ODW Harmful Algae Blooms Plan

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Photo Credit: VIMS; Wolfgang Vogelbein
Virginia HAB Task Force

- Virginia Interagency group
- Monitors public water bodies
  - Routine sampling
  - HAB Hotline - 888-238-6154
  - Online Reporting Form
- Coordinates interagency bloom responses
Algal Bloom Response

Step 1: Prepare and Monitor
If indication of potential HAB

Step 2: Monitor Raw Water for Toxins
If microcystins > 1.0 µg/L, If not

Step 3: Monitor Raw and Finished Water for Toxins
If toxin > child HA for 10 days, If not

Step 4: Consider issuing a “Do Not Drink” Notice
If 2 consecutive samples < Child HA at all distribution sites

Continue Steps 2 and 3 until the bloom dissipates
Algal Bloom Response

Step 1: Prepare and Monitor
If indication of potential HAB

Step 2: Monitor Raw Water for Toxins
If microcystins > 1.0 µg/L

Step 3: Monitor Raw and Finished Water for Toxins
If toxin > child HA for 10 days

Step 4: Consider issuing a “Do Not Drink” Notice
If 2 consecutive samples < Child HA at all distribution sites

- Waterworks monitors for and report blooms
  - Visual
  - Analytical (pH)
- ODW shares HAB Task Force bloom reports
Algal Bloom Response

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If microcystins > 1.0 µg/L

Step 3: Monitor Raw and Finished Water for Toxins
If toxin > child HA for 10 days

Step 4: Consider issuing a “Do Not Drink” Notice
If 2 consecutive samples < Child HA at all distribution sites

- ODW may provide field test kits or assist with testing
- Field offices can leave the test strips with Waterworks
Algal Bloom Response

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Step 3: Monitor Raw and Finished Water for Toxins
If toxin > child HA for 10 days

Step 4: Consider issuing a “Do Not Drink” Notice
If 2 consecutive samples < Child HA at all distribution sites

- ODW may assist with sampling and analysis
- FO has bottles and dechlor
- FO coordinates with CO for analysis
- Sampling instructions: Y:\05-Incidents\511-HAB Events\Cyanotoxin Lab Information
Algal Bloom Response

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Step 2: Monitor Raw Water for Toxins
If microcystins > 1.0 µg/L

Step 3: Monitor Raw and Finished Water for Toxins
If toxin > child HA for 10 days

Step 4: Consider issuing a “Do Not Drink” Notice
If 2 consecutive samples < Child HA at all distribution sites

- FO will coordinate with the local health department director and the waterworks owner to recommend simple messaging - “Do Not Drink” if child HA exceeded > 10 days
- ODW recommends waterworks develop a distribution system monitoring plan
ODW HAB Plan

Y:\13-Manuals\03-Sampling Manual
Waterworks monitors for algal blooms. Additionally the HAB Task Force may receive alerts of algal blooms. (Sections 1.3 and 1.4)

Are there present indicators of an algal bloom? (Section 1.5)

No

Are algal identification and cell counts available? (Section 1.5)

Yes

No

Are any cell counts above Action Levels? (Section 1.5)

Yes

HAB Taskforce and VDH local and regional staff are notified. (Section 1.5)

No

Waterworks develops a treatment plan if not prepared in advance. Waterworks may begin to implement the plan. (Section 1.2)

Go to Step 2
Step 2

Waterworks collects & analyzes raw water samples for microcystins. 1 x per week (Section 2.1)

Microcystins concentration (raw water sample) ≥ 1.0 µg/L? (Section 2.2)

No → Has the bloom dissipated? (Section 1.5)

Yes → Waterworks implements cyanotoxin treatment optimization. (Section 1.2)

ODW updates local and regional VDH staff and consecutive waterworks, and issues Event Notification. (Section 2.2)

No → ODW advises WTP to return to normal operations

Go to Step 1

Go to Step 3
Step 3

Waterworks collects & analyzes raw and finished water cyanotoxin samples 1 x per week (Section 3.1)

Any cyanotoxins detected in finished water? (Section 3.2)

No

Go to Step 2

Yes

Waterworks collects & analyzes a confirmation finished water sample within 24 hr of receiving initial result. (Section 3.2)

ODW updates local and regional VDH staff and consecutive waterworks. (Section 3.2)

Waterworks may consider initiating distribution system monitoring. (Section 4.3)

Any cyanotoxin concentrations (confirmation finished water sample) > child health advisory level for 10 days? (Section 3.3)

No

Go to Step 4

Yes
Step 4

ODW recommends issuance of a "DO NOT DRINK" notice (Section 4.1)

ODW coordinates with VDH local health department director, VDH regional public information officer, and the waterworks (Section 4.1)

ODW and waterworks develop a plan to monitor distribution system cyanotoxins. (Section 4.2)

ODW recommends sampling and analysis of raw water, finished water, and distribution system for cyanotoxins to daily (Section 4.2)

In two consecutive rounds, all cyanotoxin concentrations (finished water and distribution system samples) < child health advisory level? (Section 3.3)

Yes

In coordination with VDH local health department director, VDH regional public information officer, and local emergency management, ODW/Waterworks rescinds "DO NOT DRINK" notice (Section 4.2)

No

Go to Step 2
Source Water Protection Measures

- Public education
- Agricultural and stormwater Best Management Practices
- Wastewater improvements
Questions?

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