

Tara CDD

Phosphorus Jar Test

Sample date: 2/8/2018

Report date: 2/20/2018

Produced by: Jordana Cutajar

Lab and Field Biologist



Report 2

Aquatic Glossary 3



2100 NW 33rd Street
Pompano Beach, FL 33069

800-432-4302

www.aquaticsystems.com

©2016 All rights reserved

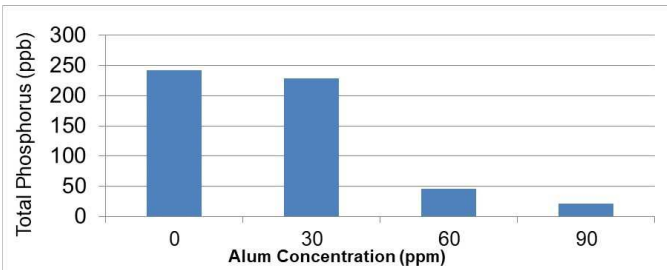
Measured

Perimeter Feet: 2,700

Surface Acres: 2.6

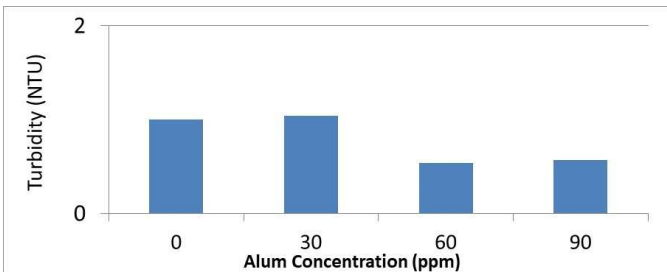
Water analysis revealed elevated phosphorus levels in this pond. Phosphorus levels of less than 100 ppb are recommended for freshwater systems. Water testing was performed in order to determine a safe and effective rate for Alum.

Phosphorus Jar Test: Desired range is <100 ppb



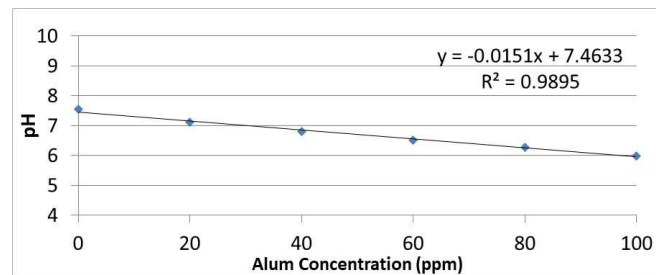
Alum Concentration (ppm)	Total Phosphorus (ppb)
0	242
30	228
60	45
90	21

Water Clarity Jar Test: Desired Range is < 5 NTU



Alum Concentration (ppm)	Turbidity (NTU)
0	1.00
30	1.04
60	0.54
90	0.57

pH Titration: Dosing Limitations



In order to protect aquatic life it is recommended that pH levels do not drop below 6.5.

It is also recommended that pH levels are not altered by more than one pH unit.

It is recommended that Alum dosage does not exceed 60 ppm at any one time since pH levels drop too low.



Recommendations

Based on test results, the following is recommended:

- Alum Treatment
 - Dose: 60 ppm
- Follow-up Total Phosphorus testing
 - When: 1 week after treatment

Due to external factors not accounted for in lab tests, phosphorus reduction rates in the field may be lower or higher than are estimated by lab results.

Additional Alum treatments may be required if target is not reached with the scheduled applications.

Trophic State Index (TSI)
<p>A Trophic State Index (TSI) provides a single quantitative result for the purpose of classifying and ranking lakes in terms of water quality.</p> <p>Nutrients such as phosphorus are usually the limiting resource for algae and plant abundance and therefore are used in creating a TSI reference number. Generally, the higher the lakes TSI the greater the likelihood of elevated nutrient levels, increased algae problems and decreased water clarity.</p> <p>Most of Florida's geology provides for very nutrient rich sediments which cause lakes to have naturally high primary productivity and be naturally eutrophic.</p>
<p>Oligotrophic (<30): Very low biological productivity - Clear Water, bottom, well oxygenated, few plants and animals</p>
<p>Mesotrophic (30-40): Low to medium biological productivity - moderately clear water, abundant plant growth</p>
<p>Eutrophic (50-70): High biological productivity - fair water clarity, muck accumulation, dense plant growth and algae mats</p>
<p>Hypereutrophic (>70): Very high productivity - plankton algae blooms, low oxygen, fish kills, poor water clarity and quality, limited submersed plant growth, muck accumulation, bottom and surface algae mats dominate</p>

Nutrient Tested	Desired Range	Issues with high levels	Likely causes of high levels
Total Phosphorus	<100 ppb	>100 ppb can cause excessive aquatic weeds and algae	Reclaimed water discharge, landscape fertilizer runoff and agricultural drainage, phosphorus laden bottom sediments

Alum (Aluminum Sulfate)

A product that binds phosphorus in its various forms, removing it from the water column and binding it within the sediment layer, thus making it unavailable for uptake by organisms. This treatment has been shown in multiple studies to significantly reduce nutrient levels and improve water clarity