AQUATIC CONTROL Est. 1966

Algal Identification and Cyanotoxin Report

Company: Painted Hills Lakes	**Water Body Name:** Holiday Lake and Nebo Lake
Address: 4364 Rembrandt Dr. Martinsville, IN 46151	**Surface Area:** 107 acres (Holiday), 39 acres (Nebo)
	Average Depth: 18 feet
Contact: Ms. Tina Thrasher	**Date Sample Collected:** 4-6-2020
Phone: 812-650-2979	**Date Sample Analyzed:** 4-7-2020
Email: tthrasher6264@gmail.com	**Analysis Performed By:** C. Baird

Algae Identification and Cell Density Results

Sample ID: Nebo Ramp

Sample Depth: 0

Sample Type: Grab

Preservative: Live/Chilled

Identification	Division	Growth Form Description	Approximate Algal Cell Count (cells/mL)
Woronichinia sp.	Cyanophyta	Planktonic	262,500
Aphanizomenon sp.	Cyanophyta	Planktonic	50,000
		Total Estimated Cell Density (cells/mL)	312,500

Sample ID: Holiday Ramp

Sample Depth: 0

Sample Type: Grab

Preservative: Live/Chilled

Identification	Division	Growth Form Description	Approximate Algal Cell Count (cells/mL)
Chlorella sp.	Chlorophyta	Planktonic	100
Chlamydomonas sp.	Chlorophyta	Planktonic	150
Rhopalodia sp.	Ochrophyta	Planktonic	50
Euglena sp.	Euglenozoa	Planktonic	50
		Total Estimated Cell Density (cells/mL)	350

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Algal Identification and Cyanotoxin Report

Sample ID: Clubhouse

Sample Depth: 0

Sample Type: Grab

Preservative: Live/Chilled

Identification	Division	Growth Form Description	Approximate Algal Cell Count (cells/mL)
Aphanizomenon sp.	Cyanophyta	Planktonic	550
Oscillatoria sp.	Cyanophyta	Planktonic	3,300
Chlorella sp.	Chlorophyta	Planktonic	50
Chlamydomonas sp.	Chlorophyta	Planktonic	300
Thalassiosira sp.	Ochrophyta	Planktonic	50
Total Estimated Cell Density (cells/mL)			4,250

Toxin Analysis Results

Toxin Analyzed	Sample ID	Concentration (ppb)	IDEM Risk Level
Microcystins	Holiday Ramp	Non-detect	1: low/no risk
Microcystins	Clubhouse	Non-detect	1: low/no risk
Microcystins	Nebo Ramp	Non-detect	1: low/no risk

Summary of Results

Algae ID and Density

As part of the consultation service provided, algae are identified and enumerated in the collected samples to monitor for presence and densities of known toxin- or odor-producing algae. At the time of sampling, potential toxin-producing cyanobacteria (blue-green algae) were detected in water samples collected from the Nebo Ramp (at kayak rack) and at the Clubhouse. No toxin-producing cyanobacteria were detected in the sample collected from the Holiday Lake ramp. At the time of sample collection, a thin brown colored film was present on the water surface at the Nebo sampling site. This type of film has been reported by residents on both lakes recently. We detected two types of potential toxin-producing cyanobacteria in samples containing this film, including *Woronichinia* and *Aphanizomenon*, totaling a moderate cell density of 312,500 cells/mL.

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Algal Identification and Cyanotoxin Report

Summary of Results

Algae ID and Density (continued)

In the sample collected from the Holiday Lake boat ramp, there were several types of algae present including green algae, a diatom, and a Euglenoid, but there were no potential-toxin producers detected. The total cell density of this assemblage was low at 350 cells/mL. In the sample collected from the Clubhouse dock, there were several types of algae present including cyanobacteria, green algae, and a diatom. The potential toxin-producing cyanobacteria identified included *Aphanizomenon* and *Oscillatoria*. The total cell density of the assemblage was approximately 4,250 cells/mL.

Algal Toxin Analysis

At the time of testing, microcystins were non-detectable at all sampling locations. These results place the water in both lakes under IDEM recreational use risk category 1 (<4 ppb, low or no risk of exposure).

Recommendations

Precautions

Although toxin levels were non-detectable at the time of sampling, it should be noted that since blue-green algae are present, conditions could be right for toxin production to begin at any time. At this time, we recommend for residents to use caution and best judgement when recreating or allowing dogs to come in contact with the water. If there is a noticeable green tint to the water or if any surface films/scums are apparent, it is advisable to prevent contact of any kind with the water.

Algae Management

Although toxin producing algae were observed at a moderate cell density in Nebo Lake, there was no evidence of toxin production at this time. In addition, upcoming cooler weather and rain may hinder further growth temporarily. We recommend monitoring the situation on both lakes, and if films appear to be getting more dense or more frequent within the next week, an algaecide treatment is advisable to prevent more several algal blooms.

Note: The data presented here pertain to water samples collected at the specified site on the collection date stated in this report. These data are used to determine whether algal species at a specific site are currently producing toxins, and if so, at what concentration. Results from a sample taken at a single point in time are not conclusive for predicting toxin production at any other point in time at this site.