

General response strategy for HCBs in publicly accessible lakes and reservoirs of Wyoming

Evaluation	Responsive Action
<p><b>Step 1: Observation and Reporting</b></p>	<ul style="list-style-type: none"> <li>WDEQ and/or cooperators should visually inspect publicly accessible lakes and reservoirs during recreation season (see Appendix A for photos of Wyoming HCBs).</li> <li>In the event of a bloom or a suspected HCB, report to WDEQ using the <i>Report a Spill</i> hotline at <a href="http://WyoSpills.org">WyoSpills.org</a> or (307) 777-7501.</li> <li>WDEQ will also use satellite imagery, if available, to monitor lakes and reservoirs for cyanobacterial blooms.</li> </ul>
<p><b>Step 2: Optional Preliminary Screening</b></p>	<ul style="list-style-type: none"> <li>WDEQ or a cooperator can use optional jar and/or stick tests<sup>1</sup> to determine if cyanobacteria are present in a bloom or field test strips<sup>2</sup> to determine if cyanotoxins such as microcystins are present.</li> <li>If tests are indicative of cyanobacteria or cyanotoxin presence, tests are inconclusive, or the waterbody is known to have had cyanobacterial blooms in the past<sup>3</sup>, the land and water management agency may choose to place an <b>UNDER INVESTIGATION</b> sign at the water body to inform recreationalists of potential health risks.</li> <li>If field test strips indicate that cyanotoxins are present in reservoirs with a drinking water intake, cooperators should notify WDEQ. WDEQ will then notify the public water supply and EPA<sup>4</sup>.</li> </ul>
<p><b>Step 3: Sample Collection, Analysis and Issuing Advisories</b></p>	<ul style="list-style-type: none"> <li>WDEQ or a cooperator should collect two water samples<sup>5</sup> for laboratory analyses: one sample for cyanobacteria identification and enumeration and one sample for cyanotoxin analysis. Each sample should be collected and shipped according to WDEQ <a href="#">Standard Operating Procedures</a>.</li> <li>If analyses indicate cyanobacteria densities <math>\geq 20,000</math> cells/mL or total microcystin concentrations <math>\geq 10</math> <math>\mu\text{g/L}</math>, WDEQ will notify WDH and WDH will issue an <b>ADVISORY</b>.</li> <li>When an <b>ADVISORY</b> is issued, WDH will inform the water management agency and local health authorities. WDEQ will notify local county coordinators. WDH will coordinate posting of <b>ADVISORY</b> signage by the land and water management agency, local health authorities and/or local county coordinators.</li> <li>If cyanotoxin levels exceed drinking water thresholds in water bodies with the likelihood to impact drinking water supplies, WDEQ will notify the public water supply and EPA<sup>4</sup>.</li> <li>Due to potential impacts to migratory birds, fisheries and other wildlife, WDEQ will notify USFWS and WGFD when an <b>ADVISORY</b> has been issued.</li> <li>If cyanobacteria are present that produce cyanotoxins other than microcystin, WDEQ will determine if additional samples need to be collected and analyzed for those cyanotoxins. If samples are collected and those cyanotoxins are detected, WDH will determine whether the cyanotoxin concentrations warrant issuance of an <b>ADVISORY</b>.</li> <li>Current and historic advisories can be viewed on WDEQ's website at <a href="http://WyoHCBs.org">WyoHCBs.org</a>.</li> </ul>
<p><b>Step 4: Monitoring and Lifting Advisories</b></p>	<ul style="list-style-type: none"> <li>While under an <b>ADVISORY</b>, water should be observed approximately weekly by the land and water management agency.</li> <li>Once the water clears and the bloom has fully dissipated, the land and water management agency should provide visual evidence to WDEQ. WDEQ will determine if the bloom has fully dissipated based on visual evidence and satellite imagery, if available. Once WDEQ determines the bloom has fully dissipated, WDEQ will report results to WDH and WDH will lift the <b>ADVISORY</b>.</li> <li>Once WDH has lifted the <b>ADVISORY</b>, signage should be removed by the land and water management agency, local health authorities and/or local county coordinators.</li> <li>WDH may issue a <b>CLOSURE</b> at any time during the process based on the threat to public health.</li> </ul>

Abbreviations: EPA, US Environmental Protection Agency; WDEQ, Wyoming Department of Environmental Quality; WDH, Wyoming Department of Health; WGFD, Wyoming Game and Fish Department; WLSB, Wyoming Livestock Board; USFWS, United States Fish and Wildlife Service.

<sup>1</sup> See Appendix D in HCB Action Plan for procedures on the Jar and Stick Tests; adapted from the Kansas Department of Health and Environment: [www.kdheks.gov/algae-illness/download/Jar\\_Test.pdf](http://www.kdheks.gov/algae-illness/download/Jar_Test.pdf)

<sup>2</sup> Abraxis Fresh Water Strip Test with QuikLyse™ used to detect microcystins in recreational water (10 ppb or  $\mu\text{g/L}$ ): <http://abraxiskits.wpengine.com/wp-content/uploads/2015/08/Microcystins-Strip-for-Recreational-Water-R082115.pdf>

<sup>3</sup> See Appendix B in HCB Action Plan for a list of Wyoming lakes and reservoirs with documented cyanobacteria blooms.

<sup>4</sup> EPA implements the Safe Drinking Water Act in the State of Wyoming.

<sup>5</sup> A total of two water samples do not include duplicates; see WDEQ [Standard Operating Procedures](#) for collecting duplicates.