weekly, semi-annual and annual basis. All equipment calibration & maintenance scheduling and standard procedures are provided by Maximo Computerized Maintenance System.

Attached is **Appendix V: Maintenance Summary**, a Work Order Summary report, showing all preventive and corrective maintenance activities performed at the Omemee Sewage Lagoons, including the collection system, during 2023.

All other collection system repairs are summarized in the table below:

Table 9: Summary of Major Structure & Equipment Calibration, Maintenance and Repair

Major Structure	Work Performed
Manhole Moduloc, Frame and Cover Repair	MH2374 Rita Cres Dead End. – Remove moduloc and reset manhole frame and cover to finish grade asphalt
Manhole Rain Bladder Installation	MH2282 Mary St. W MH2264 Sibley Ave
Manhole Grouting	MH2364 88 King St.

4.6 (d) a summary of any complaints related to the Sewage Works received during the reporting period and any steps taken to address the complaints.

Complaints related to the Omemee Sewage Collection System and steps taken to address the complaints are included in **Table 7: Complaints Received Summary for 2023.**

4.6 (e) a summary of all 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.

There were no Alterations made to the Omemee Sewage Collection System in 2023.

4.6 (f) a summary of all Collection System Overflow(s) and Spill(s) of Sewage, including:

i) Dates;
ii) Volumes and durations;
iii) If applicable, loadings 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 any corrective actions, if applicable.

The Omemee Sewage Collection system did not experience any collection system Overflows but one (1) Spill occurred in 2023.

There was one spill within the sewage collection system at the Omemee Sewage Lagoons in 2023. The spill occurred on May 16, 2023 at the air release chamber north of 95 Surgeon Road, Omemee. This portion of the sewage collection system is the forcemain from Sturgeon Street Sewage Pump Station to the Omemee Lagoons. Approximately 10 gallons of sewage was released. Corrective actions included pumping out the chamber and disinfecting the area with a mild chlorine solution. The air relief valve was replaced by the Owner and placed back into service on June 20, 2023.

It was not possible to collect a sample from the spill, therefore there are no monitoring results to comment on.

4.6 (g) a summary of efforts made to reduce Collection System Overflows, Spills, STP Overflows, and/or STP Bypasses, including the following 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.

Annually manhole inspections are completed by City operations staff within the collection systems to identify any deficiencies that may result in excess flows increasing the risk of potential overflows. In an effort to reduce all excess flows, the City has an annual manhole rehabilitation program which includes but is not limited to grouting, moduloc replacement and frame and cover replacements.

Operationally, where manholes are located in lower lying areas and are at risk of being submerged and contributing to inflow, rain bladders are installed to prevent excess water from entering the system, further reducing the risk of overflow.

During the 2023 reporting period there were no incidents of a bypass or overflow within the sanitary sewer system or the WWTP. However, a summary of operational activities that were performed to help reduce overflow potential are summarized in **Table 9: Summary of Major Structure & Equipment Calibration, Maintenance and Repair** above.

There are no proposed projects to specifically eliminate bypasses or overflows forecasted for the 2024 reporting period, however there is an operational budget of $20,000 available for any necessary operational repairs.

ii) Details of the establishment and maintenance of a PPCP, including a summary of project progresses compared to the PPCP's timelines.

The Omemee Sewage Collection system does not contain combined sewers and therefore is not required to complete a Pollution Prevention and Control Plan (PPCP).

iii) An assessment of the effectiveness of each action taken.

None to report.

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.

N/A

v) Public reporting approach including proactive efforts

SOP WWC02 Waterwater Bypass/Overflow Notification Procedure has been developed and has been in practice since 2021, which clearly outlines all reporting protocols to both regulatory agencies and the public in various situations. This procedure was developed in consultation with Ontario Clean Water Agency, Ministry of Environment, Conservation and Parks and Ministry of Health.

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Appendix I:

Process Assessment Report Wastewater/Lagoon

Ontario Clean Water Agency
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Performance Assessment Report

From 1/1/2023 to 12/31/2023 11:59:59 PM

5901 OMEMEE WASTEWATER TREATMENT LAGOON 110001630

	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 m³/d	31,111.60	27,905.50	31,292.00	28,883.29	20,269.50	14,300.44	10,979.00	10,848.00	8,111.00	8,205.00	8,699.00	14,745.00	215,349.33			0.00
Raw Flow: Avg - Raw m³/d	1,003.60	996.63	1,009.42	962.78	653.85	476.68	354.16	349.94	270.37	264.68	289.97	475.65		590.00		1,353.00
Raw Flow: Max - Raw m³/d	2,900.00	3,455.00	2,067.00	2,619.00	1,399.00	800.00	419.00	461.00	314.00	307.00	348.00	1,004.50			3,455.00	0.00
Raw Flow: Count - Raw 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 - Eff m³/d	19,709.40	18,514.30	25,539.10	26,924.00	56,124.00	35,113.80	27,278.00	25,475.00	37,206.00	14,174.40	13,094.00	< 13,216.00	312,368.00			0.00
Eff. Flow: Avg - Eff m³/d	635.79	661.23	823.84	897.47	1,810.45	1,170.46	879.94	821.77	1,240.20	457.24	436.47	< 426.32		855.80		1,353.00
Eff. Flow: Max - Eff m³/d	787.00	898.80	1,994.00	1,176.00	4,488.00	4,885.30	1,042.00	1,558.00	5,653.00	706.00	601.00	< 852.00			5,653.00	0.00
Eff Flow: Count - Eff 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
Carbonaceous Biochemical Oxygen Demand: CBOD																
Eff: Avg cBOD5 - Eff mg/L	< 2.00	< 6.00	8.50	< 4.25	< 2.60	< 6.00	28.75	20.60	31.25	17.20	30.00	18.75		< 14.21	< 31.25	30.00
Eff: # of samples of cBOD5 - Eff	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Loading: cBOD5 - Eff kg/d	< 1.272	< 3.967	7.003	< 3.814	< 4.707	< 7.023	25.298	16.929	38.756	7.865	13.094	7.994		< 12.16	< 38.76	
Biochemical Oxygen Demand: BOD5																
Raw: Avg BOD5 - Raw mg/L	107.00	225.00	38.00	12.00	19.00	226.00	239.00	310.00	296.00	361.00	247.00	238.00		193.17	361.00	0.00
Raw: # of samples of BOD5 - Raw	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
Eff: Avg BOD5 - Eff mg/L	< 2.00	3.00	4.00	13.00	3.00	3.00	15.00	0.00	24.00	31.00	34.00	35.00		< 15.18	< 35.00	
Total Suspended Solids: TSS																
Raw: Avg TSS - Raw mg/L	67.00	213.00	62.00	14.00	46.00	167.00	203.00	175.00	279.00	282.00	233.00	236.00		164.75	282.00	0.00
Raw: # of samples of TSS - Raw	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
Eff: Avg TSS - Eff mg/L	3.00	8.00	11.75	< 6.50	3.00	< 6.00	36.25	30.20	32.50	30.20	55.40	34.50		21.10	56.50	40.00
Eff: # of samples of TSS - Eff	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Loading: TSS - Eff kg/d	1.907	5.290	9.680	< 5.834	5.431	< 7.023	31.898	24.818	40.307	13.809	24.660	14.708		18.05	40.31	
Total Phosphorus: TP																
Raw: Avg TP - Raw mg/L	1.34	2.95	1.23	0.34	0.52	3.88	2.41	3.72	4.53	5.12	3.64	3.40		2.76	5.12	0.00
Raw: # of samples of TP - Raw	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
Eff: Avg TP - Eff mg/L	0.16	0.18	0.12	0.09	< 0.03	0.08	0.25	0.66	0.52	0.53	0.28	0.41		0.26	0.66	1.00
Eff: # of samples of TP - Eff	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	13.00			0.00
Loading: TP - Eff kg/d	0.102	0.119	0.099	0.081	< 0.054	0.094	0.220	0.542	0.645	0.242	0.122	0.175		0.23	0.64	
Nitrogen Series																
Raw: Avg TKN - Raw mg/L	14.90	24.80	12.70	4.10	4.40	29.50	28.10	32.50	36.60	40.00	42.20	31.80		25.13	42.20	0.00
Raw: # of samples of TKN - Raw	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

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Performance Assessment Report

From 1/1/2023 to 12/31/2023 11:59:59 PM

Eff: Avg TAN - Eff mg/L	1.00	2.45	4.30	< 1.43	< 0.18	< 0.45	0.45	1.98	1.58	2.30	3.08	8.53		2.24	8.53	
Eff: # of samples of TAN - Eff	5.00	4.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	4.00	4.00	52.00			0.00
Eff: Avg NO3-N - Eff mg/L	1.77	1.22	0.67	2.04	0.76	0.16	0.11	< 0.08	< 0.08	< 0.58	< 0.49	0.45		0.70	2.04	0.00
Eff: Avg NO2-N - Eff mg/L	< 0.07	0.12	0.11	0.31	< 0.06	< 0.53	< 0.03	< 0.03	< 0.03	< 0.03	< 0.08	< 0.03		< 0.12	< 0.53	0.00

Disinfection

Eff: GMD E. Coli - Eff cfu/100mL	172.00	220.00	750.47	440.00	26.00	2.00	80.00	100.00	350.00	2,800.00	1,000.00	6,900.00				
Eff: # of samples of E. Coli - Eff	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	13.00			0.00

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Appendix II:

2024 Omemee Sewage Lagoon Sampling Calendar

Ontario Clean Water Agency
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Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen

Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli

Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

January 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
	1 **Stat Holiday New Year's Day**	**2**	**3** ☐ Weekly ☐ Monthly	**4**	**5**	**6**
7	**8**	**9**	**10** ☐ Weekly	**11**	**12**	**13**
14	**15**	**16**	**17** ☐ Weekly	**18**	**19**	**20**
21	**22**	**23** ☐ Quarterly GW Monitoring (1st)	**24** ☐ Weekly	**25**	**26**	**27**
28	**29**	**30**	**31** ☐ Weekly			

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

February 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
				1	**2**	**2**
4	**5**	**6**	**7** ☐ Weekly ☐ Monthly	**8**	**9**	**10**
11	**12**	**13**	**14** ☐ Weekly	**15**	**16**	**17**
18	**19** **Stat Holiday Family Day**	**20**	**21** ☐ Weekly	**22**	**23**	**24**
25	**26**	**27**	**28** ☐ Weekly	**29**		

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

March 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
					1	**2**
3	**4**	**5**	**6** ☐ Weekly ☐ Monthly	**7**	**8**	**9**
10	**11**	**12**	**13** ☐ Weekly	**14**	**15**	**16**
17	**18**	**19**	**20** ☐ Weekly	**21**	**22**	**23**
24	**25**	**26**	**27** ☐ Weekly	**28**	**29** **Stat Holiday Good Friday**	**30**
31						

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
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3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

April 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
	1 **Stat Holiday Easter Monday**	**2**	**3** ☐ Weekly ☐ Monthly	**4**	**5**	**6**
7	**8**	**9**	**10** ☐ Weekly	**11**	**12**	**13**
14	**15**	**16**	**17** ☐ Weekly	**18**	**19**	**20**
21	**22**	**23**	**24** ☐ Weekly	**25**	**26**	**27**
28	**29**	**30**				

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
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Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

May 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
			1 ☐ Weekly ☐ Monthly	**2**	**3**	**4**
5	**6**	**7**	**8** ☐ Weekly	**9**	**10**	**11**
12	**13**	**14**	**15** ☐ Weekly	**16**	**17**	**18**
19	**20** **Stat Holiday Victoria Day**	**21**	**22** ☐ Weekly	**23**	**24**	**25**
26	**27**	**28**	**29** ☐ Weekly	**30**	**31**	

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

June 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
						1
2	**3**	**4**	**5** ☐ Weekly ☐ Monthly	**6**	**7**	**8**
9	**10**	**11**	**12** ☐ Weekly	**13**	**14**	**15**
16	**17**	**18**	**19** ☐ Weekly	**20**	**21**	**22**
23	**24**	**25**	**26** ☐ Weekly	**27**	**28**	**29**
30						

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

July 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
	1 **Stat Holiday Canada Day**	**2**	**3** ☐ Weekly ☐ Monthly	**4**	**5**	**6**
7	**8**	**9**	**10** ☐ Weekly	**11**	**12**	**13**
14	**15**	**16**	**17** ☐ Weekly	**18**	**19**	**20**
21	**22**	**23**	**24** ☐ Weekly	**25**	**26**	**27**
28	**29**	**30**	**31** ☐ Weekly			

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

August 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
				1	2	3
4	5 **Stat Holiday Civic Day**	6	7 ☐ Weekly ☐ Monthly	8	9	10
11	12	13	14 ☐ Weekly	15	16	17
18	19	20	21 ☐ Weekly	22	23	24
25	26	27	28 ☐ Weekly	29	30	31

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

September 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
1	**2** **Stat Holiday Labour Day**	**3**	**4** ☐ Weekly ☐ Monthly	**5**	**6**	**7**
8	**9**	**10**	**11** ☐ Weekly	**12**	**13**	**14**
15	**16**	**17**	**18** ☐ Weekly	**19**	**20**	**21**
22	**23**	**24**	**25** ☐ Weekly	**26**	**27**	**28**
29	**30** **Stat Holiday T&R**					

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

October 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
		1	**2** ☐ Weekly ☐ Monthly	**3**	**4**	**5**
6	**7**	**8**	**9** ☐ Weekly	**10**	**11**	**12**
13	**14** **Stat Holiday Thanksgiving Day**	**15**	**16** ☐ Weekly	**17**	**18**	**19**
20	**21**	**22**	**23** ☐ Weekly	**24**	**25**	**26**
27	**28**	**29**	**30** ☐ Weekly	**31**		

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

November 2024

Sun	Mon	Tue	Wed	Thu	Fri	Sat
					1	2
3	4	5	6 ☐ Weekly ☐ Monthly	7	8	9
10	11 **Stat Holiday Remembrance Day**	12	13 ☐ Weekly	14	15	16
17	18	19	20 ☐ Weekly	21	22	23
24	25	26	27 ☐ Weekly	28	29	30

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Sampling Calendar
Omemee Lagoons (5901) Works #110001630

Weekly
Final – Grab - CBOD5, TSS, Total Ammonia Nitrogen, Nitrate, Nitrite, Nitrate and Nitrite as Nitrogen
Monthly
Raw − Grab - BOD5, SS, Total Phosphorus, TKN, NH3+NH4
Cell − Grab - CBOD5, SS, Total Phosphorus, NH3+NH4, Nitrate, Nitrite, E.coli
Final – Grab - Total Phosphorus, E. coli
Quarterly
Groundwater Monitoring Well Level (Record on Worksheet and facility logbook)
Total Dissolved Solids, pH, Nitrate Nitrogen, Nitrite Nitrogen, TKN, Hardness, Total Phosphorus, Ammonia Nitrogen, Conductivity
1. Attempt to collect samples from all identified monitoring wells as per Provincial Officer's Order 1-L4E0C (issued May 8, 2019 and amended April 26, 2021).
2. Notify PCT/Manager and record in facility logbook, etc., if the water level is too low in the well to collect a sample or the well is dry.
3. A second attempt for sampling must be completed within the quarter for any monitoring wells where samples were not collected on the first attempt due to low water levels or the well was dry. Record all attempts in the facility logbook.
4. Quarterly meaning every 3 month period with at least 60 days but not more than 120 days between samples**.**

Emergency Discharge Samples to be collected prior to discharge, first day of discharge, every three days during discharge, the last day of the discharge and the day after the discharge has stopped.
Note: The MECP must be notified 24 hrs. prior to the start of each discharge (705-755-4300)

Operator Name:_____ **Operator Signature:**_____ **Date:**_____

(all collection and submission complete as per ECA, etc. plus any special requirements).
Federal regulations (WSER) do not apply at this facility in 2024.

December 2024

Sun	*Mon*	*Tue*	*Wed*	*Thu*	*Fri*	*Sat*
1	**2**	**3**	**4** ☐ Weekly ☐ Monthly	**5**	**6**	**7**
8	**9**	**10**	**11** ☐ Weekly	**12**	**13** *Please review SGS's Holiday schedule prior to sampling	**14**
15	**16**	**17**	**18** ☐ Weekly	**19**	**20**	**21**
22	**23**	**24**	**25** **Stat Holiday Christmas Day**	**26** **Stat Holiday Boxing Day**	**27** ☐ Weekly	**28**
29	**30**	**31**				

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix III:

WMS Workorder Summary

Workorder Summary Report

Report Start Date: Jan 1, 2023 12:00 AM

Report End Date: Dec 31, 2023 11:59 PM

Location: 5901*

Work Order Type: CALL,EMER

Work Order Class:

			WorkOrder		Workorder Details			
WO #	Asset Description	Location Description	Type	Class	Work Order Description	Status	Actual Start	Actual Finsh
3291117		5901, Omemee Lagoon, Facility	CALL	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Door Alarm, Close Door	CLOSE	3/26/23 04:58 AM	3/26/23 07:00 AM
3339365		5901, Omemee Lagoon, Facility	CALL	Inspection	5901, Omemee Lagoon, High Wet Well, Alarm	CLOSE	4/9/23 04:12 PM	4/9/23 06:00 PM
3383403		5901, Omemee Lagoon, Process, Process Control & Monitoring	CALL	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Wetwell High Level, Alarm	CLOSE	5/3/23 05:57 AM	5/3/23 06:05 AM
3432966		5901, Sturgeon SPS, Facility	CALL	Refurbish/ Replace/ Repair	5901, Sturgeon SPS, Power Fail, Alarm	CLOSE	6/9/23 06:23 PM	6/9/23 08:45 PM
3572559		5901, Omemee Lagoon, Process	CALL	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Low Level, Alarm	CLOSE	9/7/23 10:43 PM	9/10/23 01:15 AM
3624188		5901, Sturgeon SPS, Facility, Power Distribution	CALL	Refurbish/ Replace/ Repair	5901, Sturgeon SPS, VFD Fault and Float Mode, Alarm	CLOSE	10/22/23 02:16 PM	10/22/23 03:40 PM
3664611	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	CALL	Refurbish/ Replace/ Repair	5901, Church SPS, Generator Low Fuel, Alarm	CLOSE	11/13/23 03:51 PM	11/13/23 08:00 PM
3666446		5901, Omemee Lagoon	CALL	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Wet Well Low Level/Sensor, Fail	CLOSE	11/27/23 11:43 PM	11/28/23 02:48 AM
3705386	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon, Process, Process Control & Monitoring	CALL	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Battery Low, Alarm	CLOSE	12/12/23 03:45 PM	12/13/23 07:00 AM

Workorder Summary Report

Report Start Date: Jan 1, 2023 12:00 AM

Report End Date: Dec 31, 2023 11:59 PM

Location: 5901*

Work Order Type: CAP,CORR

Work Order Class:

			WorkOrder		Workorder Details			
WO #	Asset Description	Location Description	Type	Class	Work Order Description	Status	Actual Start	Actual Finsh
1662538		5901, Sturgeon SPS	CORR	Refurbish/ Replace/ Repair	DEFERRED 5901, Sturgeon SPS, Replace Impellers and Wear Plates on Both Pumps	CLOSE	2/21/23 06:54 AM	11/3/23 01:34 PM
1794303	MOTOR PUMP 03 BOOSTER PUMP [LAGOON]	5901, Omemee Lagoon , Process	CORR	Refurbish/ Replace/ Repair	DEFERRED 5901, Omemee Lagoon, Booster Pump 3 Packing Gland, Replacement	CLOSE	4/19/23 08:00 AM	4/21/23 11:00 AM
3068805	PUMP SUBMERSIBLE P003 SUBSURFACE [LAGOON]	5901, Omemee Lagoon , Process	CORR	Refurbish/ Replace/ Repair	DEFERRED 5901, Omemee Lagoon, Pump Submersible P003, Flow Dropping, Replace	CLOSE	10/31/22 11:45 AM	5/2/23 02:37 PM
3203419	PUMP PERISTALTIC ALUM 01 [STURGEON]	5901, Sturgeon SPS, Process	CORR	Refurbish/ Replace/ Repair	5901, Sturgeon SPS, Chem Pump 2 Head, Failure	CLOSE	1/12/23 12:00 AM	1/12/23 12:00 AM
3246878	PUMP SUBMERSIBLE P004 SUBSURFACE [LAGOON]	5901, Omemee Lagoon , Process	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Pump Submersible P004 Subsurface, Pull and Clean	CLOSE	2/21/23 08:00 AM	2/21/23 12:00 PM
3247058		5901, Omemee Lagoon , Process, Process Control & Monitoring	CAP	Compliance	5901, Omemee Lagoon, Well Monitoring & Sampling Program POO# 1-L4E0C (2023)	COMP	5/10/23 12:41 PM	2/29/24 11:56 AM
3289675	DRYER AIR BUBBLER SYSTEM [LAGOON]	5901, Omemee Lagoon , Process	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Air Blower Hose, Failing	CLOSE	3/15/23 08:45 AM	3/27/23 09:22 AM

3383295	MOTOR PUMP SUBMERSIBLE P001 SUBSURFACE [LAGOON]	5901, Omemee Lagoon , Process	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Pump & Motor Submersible Subsurface P001 Fail, Replace	CLOSE	5/2/23 09:00 AM	5/2/23 11:49 AM
3383297		5901, Omemee Lagoon , Facility	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Lagoon Light Fixture, Replaced	CLOSE	5/8/23 08:14 AM	5/8/23 08:14 AM
3385526		5901, Omemee Wastewater Collection	CORR	Refurbish/ Replace/ Repair	5901, Omemee Wastewater Collection, ,Spill, Air Valve, Sturgeon Forcemain	CLOSE	5/16/23 08:30 AM	5/16/23 12:20 PM
3434978		5901, Omemee Lagoon , Process, Process Piping & Valves, Spray Irrigation System	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Spray Irrigation System, Spray Head 3 Fail, Replace	CLOSE	6/21/23 03:00 PM	6/22/23 02:45 PM
3483544		5901, Omemee Lagoon , Facility	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Property, Grass Cut	CLOSE	7/26/23 07:30 AM	7/26/23 07:30 AM
3525627	PUMP SUBMERSIBLE P004 SUBSURFACE [LAGOON]	5901, Omemee Lagoon , Process	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Pump 4 Piping, Flushing	CLOSE	9/7/23 01:03 PM	9/7/23 01:03 PM
3525762	PUMP SUBMERSIBLE P002 SUBSURFACE [LAGOON]	5901, Omemee Lagoon , Process	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Pump Submersible P002 , Replace	COMP	2/9/24 01:20 PM	2/9/24 01:20 PM
3573120	FAN EXHAUST #1 [LAGOON]	5901, Omemee Lagoon , Facility, Heating Ventilation Air Conditioning, Exhaust Fans	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Exhaust Fan, Replace	CLOSE	9/11/23 08:00 AM	9/13/23 02:00 PM
3622508	PUMP SUBMERSIBLE P001 SUBSURFACE [LAGOON]	5901, Omemee Lagoon , Process	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Pump Submersible P001 Subsurface, Control Panel Overload, Tripping	COMP	10/6/23 12:00 AM	2/9/24 01:24 PM
3624189		5901, Sturgeon SPS, Facility, Power Distribution	CORR	Refurbish/ Replace/ Repair	5901, Sturgeon SPS, Surge Protector, Replace	CLOSE	10/22/23 02:15 PM	12/11/23 07:45 AM
3664612	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	CORR	Refurbish/ Replace/ Repair	5901, Church SPS, Generator Fuel Low Level, Follow up to Work Order 3664611	COMP	11/13/23 07:00 PM	2/12/24 01:31 PM

3705389	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon, Process, Process Control & Monitoring	CORR	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Alarm Battery Low, Repair	CLOSE	12/12/23 03:45 PM	12/14/23 01:29 PM

Workorder Summary Report

Report Start Date: Jan 1, 2023 12:00 AM

Report End Date: Dec 31, 2023 11:59 PM

Location: 5901*

Work Order Type: OPER,PM

Work Order Class:

			WorkOrder		Workorder Details		
WO #	Asset Description	Location Description	Type	Class	Work Order Description	Actual Start	Actual Finsh
3153700		5901, Omemee Lagoon	OPER	Health and Safety	Corporate Facility Workplace H & S Inspection (3m) - 5901 - KTS	1/25/23 12:00 AM	1/25/23 12:00 AM
3153707		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	1/1/23 12:00 AM	1/31/23 12:00 AM
3153709		5901, Omemee Lagoon	PM	Inspection	Daily Operational Activities (1y) - 5901 - KTS	1/2/24 08:49 AM	1/2/24 08:49 AM
3153714	PANEL ALARM/DIALER	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	1/25/23 12:00 AM	1/25/23 12:00 AM
3153721	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	1/25/23 12:00 AM	1/25/23 12:00 AM
3155359		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	1/25/23 12:00 AM	1/25/23 12:00 AM
3155362		5901, Omemee Lagoon	PM	Inspection	Water Well Inspection (3m) - 5901 Lagoon Monitoring Wells - KTS	3/28/23 12:00 AM	3/28/23 12:00 AM
3155726		5901, Omemee Lagoon	PM	Compliance	FEP Contact List Update (1y) - 5901 - KTS	1/1/23 12:00 AM	12/31/23 12:00 AM
3156448	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	1/25/23 12:00 AM	1/25/23 12:00 AM

3156467	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	1/25/23 12:00 AM	1/25/23 12:00 AM
3156474	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	1/25/23 12:00 AM	1/25/23 12:00 AM
3179673		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	1/25/23 12:00 AM	1/25/23 12:00 AM
3182478		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	1/4/23 12:00 AM	1/4/23 12:00 AM
3183712		5901, Omemee Lagoon	PM	Inspection	Well Level Monitoring & Sampling POO# 1-L4E0C (3m) – 5901 – KTS	3/28/23 12:00 AM	3/28/23 12:00 AM
3209639		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	2/1/23 12:00 AM	2/22/23 12:00 AM
3209641	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	2/22/23 12:00 AM	2/22/23 12:00 AM
3209648	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	2/22/23 12:00 AM	2/22/23 12:00 AM
3210889		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	2/22/23 12:00 AM	2/22/23 12:00 AM
3211362	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	2/22/23 12:00 AM	2/22/23 12:00 AM
3211381	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	2/22/23 12:00 AM	2/22/23 12:00 AM
3211388	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	2/22/23 12:00 AM	2/22/23 12:00 AM
3227717		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	2/22/23 12:00 AM	2/22/23 12:00 AM

3229513		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	2/9/23 12:00 AM	2/9/23 12:00 AM
3246778		5901, Omemee Lagoon	PM	Inspection	Submersible Sewage Pump Inspection/Maintenance by Contractor (2y) - 5901 - KTS	2/14/23 12:00 AM	3/1/23 02:48 PM
3250546		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	3/1/23 12:00 AM	3/31/23 12:00 AM
3250548	BLOWER ROTORY LOBE [LAGOON]	5901, Omemee Lagoon, Process	PM	Refurbish/ Replace/ Repair	Blower Insp/Service (1y) - 5901 Lagoon- KTS	12/31/23 10:37 AM	12/31/23 10:37 AM
3250561	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	3/30/23 12:00 AM	3/30/23 12:00 AM
3250568	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	3/30/23 12:00 AM	3/30/23 12:00 AM
3251899		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	3/30/23 12:00 AM	3/30/23 12:00 AM
3252186	PUMP CENT 02 DISCH [LAGOON]	5901, Omemee Lagoon, Process	PM	Inspection	Pump Cent Insp/Service (1y) - 5901 Lagoon- KTS	2/27/24 10:34 AM	2/27/24 10:34 AM
3252804	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	3/30/23 12:00 AM	3/30/23 12:00 AM
3252823	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	3/30/23 12:00 AM	3/30/23 12:00 AM
3252830	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	3/30/23 12:00 AM	3/30/23 12:00 AM
3270664		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	8/9/23 02:32 PM	8/9/23 02:32 PM
3272443		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	3/14/23 02:54 PM	3/14/23 02:54 PM

3294924		5901, Omemee Lagoon	OPER	Health and Safety	Corporate Facility Workplace H & S Inspection (3m) - 5901 - KTS	4/28/23 01:07 PM	4/28/23 01:35 PM
3294931		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	4/1/23 12:00 AM	4/25/23 12:00 AM
3294933	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	4/25/23 12:00 AM	4/25/23 12:00 AM
3294940	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	4/25/23 12:00 AM	4/25/23 12:00 AM
3296396		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	4/25/23 12:00 AM	4/25/23 12:00 AM
3296399		5901, Omemee Lagoon	PM	Inspection	Water Well Inspection (3m) - 5901 Lagoon Monitoring Wells - KTS	6/22/23 12:00 AM	6/22/23 12:00 AM
3296841	TANK PROCESS WETWELL [STURGEON ST]	5901, Sturgeon SPS, Process	PM	Refurbish/ Replace/ Repair	Tank Wetwell Cleaning/Inspection (6m) - 5901 Sturgeon - KTS	5/26/23 12:00 AM	5/26/23 12:00 AM
3297597	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	4/25/23 12:00 AM	4/25/23 12:00 AM
3297616	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	4/25/23 12:00 AM	4/25/23 12:00 AM
3297623	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	4/25/23 12:00 AM	4/25/23 12:00 AM
3298624	TANK PROCESS WETWELL [CHURCH ST]	5901, Church SPS, Process	PM	Refurbish/ Replace/ Repair	Tank Wetwell Cleaning/Inspection (6m) - 5901 Church - KTS	5/26/23 12:00 AM	5/26/23 12:00 AM
3317285		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	4/28/23 01:07 PM	4/28/23 01:35 PM
3319525		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	4/18/23 12:00 AM	4/18/23 12:00 AM

3320627		5901, Omemee Lagoon	PM	Inspection	Well Level Monitoring & Sampling POO# 1-L4E0C (3m) – 5901 – KTS	6/22/23 12:00 AM	7/7/23 02:11 PM
3339581		5901, Omemee Lagoon, Process, Process Piping & Valves, Spray Irrigation System	OPER	Refurbish/ Replace/ Repair	5901, Omemee Lagoon, Spray Irrigation System, Repair/Testing	4/11/23 07:00 AM	12/14/23 02:48 PM
3344901		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	5/1/23 12:00 AM	5/30/23 12:00 AM
3344903	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	5/26/23 12:00 AM	5/26/23 12:00 AM
3344910	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	5/26/23 12:00 AM	5/26/23 12:00 AM
3346156		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	5/26/23 12:00 AM	5/26/23 12:00 AM
3346744	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	5/26/23 12:00 AM	5/26/23 12:00 AM
3346763	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	5/26/23 12:00 AM	5/26/23 12:00 AM
3346770	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	5/26/23 12:00 AM	5/26/23 12:00 AM
3355411		5901, Omemee Lagoon	PM	Inspection	Lifting Devices & Fall Arrest Inspection by Contractor (1y) - 5901 - KTS	12/14/23 02:11 PM	12/14/23 02:11 PM
3365034		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	5/26/23 12:00 AM	5/26/23 12:00 AM
3366920		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	5/16/23 12:00 AM	5/16/23 12:00 AM

3390580		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	6/29/23 12:00 AM	6/29/23 12:00 AM
3390582	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	6/29/23 12:00 AM	6/29/23 12:00 AM
3390589	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	6/29/23 12:00 AM	6/29/23 12:00 AM
3391845		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	6/29/23 12:00 AM	6/29/23 12:00 AM
3392588	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	6/29/23 12:00 AM	6/29/23 12:00 AM
3392607	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	6/29/23 12:00 AM	6/29/23 12:00 AM
3392614	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	6/29/23 12:00 AM	6/29/23 12:00 AM
3407223		5901, Sturgeon SPS	PM	Refurbish/ Replace/ Repair	Drive VFD Insp (1y) - 5901 - KTS	12/14/23 02:28 PM	12/14/23 02:28 PM
3412394		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	6/29/23 12:00 AM	6/29/23 12:00 AM
3413267		5901, Omemee Lagoon	PM	Inspection	Aeration Pod Inspection & Cleaning (1y) - 5901 - KTS	11/23/23 12:00 AM	11/23/23 12:00 AM
3414209		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	6/8/23 12:00 AM	6/8/23 12:00 AM
3439424		5901, Omemee Lagoon	OPER	Health and Safety	Corporate Facility Workplace H & S Inspection (3m) - 5901 - KTS	7/26/23 12:00 AM	7/26/23 12:00 AM
3439431		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	7/1/23 12:00 AM	7/31/23 12:00 AM

3439433	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	7/26/23 12:00 AM	7/26/23 12:00 AM
3439440	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	7/26/23 12:00 AM	7/26/23 12:00 AM
3440842		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	7/26/23 12:00 AM	7/26/23 12:00 AM
3440845		5901, Omemee Lagoon	PM	Inspection	Water Well Inspection (3m) - 5901 Lagoon Monitoring Wells - KTS	7/5/23 12:00 AM	7/5/23 12:00 AM
3441537	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	7/26/23 12:00 AM	7/26/23 12:00 AM
3441556	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	7/26/23 12:00 AM	7/26/23 12:00 AM
3441563	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	7/26/23 12:00 AM	7/26/23 12:00 AM
3459786		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	7/26/23 12:00 AM	7/26/23 12:00 AM
3461910		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	8/2/23 12:00 AM	8/2/23 12:00 AM
3463068		5901, Omemee Lagoon	PM	Inspection	Well Level Monitoring & Sampling POO# 1-L4E0C (3m) – 5901 – KTS	7/5/23 12:00 AM	7/5/23 12:00 AM
3487004		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	8/1/23 12:00 AM	8/31/23 12:00 AM
3487006	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	8/22/23 12:00 AM	8/22/23 12:00 AM
3487013	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	8/22/23 12:00 AM	8/22/23 12:00 AM

3488265		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	8/22/23 12:00 AM	8/22/23 12:00 AM
3488718	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	8/22/23 12:00 AM	8/22/23 12:00 AM
3488737	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	8/22/23 12:00 AM	8/22/23 12:00 AM
3488744	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	8/22/23 12:00 AM	8/22/23 12:00 AM
3505545		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	8/22/23 12:00 AM	8/22/23 12:00 AM
3507227		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	8/18/23 03:27 PM	8/18/23 03:27 PM
3530437		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	11/15/23 02:00 PM	11/15/23 02:00 PM
3530439	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	9/27/23 12:00 AM	9/27/23 12:00 AM
3530446	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	9/27/23 12:00 AM	9/27/23 12:00 AM
3531675		5901, Omemee Lagoon	PM	Calibration	Online Process Equipment Calibration Service by Contractor (1y) - 5901 - KTS	11/14/23 07:11 AM	11/14/23 07:11 AM
3531680		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	9/27/23 12:00 AM	9/27/23 12:00 AM
3532238	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Refurbish/ Replace/ Repair	Engine Diesel Inspection/Service by Contractor (1y) - 5901 Sturgeon - KTS	10/31/23 12:00 AM	10/31/23 12:00 AM

3532857	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	9/27/23 12:00 AM	9/27/23 12:00 AM
3532876	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Refurbish/ Replace/ Repair	Engine Diesel Inspection/Service by Contractor (1y) - 5901 Church - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM
3532882	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	9/27/23 12:00 AM	9/27/23 12:00 AM
3532889	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	9/27/23 12:00 AM	9/27/23 12:00 AM
3551159		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	9/27/23 12:00 AM	9/27/23 12:00 AM
3553171		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	9/12/23 12:00 AM	9/12/23 12:00 AM
3562829	METER FLOW LAGOON 1	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Calibration	Meter Flow Lagoon 1 Calibration (1y) 5901	11/14/23 07:05 AM	11/14/23 07:05 AM
3562835	METER FLOW LAGOON 2	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Calibration	Meter Flow Lagoon 2 Calibration (1y) 5901	11/14/23 07:06 AM	11/14/23 07:06 AM
3562841	METER FLOW LAGOON 3	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Calibration	Meter Flow Lagoon 3 Calibration (1y) 5901	11/14/23 07:07 AM	11/14/23 07:07 AM
3562847	METER FLOW SPRAY FLOW LAGOON	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Calibration	Meter Flow Spray Flow Lagoon Calibration (1y) 5901	11/14/23 07:08 AM	11/14/23 07:08 AM
3562853	METER FLOW FIT 104 LAGOON #4	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Calibration	Meter Flow FIT-104 Lagoon #4 Calibration (1y) 5901	11/14/23 07:09 AM	11/14/23 07:09 AM
3577921		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Heater Unit Insp. (1y) - 5901 Lagoon- KTS	11/1/23 12:00 AM	11/1/23 12:00 AM

3578974		5901, Omemee Lagoon	OPER	Health and Safety	Corporate Facility Workplace H & S Inspection (3m) - 5901 - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM
3578981		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM
3578983	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM
3578990	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM
3580445		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM
3580448		5901, Omemee Lagoon	PM	Inspection	Water Well Inspection (3m) - 5901 Lagoon Monitoring Wells - KTS	10/17/23 12:00 AM	10/17/23 12:00 AM
3580779	TANK PROCESS WETWELL [STURGEON ST]	5901, Sturgeon SPS, Process	PM	Refurbish/ Replace/ Repair	Tank Wetwell Cleaning/Inspection (6m) - 5901 Sturgeon - KTS	11/16/23 12:00 AM	11/16/23 12:00 AM
3581380	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM
3581399	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM
3581406	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM
3582861	TANK PROCESS WETWELL [CHURCH ST]	5901, Church SPS, Process	PM	Refurbish/ Replace/ Repair	Tank Wetwell Cleaning/Inspection (6m) - 5901 Church - KTS	11/16/23 12:00 AM	11/16/23 12:00 AM
3597483		5901, Omemee Lagoon	PM	Inspection	UPS Insp/Service (1y) - 5901 - KTS	2/29/24 12:56 PM	2/29/24 12:56 PM
3600202		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	11/1/23 12:00 AM	11/1/23 12:00 AM

3602541		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	10/24/23 12:00 AM	10/24/23 12:00 AM
3603681		5901, Omemee Lagoon	PM	Inspection	Well Level Monitoring & Sampling POO# 1-L4E0C (3m) – 5901 – KTS	11/2/23 12:35 PM	11/2/23 12:35 PM
3628177		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	11/1/23 12:00 AM	11/30/23 12:00 AM
3628179	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	11/30/23 12:00 AM	11/30/23 12:00 AM
3628186	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	11/30/23 12:00 AM	11/30/23 12:00 AM
3629392		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	11/30/23 12:00 AM	11/30/23 12:00 AM
3629483	FILTER CARBON ODOUR CONTROL CANNISTER [STURGEON]	5901, Sturgeon SPS, Process, Tertiary Treatment, Filtration	PM	Inspection	Filter Carbon Insp. (1y) - 5901 Sturgeon - KTS	1/1/23 12:00 AM	12/31/23 12:00 AM
3629492	FILTER CARBON ODOUR CONTROL CANISTER [STURGEON]	5901, Sturgeon SPS, Process, Tertiary Treatment, Filtration	PM	Inspection	Filter Carbon Insp. (1y) - 5901 Sturgeon - KTS	1/1/23 12:00 AM	12/31/23 12:00 AM
3629889	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	11/30/23 12:00 AM	11/30/23 12:00 AM
3629908	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	11/30/23 12:00 AM	11/30/23 12:00 AM
3629915	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	11/30/23 12:00 AM	11/30/23 12:00 AM
3645619		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	11/30/23 12:00 AM	11/30/23 12:00 AM

3647329		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	11/9/23 12:00 PM	11/9/23 01:00 PM
3669394		5901, Omemee Lagoon	PM	Inspection	Building and Grounds Maintenance (1m) - 5901 - KTS	12/20/23 12:00 AM	12/20/23 12:00 AM
3669396	PANEL ALARM/DIALER [STURGEON]	5901, Sturgeon SPS, Facility, IT Equipment	PM	Inspection	Alarm Dialer (1m) - 5901 Sturgeon - KTS	12/20/23 12:00 AM	12/20/23 12:00 AM
3669403	ENGINE DIESEL GENERATOR [STURGEON]	5901, Sturgeon SPS, Facility, Power Generation, Engines	PM	Inspection	Engine Diesel (1m) - 5901 Sturgeon - KTS	12/20/23 12:00 AM	12/20/23 12:00 AM
3670573		5901, Omemee Lagoon	PM	Refurbish/ Replace/ Repair	Tank Alum Inspection (1m) - 5901 - KTS	12/20/23 12:00 AM	12/20/23 12:00 AM
3671044	ENGINE DIESEL GENERATOR [CHURCH ST]	5901, Church SPS, Facility, Power Generation, Backup Power	PM	Inspection	Engine Diesel (1m) - 5901 Church - KTS	12/20/23 12:00 AM	12/20/23 12:00 AM
3671063	PANEL ALARM/DIALER [CHURCH]	5901, Church SPS, Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Church - KTS	12/20/23 12:00 AM	12/20/23 12:00 AM
3671070	PANEL ALARM/DIALER [LAGOON]	5901, Omemee Lagoon , Process, Process Control & Monitoring	PM	Inspection	Alarm Dialer (1m) - 5901 Lagoon - KTS	12/20/23 12:00 AM	12/20/23 12:00 AM
3687136		5901, Omemee Lagoon	PM	Health and Safety	HS03 H & S Equipment Check (1m) - 5901 - KTS	12/20/23 12:00 AM	12/20/23 12:00 AM
3688779		5901, Omemee Lagoon	OPER	Compliance	Operator PDM Entry & Review (1m) - 5901 - KTS	12/20/23 02:49 PM	12/20/23 02:49 PM

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix IV:

Calibration Reports

Franklin Empire Inc,
550 Braidwood Ave
Peterborough ON K9J 1W1, CANADA

Tel: (705) 745-1626
Fax: (705) 745-3493

OCWA Kawartha

Omemee SPS and Lagoon Flows 2023

CALIBRATION REPORT

Report No.: OCWA 23 FIT Lagoon

Date: 9-Nov-23

SITE:	Omemee Lagoon
PROCESS AREA:	Flow to spray system
INSTR. TAG:	FIT Lagoon
MANUFACTURER:	Krohne
MODEL:	IFC010
SERIAL No.:	00177980
OCWA Code:	0000291043

SERVICE DATE:	November 9, 2023
TECHNICIAN:	MM
JOB REFERENCE:	OCWA 23

Input	**(Test)**
Type:	GS 8 (X val)
Min:	0.00
Max:	11.41
DN (mm):	200
GK=1 GKL=2	2
GK:	4.575
Constant:	4177.44

Output	**(Signal)**	**(Process)**
Type or EGU:	mA	Liter/sec
Min:	4.00	0.00
Max:	20.00	250.00
	95.1 ohms	open to ground

			Before Calibration		**After Calibration**	
Input (Y pos)	**Knob Setting**	**Calc. O/P (mA)**	**Output (mA)**	**%Error**	**Output (mA)**	**%Error**
0.00	0	4.00	4.00	0.00%	4.00	0.00%
0.50	A	4.70	4.69	-0.21%	4.69	-0.21%
1.00	B	5.40	5.39	-0.19%	5.39	-0.19%
2.00	C	6.80	6.80	0.00%	6.79	-0.15%
5.00	D	11.01	11.01	0.00%	11.01	0.00%
10.00	E	18.02	18.03	0.06%	18.03	0.06%

Calibration Equipment			
Type:	DMM	Simulator	
Manufacturer:	Fluke	Krohne	
Model:	Model 87	GS 8B	
Serial No.:	13440128	U1127700020705	
Last Cal. Date:	Feb. 17, 2023	Mar. 27, 2023	

Comments:

AS FOUND: PASS **AS LEFT:** PASS

CERTIFIED BY:

Flowmeter Verification Certificate Transmitter

OCWA Kawartha	Omemee Sewage
Customer	Plant
Church St SPS	--------
Order code	Tag Name
PROMAG 53 P DN200	1.0162 - 1.0162
Device type	K-Factor
H6027B16000	1
Serial number	Zero point
V2.03.00	V1.05.03
Software Version Transmitter	Software Version I/O-Module
04.11.2023	23:35
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
550149	
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
04/2023	04/2023
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

FieldCheck - Result Tab Transmitter

Customer	**OCWA Kawartha**	Plant	**Omemee Sewage**
Order code	**Church St SPS**	Tag Name	**--------**
Device type	**PROMAG 53 P DN200**	K-Factor	**1.0162 - 1.0162**
Serial number	**H6027B16000**	Zero point	**1**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**04.11.2023**	Verification time	**23:35**

Verification Flow end value (100 %): 125.664 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	6.283 l/s (5%)	1.50 %	0.71 %
✓		12.566 l/s (10.0%)	1.00 %	0.05 %
✓		62.832 l/s (50.0%)	0.60 %	0.05 %
✓		125.665 l/s (100%)	0.55 %	0.04 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.002 mA
✓		4.800 mA (5%)	0.05 mA	0.002 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.007 mA
✓		12.000 mA (50.0%)	0.05 mA	0.017 mA
✓		20.000 mA (100%)	0.05 mA	0.043 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	13.300 ms	0.000..27.625 ms	18.583 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	29.503 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer	**OCWA Kawartha**	Plant	**Omemee Sewage**
Order code	**Church St SPS**	Tag Name	**--------**
Device type	**PROMAG 53 P DN200**	K-Factor	**1.0162 - 1.0162**
Serial number	**H6027B16000**	Zero point	**1**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**04.11.2023**	Verification time	**23:35**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA active	0.0 l/s	100.01 l/s		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	50.000 l/P	Passive/Positive	100.01 ms		

Actual System Ident. 107.0

Flowmeter Verification Certificate Transmitter

OCWA Kawartha	Omemee Sewage
Customer	Plant
Sturgeon St SPS	--------
Order code	Tag Name
PROMAG 53 P DN300	1.2756 - 1.2756
Device type	K-Factor
H6027C16000	-2
Serial number	Zero point
V2.03.00	V1.05.03
Software Version Transmitter	Software Version I/O-Module
04.11.2023	23:56
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
550149	
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
04/2023	04/2023
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

FieldCheck - Result Tab Transmitter

Customer	**OCWA Kawartha**	Plant	**Omemee Sewage**
Order code	**Sturgeon St SPS**	Tag Name	**--------**
Device type	**PROMAG 53 P DN300**	K-Factor	**1.2756 - 1.2756**
Serial number	**H6027C16000**	Zero point	**-2**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**04.11.2023**	Verification time	**23:56**

Verification Flow end value (100 %): 282.743 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	14.137 l/s (5%)	1.50 %	0.72 %
✓		28.274 l/s (10.0%)	1.00 %	0.70 %
✓		141.373 l/s (50.0%)	0.60 %	0.09 %
✓		282.744 l/s (100%)	0.55 %	0.06 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	-0.000 mA
✓		4.800 mA (5%)	0.05 mA	-0.000 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.011 mA
✓		12.000 mA (50.0%)	0.05 mA	0.008 mA
✓		20.000 mA (100%)	0.05 mA	0.025 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	18.100 ms	0.000..36.625 ms	23.338 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	13.121 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer	**OCWA Kawartha**	Plant	**Omemee Sewage**
Order code	**Sturgeon St SPS**	Tag Name	**--------**
Device type	**PROMAG 53 P DN300**	K-Factor	**1.2756 - 1.2756**
Serial number	**H6027C16000**	Zero point	**-2**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**04.11.2023**	Verification time	**23:56**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA active	0.0 l/s	200.01 l/s		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	100.001 l/P	Passive/Positive	100.01 ms		

Actual System Ident. 107.0

Flowmeter Verification Certificate Transmitter

OCWA Kawartha	Omemee Lagoons
Customer	Plant
Pump 1	--------
Order code	Tag Name
PROMAG 53 W DN100	1.2394 - 1.2394
Device type	K-Factor
H607FA16000	6
Serial number	Zero point
V2.03.00	V1.05.03
Software Version Transmitter	Software Version I/O-Module
05.11.2023	00:38
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
550149	
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
04/2023	04/2023
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

FieldCheck - Result Tab Transmitter

Customer	**OCWA Kawartha**	Plant	**Omemee Lagoons**
Order code	**Pump 1**	Tag Name	**--------**
Device type	**PROMAG 53 W DN100**	K-Factor	**1.2394 - 1.2394**
Serial number	**H607FA16000**	Zero point	**6**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**05.11.2023**	Verification time	**00:38**

Verification Flow end value (100 %): 31.416 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	1.571 l/s (5%)	1.50 %	0.68 %
✓		3.142 l/s (10.0%)	1.00 %	0.78 %
✓		15.708 l/s (50.0%)	0.60 %	0.11 %
✓		31.416 l/s (100%)	0.55 %	0.07 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.000 mA
✓		4.800 mA (5%)	0.05 mA	0.001 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.012 mA
✓		12.000 mA (50.0%)	0.05 mA	0.011 mA
✓		20.000 mA (100%)	0.05 mA	0.025 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	5.000 ms	0.000..14.250 ms	6.449 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	6.544 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer	**OCWA Kawartha**	Plant	**Omemee Lagoons**
Order code	**Pump 1**	Tag Name	**--------**
Device type	**PROMAG 53 W DN100**	K-Factor	**1.2394 - 1.2394**
Serial number	**H607FA16000**	Zero point	**6**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**05.11.2023**	Verification time	**00:38**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA active	0.0 l/s	10.00 l/s		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	5.000 l/P	Passive/Positive	100.01 ms		

Actual System Ident. 115.0

Flowmeter Verification Certificate Transmitter

OCWA Kawartha	Omemee Lagoons
Customer	Plant
Pump #2	--------
Order code	Tag Name
PROMAG 53 W DN100	1.2614 - 1.2614
Device type	K-Factor
H607FB16000	-15
Serial number	Zero point
V2.03.00	V1.05.03
Software Version Transmitter	Software Version I/O-Module
05.11.2023	01:02
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
550149	
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
04/2023	04/2023
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

Endress+Hauser
People for Process Automation

FieldCheck - Result Tab Transmitter

Customer	**OCWA Kawartha**
Order code	**Pump #2**
Device type	**PROMAG 53 W DN100**
Serial number	**H607FB16000**
Software Version Transmitter	**V2.03.00**
Verification date	**05.11.2023**

Plant	**Omemee Lagoons**
Tag Name	**--------**
K-Factor	**1.2614 - 1.2614**
Zero point	**-15**
Software Version I/O-Module	**V1.05.03**
Verification time	**01:02**

Verification Flow end value (100 %): 31.416 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	1.571 l/s (5%)	1.50 %	0.68 %
✓		3.142 l/s (10.0%)	1.00 %	0.71 %
✓		15.708 l/s (50.0%)	0.60 %	0.08 %
✓		31.416 l/s (100%)	0.55 %	0.05 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.001 mA
✓		4.800 mA (5%)	0.05 mA	0.000 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.010 mA
✓		12.000 mA (50.0%)	0.05 mA	0.009 mA
✓		20.000 mA (100%)	0.05 mA	0.018 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	5.000 ms	0.000..14.250 ms	6.266 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	183.814 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer	**OCWA Kawartha**	Plant	**Omemee Lagoons**
Order code	**Pump #2**	Tag Name	**--------**
Device type	**PROMAG 53 W DN100**	K-Factor	**1.2614 - 1.2614**
Serial number	**H607FB16000**	Zero point	**-15**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**05.11.2023**	Verification time	**01:02**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA active	0.0 l/s	10.00 l/s		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	5.000 l/P	Passive/Positive	100.01 ms		

Actual System Ident. 119.0

Flowmeter Verification Certificate Transmitter

OCWA Kawartha	Omemee Lagoons
Customer	Plant
Pump 3	--------
Order code	Tag Name
PROMAG 53 W DN100	1.2518 - 1.2518
Device type	K-Factor
H607FC16000	5
Serial number	Zero point
V2.03.00	V1.05.03
Software Version Transmitter	Software Version I/O-Module
05.11.2023	01:20
Verification date	Verification time

Verification result Transmitter: Passed

Test item	Result	Applied Limits
Amplifier	Passed	Basis: 0.55 %
Current Output 1	Passed	0.05 mA
Pulse Output 1	Not tested	0 P
Test Sensor	Passed	

FieldCheck Details	**Simubox Details**
550149	
Production number	Production number
1.07.10	1.00.01
Software Version	Software Version
04/2023	04/2023
Last Calibration Date	Last Calibration Date

Date Operator's Sign Inspector's Sign

Overall results:

The achieved test results show that the instrumment is completely functional, and the measuring results lie within +/- 1% of the original calibration. [1)]

The calibration of the Fieldcheck test system is fully traceable to national standards.

1) Prerequisite is an additional proof of electrode integrity with a high voltage test.

FieldCheck - Result Tab Transmitter

Customer	**OCWA Kawartha**	Plant	**Omemee Lagoons**
Order code	**Pump 3**	Tag Name	**--------**
Device type	**PROMAG 53 W DN100**	K-Factor	**1.2518 - 1.2518**
Serial number	**H607FC16000**	Zero point	**5**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**05.11.2023**	Verification time	**01:20**

Verification Flow end value (100 %): 31.416 l/s
Flow speed 4.00 m/s

Passed / Failed	Test item	Simul. Signal	Limit Value	Deviation
	Test Transmitter			
✓	Amplifier	1.571 l/s (5%)	1.50 %	0.74 %
✓		3.142 l/s (10.0%)	1.00 %	0.70 %
✓		15.708 l/s (50.0%)	0.60 %	0.09 %
✓		31.416 l/s (100%)	0.55 %	0.07 %
✓	Current Output 1	4.000 mA (0%)	0.05 mA	0.000 mA
✓		4.800 mA (5%)	0.05 mA	0.001 mA
✓		5.600 mA (10.0%)	0.05 mA	-0.010 mA
✓		12.000 mA (50.0%)	0.05 mA	0.009 mA
✓		20.000 mA (100%)	0.05 mA	0.018 mA
–	Pulse Output 1	---	---	---
		Start value	**Limits range**	**Measured value**
	Test Sensor			
✓	Coil Curr. Rise	5.000 ms	0.000..14.250 ms	6.361 ms
✓	Coil Curr. Stability		---	---
✓	Electrode Integrity	mV	0.0..300.001 mV	29.512 mV

Legend of symbols

✓	✗	–	?	!
Passed	Failed	not tested	not testable	Attention

FieldCheck: Parameters Transmitter

Customer	**OCWA Kawartha**	Plant	**Omemee Lagoons**
Order code	**Pump 3**	Tag Name	**--------**
Device type	**PROMAG 53 W DN100**	K-Factor	**1.2518 - 1.2518**
Serial number	**H607FC16000**	Zero point	**5**
Software Version Transmitter	**V2.03.00**	Software Version I/O-Module	**V1.05.03**
Verification date	**05.11.2023**	Verification time	**01:20**

Curent Output	**Assign**	**Current Range**	**Value 0_4mA**	**Value 20 mA**		
Terminal 26/27	VOLUME FLOW	4-20 mA active	0.0 l/s	10.00 l/s		
Pulse Output	**Assign**	**Pulse Value**	**Output signal**	**Pulse width**		
Terminal 24/25	VOLUME FLOW	5.000 l/P	Passive/Positive	100.01 ms		

Actual System Ident. 119.0

SIEMENS MAGFLO® Verification Certificate

Customer:

Name	OCWA Kawartha
Address	Omemee WW
Phone	
Email	

MAGFLO® Identification:

TAG No./Name	0
Sensor Code No.	7ME658
Sensor Serial No.	PBD-MN174541
Transmitter Code No.	7ME691
Transmitter Serial No.	N1L9110136
Location	Pump 4

Results:

Verification file name or No.		Pump 4 Flow
Transmitter		Passed
Sensor	Insulation	Passed
	Magnetic Circuit	Passed

Velocity	Current Output			Frequency Output		
Theoretical	Theoretical	Actual	Deviation	Theoretical	Actual	Deviation
0.5m/s	4.800mA	4.803mA	0.41%	0.500kHz	0.501kHz	0.18%
1.0m/s	5.600mA	5.602mA	0.13%	1.000kHz	1.000kHz	0.03%
3.0m/s	8.800mA	8.805mA	0.10%	3.000kHz	3.003kHz	0.08%

Current Output 4-20mA Frequency Output 0-10kHz

Transmitter Settings:

Basic	Qmax.	10.0000 l/s
	Flow Direction	Positive
	Low flow Cut-off	1.50%
	Empty Pipe	ON
Output	Current Output	ON (4-20mA)
	Time Constant	5.0 Sec.
	Relay Output	Error Level
	Digital Output	Pulse
	Frequency Range	N/A
	Time Constant	N/A
	Volume/pulse	5.0 l/p
	Pulse width	0.066 sec.
	Pulse polarity	Positiv
Totalizer 1 value before test		241854.828125 m³
Totalizer 1 value after test		241854.859375 m³
Totalizer 2 value before test		5.16744184 m³
Totalizer 2 value after test		5.16744566 m³
Operating time in days		1046

Sensor Details:

Size	DN 100 4 IN
Cal. Factor	7.70578146
Correction Factor	1.0
Excitation Freq.	7.5Hz

Verificator Details (083F5061)

Serial No.	000811N218
Device No.	91739
Software Version	1.40
PC-Software Version	5.01
Cal. date	2022.12.29
ReCal. date	2023.12.29

Comments

These tests verify that the flowmeter is functioning within 2% deviation of the original test parameters.

Verification is traceable to National and International Standards.

Date and signature

2023.11.09 M Manley

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Appendix V:

Monitoring Wells

Ontario Clean Water Agency
Time Series Info Report

From: **01/01/2023 to 31/12/2023**

Facility Org Number: 5901
Facility Works Number: 110001630
Facility Name: OMEMEE WASTEWATER TREATMENT LAGOON
Facility Owner: Municipality: City of Kawartha Lakes
Facility Classification: Class 1 Wastewater Treatment
Receiver: Subsurface
Service Population: 1220.0
Total Design Capacity: 10540.0 m3/day

	01/2023	02/2023	03/2023	04/2023	05/2023	06/2023	07/2023	08/2023	09/2023	10/2023	11/2023	12/2023
MW1 / Well Level - m												
Total IH			2.03			2.46				2.85		
MW101B / Well Level - m												
Total IH			2.67			2.26				2.77		
MW102B / Well Level - m												
Total IH			9.45			9.16				9.89		
MW103 / Well Level - m												
Total IH			2.47			2.34				2.72		
MW104B / Well Level - m												
Total IH			6.24			5.54				6.59		
MW105B / Well Level - m												
Total IH			6.69			6.15				6.78		
MW106B / Well Level - m												
Total IH			2.58			2.15				2.82		
MW107B / Well Level - m												
Total IH			4.8			5.4				7.65		
MW108B / Well Level - m												
Total IH			6.6			6.44				7.1		
MW109B / Well Level - m												
Total IH			2.75			2				2.55		
MW110 / Well Level - m												
Total IH			16.6			16.55				16.7		
MW111B / Well Level - m												
Total IH			20.74			20.34				20.82		
MW113B / Well Level - m												
Total IH			19.45			19.2				15.55		
MW114B / Well Level - m												
Total IH			5.26			4.95				5.74		
MW115B / Well Level - m												
Total IH			1.43			2.07				2.73		
MW2 / Well Level - m												
Total IH			6.27									

Omemee Sewage Lagoons
Groundwater Monitoring Program

MW-1 (A148770)	09-Jan-19	03-Apr-19	18-Jul-19	23-Oct-19	22-Jan-20	13-May-20	28-Jul-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS	157	191	226	269	246	234	220	231	211	194	269	237	211	211
Conductivity						409	370	367	319	353	444	341	349	275
DOC	1	1	1	1	1	1	1	2	2					
pH	7.75	8.01	7.74	7.78	7.85	7.86	7.92	8.1	7.98	8.17	7.78	7.75	8.13	8.25
BOD	<4	4	<4	<4	<4	<4	<4	<4	<4					
COD	<8	18	<8	8	<8	<8	<8	<8	<8					
Nitrate (N)	0.32	<0.06	0.09	0.66	0.29	0.25	0.36	0.46	0.38	0.32	0.79	0.84	0.16	0.14
Nitrite (N)	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9	<0.5
Hardness	3180	4390	530	1730	5670	2020	1540	6040	498	351	845	1100	1030	3050
TP	3.15	3.91	0.003	<0.03	<0.003	<0.003	0.003	<0.003	0.068	<0.003	<0.003	0.013	<0.003	<0.003
TC	0	12	30	2	<5	<10	5	20	<2					
EC	0	0	<5	<2	<5	<10	<5	<5	0					
Ammonia (N)	N/A	N/A	0.1	0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

MW-2 (A148769)		03-Apr-19	18-Jul-19	27-Nov-19	22-Jan-20	13-May-20	28-Jul-20	04-Nov-20	08-Dec-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	10-Mar-22
TDS		231	Well not	Dry Well	260	451	Well not	Dry Well	Dry Well	Dry Well	249	Well not	Dry Well	Dry Well
Conductivity			accessible			827	accessible				459	accessible		
DOC		2			1	1								
pH		8.01			7.56	7.61					8.06			
BOD		4			<4	<4								
COD		37			<8	<8								
Nitrate (N)		2.02			1.6	1.64					1.14			
Nitrite (N)		<0.03			<0.03	<0.03					<0.03			
TKN		1.2			0.7	<0.5					<0.5			
Hardness		1270			375	694					349			
TP		0.99			0.008	<0.003					<0.003			
TC		<20			<5	<5								
EC		<20			<5	<5								
Ammonia (N)		N/A			<0.1	<0.1					<0.1			

Omemee Sewage Lagoons
Groundwater Monitoring Program

MW-101B		17-Feb-11	18-Jul-19	25-Oct-19	23-Jan-20	13-May-20	01-Sep-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	17-Mar-22	22-Jun-22
TDS		203	200	200	191	169	194	177	160	154	223	186	197	229
Conductivity						305	307	307	272	289	299	256	299	319
DOC		<1.0	<1	<1	<1	<1	<1	<1	1					
pH		8.09	7.91	7.69	7.7	7.89	7.77	8.13	7.94	8.14	7.99	7.76	7.73	8.22
BOD		<2	<4	<4	<4	<4	<4	<4	<4					
COD		17	<8	<8	11	<8	<8	<8	<8					
Nitrate (N)		0.24	0.09	0.09	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		187	1810	1530	431	3160	3130	2480	1320	1910	1480	797	1030	3010
TP		<0.009	0.003	<0.03	0.007	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	0.005	<0.003	<0.003
TC		<2	<5	2	<5	<10	<20	<5	<20					
EC		<2	<5	1	<5	<10	<20	<5	<20					
Ammonia (N)		0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

MW-102B		23-Nov-09	23-Aug-19	25-Oct-19	22-Jan-20	25-Feb-20	13-May-20	28-Jul-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	17-Mar-22
TDS		277	360	331	Dry Well	Dry Well	Dry Well	309	329	331	360	389	337	323
Conductivity								538	549	488	537	527	461	525
DOC		2.3	1	<1				<1	1	1				
pH		7.89	7.75	7.59				7.82	7.72	7.7	8.03	7.71	7.48	7.49
BOD		15	<4	<4				<4	4	<4				
COD		24	9	<8				<8	<8	8				
Nitrate (N)		<0.05	0.15	0.22				0.11	0.16	0.14	0.16	0.15	0.22	<0.03
Nitrite (N)		<0.06	<0.03	<0.03				<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.19
TKN		<0.5	<0.5	<0.5				<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		217	13300	16400				1340	1670	2270	770	1230	384	1670
TP		<0.01	<0.003	<0.03				<0.003	<0.003	<0.003	<0.003	0.027	0.009	<0.003
TC		120	820	156				<20	8	<20				
EC		<2	<20	<2				<20	<2	<20				
Ammonia (N)		<0.1	0.2	0.1				<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Omemee Sewage Lagoons
Groundwater Monitoring Program

MW-103		17-Feb-11	16-Jul-19	23-Oct-19	23-Jan-20	12-May-20	28-Jul-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		329	374	351	349	406	329	337	349	303	374	311	297	360
Conductivity						495	550	558	507	556	551	459	509	533
DOC		<1.0	1	<1	1	1	1	1	1					
pH		7.89	7.48	7.77	7.48	7.59	7.75	8.02	7.79	8.02	7.76	7.52	8.11	8.09
BOD		<2	<4	<4	<4	<4	<4	<4	<4					
COD		17	8	<8	<8	<8	<8	<8	<8					
Nitrate (N)		4.8	6.14	7.00	6.57	5.45	7.1	7.91	7.51	7.16	8.16	7.82	3.93	7.39
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		<0.5	0.9	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		315	3500	1280	849	486	2000	1520	2610	440	1000	2220	786	5550
TP		<0.009	<0.003	0.12	0.004	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
TC		<2	<5	14	<5	0	<5	<5	<20					
EC		<2	<5	<2	<5	0	<5	<5	<20					
Ammonia (N)		<0.1	<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

MW-104B		17-Feb-11	16-Jul-19	23-Oct-19	22-Jan-20	13-May-20	28-Jul-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	17-Mar-22	22-Jun-22
TDS		377	451	403	354	363	374	349	360	383	394	346	369	374
Conductivity						617	603	614	539	589	587	498	601	581
DOC		1.6	2	<1	1	1	1	1	1					
pH		7.86	7.52	7.58	7.26	7.43	7.51	7.95	7.63	7.92	7.34	7.36	7.34	8.1
BOD		<2	5	<4	<4	<4	<4	<4	<4					
COD		16	<8	<8	<8	<8	<8	<8	<8					
Nitrate (N)		<0.05	0.08	0.31	0.35	0.39	0.35	0.32	0.32	0.28	0.29	0.26	0.33	0.36
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		<0.5	0.9	<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		358	12300	1890	504	3830	1660	1190	2410	959	1110	499	823	621
TP		<0.009	0.004	<0.03	<0.003	<0.003	<0.003	<0.003	<0.003	0.005	0.003	<0.003	<0.003	0.006
TC		<2	200	440	<5	<10	5	<2	<20					
EC		<2	<20	<20	<5	<10	<5	<2	<20					
Ammonia (N)		<0.1	0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Omemee Sewage Lagoons
Groundwater Monitoring Program

MW-105B		17-Feb-11	18-Jul-19	23-Oct-19	22-Jan-20	13-May-20	28-Jul-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		286	411	383	409	394	443	417	434	451	451	397	414	471
Conductivity						626	605	623	572	631	615	530	626	618
DOC		<1.0	2	<1	1	1	1	1	1					
pH		7.96	7.63	7.76	7.49	7.56	7.8	8.02	7.74	8	7.63	7.53	8.09	8.12
BOD		<2	<4	<4	<4	<4	<4	<4	<4					
COD		14	<8	<8	16	<8	<8	<8	<8					
Nitrate (N)		1.28	13.4	14.4	17.7	18.3	18.1	18.8	21	21.7	20.7	21.9	20.6	22.4
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		0.9	1.4	<0.5	<0.5	0.5	<0.5	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		255	1790	1300	1220	575	1090	1360	1040	821	957	706	2340	1130
TP		<0.009	0.003	0.04	<0.003	<0.003	<0.003	<0.003	0.192	<0.003	<0.003	0.004	<0.003	<0.003
TC		<2	<5	100	<5	<5	<5	5	<5					
EC		<2	<5	<20	<5	<5	<5	<5	<5					
Ammonia (N)		0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

MW-106B		17-Feb-11	18-Jul-19	23-Oct-19	22-Jan-20	13-May-20	28-Jul-20	05-Nov-20	23-Feb-21	14-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		266	329	306	306	291	283	294	286	343	371	311	314	371
Conductivity						481	458	455	435	479	471	433	515	510
DOC		<1.0	1	1	1	1	1	<1	1					
pH		8.08	7.82	7.92	7.86	7.90	7.95	7.94	7.84	7.82	7.9	7.79	8.11	8.21
BOD		7	<4	<4	8	<4	<4	<4	<4					
COD		18	<8	<8	<8	<8	<8	<8	<8					
Nitrate (N)		<0.05	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		<0.5	<0.5	<0.5	1.3	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		242	12900	2650	13200	2560	6870	3210	12700	2460	1930	550	6060	8210
TP		0.065	0.019	<0.03	6.48	0.018	0.003	<0.003	<0.003	0.023	<0.003	0.008	0.004	0.006
TC		<2	<20	<100	<5	<10	<5	20	<20					
EC		<2	<20	<20	<5	<10	<5	<20	<20					
Ammonia (N)		0.3	0.2	0.2	0.1	0.1	0.1	0.1	<0.1	0.1	0.1	0.2	<0.1	<0.1

Omemee Sewage Lagoons
Groundwater Monitoring Program

MW-107B		17-Feb-11	18-Jul-19	25-Oct-19	22-Jan-20	25-Feb-20	13-May-20	28-Jul-20	05-Nov-20	23-Feb-21	14-May-21	19-Aug-21	23-Nov-21	10-Mar-22
TDS		343	443	454	Dry Well	394	414	420	411	431	480	471	440	397
Conductivity							651	622	597	570	629	628	541	685
DOC		<1.0	1	<1		1	1	1	<1	1				
pH		7.97	7.66	7.57		7.61	7.77	7.72	7.82	7.85	7.75	7.75	7.51	8.11
BOD		3	<4	<4		<4	<4	<4	<4	<4				
COD		17	<8	<8		<8	<8	14	<8	8				
Nitrate (N)		<0.05	<0.06	<0.06		<0.06	<0.06	<0.06	<0.06	<0.06	0.08	<0.06	<0.06	<0.06
Nitrite (N)		<0.06	<0.03	<0.03		<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		<0.5	<0.5	<0.5		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		296	11700	6520		4010	3830	3550	3320	2020	2550	1120	420	1170
TP		<0.009	<0.003	<0.03		<0.003	<0.003	<0.003	<0.003	<0.003	0.039	<0.003	0.014	<0.003
TC		<2	<20	<2		<5	<10	100	<5	520				
EC		<2	<20	<2		<5	<10	10	<5	<5				
Ammonia (N)		0.1	0.1	0.1		<0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

MW-108B		17-Feb-11	23-Aug-19	23-Oct-19	23-Jan-20	13-May-20	01-Sep-20	05-Nov-20	23-Feb-21	14-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		186	263	569	297	289	274	286	269	300	303	283	260	289
Conductivity						485	477	458	415	461	455	393	483	466
DOC		1.2	<1	<1	<1	<1	1	<1	1					
pH		8.2	7.99	7.83	7.97	7.72	7.69	7.96	7.98	7.83	7.92	7.75	8.13	8.22
BOD		<2	<4	<4	<4	<4	<4	<4	<4					
COD		16	10	<8	<8	<8	26	<8	<8					
Nitrate (N)		0.06	0.06	0.13	0.12	0.06	<0.06	0.07	0.08	<0.06	0.07	0.08	0.07	0.08
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		177	1860	12300	1710	1110	3800	832	2120	783	1810	1740	1120	2030
TP		<0.009	0.185	<0.03	<0.003	<0.003	<0.003	0.025	<0.003	0.062	0.305	0.008	<0.003	0.004
TC		<2	40	140	5	20	260	40	110					
EC		<2	<2	<20	<5	<10	<5	<2	<5					
Ammonia (N)		0.1	0.2	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1

Omemee Sewage Lagoons
Groundwater Monitoring Program

MW-109B		17-Feb-11	18-Jul-19	25-Oct-19	23-Jan-20	13-May-20	01-Sep-20	05-Nov-20	23-Feb-21	14-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		223	229	257	257	240	240	223	280	249	420	206	270	234
Conductivity						368	357	348	435	351	346	284	350	342
DOC		1.1	<1	1	1	1	1	1	2					
pH		8.11	7.88	7.9	7.82	7.85	7.9	7.97	7.96	8.03	8.02	7.93	8.22	8.28
BOD		<2	<4	<4	4	<4	<4	9	<4					
COD		17	<8	<8	12	<8	16	<8	8					
Nitrate (N)		<0.05	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	0.24	<0.06	<0.06	<0.06	<0.06	<0.06
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		1	0.7	0.6	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.6	<0.5
Hardness		168	15200	9060	13600	2410	2260	1440	3080	2710	6480	6840	12300	2730
TP		0.021	0.006	0.2	0.011	0.006	<0.003	<0.003	0.217	0.08	<0.003	0.006	0.006	0.009
TC		<2	20	<2	5	780	<5	440	400					
EC		<2	<20	<2	<5	<20	<5	<2	<100					
Ammonia (N)		0.4	0.3	0.2	0.1	0.2	0.1	0.1	0.1	<0.1	0.2	0.2	0.1	0.1

MW-110		23-Nov-09	18-Jul-19	27-Nov-19	22-Jan-20	25-Feb-20	13-May-20	28-Jul-20	01-Sep-20	04-Nov-20	08-Dec-20	23-Feb-21	19-Aug-21	23-Nov-21
TDS		326	283	Dry Well	Dry Well	Dry Well	229	Dry Well	Dry Well	Dry Well	Dry Well	Dry Well	Dry Well	Dry Well
Conductivity							392							
DOC		1.1	<1				1							
pH		7.78	7.74				7.76							
BOD		<4	<4				<4							
COD		<8	<8				<8							
Nitrate (N)		0.5	2.18				0.87							
Nitrite (N)		<0.06	<0.03				<0.03							
TKN		<0.5	0.7				<0.5							
Hardness		210	1870				3480							
TP		<0.01	<0.003				<0.003							
TC		2	<20				<10							
EC		<2	<20				<10							
Ammonia (N)		<0.1	<0.1				<0.1							

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MW-111B		17-Feb-11	16-Jul-19	23-Oct-19	23-Jan-20	12-May-20	28-Jul-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		363	397	409	377	380	369	349	334	346	411	331	351	334
Conductivity						567	585	566	504	557	597	477	571	568
DOC		<1.0	1	<1	1	<1	1	1	1					
pH		7.93	7.64	7.76	7.52	7.61	7.8	8.07	7.98	8.05	7.7	7.53	8.14	8.11
BOD		<2	<4	<4	<4	<4	<4	<4	<4					
COD		20	<8	<8	27	<8	<8	<8	<8					
Nitrate (N)		5.96	0.74	0.75	0.7	0.2	0.95	1.96	0.87	0.73	1	1.22	0.55	0.41
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	0.03
TKN		0.6	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		320	344	522	1540	634	439	425	507	432	439	480	653	671
TP		<0.009	0.003	<0.03	<0.003	<0.003	0.023	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
TC		<2	0	<20	<5	80	28	20	<5					
EC		<2	0	<20	<5	<20	<2	<2	<5					
Ammonia (N)		0.1	0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

MW-113B		23-Nov-09	16-Jul-19	23-Oct-19	23-Jan-20	12-May-20	01-Sep-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		294	374	306	286	343	286	283	303	297	323	334	306	294
Conductivity						496	490	506	461	498	495	438	520	480
DOC		<1.0	1	<1	<1	1	<1	1	1					
pH		7.76	7.53	7.65	7.64	7.44	7.49	8.01	7.68	8	7.59	7.42	8.06	8.08
BOD		<4	<4	<4	<4	<4	<4	<4	<4					
COD		<8	<8	<8	<8	<8	18	<8	<8					
Nitrate (N)		1.61	1.11	1.36	1.69	1.2	1	1.26	1.61	1.37	1.42	1.67	1.55	1.43
Nitrite (N)		0.08	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		<0.5	0.8	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		245	15200	5250	5900	11800	852	5920	5850	950	1320	467	2460	1160
TP		<0.01	0.237	<0.03	<0.003	<0.003	<0.003	0.063	<0.003	0.003	<0.003	0.003	<0.003	0.003
TC		108	<20	800	<5	<100	20	<20	<20					
EC		<2	<20	<20	<5	<20	<10	<20	<20					
Ammonia (N)		0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

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MW-114B		23-Nov-09	16-Jul-19	23-Oct-19	23-Jan-20	12-May-20	01-Sep-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		289	400	289	286	283	254	263	260	286	323	280	260	271
Conductivity						436	448	438	427	465	454	376	469	420
DOC		<1.0	1	<1	<1	<1	1	<1	1					
pH		7.67	7.71	7.8	7.6	7.76	7.63	8.03	7.73	8.11	7.78	7.63	8.12	8.1
BOD		<4	<4	<4	<4	<4	<4	<4	<4					
COD		<8	<8	<8	15	<8	<8	<8	<8					
Nitrate (N)		0.75	0.74	0.89	1.07	0.61	0.77	1	1.11	1.08	1.04	1.07	1.12	0.74
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		262	1650	372	418	316	3530	1640	345	330	555	344	305	3450
TP		<0.01	0.006	<0.03	<0.003	<0.003	<0.003	0.012	<0.003	<0.003	0.006	<0.003	<0.003	<0.003
TC		40	<5	<2	<5	0	<2	<5	<5					
EC		<2	<5	<2	<5	0	<2	<5	<5					
Ammonia (N)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

MW-115B		23-Nov-09	16-Jul-19	23-Oct-19	23-Jan-20	12-May-20	28-Jul-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		271	334	286	246	314	274	334	223	206	314	240	255	257
Conductivity						431	438	569	417	443	429	361	463	435
DOC		<1.0	1	<1	<1	<1	1	1	1					
pH		7.86	7.7	7.88	7.71	7.77	7.89	8.07	8	8.09	7.94	7.65	8.15	8.17
BOD		<4	<4	<4	<4	<4	<4	<4	<4					
COD		<8	<8	<8	<8	<8	<8	<8	<8					
Nitrate (N)		1.04	0.45	0.47	0.37	0.28	0.4	8.65	0.35	0.43	0.21	0.24	0.51	0.29
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
TKN		<0.5	0.7	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Hardness		243	18200	211	13100	8730	1770	572	3290	650	968	1610	12800	4990
TP		<0.01	<0.003	<0.03	0.005	<0.003	0.006	<0.003	0.012	0.003	<0.003	<0.003	1.81	<0.003
TC		<2	20	200	<5	<100	40	6400	80					
EC		<2	<20	<100	<5	<20	<5	<20	<20					
Ammonia (N)		<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

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MW-116B		17-Feb-11	16-Jul-19	23-Oct-19	23-Jan-20	12-May-20	28-Jul-20	04-Nov-20	23-Feb-21	04-May-21	19-Aug-21	23-Nov-21	10-Mar-22	22-Jun-22
TDS		337	349	363	343	391	311	257	323	340	346	317	340	Well not
Conductivity						522	563	435	547	568	558	474	587	accessible
DOC		<1.0	1	<1	1	<1	1	<1	1					
pH		8.02	7.66	7.85	7.54	7.58	7.79	8.11	8.03	8.09	7.79	7.47	8.15	
BOD		<2	<4	<4	<4	<4	<4	<4	<4					
COD		21	<8	<8	11	<8	16	<8	13					
Nitrate (N)		8.34	7.15	7.36	8.07	7.78	7.55	0.16	8.95	8.82	8.43	8.69	8.89	
Nitrite (N)		<0.06	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	
TKN		<0.5	1.1	<0.5	0.7	<0.5	0.5	<0.5	0.6	<0.5	<0.5	<0.5	<0.5	
Hardness		291	4340	1380	1170	3650	1530	6630	989	650	1060	1040	335	
TP		<0.009	0.003	<0.03	0.003	<0.003	<0.003	<0.003	<0.003	0.051	<0.003	<0.003	<0.003	
TC		<2	<20	<20	<5	<20	15	<5	<20					
EC		<2	<20	<20	<5	<5	<5	<5	<20					
Ammonia (N)		<0.1	<0.1	<0.1	<0.1	<0.1	0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	

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21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
220	263	226	206	217	317
411	438	405	323	381	495
8.17	7.92	8.22	7.58	7.64	7.87
1.16	1.45	0.44	0.28	0.62	1.84
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	0.7
563	2370	438	1440	2220	982
<0.003	0.005	<0.003	<0.003	<0.003	<0.003
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

22-Jun-22	21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
Well not	Well not	Dry Well	251	Well not	Well not	Well not
accessible	accessible		372	accessible	accessible	accessible
			8.27			
			0.24			
			<0.03			
			<0.5			
			366			
			<0.003			
			<0.1			

21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
223	223	200	220	563	260
386	352	346	318	735	396
8.15	7.78	8.25	7.66	7.9	7.83
0.19	0.13	<0.06	0.06	1.08	0.2
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	0.8
1180	1240	955	5050	1520	1700
<0.003	<0.003	<0.003	<0.003	<0.003	0.038
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

22-Jun-22	21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
326	294	294	311	331	337	354
502	507	518	497	522	537	487
8.1	8.07	7.82	8.1	7.56	8.07	7.84
0.16	0.22	0.3	0.18	0.23	0.16	0.22
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
1860	768	500	722	1920	1120	625
0.003	0.064	<0.003	<0.003	<0.003	0.003	<0.003
<0.1	<0.1	0.3	<0.1	<0.1	<0.1	<0.1

21-Sep-22	07-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
309	360	269	323	371	400
560	550	460	537	560	582
8.01	7.64	8.08	7.49	7.96	7.82
8.3	7.86	3.5	5.68	7.45	8.18
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
0.6	<0.5	<0.5	<0.5	<0.5	<0.5
635	926	1510	1750	1140	456
<0.003	<0.003	<0.003	0.026	0.005	<0.003
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
329	506	380	386	374	363
603	584	570	604	627	599
8.01	7.63	8	7.26	8	7.79
0.28	0.32	0.54	0.41	0.33	0.43
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
413	504	606	1060	1150	943
<0.003	<0.003	0.004	<0.003	<0.003	<0.003
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
411	420	394	446	429	460
658	612	598	614	652	584
8.01	7.9	8.07	7.46	8.04	7.84
24.7	22.5	20.3	20.2	21	21
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	2.9	<0.5
705	942	525	3570	1830	1110
<0.003	<0.003	<0.003	0.015	<0.003	0.014
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
334	314	366	323	329	354
512	486	561	526	556	519
8.09	7.95	8.11	7.57	8.03	7.81
<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
<0.03	<0.03	<0.03	<0.03	0.05	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
511	10200	5610	4350	3580	2290
0.003	0.004	0.013	0.005	<0.003	0.003
<0.1	<0.1	<0.1	<0.1	0.1	0.1

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22-Jun-22	21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
483	429	420	411	494	437	494
653	649	624	656	676	697	624
8.12	8.03	7.97	8.1	7.44	7.98	7.96
<0.06	<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.9
6340	846	1310	941	1420	2000	2270
<0.003	0.19	<0.003	0.004	<0.003	0.012	<0.003
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
266	271	277	309	306	303
475	452	449	473	479	370
8.12	8.05	8.14	7.59	8.1	7.88
0.08	0.16	0.07	0.11	0.07	0.07
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
484	677	833	670	540	519
<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

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21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
237	203	229	237	203	257
355	299	353	318	366	346
8.17	8.11	8.31	7.75	8.28	7.87
<0.06	<0.06	<0.06	<0.06	<0.06	<0.06
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.05	<0.5	0.5
397	2280	2310	23800	8290	2250
0.009	0.005	0.009	<0.003	0.005	0.004
<0.1	0.1	<0.1	0.2	0.2	0.1

10-Mar-22	22-Jun-22	21-Sep-22	06-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
Dry Well	Dry Well	Dry Well	Dry Well	Dry Well	Dry well	Dry Well	Dry well

Omemee Sewage Lagoons
Groundwater Monitoring Program

21-Sep-22	07-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
349	371	323	360	926	446
590	559	539	567	1240	751
8.05	7.79	8.08	7.53	7.95	7.84
1.06	1.1	0.73	0.31	1.44	0.54
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	0.7	<0.5
319	1110	454	584	823	480
<0.003	0.011	<0.003	<0.003	<0.003	<0.003
<0.1	0.2	<0.1	<0.1	<0.1	<0.1

21-Sep-22	07-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
297	314	311	317	334	343
510	519	466	492	517	474
8.03	7.59	8.03	7.43	8.08	7.8
1.75	1.97	1.76	1.22	1.83	2.02
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
819	1670	509	1820	2440	2540
<0.003	<0.003	<0.003	<0.003	<0.003	<0.003
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

Omemee Sewage Lagoons
Groundwater Monitoring Program

21-Sep-22	07-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
257	263	260	260	306	286
456	459	451	436	460	465
8.08	7.83	8.12	7.49	8.07	7.89
0.83	0.94	1.03	0.54	0.94	1.02
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
373	301	260	497	265	238
<0.003	<0.003	0.003	<0.003	<0.003	<0.003
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

15-Sep-22	07-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
226	243	231	283	294	257
442	427	454	451	450	442
8.09	7.83	8.05	7.62	8.15	7.9
0.38	0.12	0.42	0.23	0.26	0.18
<0.03	<0.03	<0.03	<0.03	<0.03	<0.03
<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
567	3100	402	7480	571	673
<0.003	<0.003	<0.003	0.004	<0.003	<0.003
<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

21-Sep-22	07-Dec-22	28-Mar-23	22-Jun-23	17-Oct-23	09-Jan-24
Well not accessible	Well not accessible	Well not accessible	Well not accessible	Well not accessible	Well not accessible