



June 08, 2023

Duncan Kruse  
West Hill Pond Association  
PO Box 1057  
New Hartford, CT

Re: West Hill Pond Spring Update  
New Hartford/Barkhamsted, CT

Dear Mr. Kruse,

GZA staff sampled West Hill Pond on April 20<sup>th</sup>. Samples were taken from the deepest point in the reservoir, which is found in the south of the lake. RTRM calculations demonstrate that West Hill Pond was minimally stratified, with the thermocline at 7 m deep (minimal stratification is usually 30 RTRM or so). Dissolved oxygen was present throughout the water column, with highest concentrations occurring directly below the thermocline. The euphotic zone (the upper portion of the water column that is able to support photosynthesis) reached 13 meters, so elevated oxygen production below 7 m is likely the result of photosynthetic phytoplankton productivity. Water samples were collected at 2 m, 7 m, 10 m, 14 m, and 18 m for chemical and optical analyses. Total phosphorus (TP) concentrations in West Hill Pond were moderately low, ranging from 11 to 18 ug/L. Ammonia concentrations were highest at the bottom of the reservoir (18 ug/L), but were still low. Similarly, iron concentrations were highest at the bottom of the reservoir (0.22 mg/L) but remained moderately low. Thus, the three most important nutrients for cyanobacteria production in New England lakes—TP, ammonia, and Fe—were all moderately low, suggesting West Hill Pond's water column will likely favor eukaryotic phytoplankton (such as diatoms and green algae) over cyanobacteria.

Phycocyanin and phycoerythrin, which are cyanobacteria pigments, were minimal. GZA personnel used a 5-meter straw to collect phytoplankton samples and actual phytoplankton cell counts from these samples demonstrate the total absence of cyanobacteria. The upper epilimnion's phytoplankton assemblage was ecologically diverse, with Diatoms being the most abundant. Nannoplankton, Cryptophytes, and green algae (Chlorophytes) were also common.

In sum, early spring conditions at West Hill Pond seem very healthy and bode well for the coming summer season.

GEOTECHNICAL

ENVIRONMENTAL

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