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TEMPORARY ADMINISTRATIVE ORDER
INCLUDING STATEMENT OF NEED & JUSTIFICATION

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OREGON HEALTH AUTHORITY
PUBLIC HEALTH DIVISION

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FILING CAPTION: Cyanotoxin monitoring and testing at public drinking water systems

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NEED FOR THE RULE(S):

The Oregon Health Authority (Authority) establishes rules for public drinking water systems to ensure all Oregonians have safe drinking water. Cyanobacteria are naturally occurring bacteria in marine and fresh water ecosystems, and may produce cyanotoxins, which at sufficiently high concentrations can pose a risk to public health. Cyanotoxins are currently an unregulated contaminant under the Federal Safe Drinking Water Act and public drinking water systems are not required to monitor and test for the presence of these toxins in drinking water. Recent events have indicated that cyanotoxins are present in certain drinking water systems supplied by water sources that are susceptible to harmful algal blooms that produce the release of cyanotoxins. These rules require water suppliers to monitor for the presence of cyanotoxins in drinking water at public water systems that are supplied by susceptible water sources. Water suppliers must also notify the public of the presence of cyanotoxins in drinking water, report testing results to the Authority and issue health advisories when cyanotoxin advisory levels are exceeded.

JUSTIFICATION OF TEMPORARY FILING:

If the Oregon Health Authority (Authority) fails to adopt cyanotoxin monitoring rules applicable to certain water systems there would be no standardized process to determine whether cyanotoxins are present in susceptible water sources and whether those water sources present a risk to public health. A lack of knowledge of the presence of cyanotoxins and process for public water systems to notify the public of the potential public health risks of the presence of cyanotoxins may endanger the health of vulnerable populations and the general public. Failure to immediately take rulemaking action would leave public water suppliers and the Authority without sufficient data to provide adequate actions to ensure safe drinking water and protect public health. These temporary rules will require public water systems to monitor the presence and levels of cyanotoxins in drinking water and standardize a process to timely notify the public of potential risk to health.

The Authority finds that failure to act promptly will result in serious prejudice to the public interest, the Authority, and vulnerable populations including children under the age of six, the elderly and those with illnesses or immune-compromised. These rules need to be adopted promptly so that applicable public drinking water systems are required to

test for cyanotoxins that may pose a risk to public health and timely notify the public and issue health advisories to protect public health.

DOCUMENTS RELIED UPON, AND WHERE THEY ARE AVAILABLE:

EPA, Recommendations for Public Water Systems to Manage Cyanotoxins in Drinking Water:
<https://www.epa.gov/ground-water-and-drinking-water/recommendations-public-water-systems-manage-cyanotoxins-drinking>

Ohio rule regulating harmful algal blooms, Chapter 3745-90: <http://epa.ohio.gov/ddagw/rules#112029992-chapter-3745-90-harmful-algal-blooms>

RULES:

333-061-0510, 333-061-0520, 333-061-0530, 333-061-0540, 333-061-0550, 333-061-0560, 333-061-0570, 333-061-0580

ADOPT: 333-061-0510

RULE TITLE: Applicability of Cyanotoxin Rules

RULE SUMMARY: 333-061-0510, Applicability of Cyanotoxin Rules: defines which water suppliers are subject to OAR 333-061-0510 to 333-061-0580

RULE TEXT:

(1) Water suppliers subject to OAR 333-061-0510 to 333-061-0580 are those water suppliers operating water systems subject to regulation under OAR 333-061-0010 that:

- (a) Are supplied by a surface water source that is susceptible to harmful algae blooms or release of cyanotoxins; or
- (b) Are supplied by a groundwater source determined by the Authority to be under the direct influence of a surface water source that is susceptible to harmful algae blooms or release of cyanotoxins; or
- (c) Purchase water from another water system that is supplied by a surface water source or a groundwater source determined by the Authority under the direct influence of a surface water that is susceptible to harmful algae blooms or release of cyanotoxins.

(2) A water source is susceptible to harmful algae blooms or release of cyanotoxins when:

- (a) One or more harmful algae blooms have been documented or at least one cyanotoxin was previously detected in the water source or at any location in a public water system supplied by that water source;
- (b) The point of diversion into the water system is downstream of or influenced by another surface water source susceptible to harmful algae blooms or release of cyanotoxins;
- (c) The surface water source is susceptible to cyanotoxins based on a water quality limited listing in the Oregon DEQ Integrated Report and Clean Water Act Section 303(d) list for the limiting factors of algae and aquatic weeds, chlorophyll-a, nitrates, phosphorus, pH, or dissolved oxygen; or
- (d) The Authority determines the source is susceptible to harmful algae blooms and cyanotoxins based on the characteristics of the source, including, but not limited to, slow moving or stagnant water, or available sources of nutrients.

(3) The Authority may, in its discretion, exempt a water supplier that would otherwise be subject to OAR 333-061-0510 to 333-061-0580 if the water supplier submits sufficient evidence, including but not limited to, water quality data, watershed characteristics, and environmental conditions such that the Authority determines that the water source has a low susceptibility to cyanotoxins when considered with any other information available to the Authority.

(4) A water supplier subject to OAR 333-061-0510 to 333-061-0580 under this rule must begin monitoring as described in OAR 333-061-0510 to 333-061-0580 beginning the week of July 15, 2018.

STATUTORY/OTHER AUTHORITY: 448.131, 448.150, ORS 448.123

STATUTES/OTHER IMPLEMENTED: 448.150, ORS 448.123

ADOPT: 333-061-0520

RULE TITLE: Definitions

RULE SUMMARY: 333-061-0520, Definitions: defines terms used in OAR 333-061-0510 to 333-061-0580.

RULE TEXT:

Except as follows, or unless the context indicates otherwise, the definitions in OAR 333-061-0020 shall apply to OAR 333-061-0510 to 333-061-0580. In addition, the following definitions apply to OAR 333-061-0510 to 333-061-0580:

- (1) "Confirmation sample" means a finished water sample taken on a different day but the same location and analyzed by the same method.
- (2) "Cyanobacteria" are photosynthetic bacteria that share some properties with algae and are found naturally in freshwater and saltwater. Some species of cyanobacteria can produce toxins, which are known to be harmful to human health above certain concentrations.
- (3) "Cyanotoxins" means total microcystins and cylindrospermopsin produced by cyanobacteria.
- (4) "Detected" or "detection" means an analytical result that is equal to or greater than the reporting limit for the analytical method being used.
- (5) "Distribution sampling points" means representative points in the distribution system.
- (6) "Finished water sampling point" means each entry point to the distribution system which is representative of the water intended for distribution and consumption without further treatment, except as necessary to maintain water quality in the distribution system (for example, booster chlorination).
- (7) "Harmful algae bloom" means a dense colony of cyanobacteria that can rapidly multiply in surface waters when environmental conditions are favorable for growth.
- (8) "Health advisory level" is the concentration of a cyanotoxin determined by the US Environmental Protection Agency, as specified in OAR 333-061-0530(1), at or below which adverse health effects are not expected to occur if consuming water containing cyanotoxins at this concentration for up to 10 days.
- (9) "Monitoring" means collecting a sample, having it analyzed by a competent lab, and reporting the results to the Authority.
- (10) "Raw water sampling point" means a sampling point on each water source intake in use prior to any treatment, or another raw water sampling point acceptable to the Authority.
- (11) "Subject water suppliers" means a water supplier subject to OAR 333-061-0010 and OAR 333-061-0510 to 333-061-0580 as described in OAR 333-061-0510.
- (12) "Vulnerable people" means formula-fed infants, people under the age of six, pregnant women, nursing mothers, the elderly, those receiving dialysis treatment, those with pre-existing liver conditions, and other sensitive populations.

STATUTORY/OTHER AUTHORITY: ORS 448.123, 448.131, 448.150

STATUTES/OTHER IMPLEMENTED: ORS 448.123, 448.150

ADOPT: 333-061-0530

RULE TITLE: Health Advisory Levels

RULE SUMMARY: 333-061-0530, Health Advisory Levels: identifies levels for cyanotoxins, above which a health advisory is issued.

RULE TEXT:

(1) The health advisory levels are as follows:

(a) Total Microcystins: 0.3 ug/L for vulnerable people; 1.6 ug/L for people aged 6 and older.

(b) Cylindrospermopsin: 0.7 ug/L for vulnerable people; 3 ug/L for people aged 6 and older.

(2) Exceeding a health advisory level in a sample collected from a finished water sampling point or a distribution sampling point requires additional monitoring and public notification as prescribed by OAR 333-061-0540(4) and OAR 333-061-0570.

STATUTORY/OTHER AUTHORITY: ORS 448.123, 448.131, 448.150

STATUTES/OTHER IMPLEMENTED: ORS 448.123, 448.150

ADOPT: 333-061-0540

RULE TITLE: Cyanotoxin Monitoring

RULE SUMMARY: 333-061-0540, Cyanotoxin Monitoring: defines when and how water suppliers must monitor for cyanotoxins.

RULE TEXT:

Subject water suppliers must monitor for cyanotoxins as follows.

(1) Water suppliers with raw water intakes must monitor at raw water sampling points as follows:

(a) From May 1 through October 31 water suppliers shall monitor at the raw water sampling point at least once every two weeks for cyanotoxins.

(b) If cyanotoxin levels are greater than or equal to 0.3 ug/L, or there is a recreational harmful algae bloom advisory in a water body upstream, water suppliers must immediately increase monitoring to weekly.

(c) Water suppliers may resume raw water monitoring every two weeks if cyanotoxin levels are less than 0.3 ug/L in at least two consecutive weekly samples.

(2) Water suppliers with raw water intakes must monitor at finished water sampling points as follows:

(a) If cyanotoxin levels are greater than or equal to 0.3 ug/L at the raw water sampling point, water suppliers must monitor finished water weekly, beginning within 24 hours of receiving raw water results.

(b) If any finished water sample detects cyanotoxins, water suppliers must immediately begin monitoring finished water daily.

(c) Water suppliers may resume weekly finished water monitoring if cyanotoxins are not detected in two consecutive daily samples collected at the finished water sampling point.

(d) Finished water monitoring may be discontinued if both cyanotoxin levels are less than 0.3 ug/L in two consecutive samples of the raw water and is not detected in any finished or distribution sample.

(3) Revised cyanotoxin monitoring frequency. The cyanotoxin monitoring frequency may be revised (decreased, increased or discontinued) at the discretion of the Authority. When establishing the revised schedule, the Authority may consider cyanotoxin data collected in accordance with this rule, locations of intakes and dilution factors for raw water monitoring of sources downstream of a harmful algae bloom, operational changes made, and other information provided by the water supplier.

(4) Monitoring following a cyanotoxin health advisory level exceedance in finished water.

(a) If the cyanotoxin concentration exceeds a health advisory level in a finished water sample, the water supplier must collect a finished water confirmation sample as soon as practical, but no later than 24 hours after receiving results.

(b) Distribution sampling. A water supplier with a confirmed finished water result greater than or equal to 0.3 ug/L for total microcystins or greater than or equal to 0.7 ug/L for cylindrospermopsin, and all water suppliers that purchase water from a water supplier with an exceedance, shall monitor daily at representative sites in the distribution system within 24 hours of receiving the confirmation sample result. Additional distribution system monitoring may be required by the Authority based on sampling results and other relevant circumstances.

(c) Once the health advisory is lifted as permitted under OAR 333-061-0570(4), water suppliers must monitor no less frequently than prescribed in sections (1) and (2) of this rule.

(5) Monitoring extension. Upon a request from a water supplier, the Authority may agree to extend the 24-hour monitoring timeline required pursuant to this rule on a case-by-case basis when the water supplier has a logistical problem timely collecting or analyzing samples in accordance with the requirements of OAR 333-061-0510 to 333-061-0580. When an extension is agreed to by the Authority, the Authority shall specify in writing how much time the water supplier has to monitor. Examples of potential logistical problems include, but are not limited to:

(a) Extreme weather conditions that create unsafe travel or on-site conditions for the person collecting the sample.

(b) Limited laboratory capacity on weekends and holidays.

STATUTORY/OTHER AUTHORITY: ORS 448.123, 448.131, 448.150

STATUTES/OTHER IMPLEMENTED: ORS 448.123, 448.150

ADOPT: 333-061-0550

RULE TITLE: Analytical Methods

RULE SUMMARY: 333-061-0550, Analytical Methods: identifies how cyanotoxin monitoring water samples must be analyzed by drinking water laboratories.

RULE TEXT:

(1) A water supplier shall ensure that cyanotoxin samples are analyzed using the Enzyme-linked immunosorbent assay (ELISA) for the specific cyanotoxin, EPA method 546, or another method approved in writing by the Authority.

(2) After December 31, 2018, to analyze samples required by OAR 333-061-0510 to 333-061-0580, a water supplier must use a laboratory accredited according to OAR chapter 333, division 64 and the Oregon Environmental Laboratory Accreditation Program (ORELAP), or the Oregon Department of Environmental Quality Laboratory.

STATUTORY/OTHER AUTHORITY: ORS 448.123, 448.131, 448.150

STATUTES/OTHER IMPLEMENTED: ORS 448.123, 448.150

ADOPT: 333-061-0560

RULE TITLE: Reporting

RULE SUMMARY: 333-061-0560, Reporting: requires water suppliers to notify purchasing water systems when advisory levels are exceeded and requires laboratories and water suppliers to report laboratory results to the Authority.

RULE TEXT:

(1) If the cyanotoxin concentration exceeds a health advisory level in the confirmation sample collected at any finished water sampling point in accordance with OAR 333-061-540(2), the water supplier shall notify all purchasing systems served by the water supplier as soon as practical but no later than 24 hours after receiving the confirmation sample results.

(2) Mandatory reporting requirements for laboratories:

(a) Laboratories must report validated results of any analysis that exceeds a health advisory level directly to the Authority and to the water supplier as soon as possible but no later than 24 hours or one business day of validating results, or within 72 hours or three business days post analysis.

(b) Subcontracted laboratories must report validated results of any analysis that exceeds the health advisory level directly to their client laboratory as soon as practical but no later than 24 hours or one business day of validating results, or within 72 hours or three business days post analysis.

(3) The water supplier shall:

(a) Ensure that laboratories conducting the testing report as described in section (2) of this rule; and

(b) Report to the Authority any analytical result used to determine whether an advisory may be lifted pursuant to OAR 333-061-0570(4) within 24 hours; and

(c) Report to the Authority any analytical result that changes the frequency of monitoring pursuant to OAR 333-061-0540 within 24 hours;

(d) Report to the Authority all other analytical results less than the health advisory levels within 10 days of the end of the month the sample results were received.

(4) Analyses required by OAR 333-061-0540 must be uploaded by the laboratory to the Authority in an approved XML format, or submitted in a format approved by the Authority.

STATUTORY/OTHER AUTHORITY: ORS 448.123, 448.131, 448.150

STATUTES/OTHER IMPLEMENTED: ORS 448.123, 448.150

ADOPT: 333-061-0570

RULE TITLE: Public Notification

RULE SUMMARY: 333-061-0570, Public Notification: identifies how and when water suppliers must notify the public of monitoring results and the standard language to be used.

RULE TEXT:

Subject water suppliers must notify the public as follows.

(1) Issuance of a Health Advisory. If cyanotoxin levels from a confirmation sample in finished water or in the distribution system exceed any health advisory level, the water supplier and any suppliers that purchase water from that system must issue a health advisory as soon as possible, but no later than 24 hours of receipt of results. The public notification shall include, at a minimum, the cyanotoxin and health advisory level exceeded, the sample collection dates, dates results were received, locations of the samples, and the standard health effects language in section (6) of this rule.

(2) The Authority may allow a water supplier additional time to issue an advisory, in order to await additional results or implement operational changes to reduce cyanotoxin levels, including but not limited to switching sources and optimizing treatment. If the Authority allows additional time, the water supplier shall issue public notification to all customers within 24 hours of receiving the confirmation sample results. The notification must include the date the samples were collected, the dates results were received, whether the sample was collected at the finished water sampling point or in the distribution, the results of the analyses, and steps the water supplier is taking to minimize risk to public health.

(3) The Authority may allow the water supplier to limit distribution of the health advisory in accordance with OAR 333-061-0042(1)(b).

(4) Unless otherwise specified by the Authority based on public health and safety considerations, a health advisory shall remain in effect until the following occur:

(a) Cyanotoxin concentrations are below the applicable health advisory level in two consecutive samples collected a minimum of 24 hours apart at the finished water sampling point; and

(b) Cyanotoxin concentrations are below the applicable health advisory level in two consecutive sets of samples collected at representative distribution sampling points.

(5) Consumer confidence report. Each water supplier that detects a cyanotoxin in a sample collected at a finished water sampling point or a distribution sampling point collected within its water system in accordance with OAR 333-061-0540 shall include the following in the consumer confidence report required by OAR 333-061-0043:

(a) The range of levels detected and highest single measurement of cyanotoxin concentration in samples collected at finished water sampling points and distribution sampling points, the cyanotoxin health advisory level, and whether an advisory was required to be issued.

(b) Information regarding the major source of the contaminant using definitions found in OAR 333-061-0520(2), (3), and (7).

(c) Standard health effects language in section (6) of this rule.

(6) Standard health effects language. Water suppliers shall include the following standard health effects language in public notification and consumer confidence reports: "Consuming water containing concentrations of cyanotoxins over the health advisory level for more than 10 days may result in upset stomach, diarrhea, vomiting, as well as liver or kidney damage. Formula-fed infants, children younger than six, pregnant women, nursing mothers, the elderly, those receiving dialysis treatment and those with pre-existing liver conditions may be more susceptible than the general population to the health effects of cyanotoxins. Seek medical attention if you or your family members experience illness."

STATUTORY/OTHER AUTHORITY: ORS 448.123, 448.131, 448.150

STATUTES/OTHER IMPLEMENTED: ORS 448.123, 448.150

ADOPT: 333-061-0580

RULE TITLE: Record Keeping

RULE SUMMARY: 333-061-0580, Record Keeping: identifies record keeping requirements for water suppliers.

RULE TEXT:

(1) Subject water suppliers shall retain, on its premises or at a convenient location near its premises, records of cyanotoxin analyses made pursuant to OAR 333-061-0510 to 333-061-0580 for not less than 10 years. Actual laboratory reports may be kept, or data may be transferred to tabular summaries, provided that the following information is included:

- (a) The date, place and time of sampling, and the name of the person who collected the sample;
- (b) Identification of the sample as to whether it was collected at a raw, finished or distribution sampling point;
- (c) Date of analysis;
- (d) Laboratory and person responsible for performing analysis;
- (e) The analytical method used; and
- (f) The results of the analysis.

(2) Subject water suppliers shall retain, on its premises or at a convenient location near its premises, health advisories issued in accordance with OAR 333-061-0510 to 333-061-0580, and consumer confidence reports issued in accordance with OAR 333-061-0510 to 333-061-0580 and OAR 333-061-0043, for not less than 10 years.

STATUTORY/OTHER AUTHORITY: ORS 448.123, 448.131, 448.150

STATUTES/OTHER IMPLEMENTED: ORS 448.123, 448.150