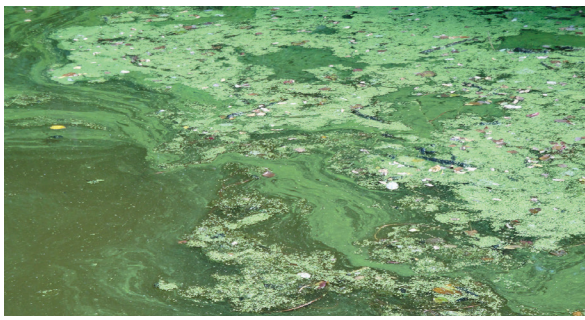
SŌLITUDE
LAKE MANAGEMENT



Drinking Water & Reservoir Management

Preventing and Managing Toxic Cyanobacteria Blooms

Drones support the safety of our teams while preserving the health, beauty, and functionality of your aquatic resources.

Cyanobacteria (blue-green algae) and harmful algal blooms (HABs) are a growing concern for water utilities that use surface water supplies. They can contaminate drinking water by producing dangerous toxins and also cause taste and odor issues. From water quality testing and algae identification to cyanobacteria control and ongoing monitoring, the environmental experts at SŌLitude Lake Management® are here to properly and efficiently manage your municipality's reservoirs and help to ensure that customers are provided with clean, safe drinking water.

What causes cyanobacteria (blue-green algae?

Excess nutrients can come from a variety of sources including run-off from fertilizers and sewage, sedimentation from increased development and decomposing organic matter both outside and within the waterbody. Excess nutrients are the primary cause of nuisance algae growth, so reducing the nutrient load through watershed management and in-lake nutrient

Why manage cyanobacteria in drinking water reservoirs?

- Better water in equals better water out, while also reducing treatment costs.
- Prevention of excess organic cyanobacteria biomass shuts off production of cyanotoxins as well as taste and odor compounds at the source, before they get into the treatment plant.
- A strategic investment in the protection of supply reservoirs and lakes can reduce the need for more significant investment in the treatment plant, while also minimizing the potential for health and permit compliance issues with cyanotoxins and disinfection by-products.

Why Should We Be Proactively Treating Cyanobacteria In Reservoirs?

1. Without intervention, the cyanobacteria are likely to continually grow and increase the amount of toxins produced.
2. Following an effective algaecide treatment, the dead cyanobacteria can no longer produce toxins.
3. Toxins are more readily degraded outside of the cell (biodegradation) than in the treatment plant.
4. Most cyanobacteria toxins will be diluted through the water (microcystins are water soluble) providing a lower exposure concentration that can't aggregate.

Surface water treatment solutions

We execute an Action Threshold based management philosophy following a proven system of Assessment, Prescription and Implementation.

Assessment:

We work with water managers to assess reservoir conditions, evaluate water quality data and identify the species, location and density of the current algae and cyanobacteria populations. We will also perform a comprehensive analysis of past conditions and historical data related to water quality.

Prescription:

Based on assessment information, water quality objectives and available resources, we will design a site specific management program. Innovative and efficient management technologies are utilized to proactively and preventively address cyanobacteria populations, and reactively control blooms, associated toxins, and taste and odor producing compounds that arise.

The following are treatment solutions we utilize to proactively control cyanobacteria and phosphorus in source water lakes and reservoirs:

- All-in-one algaecide and water quality enhancers provide effective control of a broad range of algae species while reducing in-water phosphorus levels with each application. The result is longer lasting control, improved water quality and reduced maintenance through time.
- Aluminum sulfate and lanthanum-modified clay products rapidly bind and permanently remove free reactive phosphorus (FRP) from the water column. These products can also be used to "cap" bottom sediments creating a reactive barrier that captures and binds nutrients released from the lake or pond bottom resulting in reduced internal nutrient recycling and improved water quality.
- Hydrogen peroxide and sodium carbonate based algaecides are alternatives to copper and are a good choice for selective control of blue-green algae. These environmentally sound solutions are fully biodegradable, non-toxic to the ecosystem and certified for organic use.

Implementation:

After determining the right management program to meet your specific needs and objectives, our professionals will implement all aspects of the management plan, to include ongoing monitoring and engagement with water reservoir managers.

Blue-green Algae Control in a Drinking Water Reservoir

Application of an all-in-one algaecide and water quality enhancer significantly reduced cyanobacteria in this 104-acre drinking water reservoir and improved the taste and odor of the resulting drinking water.

"SŌLitude technicians are really good at what they do. We have had some algae problems this summer with all the heat, but SŌLitude has been more than willing to make additional visits to address and solve the problems. I highly recommend SŌLitude Lake Management for all your lake or pond management needs!"

Kevin M. Summerlin
Facilities Manager

SŌLITUDE LAKE MANAGEMENT

Contact SOLitude to find out how to make your municipality's drinking water supply cleaner and safer.

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