Great Lakes Commission
September 30, 2014
Buffalo NY

City of Toledo Drinking Water Advisory and Ohio EPA Response to Harmful Algal Blooms

Ohio Harmful Algal Bloom Strategy

- **Ohio EPA began sampling for algal toxins at public water systems in 2010**
- **Ohio EPA worked with Ohio Department of Health of Dept. of Natural Resources to establish a State of Ohio HAB Response Strategy in early 2011**
  - Standardized definitions, sample collection procedures, algal toxin thresholds, and public notice language
- **Drinking Water HAB Response Strategy updated annually**

OhioEPA

Harmful Algal Bloom Impacts to Lake Erie Public Water Systems

There are 25 public water systems serving a combined population of over 2.6 million people that use Lake Erie as their source water. 10 in the Western Basin and 13 in the Central Basin

OhioEPA

Chronology:
City of Toledo "Do Not Drink" Advisory

August 1, 2014

- **6:30 pm – Ohio EPA was notified by City of water testing results for microcystin above the drinking water advisory threshold.**
  - **Consistent with State response strategy a second set of samples collected to confirm results.**

- **11:00 pm – Additional samples confirm presence of microcystin above drinking water advisory threshold.**

- **We suspect a sudden spike in the bloom, possibly in combination with an unusual amount of extracellular toxin in the Lake, overwhelmed the water treatment plant before they could adjust treatment.**

OhioEPA

Chronology:
City of Toledo "Do Not Drink" Advisory

August 2, 2014

- **12: 00 am - Ohio EPA recommends Toledo issue a "Do Not Drink Advisory"**
- **2:00 am - City of Toledo issues advisory for all users of City of Toledo Water (nearly 500,000 people)**
- **5:00 am - Ohio Emergency Operations Center activated**
- **10:00 Governor Kasich Declares state of emergency for Wood and Lucas Counties**
  - **Fulton County later added**

OhioEPA

Chronology:
City of Toledo "Do Not Drink" Advisory

August 3, 2014

- **4:00 pm – Ohio EPA, City of Toledo, U.S. EPA and other water quality experts reach consensus on sample collection, handling, and testing protocols.**

- **Additional samples collected and analyzed using consensus method by Ohio EPA, U.S. EPA and City of Toledo.**
  - **All results below threshold except two sample results that were near the threshold.**
  - **Decision to collect additional targeted samples**

OhioEPA

Chronology:
City of Toledo “Do Not Drink” Advisory

August, 4, 2014

- **9:00 am Ohio EPA and City discuss additional results**
  - **All within acceptable levels**
  - **Ohio EPA recommends lifting the advisory**

- **9:35 am Mayor announces decision to lift advisory**

A Teaching Moment

- 1940's water treatment plant
- Sole Source Dependent - No Back-up
- Monitoring finished but not raw water
- Testing protocol questionable
- Delayed increased treatment process

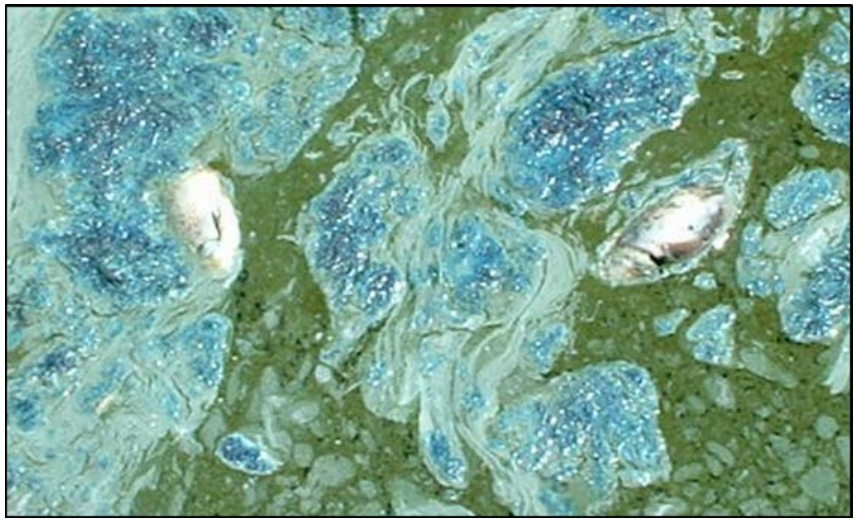
OhioEPA

Algal Toxin Sampling at Public Water Systems

- **There are No National Standards for Cyanotoxins**
- **Public Water Systems are Not Required to Monitor**
- **Ohio EPA Samples Public Water Systems for Algal Toxins based on Presence of a Bloom**
- **Ohio EPA Encourages Public Water Systems to establish their own monitoring Capability**

Drinking Water Adverse Impacts

- Toxin production
- Taste and odor problems
- Increased organic carbon load
- Dissolved oxygen dips
- Nuisance
- Costs to Communities



Examples of Economic Impacts of Algae to Public Water Systems

- **Toledo: historically $200,000/month on carbon treatment.**
- **Carroll Township: $250,000 new ozone treatment**
- **Celina: $7.2 million new treatment and ~$500,000/year on carbon & ozone**
- **Columbus: $820,000 responding to 2013 bloom**

OhioEPA

Continued and Next Steps

- **Routine Outreach and Technical Assistance to Public Water Systems (including sampling)**
- **Continue working with U.S.EPA and public water systems on analytical methods and cyanotoxin treatment (focus on Lake Erie PWSs).**
- **Funding**
  - **One Million Dollars for Laboratory Equipment and Training**
  - **$50 Million in 0% Interest Loans for Infrastructure Improvements to Address HABs**
  - **$100 Million in 0% Interest Loans for Waste Water Treatment Plant improvements to Remove Phosphorous**

OhioEPA

Continued and Next Steps

- **Base resources and program emphasis on nutrient impaired watersheds as identified in TMDLs**
- **Expand efforts within the Maumee Watershed with a focused approach in Targeted HUC 12 watersheds on agricultural and other non-point sources .**
- **Work with point source dischargers on permit limits and increased monitoring**
- **Identify and address concentrations of failed or malfunctioning home sewage systems**
- **Increase monitoring at HUC 12 level**

Take-Away

“ Never Let A Good Crisis Go To Waste ”

Winston Churchhill