

COMMENTARY

Initial results are positive following alum treatment

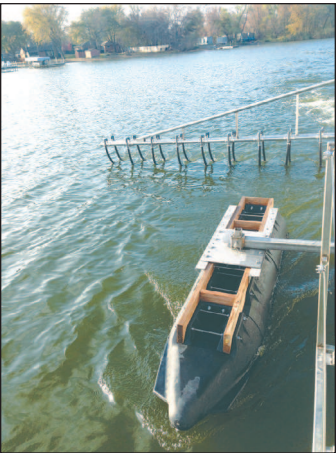
BY MEGHAN LITSEY

The results from the Spring Lake alum treatment (featured in the Nov. 9 edition of the Prior Lake American) are looking good, according to water quality data released by Barr Engineering.

In 2011, the Prior Lake-Spring lake Watershed District conducted a Total Maximum Daily Load (TMDL) study of Spring and Upper Prior lakes. A TMDL study evaluates the maximum amount of a pollutant that a waterbody can receive and still meet state water quality standards.

This TMDL study found that Spring Lake was impaired, or threatened, by excess phosphorus, and recommended that the phosphorus concentration should be reduced by about 85 percent in Spring Lake. The study also determined that approximately half of the phosphorus in Spring Lake comes from the surrounding land and streams that drain to the lake, and the other half is released internally from the bottom of Spring Lake.

In order to address the internal phosphorus concentrations, the watershed district explored several alternatives, but decided to pursue an alum treatment for Spring Lake. Aluminum sulfate, or alum, is a nontoxic material that is commonly used in water treatment plants to clarify drinking water. In lakes, alum is used to lower the



SUBMITTED PHOTO

Taken on the last day of alum application, this photo shows the immediate effects of the water-quality treatment on Spring Lake.

concentration of phosphorus in the water. The expected lifespan of the potential treatment of Spring Lake has been estimated at 15 to 30 years.

Starting in October, HAB Aquatic Solutions Inc. set up at the Spring Lake public access and began applying the alum. All told, HAB used a barge to apply 292,000 gallons of alum over an 11-day period.

Before the treatment started, Barr Engineering collected water samples from Spring Lake and measured total phosphorus and Chlorophyll-A. Monitoring chlorophyll levels is a way to track algae blooms. Surface waters with lots of algae are typically high in nutrients,

like phosphorus and nitrogen. That's why it's also important to measure phosphorus, because phosphorus drives algal growth. For reference, lakes such as Spring are not supposed to exceed 40 micrograms per liter (µg/L) for total phosphorus and 14 µg/L for Chlorophyll-A in Minnesota.

Prior to the treatment, Barr recorded 220 µg/L of total phosphorus and 45.5 µg/L of Chlorophyll-A for Spring Lake. On Nov. 1, following the alum treatment, Barr measured 59 µg/L of total phosphorus and Chlorophyll-A concentrations of 4 µg/L, which indicate a significant drop in phosphorus and chlorophyll concentrations. While these initial results are positive, the real test will come next spring when the lake has to compete with spring runoff and warming temperatures.

Watershed district staff will continue monitoring Spring Lake in the spring once conditions allow, since our monitoring program has wrapped up for the season. We have a long way to go to clean up Spring Lake, but it looks like this big first step went well.

To learn more about the alum treatment of Spring Lake, please visit www.plslwd.org and click on the Projects tab to get to the Spring Lake Alum Treatment page.

Meghan Litsey is the outreach specialist with the Prior Lake-Spring Lake Watershed District.

Interface: PL seeks submissions

Interface is our youth-focused page. What makes a good Interface submission? Well, the content must be youth-produced. That means someone under 18 has to write it, photograph it, draw it or create it. Interface is meant to be a place where youth speak for themselves, rather than have someone else do it for them. We want you to represent you, since you know how to do it best!

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The paper reserves the right to make small edits or not run material deemed inappropriate, like our other submitted material.

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Submit items to interface@swpub.com, or call reporter Kaitlyn Egan at (952) 345-6375.

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