

## Virginia HAB Task Force - Working Document – Guidance for Freshwater Harmful Algae Bloom Advisory Management

Updated 17 Oct. 2019

### Advisory thresholds

The Environmental Protection Agency (EPA) issued recommended recreational water quality criteria for microcystins and cylindrospermopsin in May 2019. These recommendations include water column thresholds for both cyanobacteria cell counts and specific toxin concentrations. The Virginia Department of Health (VDH) thresholds described here are based on the EPA recommendations. Recreational (swimming) advisories will be recommended when water column sample concentrations are greater than or equal to any of the below thresholds associated with Harmful Algal Blooms (HABs; Table 1). In addition, the presence and extent of potentially toxic algal scums or mats may be used in conjunction with these thresholds as grounds for issuance of advisories. The HAB Task Force prioritizes responses during the recreational season (May 1 through October 31) and in publicly accessible water bodies.

Table 1: Draft harmful algal bloom recreational advisory thresholds.

Criteria	Concentration
<i>Microcystis</i> species*	40,000 (total cells/mL)
Total toxigenic species**	100,000 (total cells/mL)
Microcystin toxin	8 ug/L (ppb)
Cylindrospermopsin toxin	15 ug/L (ppb)

*\*\*Toxigenic species list is subject to change based on most recent research and is available upon request.*

### Follow-up Monitoring

Once an advisory is in place, the focus of monitoring is to provide information that will inform VDH on whether it is appropriate to lift, extend, or modify the advisory. The frequency of follow-up monitoring is subject to the availability of staff, resources, and lab capacity. Monitoring every two weeks is ideal if personnel and resources are available but this frequency is not essential in every case and may not be possible based on resource and personnel availability. Most follow-up sampling includes both cell counts and toxin assays (microcystin and cylindrospermopsin). However, each follow-up investigation is designed by the HAB task force as most appropriate for the specific case and the resources available, therefore, the type and number of samples analyzed is expected to vary among HAB advisories. If the waterbody in question is a drinking water source, toxin assays should be done to provide the VDH Office of Drinking Water a reference of toxin concentration at the source water.

Swimming advisories are typically lifted when two consecutive sampling events, taking place at least 10 days apart, indicate that water column cell counts and toxins are below all advisory thresholds. In certain circumstances, VDH may recommend lifting advisories with fewer than two consecutive samples, or may extend advisories when water column concentrations are below thresholds but other factors indicate a continued risk of HAB exposure. Special circumstances such as these will be described in announcements related to specific advisories. Advisories may be lifted after October 31 (end of the recreation season) when prior sample results indicate that the thresholds are exceeded.

For more information on this guidance please contact the Waterborne Hazards Program Coordinator at VDH, Margaret Smigo, at 804-864-8128, or email at [Margaret.Smigo@vdh.virginia.gov](mailto:Margaret.Smigo@vdh.virginia.gov)

This guidance is posted at [www.SwimHealthyVa.com](http://www.SwimHealthyVa.com) for reference and review.

**References:**

World Health Organization (WHO). 2003. *Guidelines for Safe Recreational Water Environments*.  
<http://whqlibdoc.who.int/publications/2003/9241545801.pdf?ua=1>

Environmental Protection Agency (EPA).2019. *Recommended Human Health Recreational Ambient Water Quality Criteria or Swimming Advisories for Microcystin and Cylindrospermopsin*.  
<https://www.epa.gov/sites/production/files/2019-05/documents/hh-rec-criteria-habs-document-2019.pdf>