HAB AquaticSolutions

PROJECT DESCRIPTION

Lake Size
50 acres

Date of Application
May 2007

Project Sponsor
State of Nebraska

Project Reference

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Fremont Lake, NE

Fremont State Lake #20 is a 50-acre sand pit lake located near the Fremont, NE. This recreational lake had a long history of poor water quality with frequent swimming beach closures due to high algal toxic concentrations. Excessive phosphorus levels were the main cause of the toxic algal blooms. Internal phosphorus loading (leaching from the lakebed sediments) was the primary nutrient source to the overlying water column. Prior to the alum application, average summer total phosphorus was 139 µg/L, chlorophyll *a* was 100 µg/L and water clarity was only 14 inches.

A buffered alum application (28,442 gallons of alum and 13,234 gallons of sodium aluminate) occurred over a five-day period in May 2007. The application resulted in dramatic water quyality improvements.

Alum Application at Fremont State Recreation Area

State of Nebraska agencies reported that during the first three summers after the alum application:

- Total phosphorus was reduced by 85% to 21 µg/L
- Chlorophyll a was reduced by 92% to 8 µg/L
- Water clarity increased over 8 feet
- Algal toxins were eliminated & the lake was re-opened for recreation