Facts About Oregon's Cyanotoxin Testing Rules

July 2019

- General: There are no federal regulations pertaining to cyanotoxins. The U.S. Environmental Protection Agency (EPA) is in the process of gathering national occurrence data. At least two other states (Ohio, Rhode Island) have developed their own regulations for cyanotoxins. After the cyanotoxin event in Salem in 2018, emergency rules, and now permanent rules, were established in Oregon based in part on Ohio's regulations.

- Applicability: Cyanotoxin rules apply to water suppliers that meet the following criteria (about 60 water suppliers with sources, and about another 45 water purchasers) based on available data:
    - Use a surface water source that has had harmful algal blooms or cyanotoxin detections in the past;
    - Use a surface water source downstream from a water body with past harmful algal blooms or cyanotoxin detections;
    - Use a surface water source determined to be susceptible to cyanotoxins based on water body-limiting factors of algal and aquatic weeds as determined by DEQ;
    - A water supplier that purchases and supplies water from any of the above water systems.

- Regulated cyanotoxins: The permanent rules apply to the two cyanotoxins with a health advisory level established by EPA. These are for total microcystins and cylindrospermopsin, at the levels shown in the table below.

Cyanotoxin	For Vulnerable People (ug/L or ppb)	For Anyone (ug/L or ppb)
Total Microcystins	0.3	1.6
Cylindrospermopsin	0.7	3

    - EPA has determined there is insufficient data upon which to develop health advisory levels for anatoxin-a and saxitoxin. States that have done so independently have widely varying conclusions. If these cyanotoxins are

voluntarily sampled and detected, OHA would consult with national experts and advise the water system on any recommended steps to protect public health.

- Monitoring summary:
  - Raw water (susceptible sources) sample every 2 weeks, May through Oct. 31.
  - If cyanotoxins are detected in raw water at or above 0.3 micrograms per liter (ug/L) for microcystin or cylindrospermopsin, sample raw water weekly, and finished water weekly.
  - If detected in finished water, sample finished water daily.
  - Monitoring of finished water can return to weekly following two consecutive non-detects at the entry point and can cease if not detected in two consecutive weekly samples and levels are below 0.3 ug/L in raw water.
  - If finished water results are over any advisory level, collect confirmation sample as soon as practical, within 24 hours. Sample daily at entry point. If confirmed over any health advisory level in finished water, a "do-not-drink" advisory must be issued for that system and any purchasing water systems.

- Health advisories: Water suppliers will issue a "do-not-drink" advisory if routine and confirmation samples are over any health advisory level (i.e., vulnerable or general populations).
  - Health advisory levels established by EPA for the two cyanotoxins regulated by these rules are set at a concentration that anticipates no adverse health effects expected if the water is consumed for up to 10 days.
  - Issuing an advisory only when results are confirmed is consistent with other Safe Drinking Water Act contaminants. Given errors in sample collection or analysis, confirming the results prior to action is a standard and reasonable approach.
  - An advisory may be lifted upon approval by OHA if two consecutive samples from finished water and the distribution system are at or below the health advisory level in both the system treating the water, and any downstream purchasing water systems.

- Public notification: Though not required in this rule, water suppliers may want to consider notifying the public if any treated water sample is over the health advisory level, or if routine and confirmation samples detect either microcystins or cylindrospermopsin in finished drinking water below health advisory levels.
  - Public notification is a consideration with a detection or concentrations below health advisory levels for cyanotoxins but not for other contaminants due to the

current high level of public interest in cyanotoxins. Each water supplier should assess the best course of action for themselves.

- Analytical methods: The rules require ELISA (enzyme–linked immunosorbent assay) method for analyzing raw and finished water samples.
  - EPA recognizes ELISA-based methods as reliable measurements of cyanotoxin concentrations. The standard EPA method 546 is an ELISA method for total microcystins, measuring all microcystin variants (over 100), consistent with the contaminant group for which EPA has established a health advisory level.
  - There is no EPA standardized method using ELISA for cylindrospermopsin. The DEQ Lab has established a state-standardized ELISA method that private labs can be accredited to use.
  - If cylindrospermopsin is detected in treated water over a health advisory level, the confirmation sample must be analyzed using EPA method 545, which is a liquid chromatography-tandem mass spectrometry (LC MS/MS) method. Though both methods measure the same contaminant, an EPA standardized method is preferred for determining whether an advisory needs to be issued.

- Laboratory accreditation: The Oregon DEQ Laboratory is funded and prepared to conduct all required analysis for susceptible sources until June 30, 2021. Other laboratories may be accredited for cyanotoxin analysis through the Oregon Environmental Laboratory Accreditation Program.

- Annual reporting: Water suppliers must provide notification in the annual Consumer Confidence Report if cyanotoxins are found in treated water above detection levels, what the concentrations were, and whether an advisory had to be issued.

- Minimum requirements: These rules establish minimum requirements for susceptible public water systems. Water systems may choose to do more than the rules require. These rules supersede any previous cyanotoxin temporary rules or guidance.