

Temagami North Presentation



Technologies
ECOFIXE



ONTARIO CLEAN WATER AGENCY
AGENCE ONTARIENNE DES EAUX

ECOFIXE

For over 10 years Technologies Ecofixe has offered simple and modular wastewater solutions to help customers improve effluent quality and treatment capacity while minimizing cost, additional infrastructure requirements, and ecological impacts.



Ontario Clean Water Agency



***Giving a 2nd life to
Wastewater
Treatment Plants***



ECOFIXE

Specifically designed for organic load removal



Both solutions can be combined in a single installation

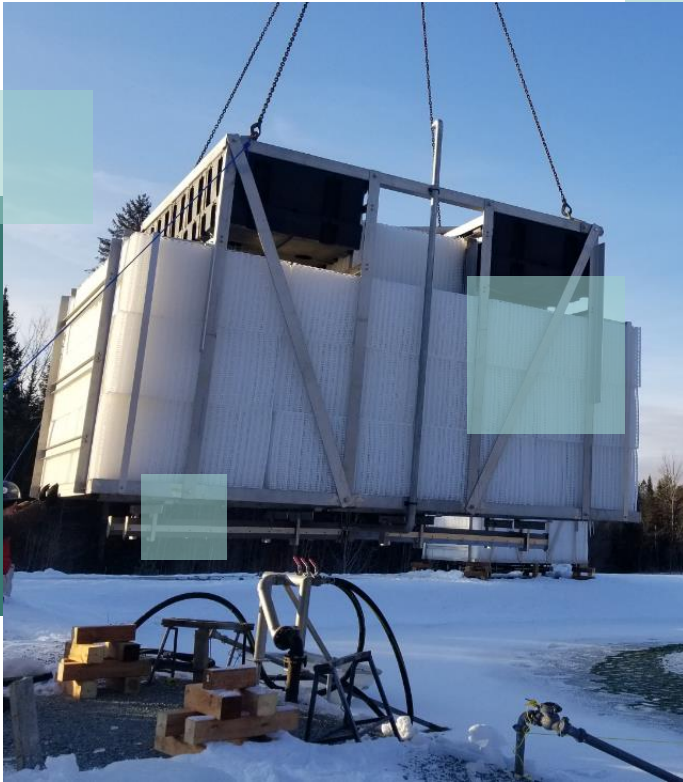
Solutions



Year-round ammonia removal, even in cold water

BIOFIXE

Specifically designed for ammonia removal



95%

Organic load removal capacity of
the ECOFIXE module

Concentration of module effluent
down to $\leq 5 \text{ mg/L}$

ECOFIXE Performance



98%

Ammonia removal capacity of
the BIOFIXE module

Module effluent concentrations
down to ≤ 1 mg/L summer and
winter

BIOFIXE Performance



How it works

ECOFIXE and BIOFIXE are modular biological reactors **submerged directly** into the aerated lagoons or other bioreactors.

Depending on the application approach ECOFIXE and BIOFIXE are **FBBR** or **IFAS** systems.

O&M

Triple-Use Aeration system:

Provides aeration to the biomass

Creates an Action Zone:

Developing Biomass on the media is partially released creating a larger colonization zone. The result allows for successful wastewater treatment beyond the modules. No forced direction

Easy Maintenance

Every 4-6 weeks, the operator redirects air pressure to the open aerators to clean the media. The operator then repeats this to the remaining modules.





Temagami North Project Overview

Project Details

Sponsorship through
Innovative Solutions Canada

Investment: **\$571,500**

Installation completed in 1 week
Approved by MECP

Turnkey Project Included:

- 3 BIOFIXE modules
- New 7.5 HP Blower
- Transportation, Assembly, Installation, Training and Support



Installation - July 2022

Temagami, ON

Population: 1000 residents

Average Daily Flow: 390 m³/d

Goal: Optimize the plant and treat TAN year-round

Environmental Advantages

ADVANTAGES

- **No** Chemicals or Consumables
- **No** Replacement Parts
- **Will Not Degrade**
 - Performance or Modules
- **New** High-Efficiency Blower

EVEN MORE!

- HDPE made with partially recycled plastics
- Stainless steel frame
- All elements are 100% recyclable
- Faster treatment recovery during extreme weather events

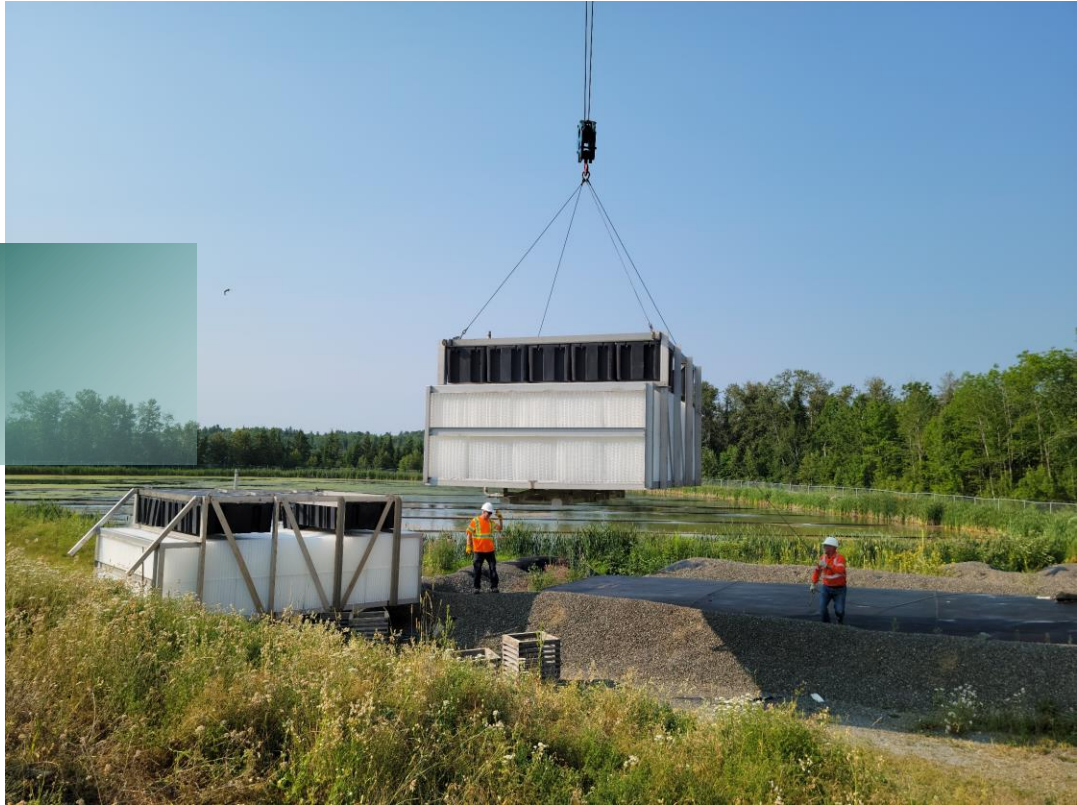


Operations Advantage



Maintenance

- **Set-It and Forget-It**
- Lasts the lifetime of the WWTP
- No new infrastructure required
- Modular system provides flexibility
 - Fast and easy to assemble
 - Operational in weeks
 - Add additional Modules over time
- Maintains optimal performance
 - Preventative monthly activity to increase aeration through on-shore blower



Operations Advantage

Annual O&M cost estimates

Description	Cost
Modules maintenance time	\$975
Electricity (module only)	\$6,625
Blower filter	\$350
Total	\$7,950

Temagami North WWTP

BIOFIXE Annual Summary

A few water treatment concepts

Three majors contaminants

Organic load (BOD5): Organic substances in the water that consume oxygen.

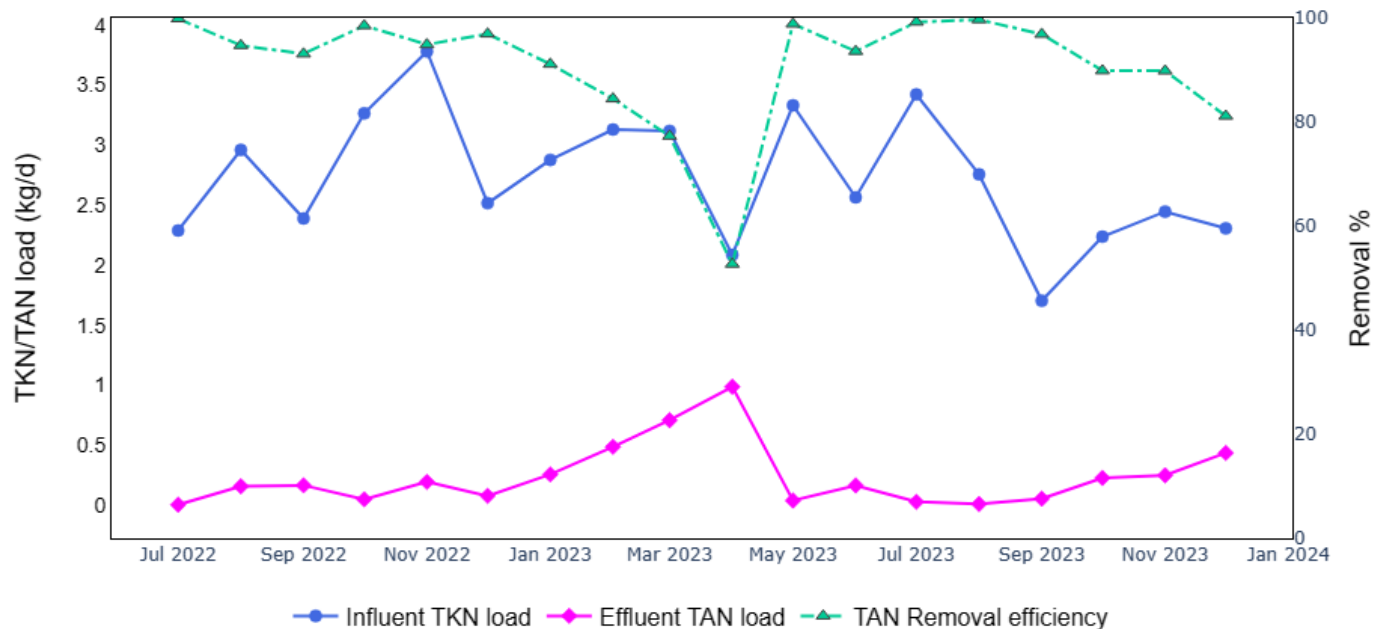
Total Ammonia Nitrogen (TAN): the nitrogen form that atrophies water

Total Suspended Solid: Solid particles that cloud water.



TAN Removal Efficiency

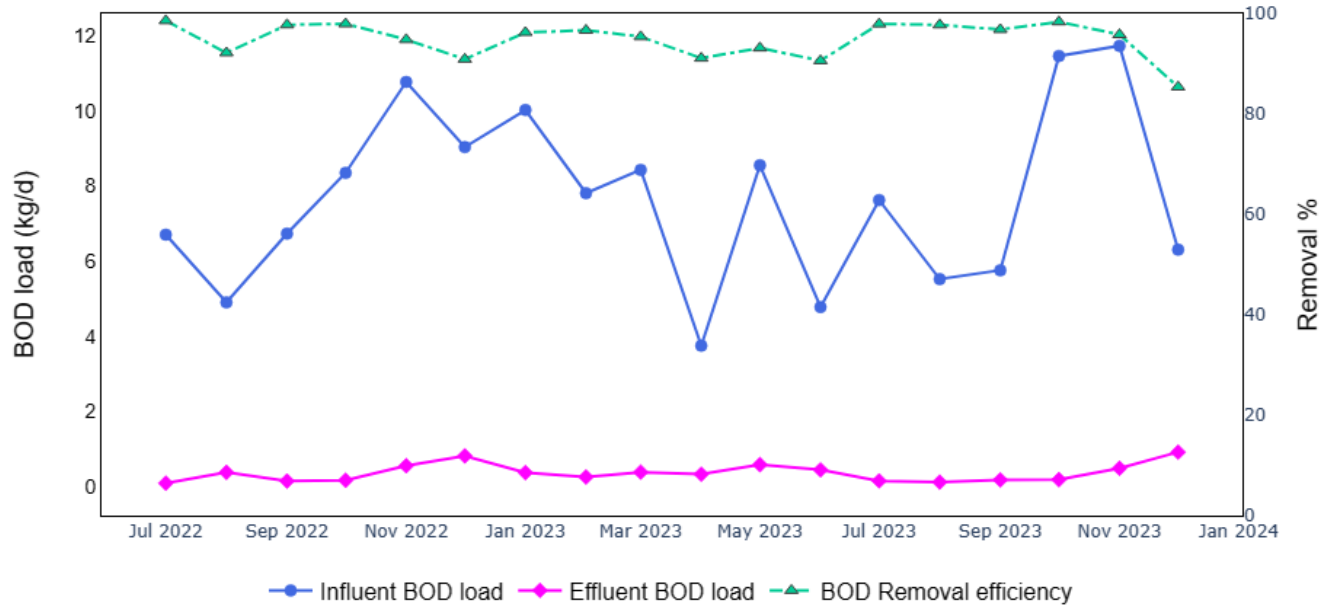
Temagami WWTP Monthly TAN removal efficiency



92.5%
Average
TAN Removal

BOD5 Removal Efficiency

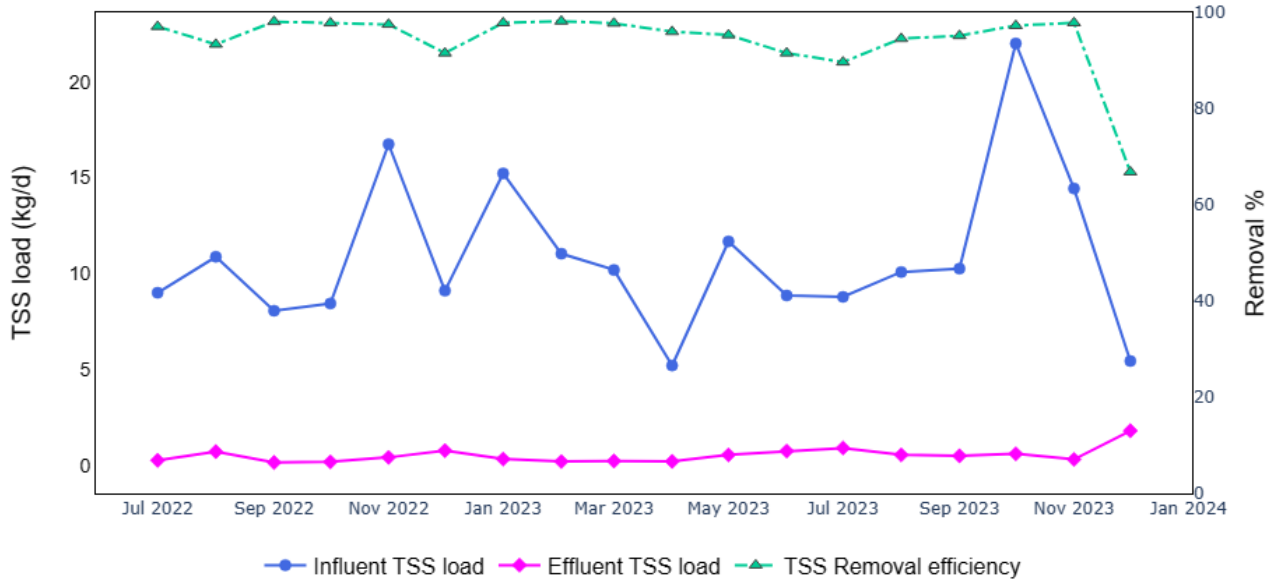
Temagami WWTP Monthly BOD removal efficiency



93%
Average
BOD5
Removal

TSS Removal

Temagami WWTP Monthly TSS removal efficiency



90%
Average on
TSS removal

ECOFIXE modules are not designed for TSS removal but have a measurable positive impact on this parameter.



Temagami North Next Steps

Temagami North WWTP

- Temagami Council approval
- Amendment to ECA
- Power supply upgrade
- High-efficiency blower connection



Why should you preserve modules in your facility?

- Community owns the equipment
- Modules provide a significant capacity increase for the future need
- Modules require very low OPEX
- Temagami North is a role model for all small communities facing similar challenges



Thanks

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Do you have a project?

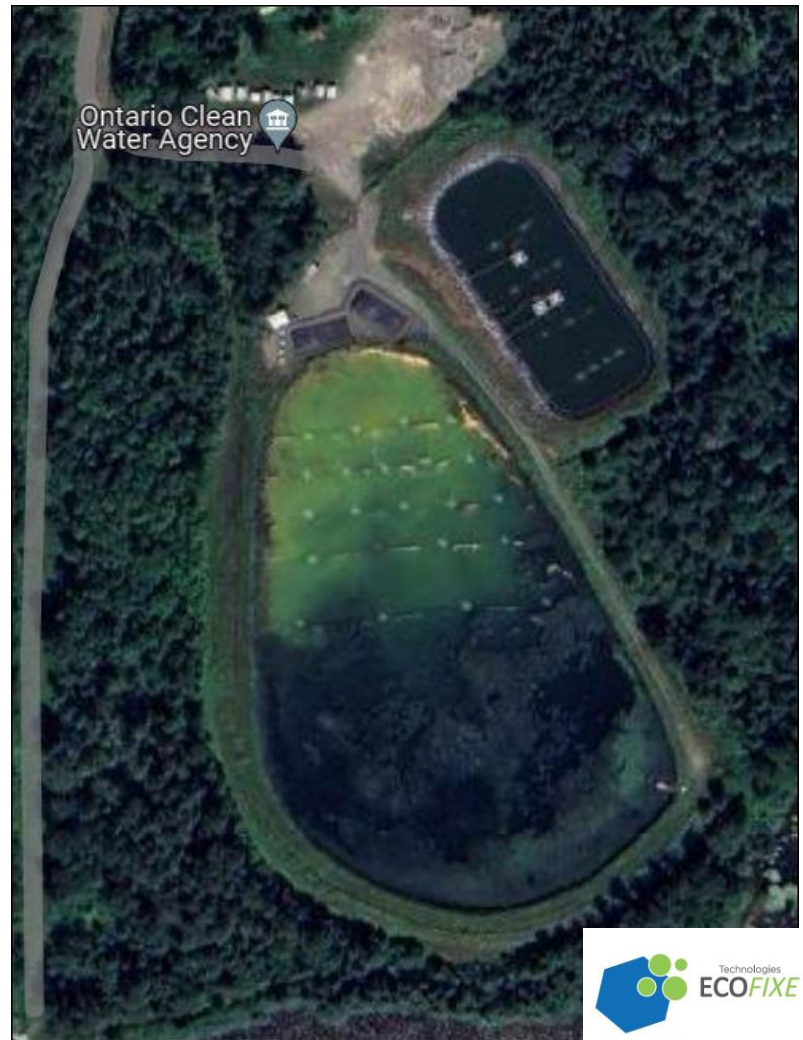
Contact us for more information

www.ecofixe.com



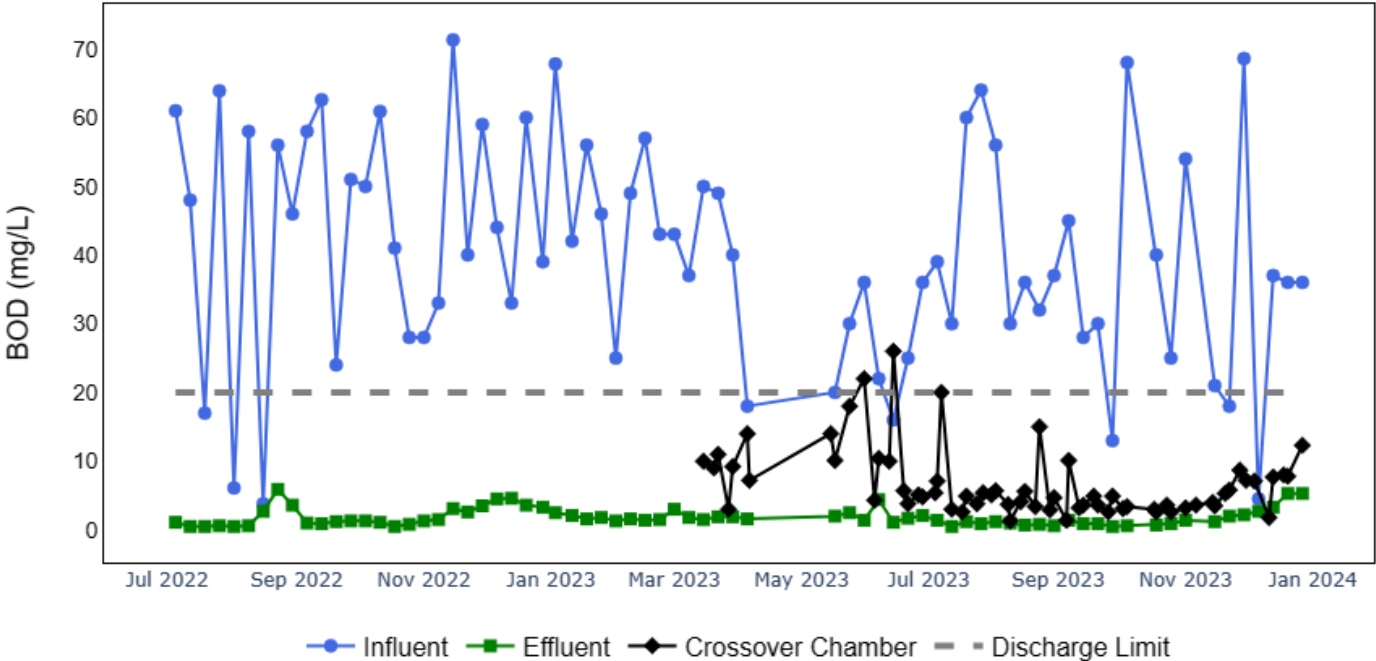
Performance Review

Opportunity: Increase the treatment capacity of the existing Wastewater Treatment Plant.



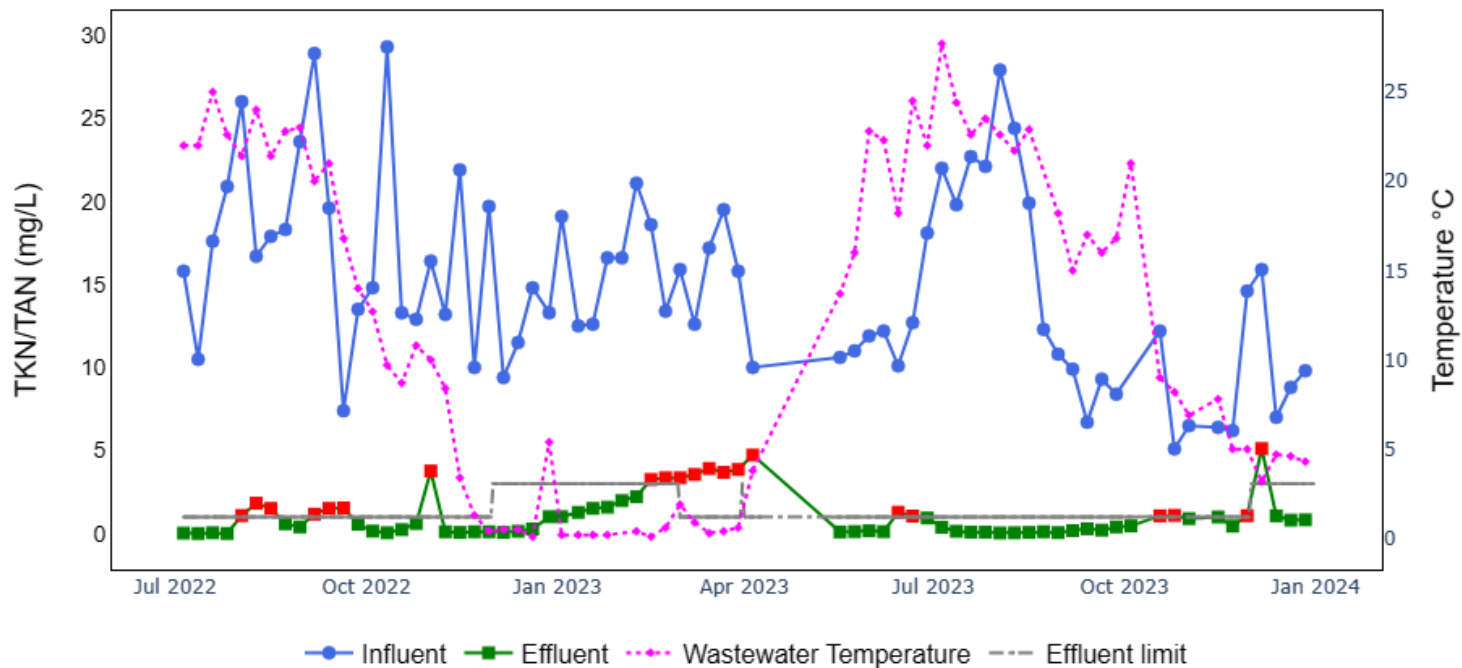
BOD Removal

Temagami WWTP BOD Removal Performance



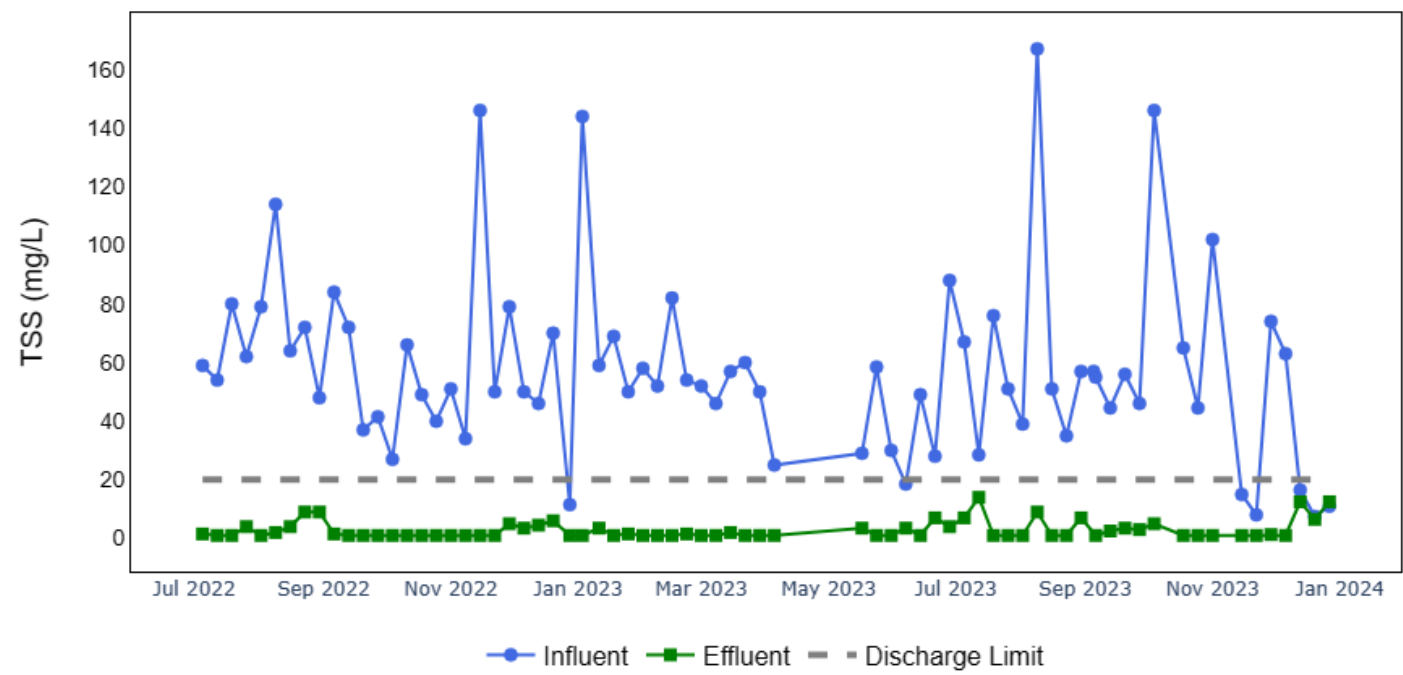
TAN Performance

Temagami WWTP TAN Removal Performance



TSS Performance

Temagami WWTP TSS Removal Performance



Average Daily Flow (m³/d) ???

Temagami WWTP Average Daily Flow

