



Drinking Water Reservoir Management

Preventing and Managing Toxic Cyanobacteria Blooms

Cyanobacteria (blue-green algae), or Harmful Algal Blooms (HABs), are a growing concern for drinking water reservoirs due to the dangerous toxins and taste and odor issues HABs can cause.

Better source water into the treatment plant translates to better drinking water for your community. That's why the aquatic experts at SOLitude Lake Management are here to effectively manage your municipality's reservoirs so your customers are provided with clean, safe drinking water. From water quality testing and algae identification to cyanobacteria control and ongoing monitoring, our solutions will help reduce treatment costs and improve the quality of your 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 remediation is essential.



Why Should We Proactively Manage Cyanobacteria In Reservoirs?

- 1** Proactively monitoring and managing for cyanotoxins helps prevent taste and odor compounds in source water, thus helping reduce treatment costs.
- 2** Management reduces issues during the treatment process while also minimizing potential health and compliance issues with cyanotoxins and disinfection by-products.
- 3** Without intervention, the cyanobacteria are likely to continually grow and increase the amount of toxins produced.
- 4** Following an effective algacide treatment or nutrient remediation application, the water quality becomes balanced and less hospitable for algae growth.
- 5** Toxins are more readily degraded outside of the cell (biodegradation) than in the treatment plant.

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 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. Science-backed technologies are utilized to proactively address cyanobacteria and manage algal blooms, dangerous toxins, and taste and odor-producing compounds.

The following solutions are used to proactively manage 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. These solutions help improve water quality and reduce the need for regular maintenance over time.
- Aluminum sulfate (Alum) and lanthanum-modified clay products (Phoslock) rapidly bind and remove free reactive phosphorus from the water column while also trapping nutrients in bottom sediments.
- Hydrogen peroxide and sodium carbonate-based algaecides are alternatives to copper and are a good choice for selective control of blue-green algae. These solutions are 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 the appropriate solutions and monitor results.

Blue-green Algae Control in a Drinking Water Reservoir



The 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.

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

Kevin M. Summerlin
Facilities Manager