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BOARD OF HEALTH

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Public Health
Prevent. Promote. Protect.

Memorandum

DATE: July 7, 2020

TO: Nashawannuck Pond Committee

CC: Easthampton Board of Health

FROM: Bri Eichstaedt- Health Agent

RE: Cyanobacteria Harmful Algal Blooms Response Protocol

The following protocol is in place for the response to a complaint or an observation of a possible harmful algal bloom in any of the bodies of water in Easthampton.

More information on cyanobacteria can be found:

[https://www.mass.gov/guides/cyanobacterial-harmful-algal-blooms-cyanohabs-water#-what-should-i-do-if-i-see-a-potential-cyanohab?-](https://www.mass.gov/guides/cyanobacterial-harmful-algal-blooms-cyanohabs-water#-what-should-i-do-if-i-see-a-potential-cyanohab?)

[https://www.mass.gov/info-details/guidelines-for-cyanobacteria-in-freshwater-recreational-water-bodies#guideline-for-cyanobacteria-toxin-\(microcystin\)-in-recreational-water-](https://www.mass.gov/info-details/guidelines-for-cyanobacteria-in-freshwater-recreational-water-bodies#guideline-for-cyanobacteria-toxin-(microcystin)-in-recreational-water-)

General Information

When a dramatic increase in a cyanobacteria population occurs, this is called harmful algal blooms (HABs), or more accurately, cyanobacterial HABs (CyanoHABs). It often results in the waterbody turning bright green or blue-green, and forms a surface scum or a discoloration of the water column. They often look like pea soup or spilled, blue or green paint; however, the color can also vary. CyanoHABs can cause dissolved oxygen (DO) swings that may result in plant and animal die-off, taste and odor issues, and can cause potential public health issues from the cyanotoxins they may release.

Health concerns associated with CyanoHABs vary depending on the type of cyanobacteria, the route of exposure, and the amount of cyanotoxins present. Ingestion is the primary concern since ingesting small amounts of cyanobacteria or cyanotoxin can cause gastrointestinal symptoms while larger amounts may cause liver or neurological damage. Contact with cyanobacteria can cause skin or eye irritation. Inhaling water spray containing cyanobacteria can cause asthma-like symptoms. Small children and pets are more susceptible to the effects of cyanotoxins than adults.

Response Protocol & Procedures

These protocol and procedures are based on recommendations from the MA Department of Public Health.

1. A complaint is received, or a noticeable scum later is observed by a member of the Easthampton Health Department on a body of water in Easthampton.
2. A representative from the Easthampton Health Department will respond to the body of water as soon as possible and will take photos of the body of water. If the body of water is Nashawannuck Pond, by request, a member of the Nashawannuck Pond Committee will be notified immediately once a complaint is received.
3. As recommended by the MA Dept. of Public Health Toxicology Program, photos will be sent to the Toxicology Program via e-mail. MA DPH recommends immediate closure and posting at a body of water if the photo sent appears to be **more likely than not** an algae bloom. If the MA DPH recommends immediate closure and posting, a representative from the Easthampton Health Department will close and post the body of water. Signage should be posted at (all) water body entry points and should include the following: date of the posting, contact information for the posting authority, language (to be provided or reviewed by MDPH) advising against contact with the water, and a recommendation that pets accidentally entering the water be rinsed.

Nashawannuck Pond: If the body of water is Nashawannuck Pond, a member from the Nashawannuck Pond Committee will be notified immediately to begin coordinating private testing.

4. Information regarding the closure of the body of water will be posted on the Easthampton Facebook Page, local media contacts will be notified via e-mail, Department Heads in the City will be notified via e-mail, and a Code Red call will be requested through the Mayor's Office.
5. **Nashawannuck Pond:** If the body of water is Nashawannuck Pond, the committee has the ability to contract out private testing of the body of water, if desired. Testing shall be completed by a licensed laboratory. Laboratories authorized to complete this testing can be found here: <https://www.mass.gov/doc/cyanobacteria-and-or-cyanotoxins-contract-services-list/download>

Although the DPH recommends waiting for the visible scum layer to dissipate, the committee has the ability to test sooner, if desired. All protocol set forth by the state shall be followed such as where on the body of water to retrieve samples from, how to properly collect samples, receiving two samples below the guideline level, one week apart, to recommend rescinding the advisory.

All other bodies of water: If the body of water is NOT Nashawannuck Pond, protocol set forth by the state will be followed i.e. waiting for the visible scum layer to dissipate prior to requesting testing through DPH, receiving two samples below the guideline level, one week apart, to recommend rescinding the advisory, etc.

DPH guidelines for cyanobacteria cell counts shall be followed:

- MDPH believes that the current literature supports the use of a cell count guideline of 70,000 cells/mL in order to prevent adverse health effects from exposure opportunities to cyanobacteria and related toxins during algal blooms.
 - If the cell count exceeds 50,000 cells/mL, toxin testing of lysed cells should be done to ensure that guideline of 14 ppb is not exceeded. The lysing should consist of three freeze and thaw cycles.
 - If either the cell count exceeds 70,000 cells/mL or the toxin level of lysed cells meets or exceeds 14 ppb, post an advisory against contact with the water. The lysing should consist of three freeze and thaw cycles.
 - Because cyanobacteria can multiply extremely rapidly, frequency of follow-up testing may depend in part on weather conditions, e.g., predicted hot, dry, and calm conditions, all of which promote rapid cyanobacteria generation, may suggest more frequent testing than weekly.
 - Since decreasing cell counts indicate cell die-off and lysing cells release toxins, algal toxin concentrations in the water may rise for a period of time after cell counts decrease. Many factors (e.g., wind, rain, temperature) can effect the progression of die-off, which supports a measured approach for lifting an advisory similar to that of Oregon and Australia: advisories may be lifted after two successive and representative sampling rounds one week apart demonstrate cell counts or toxin levels below those at which an advisory would be posted.
6. Once two tests are taken, at least one week apart, and are below the above-noted cell counts, the advisory and postings will be removed. An update will be posted on the Easthampton Facebook Page, local media contacts will be notified via e-mail, Department Heads in the City will be notified via e-mail, and a Code Red call will be requested through the Mayor's Office