Ontario Clean Water Agency
Agence Ontarienne Des Eaux

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P.O. Box 728
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March 18, 2025

Ministry of the Environment
3rd Flr. Suite 331B, 435 James St.
Thunder Bay, ON
P7E 6S7

Attention: Mr. Glen Niznowski,
District Manager

Re: 2024 Performance Report for Geraldton Wastewater Treatment Facility

Dear Mr. Niznowski:

Attached is the 2024 Performance Report for the **Geraldton Wastewater Treatment Facility** located on Clarke Avenue in The Corporation of the Municipality of Greenstone – Geraldton Ward. This report has been completed in accordance with Condition No. 10 (6) cited in *Certificate of Approval Number 0172-6E7JZP* dated 16th January 2006 and issued to the Corporation of the Municipality of Greenstone.

This report was prepared by the Ontario Clean Water Agency on behalf of the Corporation of the Municipality of Greenstone based on information kept on record by OCWA at the Geraldton WWTP, and, the report covers the period from January 1 2024 to December 31 2024.

Should you have any questions or comments in regards to this annual report, please do not hesitate to contact Dave Hoffman at 807-854-7142.

Yours truly,

P O'Handley

Patti O'Handley
Senior Operations Manager
Ontario Clean Water Agency
Northwestern Ontario Hub

Copy: Mr. Mark Wright - CAO
Mr. Brian Aaltonen – Director of Public Services
Operations Staff – Geraldton
Sam Shippam – MECP

2024 Annual Report

Geraldton Wastewater Treatment Plant

Prepared by the Ontario Clean Water Agency

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

The Corporation of the Municipality of Greenstone - Geraldton
Wastewater Treatment Plant
(Sewage Plant)
2024 Annual Report

INTRODUCTION

In accordance with the ***Certificate of Approval*** *Number 8151-7PDQX7* section 10 (6), the Corporation of the Municipality of Greenstone - Geraldton Wastewater Treatment Plant is required to prepare an annual summary. The 2024 annual facility performance report summarizes important information regarding the treatment quality of the effluent wastewater, analytical test results, relevant activities and maintenance operations of the Works. Some of this information was submitted via the quarterly upload of information, but is being presented again as part of the new Annual Report based on the calendar year.

DESCRIPTION OF WORKS

Rated Capacity of Works	2,500 m^3/day
Service Area	Greenstone Municipality – Geraldton Ward, District of Thunder Bay
Service Population	1,150
Effluent Receiver	Hardrock Creek
Major Process	Extended Aeration Plant Includes separate Aeration Tanks and Final Clarifier

EFFLUENT MONITORING AND RECORDING

Analytical tests to monitor the influent and effluent water quality on a weekly/monthly basis are conducted by a laboratory audited by the Canadian Association for Environmental Analytical Laboratories (CAEAL) and accredited by the Standards Council of Canada (SCC). Accreditation ensures that the laboratory has acceptable laboratory protocols and test methods in place. It also requires the laboratory to provide evidence and assurances of the proficiency of the analysts performing the test methods. Weekly analysis is performed in-house in order to maintain the process. When these samples are split with the accredited laboratories, it confirms the procedure accuracy of the in-house testing.

SAMPLING REQUIREMENTS

Samples of raw sewage and final effluent from the WWTP shall be collected and analyzed for the following parameters at the indicated frequencies.

Raw Sewage Monitoring – Samples to be collected at the treatment plant inlet

Parameters	Sample Type	Frequency
$CBOD_5$	Composite*	monthly
Total Suspended Solids	Composite*	monthly
Total Phosphorus	Composite*	monthly
Total Kjeldahl Nitrogen*	Composite*	monthly

* Composite of three grab samples, taken at time intervals of at least two hours over an eight-hour sampling period.

Final Effluent Monitoring - Samples to be collected at the treatment plant outfall

Parameters	Sample Type	Frequency
$CBOD_5$	Composite*	weekly
Total Suspended Solids	Composite*	weekly
Total Phosphorus	Composite*	weekly
Total Ammonia (Ammonia + Ammonium) Nitrogen	Composite	weekly
Un-ionized Ammonia	Calculated**	weekly
E. Coli	Grab	weekly
Total Chlorine Residual	Grab	weekly
pH	Grab	weekly
Temperature***	Grab	weekly

* Composite of three grab samples, taken at time intervals of at least two hours over an eight-hour sampling period.

** Calculated based on results of effluent total ammonia nitrogen, temperature and pH monitoring.

***Temperature of the final effluent should be measured in the field.

Creek Monitoring – Samples to be collected from Hardrock Creek; sampling locations subject to approval by the *District Manager* (MOE staff reviewed sampling locations in June & December 2007)

Frequency	Monthly*
Sample Type	Grab
Parameters	Temperature**, pH, Dissolved Oxygen, Total Suspended Solids, Total Phosphorus, Total Ammonia Nitrogen, *E. Coli*

* Monthly during the ice-free period.

** Temperature should be measured in the field.

Lake Monitoring – Samples to be collected from Kenogamisis Lake; sampling locations subject to approval by the *District Manager* (MOE staff reviewed sampling locations in June & December 2007)

Frequency	Monthly*
Sample Type	Grab
Parameters	Temperature**, pH, Conductivity, Total Suspended Solids, Total Phosphorus, Total Ammonia Nitrogen, *E. Coli*

* Monthly during the ice-free period.

** Temperature should be measured in the field.

PLANT PERFORMANCE

Effluent Objectives (best effort) as per C of A, condition 6(1)

Effluent Parameter	**Concentration Objective** (milligrams per litre unless otherwise indicated)
$CBOD_5$	15.0 mg/L monthly average
Total Suspended Solids	15.0 mg/L monthly average
Total Residual Chlorine	Non-detectable*
E. Coli	100 organisms/100 ml (monthly *Geometric Mean Density*)
Use best effort to operate works at rated capacity of 2,500 m^3/day	

* Non-detectable as measured by equipment with a sensitivity of at least 0.02 mg/L.

Effluent Objectives (shall operate) as per C of A, condition 7(1)

Effluent Parameter	**Average Concentration** (milligrams per litre unless otherwise indicated)
$CBOD_5$	25.0 mg/L monthly average
Total Suspended Solids	25.0 mg/L monthly average
Total Residual Chlorine*	Non-detectable*
pH of the effluent maintained between 6.0 to 9.5, inclusive at all times	

* Non-detectable as measured by equipment with a sensitivity of at least 0.02 mg/L.

In order to review, at a glance, the performance of the WWTP, a graph has been prepared showing the average and maximum monthly raw influent flows for the year; January to

December 2024 The total influent flows for this timeframe report as 592,282, compared to 562,431m^3 for the 2023 calendar year. This is an increase of 5 % over the 2023 flows.

In the reporting year 2024, *$CBOD_5$* was analyzed and the maximum monthly average was 39.44 mg/L in December; this is above the effluent limits imposed by the *Certificate of Approval* condition 1.4 of 25.0 mg/L. The maximum monthly average of daily loading was 66.353 kg/day for the month of December. This was above the effluent limit of 62.5 kg/day. The works did not achieve the effluent objective of 15.0 mg/L in 2024.

The maximum monthly average suspended solids concentrations for the effluent in 2024 was 33.98 mg/L for the month of December. This parameter is likewise above the compliance level of 25.0 mg/L. The maximum monthly average of daily loading was 61.694 kg/day for the month of April with a limit of 62.5 kg/day. The works did not achieve the effluent objective of 15.0 mg/L.

The plant compliance criteria states; the pH of the effluent shall be maintained between 6.0 and 8.5, inclusive, at all times. The average pH during this period was 6.70, with a high of 7.67 and a low of 5.80. The effluent from the works did not meet the compliance level for pH in 2024. Two dates of January 2024 had levels below 6.0, January 10 and 15. The cause of the low pH is unknown due to the isolated nature of the events.

The owner shall use best effort to operate the works within the rated capacity of 2,500 m^3/d. Average flows from the plant were measured at 1618.26 m^3/d with the maximum daily flow being 3209.60 m^3/d; best effort was not achieved.

Condition Number 7 – Effluent Limits - of the Certificate of Approval outlines, in part, the following that the:

Total Residual Chlorine*	Non-detectable*

* Non-detectable as measured by equipment with a sensitivity of at least 0.02 mg/L.

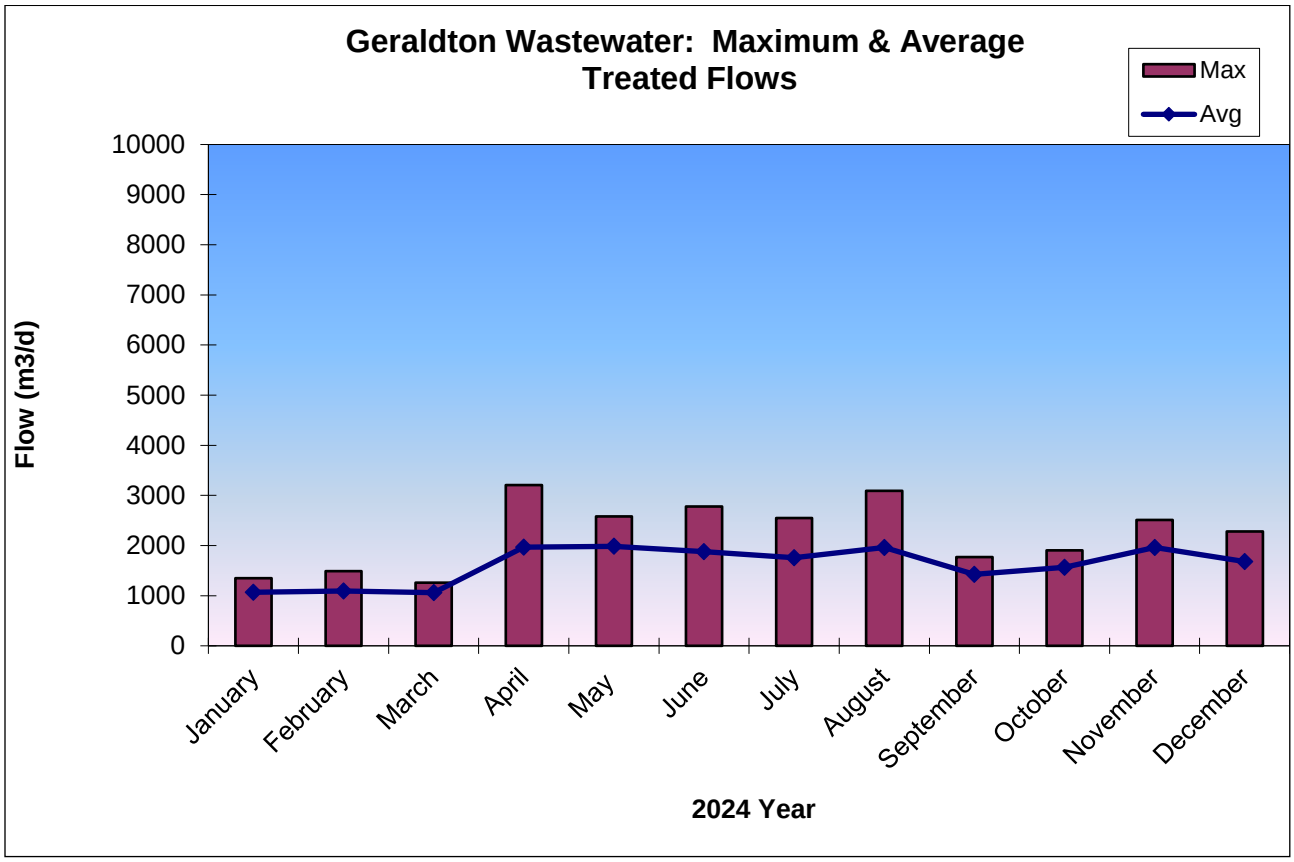
The average chlorine residual for 2024 was 0.76 mg/L, max 2.02 mg/L before de-chlorination. After de-chlorination, the chlorine residual was 0.10 mg/l maximum. The table of chlorine residuals and effluent chlorine residuals is attached.
The effluent parameter include a best effort monthly geometric mean density of 100 organisms per 100 ml for e-coli and a monthly geometric mean density limit of 200 organisms per 100 ml. In 2024 the maximum monthly geometric mean density for e-coli was 83 organisms per 100 ml. This achieved the limit criteria. The best effort monthly geometric mean was also achieved for 2024.

EFFLUENT FLOWS

The secondary treatment system is designed to operate at a *rated capacity* not to exceed the peak flow rate of 7,500m^3/d for the sewage treatment plant. For the Geraldton Wastewater Treatment Plant the peak flow for 2024 was on April 12 with a peak flow of 3209.6 m^3/day. Currently, the

Geraldton wastewater treatment *Certificate of Approval* outlines that the average daily flows of sewage into the sewage treatment plant does not exceed 2,500.m^3/d. The average daily flow for 2024 was 1618.26 m^3/d.

Average & Maximum Flows
January – December 2024



MAINTENANCE

OCWA maintains a Work Management System (WMS), which is a comprehensive computer based maintenance program that is based on a proactive preventive approach. This includes running checks, weekly, monthly and annual maintenance, as required. A full report on all maintenance carried out in 2024 is available upon request.

OPERATIONAL ISSUES

The Geraldton WWTP has experience facility issues in relation to the past upgrades.

In the engineers' opinion, bypassing was a result of excessive inflow and infiltration into the collection system. They recommend the municipality investigate the sources of the inflow and infiltration and reduce these sources to control the bypasses in the system.

The municipality has initiated a Pollution Prevention Control Plan which included an inflow and infiltration study. The results of this study were received in 2013. Several yard drains and broken/ open services were identified as were some downspout connections. The yard drains and broken/ open services were repaired by the municipal crews. Homes with downspout connections were sent notifications by the municipality to remove the downspout connections. The municipality has received confirmation that some have been corrected.

During 2024 the yearly flows to the sewage plant was relatively normal. The summer was dry and resulted in reduced flows to the plant during a significant part of the summer. The peak flows occurred during the spring melt during April and May. The high inflow rate exceeded the 87 L/sec, rate to the plant resulting in a bypass on April 11.

The sewage plant is designed to bypass at an inflow of 87 l/sec. There was one event of bypassing in 2024 reported. The event occurred at the treatment plant due to the incoming flows exceeding 87 l/sec. The event occurred on April 11 2024 and lasted for 12 hours resulting in 465 m3 bypassing the treatment process. The bypassing occurred intermittently over the time period as the flows spiked during the spring melt. The increased flows also resulted in an operational upset in the facility. The TSS was over the 25 mg/l average for the month. The alum system was not adjusted quickly enough during the increased flows.

The sewage plant had a major mechanical failure on December 3 2024. The gear box for the clarifier failed. The spare gear box on site did not fit the clarifier. The repair parts were sourced and ordered for the failed gear box. The repairs will be completed once the parts are on-site. A pump has been installed in the clarifier to keep the sludge moving and the tank from freezing. The failure has resulted in the TSS and CBOD being over the compliance levels in December.

The conversion of the idle aeration chamber into sludge storage did not perform as designed. The aeration chamber is not being used for sludge storage at this time and will remain out of service. The aeration chamber was used in 2024 to capture and hold excess raw sewage inflow to the plant to reduce bypassing. The tank was filled to capacity during the April and May bypassing events prior to bypassing the plant process. The captured influent was then pumped back through the treatment process when the plant inflow decreased.

The aeration tank for Plant #1 was cleaned and inspected in 2018. Cracks were observed in the floor of the tank. These cracks may need repair in the future.

Greenstone Gold Mines completed opening a mine close to Geraldton. As a result, the municipality has upgraded the sewage treatment plant for the anticipated additional flows. The engineering and approval processes are proceeding and a new ECA is expected early in the New

Year. A temporary alum system was installed and operating at the treatment plant for phosphorus control. Modifications are complete on the site with the installation of the permanent alum system and tank to mitigate bypass events. The permanent alum system was commissioned in December 2023. Presently there is no pace to flow feed system and the operators adjust feed rates based on historic flows. The equalization tank used for bypass events is being commissioned.
The mine has temporary camp facilities with the generated sewage being hauled to facilities for treatment. The sewage was hauled to the Geraldton and the Nakina wastewater facility in 2024. The trucked waste is introduced into the collection system at the McKenzie lift station. During 2024, the system accepted 9050 m3 of raw sewage from the temporary mine camp. This equates to an average of 49.2 m3 per day of raw sewage to the collection system.
There were complaints received by the MECP in September and October concerning the odors from the dumping of the sewage into the collection system at the McKenzie lift station. Discussion with the mine concerning the holding tank at the camp included more frequent cleaning and mixing of the tank. The results of that activity are still being assessed as the cold weather was expected to decrease odor as well.

CALIBRATIONS

The owner shall maintain a continuous flow-measuring device to measure the flow rate within an accuracy of +/- 5% of actual rate of flow within the range of 10% to 100% of the full-scale reading of the measuring devices.

In 2024, calibration of the Miltronics continuous measuring device was calibrated by a Lakeside technician; results attached. The units were within the required accuracy, as outlined in the criteria.

SLUDGE SUMMARY

Sludge is hauled from the facility to the Nakina and Longlac drying beds by the Ontario Clean Water Agency. A summary of all sludge hauled for Geraldton WWTP is outlined in the following table.

Sludge Volume Hauled in 2024

Month	Total Volume(m3)
January	195
February	255
March	165
April	90
May	495
June	255
July	210
August	225

September	285
October	150
November	195
December	0
Total:	**2520**

The new sludge beds at Octopus Lake were tried in the past and failed. The beds were modified for use again and in early 2013 the beds were put into service and operated through the year. The Octopus beds performed better in 2015. The bed drainage system was excavated for inspection/ repair to improve drainage. The MECP requested an evaluation of the sludge bed in 2021. During 2022 an inspection of the beds by the MECP found seepage outside of the bed construction. The beds have not been used for sludge drying since while the municipality investigates corrective actions to repair the beds or an alternate drying location. The sludge generated by the facility is presently being trucked to the Nakina or Longlac sludge drying beds for drying.

COMPLAINTS/ENVIRONMENTAL INCIDENT

There were complaints received by the MECP in September and October concerning the odors from the dumping of the sewage into the collection system at the McKenzie lift station.

BY-PASS REPORTS

The sewage plant is designed to bypass at an inflow of 87 l/sec. There was one event of bypassing in 2024 reported. The event occurred at the treatment plant due to the incoming flows exceeding 87 l/sec. The event occurred on April 11 2024 and lasted for 12 hours resulting in 465 m3 bypassing the treatment process. The bypassing occurred intermittently over the time period as the flows spiked during the spring melt. The increased flows also resulted in an operational upset in the facility. The TSS was over the 25 mg/l average for the month. The alum system was not adjusted quickly enough during the increased flows.

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Performance Assessment Report
1st January – December 31st 2024

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Performance Assessment Report

From 1/1/2024 to 12/31/2024 11:59:59 PM

5896 GERALDTON WASTEWATER TREATMENT FACILITY 110001649

	1 / 2024	2/ 2024	3/ 2024	4/ 2024	5/ 2024	6/ 2024	7/ 2024	8/ 2024	9/ 2024	10/ 2024	11/ 2024	12/ 2024	<--Total-->	<--Avg-->	<--Max-->	<-Criteria->
Flows																
Eff. Flow: Total - Effluent m³/d	33,061.10	31,671.90	32,866.00	59,005.80	61,505.60	56,421.20	54,432.10	60,857.30	42,828.70	48,592.70	58,885.60	52,154.00	592,282.00			0.00
Eff. Flow: Avg - Effluent m³/d	1,066.49	1,092.13	1,060.19	1,966.86	1,984.05	1,880.71	1,755.87	1,963.14	1,427.62	1,567.51	1,962.85	1,682.39		1,618.26		
Eff. Flow: Max - Effluent m³/d	1,349.00	1,491.00	1,261.00	3,209.60	2,583.00	2,777.60	2,550.60	3,088.90	1,770.00	1,903.00	2,513.00	2,278.40			3,209.60	0.00
Eff Flow: Count - Effluent m³/d	31.00	29.00	31.00	30.00	31.00	30.00	31.00	31.00	30.00	31.00	30.00	31.00	366.00			0.00
Carbonaceous Biochemical Oxygen Demand: CBOD																
Raw: Avg cBOD5 - Influent mg/L	92.40	62.00	63.40	98.20	23.60	96.70	20.50	69.80	62.70	88.30	106.00	129.00		76.05	129.00	0.00
Raw: # of samples of cBOD5 - Influent	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 cBOD5 - Effluent mg/L	5.14	4.95	10.10	23.97	< 2.05	< 2.18	< 2.34	< 2.00	< 2.00	< 3.96	3.53	39.44		9.36	39.44	25.00
Eff: # of samples of cBOD5 - Effluent	5.00	4.00	4.00	6.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	54.00			0.00
Loading: cBOD5 - Effluent kg/d	5.482	5.406	10.708	47.139	< 4.067	< 4.091	< 4.109	< 3.926	< 2.855	< 6.207	6.919	66.353		15.15	66.35	62.500
Percent Removal: cBOD5 - Influent %	94.44	92.02	84.07	75.59	91.31	97.75	88.59	97.13	96.81	95.52	96.67	69.43		89.94	97.75	0.00
Total Suspended Solids: TSS																
Raw: Avg TSS - Influent mg/L	66.00	67.80	65.50	48.70	39.10	109.00	30.30	102.00	77.40	71.60	122.00	112.00		75.95	122.00	0.00
Raw: # of samples of TSS - Influent	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 - Effluent mg/L	7.92	8.88	13.85	31.37	7.63	6.58	< 4.48	5.05	< 4.35	< 5.08	< 4.25	33.98		12.00	33.98	25.00
Eff: # of samples of TSS - Effluent	5.00	4.00	4.00	6.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	54.00			0.00
Loading: TSS - Effluent kg/d	8.447	9.693	14.684	61.694	15.128	12.366	< 7.866	9.914	< 6.210	< 7.963	< 8.342	57.168		19.41	61.69	62.500
Percent Removal: TSS - Influent %	88.00	86.91	78.85	35.59	80.50	93.97	85.21	95.05	94.38	92.91	96.52	69.66		83.13	96.52	0.00
Total Phosphorus: TP																
Raw: Avg TP - Influent mg/L	2.41	2.45	2.91	2.76	1.22	2.47	1.32	2.15	2.14	2.26	2.82	3.02		2.33	3.02	0.00
Raw: # of samples of TP - Influent	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 - Effluent mg/L	0.33	0.32	0.49	0.74	0.16	0.14	0.15	0.15	0.23	0.33	0.36	1.18		0.40	1.18	
Eff: # of samples of TP - Effluent	5.00	4.00	4.00	6.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	54.00			0.00
Loading: TP - Effluent kg/d	0.354	0.348	0.519	1.453	0.318	0.260	0.256	0.290	0.331	0.521	0.709	1.980		0.65	1.98	
Percent Removal: TP - Influent %	86.22	87.00	83.19	73.24	86.84	94.39	88.96	93.13	89.17	85.30	87.19	61.03		84.64	94.39	0.00
Nitrogen Series																
Raw: Avg TKN - Influent mg/L	22.00	23.20	25.00	26.00	10.90	21.10	12.20	21.10	21.20	26.00	28.60	26.80		22.01	28.60	0.00
Raw: # of samples of TKN - Influent	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 TAN - Effluent mg/L	6.58	6.59	8.47	6.10	4.61	0.24	0.92	0.07	0.22	0.81	0.11	9.99		3.88	9.99	
Eff: # of samples of TAN - Effluent	5.00	4.00	4.00	6.00	4.00	4.00	5.00	4.00	4.00	5.00	4.00	5.00	54.00			0.00
Loading: TAN - Effluent kg/d	7.013	7.194	8.977	11.995	9.142	0.456	1.615	0.144	0.312	1.275	0.215	16.807		6.27	16.81	

pH Monthly Process Data Report

Customized Monthly Report

From 01/01/2024 to 12/31/2024

Facility Name: GERALDTON WASTEWATER TREATMENT FACILITY
Receiver: Hardrock Creek to Kenogamisis Lake

Facility Org Number: 5896
Facility Owner: Municipality: The Corporation of the Municipality of Greenstone
Service Population: 1893

Works: 110001649
Facility Classification: Class 2 Wastewater Treatment
Total Design Capacity: 2500 m3/day

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															2024			
Effluent	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
pH - ---																
IH Month.Max	7.45	6.65	7.26	7.52	7.67	7.30	7.29	7.15	7.20	6.99	6.69	6.95			7.67	
IH Month.Mean	6.34	6.36	6.75	7.02	7.11	6.97	6.99	6.72	6.38	6.51	6.55	6.64		6.70		
IH Month.Min	5.80	6.01	6.35	6.35	6.20	6.62	6.47	5.92	6.06	6.12	6.45	6.37				5.80

Cl_2 Residual Monthly Process Data Report

Customized Monthly Report

From 01/01/2024 to 12/31/2024

Facility Name: GERALDTON WASTEWATER TREATMENT FACILITY
Receiver: Hardrock Creek to Kenogamisis Lake

Facility Org Number: 5896
Facility Owner: Municipality: The Corporation of the Municipality of Greenstone
Service Population: 1893

Works: 110001649
Facility Classification: Class 2 Wastewater Treatment
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															2024			
Dechlorination	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
Cl Residual: Total - mg/L																
IH Month.Max	0.03	0.03	0.00	0.03	0.10	0.05	0.04	0.08	0.08	0.06	0.05	0.08			0.10	
IH Month.Mean	0.01	0.01	0.00	0.01	0.02	0.01	0.02	0.04	0.03	0.02	0.03	0.03		0.02		
IH Month.Min	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.01	0.00				0.00

													2024			
Disinfection	Jan 2024	Feb 2024	Mar 2024	Apr 2024	May 2024	Jun 2024	Jul 2024	Aug 2024	Sep 2024	Oct 2024	Nov 2024	Dec 2024	Total	Avg	Max	Min
Cl Residual: Total - mg/L																
OL Month.Max	2.00	1.62	2.00	2.00	1.48	2.02	2.02	2.01	1.81	2.01	0.06	0.06			2.02	
OL Month.Mean	1.18	1.11	0.53	0.90	0.89	0.65	0.98	0.62	1.16	1.04	0.06	0.06		0.76		
OL Month.Min	0.00	0.24	0.00	0.00	0.01	0.00	0.00	0.03	0.49	0.06	0.06	0.06				0.00

Receiver Stream Data

Customized Monthly Report

From 01/01/2024 to 12/31/2024

Facility Name: GERALDTON WASTEWATER TREATMENT FACILITY
Receiver: Hardrock Creek to Kenogamisis Lake

Facility Org Number: 5896
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| | | |

Lab Month.Mean		0.01		0.02		0.02		0.02		0.03				0.02						
Total Suspended Solids: TSS - mg/L																				
Lab Month.Mean	<	3.00		5.90		3.10		3.60		4.30			<	3.98						
																2024				
Mouth of Hardrock - Lake		**May 2024**		**Jun 2024**		**Jul 2024**		**Aug 2024**		**Sep 2024**		**Total**		**Avg**		**Max**		**Min**		
Conductivity - µS/cm																				
Lab Month.Mean		182.00		203.00		208.00		229.00		238.00				212.00						
E.Coli MPN - MPN																				
Lab Month.Mean		2.00		1.00		1.00		1.00		4.00				1.80						
Total Ammonia Nitrogen: NH3 + NH4+ as N - mg/L																				
Lab Month.Mean		0.01		0.04		0.01		0.03		0.01				0.02						
pH - ---																				
IH Month.Mean		7.25		6.62		7.05		6.35						6.82						
Total Phosphorus: TP - mg/L																				
Lab Month.Mean		0.02		0.03		0.03		0.04		0.04				0.03						
Total Suspended Solids: TSS - mg/L																				
Lab Month.Mean		8.70		4.10		3.30		3.80		3.30				4.64						
																2024				
Macleod Beach - Lake		**May 2024**		**Jun 2024**		**Jul 2024**		**Aug 2024**		**Sep 2024**		**Total**		**Avg**		**Max**		**Min**		
Conductivity - µS/cm																				
Lab Month.Mean		171.00		176.00		184.00		188.00		186.00				181.00						
E.Coli MPN - MPN																				
Lab Month.Mean	<	1.00	<	1.00	<	1.00	<	1.00	<	1.00			<	1.00						
Total Ammonia Nitrogen: NH3 + NH4+ as N - mg/L																				
Lab Month.Mean	<	0.01		0.02		0.01		0.04		0.06			<	0.03						
pH - ---																				
IH Month.Mean		7.31		7.07		7.24		7.20						7.21						
Total Phosphorus: TP - mg/L																				
Lab Month.Mean		0.01		0.02		0.02		0.02		0.01				0.02						
Total Suspended Solids: TSS - mg/L																				
Lab Month.Mean		4.10		4.30	<	3.00		3.40		3.90			<	3.74						

By-Pass Reports – 2024

Environmental Incident Report

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

System: **Geraldton Waste Water Treatment Plant.** MOE Works: 110001649

Location: Geraldton WWTP Receiver: Hardrock Creek

Start of Incident:	Date: April 11, 2024	Time:18:30
☐ Spill	Details/Cause of Incident:	
☒ Bypass	Bypass event due to spring thaw and heavy rain	
☐ Other		
Downstream Users ☐ Yes ☒ No	Possible effects on receiver, environment or downstream users: N/A	
Chlorination ☒ Yes ☐ No		
Corrective Actions: Initiated bypass		
MOECC SAC called	Date: Apr 11, 2024 At 20:09	Contact: Brenda Capicciotti
MOH – Northwestern Health Unit called	Date: Apr 12, 2024 At 10:05	Contact: Braeden Payne
Patti O'Handley called	Date: Apr 11, 2024 At 19:59	Contact: OCWA
Municipality Of Greenstone called	Date: Apr 11, 2024 At 20:35	Contact: Brian Aaltonen
Other:	Date: at	Contact:
Reference #: 1-5NZTBE	Operator Reporting Incident: Filipe Jorge	

Termination:	Date: April 12, 2024	Time 06:55	Duration: 12 hrs 25 min
Approximate Volume (m^3) 465			
SAC called Date: April 12, 2024 at: 14:35 Contact: Dylan Wenzel			
Further Actions Required: N/A			
Operator Reporting Termination: Filipe Jorge			
MOECC SAC	**Tel: 800 268-6060** **Fax: 800 268-6061**	**Comments**	
MOH – Thunder Bay Health Unit **(after hours)**	**Tel: 1-807-625-5900** **Tel: 807-623-7451** **Tel: 807-625-5933** **Tel: 807-624-1280**		

Verbal notifications: MOECC SAC, MOH, Sr. Operations Manager, Client/Owner

Environmental Incident Report

Ontario Clean Water Agency
Agence Ontarienne Des Eaux

Fax completed report: MOECC SAC, MOH, VP Operations/Corporate Office, Regional Manager, Geraldton Hub Office Group, PCTs, Client/Owner, ORO

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

OCWA
PO Box 728
Geraldton, ON
P0T 1M0

NOTIFICATION OF NON-COMPLIANCE

05/13/2024

Sam Shippam
Drinking Water and Environmental Compliance Division

Re: Notification of Non-compliance with ECA Effluent Limit

This is a notification of non-compliance with an effluent limit for the Geraldton Wastewater Plant submitted in accordance with terms and conditions of Certificate of Approval 8151-7PDQX7, and provisions of the *Ontario Water Resources Act* and *Environmental Protection Act.*

The following effluent parameter(s) was/were exceeded as per 7(1) of the C of A:

Parameter	Date of Non-Compliance (yyyy-mm-dd)	Type of Limit	Type of Sample	Result (Specify Units)	Calculation Method	ECA Effluent Limit
Total Suspended Solids	2024-05-13	Monthly Average	Composite	31.4mg/L	Monthly Average	25 mg/L

Comments/Actions Taken:
High TSS due to high spring flows coming in and alum dosage not being adjusted quickly enough to accommodate the flows causing extra floc carryover. Alum is feed rates have been adjusted to accommodate flows.

Sincerely,

FILIPE JORGE
Operations Supervisor/ORO Northwestern Ontario Hub

cc: Patti O'Handley, Senior Operations Manager
Patrick Albert, General Manager
Jeremy Drindak, Julia Vescio, David Hoffman, Process & Compliance Technicians
Allyson Kirk, Safety, Process and Compliance Manager
Brian Aaltonen, Client Representative

ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

OCWA
PO Box 728
Geraldton, ON
P0T 1M0

NOTIFICATION OF NON-COMPLIANCE

01/09/2025

Sam Shippam
Drinking Water and Environmental Compliance Division

Re: Notification of Non-compliance with ECA Effluent Limit

This is a notification of non-compliance with an effluent limit for the Geraldton Wastewater Plant submitted in accordance with terms and conditions of Certificate of Approval 8151-7PDQX7, and provisions of the *Ontario Water Resources Act* and *Environmental Protection Act.*

The following effluent parameter(s) was/were exceeded as per 7(1) of the C of A:

Parameter	Date of Non-Compliance (yyyy-mm-dd)	Type of Limit	Type of Sample	Result (Specify Units)	Calculation Method	ECA Effluent Limit
Total Suspended Solids	2024-12-31	Monthly Average	Composite	33.98 mg/L	Monthly Average	25 mg/L
CBOD	2024-12-31	Monthly Average	Composite	39.44 mg/L	Monthly Average	25 mg/L
CBOD Loading	2024-12-31	Monthly Average		66.35 kg/day	Monthly Average	62.5 kg/day

Comments/Actions Taken: Exceedance on TSS, CBOD, and CBOD loading do to mechanical failure on the clarifier. All parts have been ordered for repairs and will be fixed as soon as they arrive. Pumps have been installed in clarifier to maintain movement of sludge and to prevent freezing. SAC reference # 1FZPI8Z.

Sincerely,

Patti O'Handley
Senior Operations Manager

cc: Fil Jorge, OIC/ORO
Patrick Albert, General Manager
Jeremy Drindak, Julia Vescio, David Hoffman, Process & Compliance Technicians
Allyson Kirk, Safety, Process and Compliance Manager

Brian Aaltonen, Client Representative

Analyzer Verification/Calibration Summary

WOs 20831,20829,20828,20827,20825

Municipality of Greenstone
Water Treatment Facilities

Instruments Calibrations

Completed: August 14,15 2024

By: Igor Riaboshapkin

Lakeside Process Controls
1165 Russell Street
Thunder Bay, Ontario
Canada P7B 5M6
Telephone: **1 (807) 624-2791**
Fax: 1 (807) 623-7907

Service Call Report

Instruments List				
#	Device Type	Tag Name	Cal. Status	Notes
Geraldton				
1	Flowmeter	**Grl Raw Water**	Passed	
2	Flowmeter	**Grl Treated Water**	Passed	
3	Flowmeter	**Grl Domestic Water**	Passed	
4	Flowmeter	**Grl WPC Plant 1 Final Effluent**	Passed	
5	Flowmeter	**Grl WPC Plant 2 Final Effluent**	Passed	
6	Flowmeter	**Grl Mckenzie LS Effluent**	Passed	
7	Flowmeter	**Grl WPC Influent**	Passed	
8	Flowmeter	**Grl RAS FIT-565**	Passed	
9	Flowmeter	**Grl RAS FIT-567**	Passed	
10	Flowmeter	**Grl WAS FIT-566**	Passed	
11	Chlorine meter	**Grl HH-CL**	Passed	
12	Chlorine meter	**Grl LAB-CL**	Passed	
13	Turbidity meter	**Grl LAB-TURB**	Passed	
14	pH meter	**Grl LAB-pH**	Passed	
15	Chlorine meter	**Grl HH-CL-2**	Passed	

Instruments List				
#	Device Type	Tag Name	Cal. Status	Notes
16	Chlorine meter	**Grl LAB-CL-2**	Passed	
17	pH meter	**Grl LAB-pH-2**	Passed	

Passed Instruments: **17**

Failed Instruments: **0**

Total Verified Instruments: **17**

Biosolids Sludge Quality

ALS Canada Ltd.

right solutions.
right partner.

CERTIFICATE OF ANALYSIS

Work Order	: **TY2404216**	Page	: 1 of 3
Client	: **Ontario Clean Water Agency**	Laboratory	: ALS Environmental - Thunder Bay
Contact	: Geraldton WPCP	Account Manager	: Christine Paradis
Address	: Operator Geraldton WPCP 320 Clarke Ave S.E PO Box 728 Geraldton ON Canada P0T 1M0	Address	: 1081 Barton Street Thunder Bay ON Canada P7B 5N3
Telephone	: ----	Telephone	: +1 807 623 6463
Project	: 110001649	Date Samples Received	: 03-May-2024 14:42
PO	: 5896	Date Analysis Commenced	: 10-May-2024
C-O-C number	: ----	Issue Date	: 12-May-2024 16:09
Sampler	: ----		
Site	: 110001649		
Quote number	: Geraldton WPCP/WWTP 2024		
No. of samples received	: 1		
No. of samples analysed	: 1		

This report supersedes any previous report(s) with this reference. Results apply to the sample(s) as submitted. This document shall not be reproduced, except in full.

This Certificate of Analysis contains the following information:

- General Comments
- Analytical Results

Additional information pertinent to this report will be found in the following separate attachments: Quality Control Report, QC Interpretive report to assist with Quality Review and Sample Receipt Notification (SRN).

Signatories

This document has been electronically signed by the authorized signatories below. Electronic signing is conducted in accordance with US FDA 21 CFR Part 11.

Signatories	*Position*	*Laboratory Department*
Nik Perkio	Inorganics Analyst	Metals, Waterloo, Ontario
Niki Goebel	Inorganics Analyst	Metals, Waterloo, Ontario

General Comments

The analytical methods used by ALS are developed using internationally recognized reference methods (where available), such as those published by US EPA, APHA Standard Methods, ASTM, ISO, Environment Canada, BC MOE, and Ontario MOE. Refer to the ALS Quality Control Interpretive report (QCI) for applicable references and methodology summaries. Reference methods may incorporate modifications to improve performance.
Where a reported less than (<) result is higher than the LOR, this may be due to primary sample extract/digestate dilution and/or insufficient sample for analysis.

Where the LOR of a reported result differs from standard LOR, this may be due to high moisture content, insufficient sample (reduced weight employed) or matrix interference.

Please refer to Quality Control Interpretive report (QCI) for information regarding Holding Time compliance.

Key : CAS Number: Chemical Abstracts Services number is a unique identifier assigned to discrete substances
LOR: Limit of Reporting (detection limit).
Measurement Uncertainty: The reported uncertainties in this report are expanded uncertainties calculated using a coverage factor of 2, which gives a level of confidence of approximately 95%.
Surrogate: An analyte that is similar in behavior to target analyte(s), but that does not occur naturally in environmental samples. For applicable tests, surrogates are added to samples prior to analysis as a check on recovery.

Unit	*Description*
mg/L	milligrams per litre

>: greater than.
<: less than.

Test results reported relate only to the samples as received by the laboratory.

UNLESS OTHERWISE STATED on SRN or QCI Report, ALL SAMPLES WERE RECEIVED IN ACCEPTABLE CONDITION.

Analytical Results

TY2404216-001

Sub-Matrix: **Sludge**
(Matrix: **Water**)

Client sample ID: WPCP Digested Sludge
Client sampling date / time: 02-May-2024 14:05

Analyte	CAS Number	Result	LOR	Unit	Method/Lab	Prep Date	Analysis Date	QCLot
Total Metals								
Aluminum, total	7429-90-5	945	2.0	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Antimony, total	7440-36-0	0.035	0.020	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Arsenic, total	7440-38-2	0.828	0.020	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Barium, total	7440-39-3	4.22	0.040	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Beryllium, total	7440-41-7	<0.020	0.020	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Bismuth, total	7440-69-9	0.467	0.010	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Boron, total	7440-42-8	<2.0	2.0	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Cadmium, total	7440-43-9	0.0164	0.0020	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Calcium, total	7440-70-2	600	100	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Chromium, total	7440-47-3	0.40	0.10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Cobalt, total	7440-48-4	<0.10	0.10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Copper, total	7440-50-8	22.8	0.20	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Iron, total	7439-89-6	386	10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Lead, total	7439-92-1	0.618	0.020	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Lithium, total	7439-93-2	<0.20	0.20	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Magnesium, total	7439-95-4	86	10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Manganese, total	7439-96-5	9.15	0.10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Mercury, total	7439-97-6	0.00445	0.00050	mg/L	E508B/WT	10-May-2024	10-May-2024	1436495
Molybdenum, total	7439-98-7	0.087	0.010	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Nickel, total	7440-02-0	0.26	0.10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Phosphorus, total	7723-14-0	512	10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Potassium, total	7440-09-7	60	10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Selenium, total	7782-49-2	0.061	0.010	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Silver, total	7440-22-4	0.777	0.010	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Sodium, total	7440-23-5	78	10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Strontium, total	7440-24-6	1.75	0.0400	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Sulfur, total	7704-34-9	130	100	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Thallium, total	7440-28-0	<0.0020	0.0020	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Tin, total	7440-31-5	0.388	0.020	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Titanium, total	7440-32-6	1.41	0.060	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Tungsten, total	7440-33-7	<0.18	0.18	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Uranium, total	7440-61-1	0.0352	0.0020	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Vanadium, total	7440-62-2	0.14	0.10	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Zinc, total	7440-66-6	9.69	0.60	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494
Zirconium, total	7440-67-7	0.304	0.060	mg/L	E440B/WT	10-May-2024	10-May-2024	1436494

Please refer to the General Comments section for an explanation of any result qualifiers detected.

Please refer to the Accreditation section for an explanation of analyte accreditations.

Chain of Custody (COC) / Analytical Request Form

COC Number: 22 -

Page of

Canada Toll Free: 1 800 668 9878

www.alsglobal.com

Environmental Division Thunder Bay
Work Order Reference
TY2404216

Telephone : +1 807 623 6463

Report To	Contact and company name below will appear on the final report
Company:	OCWA
Contact:	Geraldton Waste Water Treatment
Phone:	807-854-0877
	Company address below will appear on the final report
Street:	320 Clarke Ave SE
City/Province:	Geraldton, ON
Postal Code:	P0T 1M0
Invoice To	Same as Report To ☐ YES ☑ NO
	Copy of Invoice with Report ☑ YES ☐ NO
Company:	
Contact:	

Reports / Recipients

Select Report Format: ☑ PDF ☑ EXCEL ☑ EDD (DIGITAL)
Merge QC/QCI Reports with COA ☐ YES ☑ NO ☐ N/A
☐ Compare Results to Criteria on Report - provide details below if box checked
Select Distribution: ☑ EMAIL ☐ MAIL ☐ FAX

asabu@ocwa.com; jaaltonen@ocwa.com; nwopct@ocwa.com; bnayancokeesic@ocwa.com; fjorge@ocwa.com; PO'Handley@ocwa.com; palbert@ocwa.com; lab.results@greenstone.ca; katherine.alton@greenstone.ca

Invoice Recipients

Select Invoice Distribution: ☑ EMAIL ☐ MAIL ☐ FAX
Email 1 or Fax APNorthWest@ocwa.com
Email 2

Turnaround Time (TAT) Requested

☑ Routine [R] if received by 3pm M-F - no surcharges apply
☐ 4 day [P4] if received by 3pm M-F - 20% rush surcharge minimum
☐ 3 day [P3] if received by 3pm M-F - 25% rush surcharge minimum
☐ 2 day [P2] if received by 3pm M-F - 50% rush surcharge minimum
☐ 1 day [E] if received by 3pm M-F - 100% rush surcharge minimum
☐ Same day [E2] if received by 10am M-S - 200% rush surcharge.

Additional fees may apply to rush requests on weekends, statutory holidays and for non-routine tests.

Date and Time Required for all E&P TATs: dd-mmm-yy hh:mm am/pm

For all tests with rush TATs requested, please contact your AM to confirm availability.

Project Information

ALS Client Code / QUOTE #:	TY2023OCWA1000029
Job / Project #:	110001649
PO / AFE:	
LSD:	5896

Oil and Gas Required Fields (client use)

AFE/Cost Center:	PO#
Major/Minor Code:	Routing Code:
Requisitioner:	
Location:	

ALS Lab Work Order # (ALS use only): ~~4214~~ 4216

ALS Contact: Dimen Mahmood Sampler:

Analysis Request

Indicate Filtered (F), Preserved (P) or Filtered and Preserved (F/P) below

ALS Sample # (ALS use only)	Sample Identification and/or Coordinates (This description will appear on the report)	Date (dd-mmm-yy)	Time (hh:mm)	Sample Type	NUMBER OF CONTAINERS	Metals	Mercury	SAMPLES ON HOLD	EXTENDED STORAGE REQUIRE	SUSPECTED HAZARD (see notes)
	WPCP Digested Sludge	2-May-24	14:05	Grab	12	R	R			

Drinking Water (DW) Samples[1] (client use)

Are samples taken from a Regulated DW System? ☐ YES ☑ NO
Are samples for human consumption/ use? ☐ YES ☑ NO

Notes / Specify Limits for result evaluation by selecting from drop-down below (Excel COC only)

Ensure Station acronym and Short Names are included.

SAMPLE RECEIPT DETAILS (ALS use only)

Cooling Method: ☐ NONE ☐ ICE ☒ ICE PACKS ☐ FROZEN ☐ COOLING INITIATED
Cooler Custody Seals Intact: ☐ YES ☐ N/A Sample Custody Seals Intact: ☐ YES ☐ N/A

INITIAL COOLER TEMPERATURES °C	FINAL COOLER TEMPERATURES °C
12.1	

SHIPMENT RELEASE (client use)

Released by:	Date:	Time:
Filipe Jorge	03-May-24	9:00

INITIAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:

FINAL SHIPMENT RECEPTION (ALS use only)

Received by:	Date:	Time:
LV	5/3/24	2:42

REFER TO BACK PAGE FOR ALS LOCATIONS AND SAMPLING INFORMATION

WHITE - LABORATORY COPY YELLOW - CLIENT COPY

MAY 2023 FRONT

Failure to complete all portions of this form may delay analysis. Please fill in this form LEGIBLY. By the use of this form the user acknowledges and agrees with the Terms and Conditions as specified on the back page of the white - report copy.

1. If any water samples are taken from a Regulated Drinking Water (DW) System, please submit using an Authorized DW COC form.

Dropped off by G. Grozier 1 Cooler