Lake Montclair

Water Quality Plan

(Testing, Assessments and Advisories)

January 14, 2026

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Section 1

Water Quality is perhaps the most important concern for management of Lake Montclair. The lake is available to all Montclairions for a variety of recreational activities. However, Montclairions should know the risks of swimming in a freshwater lake. Health concerns associated with E coli and Harmful Algal Blooms (HABs) in freshwater lakes, rivers and streams are more well known today. This Water Quality Plan was created to ensure Montclairions are informed of water quality issues that could have an impact their health.

This document serves as a guide for the Montclair Property Owners Association (MPOA) Management Staff and Lake Management Committee in assessing water quality relative to E coli and Cyanotoxin.

Objectives include:

- Provide information to Montclairions on water quality issues that could impact their health.
- Monitor water quality using Environmental Protection Agency and Virginia Department of Health criteria.
- Provide information for community engagement, notification, and education related to the lake's water quality.
- Maintain the aesthetic appeal of Lake Montclair and protect property values.

Escherichia Coli (E. Coli)

E. Coli bacteria are found in the environment, foods, and intestines of people and animals. E. Coli are a large and diverse group of bacteria. Although most strains of E. Coli are harmless, others can make people sick. Some kinds of E. Coli can cause diarrhea, urinary tract infections, respiratory illness and other illnesses.

All warm-blooded animals have some E. Coli living in their lower intestines and are found in their feces. While E. Coli is not likely to cause illness on its own, it is relatively easy to detect in the lab, making it a useful biological indicator of contamination. If a water sample has high concentrations of E. Coli, other more dangerous and infectious organisms may also be present. While most E. Coli strains are normally harmless, their presence can mean that illness-causing pathogens are also present.

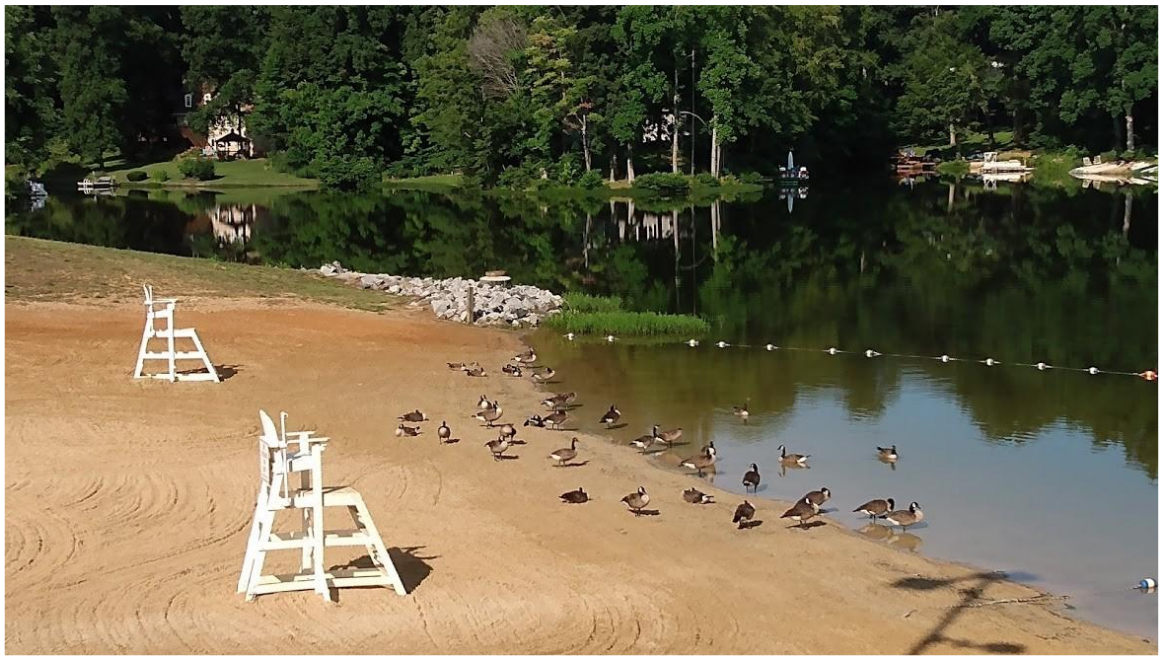
Surface water testing for E. Coli is conducted weekly at all three of Montclair's beaches during the summer months. MPOA contracts with a local lab for water testing at the beaches to examine the level of fecal coliform and to assess possible impact on the health of swimmers. The data is also used for long term trends of fecal coliform counts at each beach and potential causes and actions to correct issues stemming from fecal coliform. Results are recorded using one 100 ml sample from each beach tested for counts of fecal coliform. Past testing has generally indicated overall good conditions.

Montclair's monitoring program uses the U.S. Environmental Protection Agency standard, which can trigger short-term swimming advisories when bacteria levels exceed 235 Most Probable Number (MPN). The "Advisory" standard of 235 MPN /100 mL (E. Coli in water) was adopted based upon data

from three EPA studies. These studies indicate that E. coli and/or Enterococci are the best bacterial indicators to assess the risk of acquiring a gastrointestinal illness from recreational waters.

E Coli testing is conducted weekly during the summer months. **If E. Coli cell count is greater than 235 MPN/100 mL, then MPOA management will order additional test and issue advisories based on continued high levels of E Coli. Advisories will be lifted once samples show cell counts are below the 235 MPN limit.** E coli advisories are lifted when test results are below cell count limits

Daily removal/disposal of goose droppings and pet waste from beaches during the summer season is accomplished to reduce the E-Coli counts. Goose droppings can be a main contributor to higher levels of E-Coli in the lake, creating human health hazards, aesthetic losses, & property damage.



Cyanobacteria (Blue Green Algae) and Cyanotoxins

Algae are microscopic organisms that are found in freshwater lakes including Lake Montclair. Many are beneficial because they are major producers of oxygen and food for many of the fish and animals that live here. Most algae do not harm people, wildlife, or the environment.

Cyanobacteria, also known as Blue-Green Algae, are single-celled organisms that naturally exist in freshwater lakes like Montclair. Like other plants and algae, cyanobacteria use sunlight to make their food. When the environmental factors are favorable and there are a lot of nutrients available in the water, the bacteria can grow rapidly or "bloom" to form a visible film or scum on the surface of the water or perhaps cause a color change to the water. This is more likely to occur in warm spring and hot summer months. Cyanobacteria (blue-green algae) can sometimes produce toxins. In extreme cases, these toxins can cause severe illness in humans or death in animals when they are ingested.

A Harmful Algal Bloom (HAB) is an excessive growth of cyanobacteria/algae that can be toxic to people, animals, and marine life. HABs are likely to result from a combination of environmental factors including available nutrients, temperature, sunlight, ecosystem disturbance (stable/mixing conditions, turbidity), hydrology (flow and water storage levels) and water chemistry. However, the combination of factors that trigger and sustain an algal bloom is not well understood and it is not possible to attribute algal blooms to any specific factor.

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In 2025, the Virginia Department of Health changed the reporting criteria for issuing advisories on HABs. Advisory decisions are now based solely on toxin concentrations in water. In the past, advisories were issued based on Cyanobacteria cell counts. In the new approach, advisories will be based on toxins only. Issuing advisories based on toxin concentrations will increase certainty; when advisory is issued, it will mean that there is a substantial health risk from HAB toxins. Staying consistent with VDH criteria, MPOA will also use cyanotoxin levels as the criteria for issuing advisories.

Consistent with VDH recommendations for cyanotoxins, water samples are taken as required at the onset of algae bloom. If warranted additional samples are collected, packaged, and shipped overnight to the lab. The analysis report can take up to a week to receive results. If warranted an Advisory will be issued.

MPOA will use the VDH Cyanotoxin advisory criteria for recreational waters to issue advisories.

Toxin name	Metric Concentration (micrograms per liter)
Microcystins	≥8 µg/L
Cylindrospermopsin	≥15 µg/L

Details of cyanotoxin sampling procedures are in Section 2 of this document. Background on current VDH policy and criteria are also located in Section 4.

Understanding when the lake gets to optimal conditions to support algae blooms is key to identifying when to test. Cyanobacteria tend to like consistently warm temperatures. Blooms tend to become more stable from July-August because nightly temperatures aren't dropping too low in the summer evenings. The conditions within each cove may be very different from the rest of the lake. Conditions in the morning, afternoon, and evening can differ widely. A bloom visible at mid day may dissipate by evening.

Once a bloom is established and becomes consistent and the presence of scum areas further testing is warranted. Scum is dead Cyanobacteria that has risen to the surface and can potentially give off toxins. Alage mats should be completely avoided.

Once an advisory is issued, then additional sampling will be conducted to determine when it's safe to enter lake waters and swim in the lake. Two consecutive sample events, with acceptable Cyanotoxin levels below advisory thresholds will be used to determine when to lift an advisory.

Water Quality testing will not extend beyond Labor Day. By 1 October the advisories will be lifted, even if prior sample results indicate thresholds are exceeded. HABs may continue beyond the recreational season, therefore public messaging and outreach should clearly indicate that while advisories are being lifted, the risk of human HAB exposure may continue, especially for those who engage in activities likely to result in accidental ingestion within the waterbody.

Other Reference links for Further Education

Environmental Protection Agency - Harmful Algal Blooms (HABs) in Water Bodies

https://www.epa.gov/habs/protecting-human-health-cyanotoxin-exposure-during-recreation

Virginia Department of Health (VDH) – Harmful Algal Blooms

https://www.vdh.virginia.gov/waterborne-hazards-control/harmful-algal-blooms/

VDH- Beach Monitoring

https://www.vdh.virginia.gov/waterborne-hazards-control/beach-monitoring/

Section 2

Cyanotoxin Reporting

This section provides details on detecting and reporting Cyanotoxin in Lake Montclair. Cyanotoxin identification includes observation of Cyanobacteria blooms, use of test strips to confirm the presence of Cyanotoxin and lab services necessary to determine levels of toxin in the water.

Observations made by Management Agent

Management Agent will make weekly observations of lake water to assess conditions and look for development of an Algae Bloom. Weekly observations are taken from mid May to early September.

Observations should be made between 10AM and 2PM. Cyanobacteria can accumulate at the water's surface in response to strong sunlight, making blooms most visible and concentrated at this time.

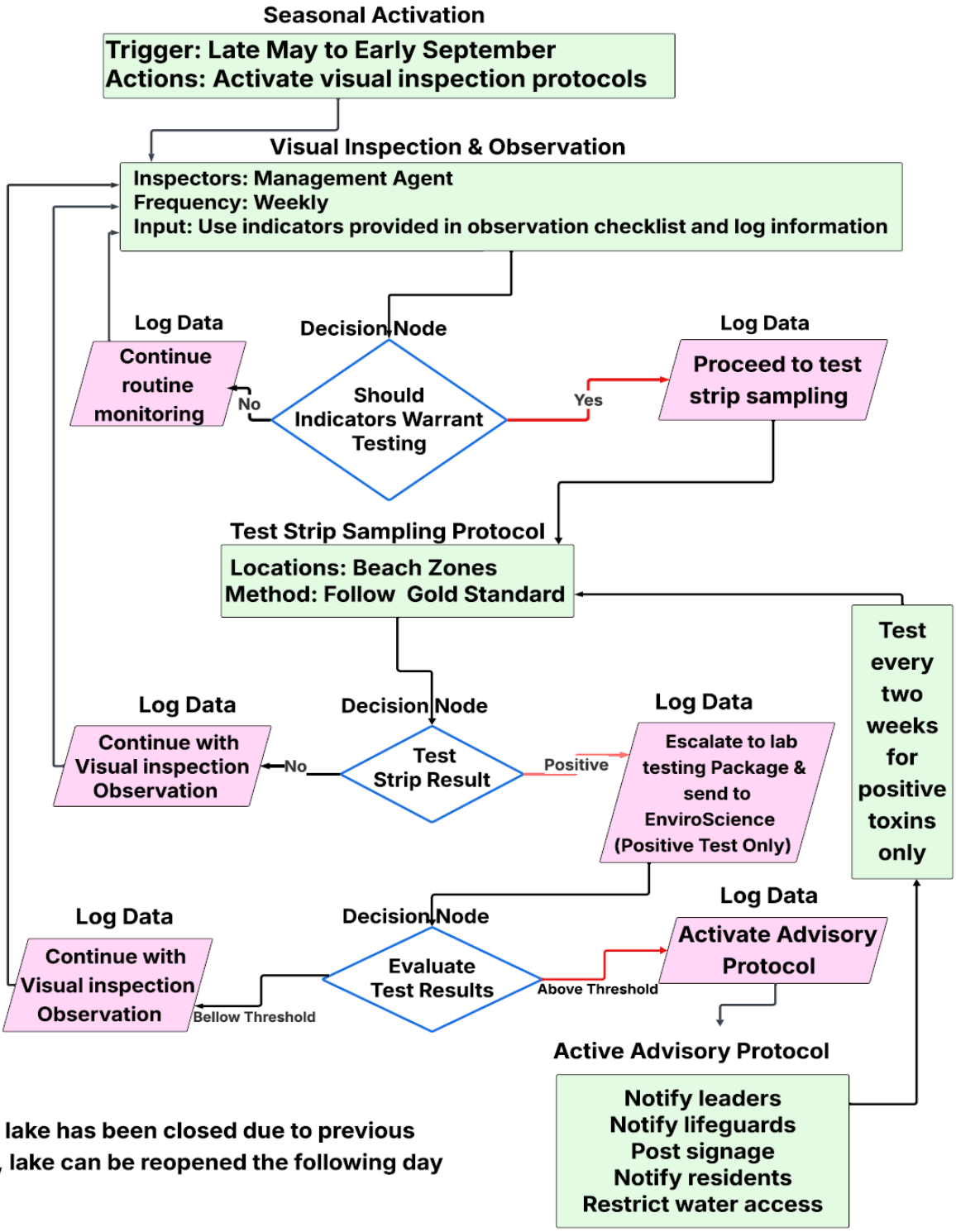
Observation locations are taken from each of the three beaches.

Water temperature will be recorded during the observation. Cyanobacteria blooms more likely in warm water.

Water surface conditions will be recorded – Calm; Rolling (some wave action light winds) or White caps (windy day). Cyanobacteria bloom more likely in calm stagnate water.

Water Conditions - Visual signs of a bloom include surface water discoloration (e.g., a green, white, brown, red, or blue tint); reduced transparency (e.g., water that looks like pea soup or lets limited light through); and/or thick, mat-like accumulations of scum on the shoreline and surface. Cyanobacteria are also associated with unfavorable taste-and-odor compounds in lakes and reservoirs.

Cyanotoxin Monitoring & Response Flow - Lake Montclair



Note: If lake has been closed due to previous threshold, lake can be reopened the following day

Checklist for use by Management agent:

Algae Bloom observation checklist

Observer Name _____ Date/Time _____ Location _____ (DB, WB, BL)

Water Surface ____Calm ____light winds and wave action ____ White Caps/windy

Water Conditions

_____ No cyanobacteria observed—clear water. Objects lower in the water column—sand, rocks, or plants—are clearly visible. The overall appearance of the water is clear.

_____ No cyanobacteria observed—brown or turbid water

_____ No cyanobacteria observed—other material present

_____ Little cyanobacteria observed—recreation not impaired—tiny specks present, but no streaks or patches

_____ Cyanobacteria present, but at less than bloom levels.

_____ Cyanobacteria bloom in progress. Surface coverage such that a swimmer could not avoid floating algae. Take photos of the bloom and create appropriate file name.

_____ Use test strips to determine presence of toxins and follow flow chart for next steps.

Notes:

_____

_____

_____

Algae Bloom observation log

Observer Name	Date/Time	Location	Water Temperature	Water Surface	Water Conditions

For Water Conditions column insert appropriate number from the list below

1. No cyanobacteria observed—clear water. Objects lower in the water column—sand, rocks, or plants—are clearly visible. The overall appearance of the water is clear.

2. No cyanobacteria observed—brown or turbid water

3. No cyanobacteria observed—other material present

4. Little cyanobacteria observed—recreation not impaired—tiny specks present, but no streaks or patches

5. Cyanobacteria present, but at less than bloom levels.

6. Cyanobacteria bloom in progress. Surface coverage such that a swimmer could not avoid floating algae.
   Take photos of the bloom and create appropriate file name.
   Use test strips to determine presence of toxins and follow flow chart for next steps.

Notes with further actions being taken:

_____
_____
_____

ABRAXIS® Microcystins Strip Test

Immunochromatographic Strip Test for the Detection of
Microcystins and Nodularins in Recreational Water
ABRAXIS® QuikLyse™ reagents may be used in a method of U.S. Patent 9,739,777
Product No. 520023 (5 Test), 520022 (20 Test)

1. General Description

The ABRAXIS® Microcystins Strip Test for Recreational Water is a rapid immunochromatographic test designed for use in the qualitative screening of Microcystins and Nodularins in recreational water (freshwater samples only; please see the Gold Standard Diagnostics Horsham website for information on the screening of brackish or seawater samples and for sample preparation and testing of benthic mat samples). A rapid cell lysis step (ABRAXIS® QuikLyse™) performed prior to testing is required to measure total Microcystins (dissolved, or free, plus cell-bound). The ABRAXIS® Microcystins Strip Test provides only preliminary qualitative test results. If necessary, positive samples can be confirmed by ELISA, HPLC, or other conventional methods.

2. Safety Instructions

Discard samples according to local, state, and federal regulations.

3. Storage and Stability

The ABRAXIS® Microcystins Strip Kit should be stored between 2-30°C. The test strips, test vials, and water samples to be analyzed should be at room temperature before use. Reagents may be used until the last day of the month as indicated by the expiration date on the box.

4. Test Principle

The test is based on the recognition of Microcystins, Nodularins, and their congeners by specific antibodies. The toxin conjugate competes for antibody binding sites with Microcystins/Nodularins that may be present in the water sample. The test device consists of a vial containing specific antibodies for Microcystins and Nodularins labeled with a gold colloid and a membrane strip to which a conjugate of the toxin is attached. A control line, produced by a different antibody/antigen reaction, is also present on the membrane strip. The control line is not influenced by the presence orabsence of Microcystins in the water sample and, therefore, should be present in all reactions.

In the absence of toxin in the water sample, the colloidal gold labeled antibody complex moves with the water sample by capillary action to contact the immobilized Microcystins conjugate. An antibody-antigen reaction occurs forming a visible line in the 'test' area. The formation of two visible lines of similar intensity indicates a negative test result, meaning the test did not detect the toxin at or above the cut-off point established for the toxin. If Microcystins are present in the water sample, they compete with the immobilized toxin conjugate in the test area for the antibody binding sites on the colloidal gold labeled complex. If a sufficient amount of toxin is present, it will fill all of the available binding sites, thus preventing attachment of the labeled antibody to the toxin conjugate, therefore preventing the developmentof a colored line. If a colored line is not visible in the test line region, or if the test line is lighter than the control line, Microcystins are present at a level > 2.5 ppb. Semi-quantitative results in the test kit range of 0-10 ppb can be obtained by comparing the sample test strip appearance to the appearance of test strips from solutions of known Microcystins concentrations (control solutions). ABRAXIS® Microcystins controls (PN 422011) are available through Gold Standard Diagnostics.

5. Limitations of the ABRAXIS® Microcystins Strip Test, Possible Test Interference

Numerous organic and inorganic compounds commonly found in water samples have been tested and found not to interfere with this test. However, due to the high variability of compounds that might be found in water samples, test interferences caused by matrix effects can't be completely excluded.

Mistakes in handling the test can also cause errors. Possible sources for such errors include:

Inadequate storage conditions of the test strip, too long or too short incubation times, extreme temperatures during the test performance (lower than 10°C or higher than 30°C).

The test is designed for use with freshwater recreational waters. The use of the test with brackish or seawater samples will produce inaccurate results. Please see the Brackish or Sea Water Sample Preparation technical bulletin for information on the preparation and screening of marine water samples using the ABRAXIS® Microcystins Strip Test for Finished Drinking Water. The ABRAXIS® Microcystins Strip Test provides only a preliminary qualitative test result. Use another more quantitative analytical method such as ELISA or instrumental analysis to obtain a confirmed quantitative analytical result. Apply good judgement to any test result, particularly when preliminary positive results are observed.

6. Warnings and Precautions

-The ABRAXIS® Microcystins Strip Test for Recreational Water is for the screening of freshwater recreational water samples for total Microcystins (free and cell-bound). Please see the Gold Standard Diagnostics Horsham website for information on sample preparation and testing of brackish water, seawater, or benthic mat samples using the ABRAXIS® Microcystins Strip Test for Finished Drinking Water at 1 ppb, PN 520016 (5 Test) or PN 520017 (20 Test).
-Use of the ABRAXIS® Microcystins Test Strips **without** the ABRAXIS® QuikLyse™ reagents will adversely affect the performance of the test, producing inaccurate results. To test samples without using ABRAXIS® QuikLyse™ reagents for cell lysis, such as when testing for free Microcystins only or when testing samples which have been previously lysed (such as those which have undergone the freeze/thaw method), please use the ABRAXIS® Microcystins Strip Test for Finished Drinking Water at 1 ppb, PN 520016 (5 Test) or PN 520017 (20 Test).
-Use only the ABRAXIS® Microcystins test strips and ABRAXIS® QuikLyse™ reagents from one kit lot, as they have been adjusted in combination.
-Test strips, conical test vials, and lysis vials should be kept sealed in their original packaging with desiccant when not in use. Exposure to humidity during storage may adversely impact their performance and give inaccurate results. After initial use in high humidity conditions, remaining kit components should be stored tightly closed with desiccant and refrigerated (2-8°C) when not in use. Conical test vials and lysis vials stored with indicating desiccant which has turned from blue to pink (indicating excessive exposure to moisture) should not be used and should be discarded.
-All reagents and samples should be allowed to reach room temperature before testing.
-Prior to use, ensure that the product has not expired by verifying that the date of use is prior to the expiration date on the label.
-Avoid cross-contamination of water samples by using a new sample vial and disposable pipette for each sample.
-Samples containing unusually large amounts of algal blooms or very thick algal scums should be diluted 1:1 with deionized or distilled water prior to lysis, as overly viscous samples may not allow for uniform cell lysis or proper capillary flow up the test strip. Diluted samples will have a cut-off of 20 ppb.
-Use reasonable judgment when interpreting the test results.
-Results should be interpreted within 5-10 minutes after completion of the test.

7. Sample Collection and Handling

-Collect water samples in glass or polyethylene terephthalate (PETG) containers only. The use of other types of plastic containers may result in adsorptive loss of Microcystins, producing inaccurate (falsely low) results.
-Samples can be stored refrigerated for up to 5 days. If samples must be held for greater than 5 days, samples should be stored frozen.

A. Materials Provided

1. Microcystins test strips in a desiccated container
2. Sample collection vials
3. Unlabeled lysis vials (blue capped)
4. Graduated disposable pipettes (calibrated at 1 mL)
5. Disposable exact volume transfer pipettes (see package for usage instructions)
6. Reagent papers
7. Conical test vials
8. Forceps
9. Instructions for use
10. Vial labels

B. Additional Materials (not provided with the test)

1. Timer
2. ABRAXIS® Microcystins Check Samples (PN 422011), for the preparation of control solutions which can be analyzed with samples, to obtain semi-quantitative sample results (see Section C, Controls, below).

C. Controls

It is a good laboratory practice to use positive and negative controls to ensure proper test performance. Water samples containing known quantities of Microcystins (positive and negative controls) should be analyzed with each lot of test strips to provide a reference for line intensity to be expected.

D. Test Preparation

-Allow the reagents and water sample to reach room temperature before use.
-Remove the number of conical test vials required from the package. The remaining conical test vials are stored in the tightly closed container with desiccant.

E. Procedure

1. When analyzing for total Microcystins (dissolved, or free, and cell-bound), which may be present in recreational waters, a sample lysis is necessary before analysis. ABRAXIS® QuikLyse™ reagents provide a rapid option for cell lysis.
2. Using a new graduated disposable pipette for each sample, draw the sample to the 1 mL line (graduation mark slightly below bulb) and add 1 mL of sample to the lysis vial.

3. Cap the vial and shake for 2 minutes, then allow the sample in the vial to incubate at room temperature for 8 minutes, to begin the cell lysis.
4. Using the forceps provided, add 1 reagent paper to the lysis vial.
5. Cap the vial and shake for 2 minutes, then allow the sample in the vial to incubate at room temperature for 8 minutes.
6. Label conical test vials for each sample to be tested.
7. Using a new disposable exact volume transfer pipette for each sample, transfer 200 µL of the previously lysed water sample (Steps 1-4 above) to the appropriately labeled conical test vial (see pipette package for usage instructions).
8. Close the conical test vial and shake for 30 seconds. Examine the vial to ensure all dried reagents are completely dissolved (dried reagents will dissolve, turning the sample purple).
9. Insert test strip (arrows down) into the conical vial.
10. Allow the test to develop for 10 minutes.
11. Remove the test strip. Lay the strip flat and allow to continue developing for 5 minutes.
12. Read the results visually, as explained below in Section F, Interpretation of Results.

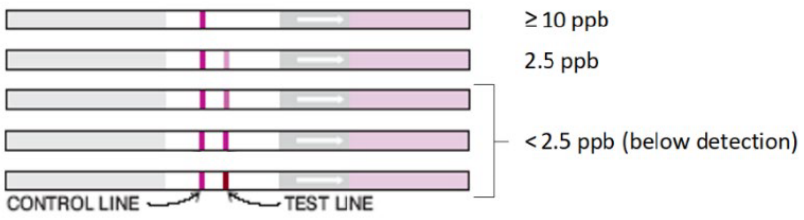
F. Interpretation of Results

Sample concentrations are determined by comparison of the intensity of the test line to the intensity of the control line on the same test strip. Although control line intensity may vary, a visible control line must be present for results to be considered valid. Test strips with a test line which is darker than or of equal intensity to the control line indicates a result which is below the limit of detection of the test. Test strips with a test line which is lighter than the control line indicates a result which is ≥ 2.5 ppb. Test strips with no test line visible (only the control line is visible) indicates a result which is ≥ 10 ppb. Results should be determined within 5-10 minutes after completion of the strip test procedure. Determination made using strips which have dried for more or less than the required time may be inaccurate, as line intensities may vary with drying time.

Control Line	***Test Line***	***Interpretation***
No control line present	No test line present	Invalid result
Control line present	No test line present	≥10 ppb
Control line present	Test line present	Between 0 and <10 ppb

The appearance of test strips may also be compared to the illustration below to determine approximate sample concentration ranges. Please note that the illustration is intended for the demonstration of test line to control line intensity only. Results should not be determined by comparing the intensity of test lines from test strips to the test line intensity of the illustration, as the overall intensity of test strips may vary slightly with different lots of reagents. To obtain semi-quantitative results in the test kit range of 0-10 ppb, solutions of known Microcystins concentration (control solutions) must be tested concurrently with samples. Sample test line intensities can then be compared with control solution test line intensities, yielding approximate sample concentrations. Do not use strips run previously to determine semi-quantitative sample concentrations, as test line intensities may vary once strips are completely dry.

Visual Interpretation:



Alternately, test strips can also be interpreted using the AbraScan test strip reader (PN 475025), which provides objective determination of line intensities for consistent interpretation of results as well as a digital photographic record of all test strips.

G. Additional Analysis

If necessary, positive samples can be confirmed by ELISA, HPLC, or other conventional methods. These services are available from commercial analytical laboratories such as GreenWater Laboratories (www.greenwaterlab.com).

H. References

W. J. Fischer, I. Garthwaite, C.O. Miles, K.M. Ross, J.B. Aggen, A.R. Chamberlain, N.A. Towers, and D.R. Dietrich, Congener-Independent Immunoassay for Microcystins and Nodularins. Environ. Sci. Technol. 35, 2002, 4849-4858.
Worldwide Patenting PCT WO 01/18059 A2.
U.S. Patent Number 6,967,240. U.S. Patent Number 9,739,777.

Use EnviroScience sampling and shipping instructions

EnviroScience
Excellence In Any Environment

SAMPLE SUBMISSION AND CHAIN OF CUSTODY FORM

5070 Stow Road, Stow, OH 44224
Phone: 330-688-0111 Ext. 327
Fax: 330-688-3858
Email: aquaticbiologylab@enviroscienceinc.com

Purchase Order Number:
Project ID #:

Report to:		Invoice to:		Client:	
Company:		Company:		Contact:	
Address:		Address:		Email:	
				Phone:	
Phone:		Phone:			
Email:		Email:			

(Leave blank if same as reporting)

(Leave blank if same as reporting)

Laboratory No. (Lab Use Only)	Sample ID	Site ID	Date	Time	Requested Analyses										
					HAB Analysis	Algae Analysis 1	Algae Analysis 2	Algae Analysis 3	Diatom Analysis	Chlorophyll-a	Ash Free Dry Weight	Cyanotoxin Analysis[1]	Phycocyanin	Volume of Containers	Number of Containers
														Total Number of Containers:	

Preservative(s) Used:	
On ice at 4°C:	
Lugols:	
Formalin:	
Other:	

EnviroScience Use Only	
Sample Receipt Evaluation	
Past Hold Time:	Lab Accident:
Leaked/Broken:	Notes:
Sample Temperature:	°C

[1]Requested Cyanotoxin Analysis:

Narrative Report: **Y / N** (circle one)
Photomicrographs: specify with ES lab representative

Relinquished by	Received by	Date	Time	Shipping Information		Sample collector signature:	
				Date Shipped			
				Method Shipped			

Section 3

Communications and Community Engagement

Maintaining transparency and trust of the Montclair Community is vital. If consistently high E Coli levels or high Cyanotoxins concentrations are present in the lake, then residents will be made aware of the potential health hazards. This section's purpose is to provide MPOA staff a starting place for effective communication with our community.

Generally, messages to the community should be simple and may include any or the following elements:

- Clearly state that cyanotoxins above the VDH limits have been detected.
- Specify the exact location of the advisory, one or all the beaches. Clarify if restrictions apply to a specific beach, a section of a lake, or the entire waterbody.
- List the recreational activities that are prohibited (e.g., swimming, wading).
- List the activities that are still permitted (e.g., boating without contact)
- Explain the potential health effects of contact or ingestion, such as skin irritation, gastrointestinal distress, and flu-like symptoms.
- Highlight that children, pets, and individuals with compromised immune systems are particularly vulnerable.
- Instruct the public on simple precautions like avoiding swallowing water when swimming, prevent direct contact of cuts and open wounds, avoid swimming in areas where dead fish are present, don't swim with weakened immune system, rinsing off with clean water after swimming, and keeping pets away from the water and never drink untreated water.

Examples of Cyanotoxins Community Notices and Updates

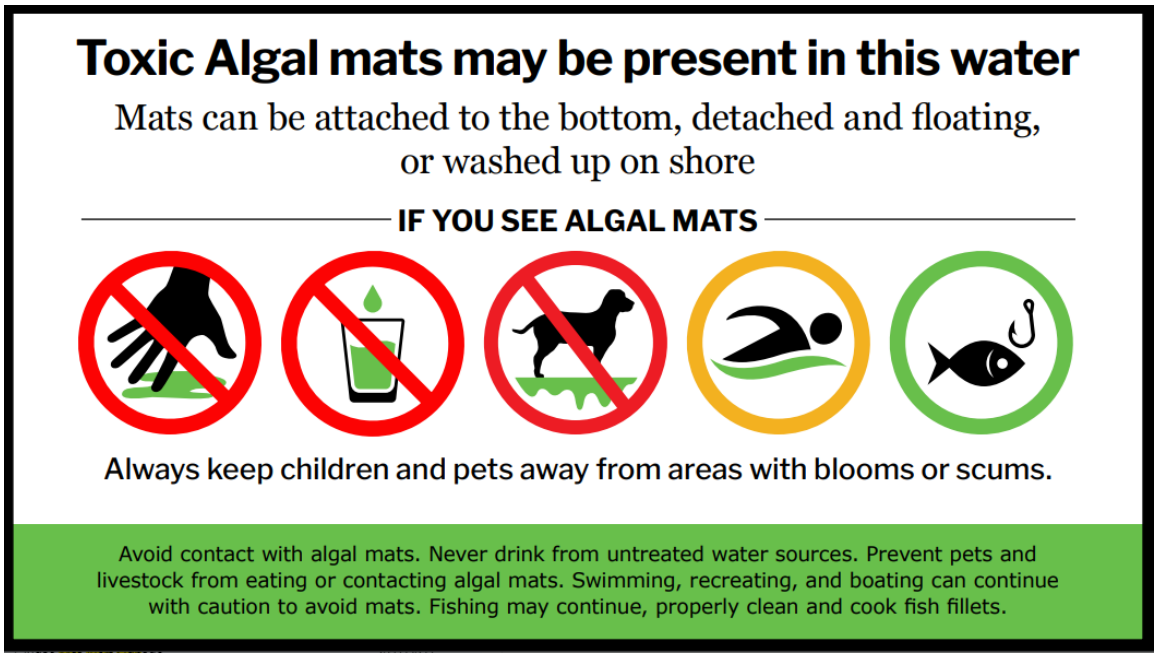
Month, XX, 20XX

High levels of Cyanotoxins have been detected in lake Montclair. Montclairions are advised to avoid water contact and stay out of the water and to keep their pets as well. The lake will continue to be monitored and when the toxin levels return to normal thresholds these advisories will be lifted.

Insert other comments as required

Lake water will be monitored by the staff at least once a week for any signs of Cyanobacteria or Blue green Algae. Staff will use field test kits to confirm if toxins are present. Elevated Cyanotoxin levels will have to be confirmed by a certified lab. If the lab reports that toxin levels above established limits, then Advisories will be sent out.

Example of signs to be posted for HAB/Cyanotoxins



Example messages for high E Coli levels

Month, XX, 20XX

High levels of E Coli have been detected in lake Montclair. Montclairions are advised to avoid water contact and stay out of the water and to keep their pets as well. The lake will continue to be monitored and when the E Coli levels return to normal thresholds these advisories will be lifted.

Insert additional information as required

Lake water at all three beaches will be tested for *Enterococci* bacteria (E Coli) by a lab once a week during the Beach Season. Test results are generally available the next day. E coli levels can change rapidly. If E Coli levels are elevated, then a second test will be ordered immediately to confirm the results.

Good advice to be used as appropriate on tips for avoiding potential illnesses:

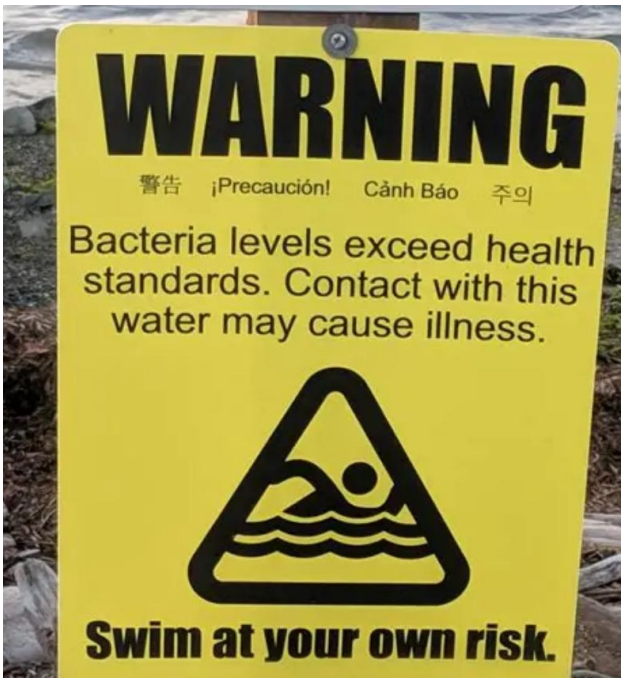
Avoid contact with water when an advisory sign is posted.
Keep children and pets out of affected areas and quickly wash them off with soap and water after coming into contact with lake water that has been identified as having high levels of E Coli.
Do not swim through fecal waste
Don't swim near dead or dying animals or fish.
Swim in designated areas
Never drink lake water
Rainwater can cause sewer overflows and wash animal waste into the water. Consider staying out of the water after heavy rain.

Additional information from the VDH Website: Beach Monitoring – Waterborne Hazards Control

"You can help to protect your health while swimming at the beach by taking these simple steps:

- **Observe Swimming Advisories;** do not enter the water at a beach under a swimming advisory.
- **Avoid swallowing water when swimming;** natural waters may contain disease-causing organisms that can cause gastrointestinal illness if swallowed.
- **Avoid swimming for a few days after heavy rainfall;** bacteria levels are likely to be high, and disease-causing organisms are more likely to be present after rainfall due to pollution from land runoff and other sources.
- **Prevent direct contact of cuts and open wounds with recreational water;** natural waters may contain disease-causing organisms that may cause skin infections.
- **Avoid swimming in areas where dead fish are present;** dead fish may indicate that water conditions are poor or hazardous materials are in the water. Please contact the Virginia Emergency Operations Center (1-800-468-8893) if you observe a fish kill.
- **Don't swim if you are ill or have a weakened immune system;** organisms are opportunistic and may only cause illness when you are already ill or your immune system is weakened.
- **Shower with soap after swimming;** showering helps remove potential disease-causing organisms.
- **Do not dispose of trash, pet waste, or dirty diapers on the beach"**

Examples of signs that could be used or modified as appropriate E Coli presence

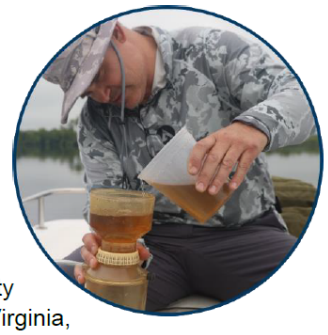


Section 4

Virginia Department of Health reference document on Cyanotoxin testing and advisories.

Harmful Blue-green Algal Blooms in Virginia:
Updates to the Public Advisory Process

What are Harmful Algal Blooms (HABs)?



Algae blooms are rapid growths of algae that can occur naturally in Virginia's waterways. Not all blooms are harmful. HABs occur when algae produce toxins that adversely affect human health. In fresh waters, blue-green algae, known as cyanobacteria, can produce toxins that can damage the kidneys, liver, nervous system, and brain. In extreme cases, these toxins can cause severe illness or death in humans or animals when they are ingested.

The Virginia Department of Environmental Quality (DEQ) investigates most reports of HABs in Virginia, and the Virginia Department of Health (VDH) issues recreational advisories when an HAB poses a potential human health risk based on investigations.

Prior to 2025, DEQ and VDH monitored both the concentration of blue-green algae (known as cell counts) and the concentration of toxins in water samples. When cell counts exceeded 100,000 cells per milliliter (mL) of water, or when toxin concentrations exceeded any of the levels listed in the table, VDH issued advisories recommending that the public avoid swimming and other activities that pose a risk of ingesting water. Note that these advisories are not closures—they are recommendations, but don't prohibit swimming in a waterbody under an advisory.

VDH algae toxin thresholds:

Advisories are recommended if toxin levels are exceeded in water samples.

Toxin Name	**Concentration** *(micrograms per liter)*
Microcystins	≥8
Cylindrospermopsin	≥15
Anatoxin-A	≥8
Saxitoxin	≥4

How is the approach to issuing advisories based on blue-green algae cell counts changing?

Advisory decisions will now be based solely on toxin concentrations in water. In the past, advisories were issued based on both cell counts and toxin concentrations. In the new approach, advisories will be based on toxins only.

Why is the approach to advisories changing?

Toxins generated by HABs are the primary concern with protecting public safety. Issuing advisories based on toxin concentrations will increase certainty; **when an advisory is issued, it will mean that there is a substantial health risk from HAB toxins.**

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