

WaterQuality3D

City of Fergus Falls – MN Pollution Control Agency End-of-Season Summary Lake Alice Pilot Project November 2024

Season Overview:

The second season of operation on Lake Alice followed one of the warmest winters on record. Spring conditions were abnormally wet, with near-record rainfall in May and June. Mid-summer and Fall were unusually dry with high temperatures, making 2024 one of Minnesota's most atypical weather years. Despite the challenging weather conditions, project outcomes in 2024 met or exceeded project expectations to improve odor and water quality on Lake Alice.

Notable Improvements:

- ❖ Increased pH, which inhibits algae and bacteria growth.
- ❖ Reduced odor allows lakeshore residents to open windows throughout the summer.
- ❖ Improved recreational use for shoreline users means walkers, bikers, and picnickers are not deterred by odors.
- ❖ Improved dissolved oxygen throughout the water column indicates the problematic anoxic zone at the lake bottom is decreasing while the sandy bottom is increasing.

The WQ3D water treatment system has been operational on Lake Alice during the summer months since 2023 under a partnership agreement with the City of Fergus Falls. The State of Minnesota authorized and funded the project under a two-year demonstration pilot project to improve water quality on the lake. WQ3D is testing a unique and innovative nonchemical water treatment technology that is mitigating, managing, and controlling some of the state's most troublesome water impairments on Lake Alice and several other projects around the state.

More than any other natural resource, lakes are our state's cultural identity. In recent decades, lakeshore property owners, city residents, local and state governments, and clean water advocates have become increasingly frustrated at the lack of viable options available to address growing impairments like odor, algae, potentially harmful E. coli, and cyanobacteria (blue-green algae).

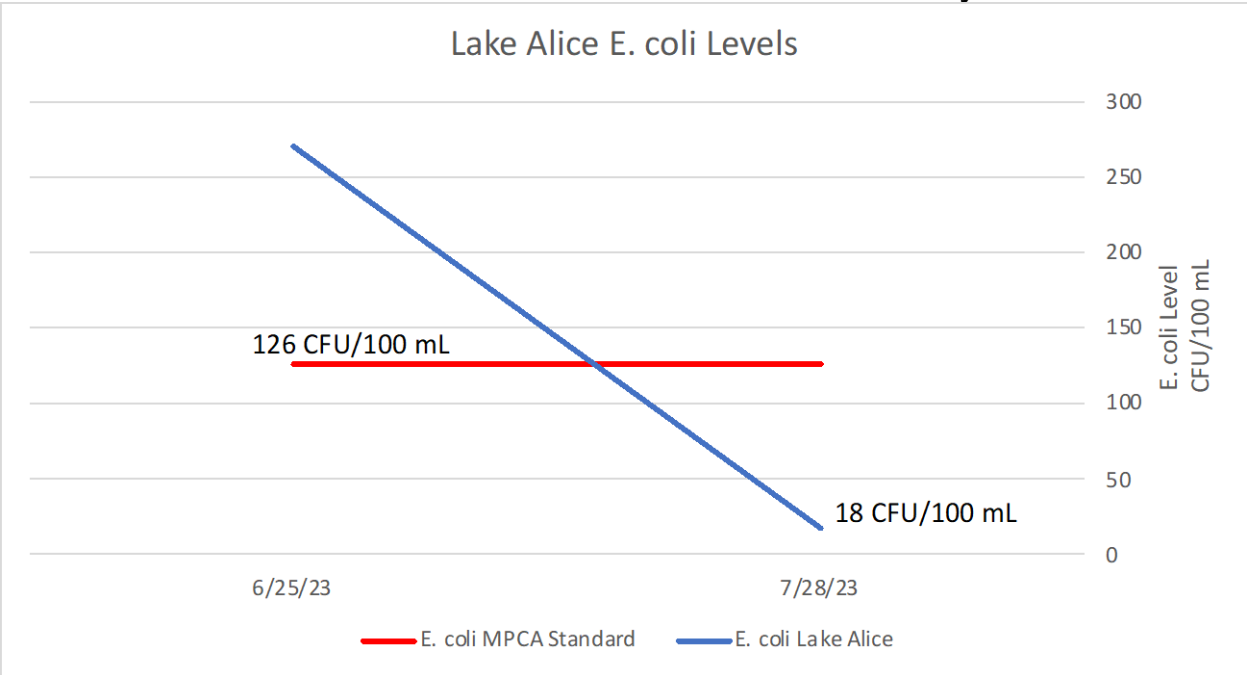
Local project goals include reducing odor, improving recreational activities on and around the lake, and making the lake safe for dogs and children.

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“Lake Alice in Fergus Falls is part of a two-year pilot project approved by the Minnesota State Legislature, and according to the data coming in now over the last summer, the transformation is astounding.”

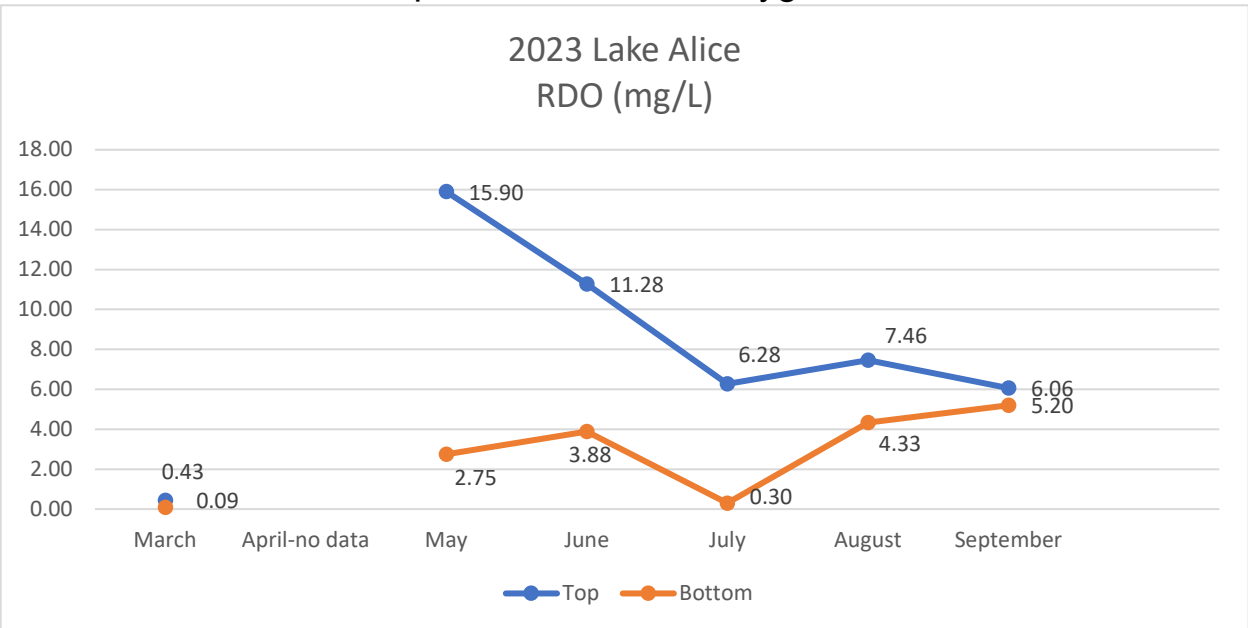
Fergus Falls Journal / October 18, 2023
System Install 2023

WQ3D Reduced E.coli 252 Points in 34 Days



In one month, between June 25 and July 28, the WQ3D system reduced E.coli bacteria in water samples from 270 colony-forming units (CFU) to 18 CFU. The MPCA bacteria water quality standard is 126 CFU.

Improved Dissolved Oxygen



The WQ3D system improved Dissolved Oxygen significantly by reducing surface-level algae and increasing bottom-measurement oxygen levels.