



Water Quality Summary – Horseshoe Lake

| Parameter | Test Results | | Target Range | Status |
|--|--------------------------|-------------|------------------|--------------|
| | Site 1 | Site 2 | | |
| Chlorophyll ‘α’ | 1.25 | 0.753 mg/m3 | 1 –140 mg/m3 | Oligotrophic |
| Total Dissolved Solids | 440 | 440 ppm | 0 – 1,000 ppm | Normal |
| Dissolved Oxygen | NA | | 4.0 – 12.0 ppm | |
| Phosphate | Less than 5 ppb | | 15 – 100 ppb | Normal |
| Nitrate | Less than 0.1 ppm | | 0 – 50 ppm | Healthy |
| E. coli | Less than 1 CFU / 100 ml | | < 300 CFU/100 mL | Normal |
| <div><div><div></div> CRITICAL</div><div><div></div> CAUTION</div><div><div></div> HEALTHY</div></div> | | | | |

Discussion

These results show that the water at Horseshoe remains relatively healthy and suitable to support natural wildlife.

Chlorophyll 'a' is a measurement of projected biomass and photosynthesis rate of algae and plants within the waterbody. This measurement translates to a trophic state of the lake, or how active the lake is to produce algae and plants. There are four trophic states: Oligotrophic (< 2.5 mg/m3, very inactive), Mesotrophic (2.6-20 mg/m3, moderately active), Eutrophic (20-56 mg/m3, very active) and Hyper Eutrophic (> 56 mg/m3, extremely active). Many lakes and ponds in urbanized areas are Eutrophic to Hyper Eutrophic, meaning there is continuous production of algae and plants due to constant to excessive nutrient loading. A pond or lake that is Mesotrophic to Eutrophic is generally desired and considered healthy.

Total Dissolved Solids is the measurement of the combined content of all inorganic and organic substances contained in a waterbody. Pure water will contain no dissolved solids. Storm water run-off is the primary source of dissolved solids. Drinking water must have reading below 500 ppm. Reading of up to 1,000 ppm are generally considered safe for plants and other aquatic organisms.

Dissolved Oxygen Measures the amount of microscopic bubbles of oxygen gas in the water column. Just like animals on land, animals underwater require oxygen to breath. Warmer water tends to hold less oxygen so this measurement becomes very important during summer months. Reading below 4 ppm can be fatal.

Phosphate and Nitrate are essential nutrients for all aquatic life. A lack or excess of these components can lead to a change in the trophic state of a waterbody. Phosphate readings between 15 – 100 ppb are needed to maintain normal aquatic life. Nitrate levels over 50 ppm are considered to be polluted waters and unsafe for consumption.

E. coli are a form of bacteria that live in the intestines and fecal matter of warm blooded organisms. Although the e. coli may not be the agent of disease, high levels of this bacteria indicate the presence of disease-carrying organisms. Per the MDEQ, a single reading over 300 CFU/100 ml or sustained readings over 130 CFU/100ml for 30 days is considered unsafe for swimming.

Pond Test Water Quality Report by



Water samples were taken on 6/24/2016. Water tests were completed on 6/28/2016. This report describes conditions at the time the samples were taken. The quality of the water was tested only to the parameters listed above.

Compiled and Certified by:



Date: 6/29/2016

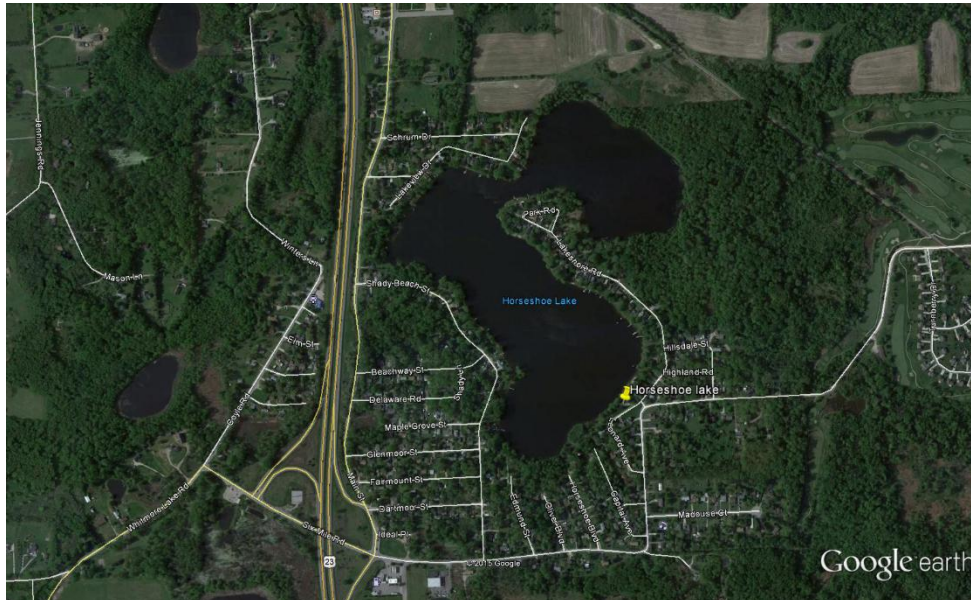
Pond  Test Technician

Reviewed and Approved by:



Date: 6/29/2016

Aqua-Weed Control Inc.





Water Quality Summary – Horseshoe Lake

| Parameter | Site 1 | Site 2 | Site 3 | Target Range | Status |
|------------------------|--------|--------|------------|------------------|--------------|
| Chlorophyll 'a' | 1.35 | 1.23 | .208 mg/m3 | 1 –140 mg/m3 | Oligotrophic |
| Total Dissolved Solids | 392 | 384 | 367 ppm | 0 – 1,000 ppm | Normal |
| Dissolved Oxygen | | NA | | 4.0 – 12.0 ppm | |
| Phosphate | 5 | < 5 | < 5 ppb | 15 – 100 ppb | Normal |
| Nitrate | 5 | < 5 | < 5 ppb | 0 – 50 ppm | Normal |
| E. coli | | NA | | < 300 CFU/100 mL | |



CRITICAL



CAUTION



HEALTHY

Discussion

These results show that the water at Horseshoe Lake remains relatively healthy and suitable to support natural wildlife. The low levels of Nitrate could be attributed to the samples taken early in the season. The activity in the water would be limited and be a potential reason for the low amount of Nitrate in the water.

Chlorophyll 'a' is a measurement of projected biomass and photosynthesis rate of algae and plants within the waterbody. This measurement translates to a trophic state of the lake, or how active the lake is to produce algae and plants. There are four trophic states: Oligotrophic (< 2.5 mg/m3, very inactive), Mesotrophic (1-15 mg/m3, moderately active), Eutrophic (16-140 mg/m3, very active) and Hyper Eutrophic (> 140 mg/m3, extremely active). Many lakes and ponds in urbanized areas are Eutrophic to Hyper Eutrophic, meaning there is continuous production of algae and plants due to constant to excessive nutrient loading. A pond or lake that is Mesotrophic to Eutrophic is generally desired and considered healthy.

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Pond Test Water Quality Report by



Water samples were taken on April 20th, 2016. Water tests were completed on April 29th, 2016. This report describes conditions at the time the samples were taken. The quality of the water was tested only to the parameters listed above.

Compiled and Certified by:



Date: May 13th 2016

Pond  Test Technician

Reviewed and Approved by:

Aqua-Weed Control Inc.

Date: May 13th 2016

