

# **Beneficial Use Program Operator Training Committee of Ohio**

July 26, 2018

Ohio EPA Division of Materials and Waste Management

Beneficial Use Group

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# Today's Discussion

- Beneficial Use Rules
  - Why?
    - Background
  - Materials
- Permit Applications
  - General Permits
    - Drinking Water Treatment Material\*
    - Other
  - Individual Permits
  - Land Application Management Plan (LAMP) Permits
- Emerging Contaminants of Potential Concern
- Best Management Practices (BMPs)

# Why Beneficial Use Rules?

- Industry's desire to legitimize beneficial use.
- Need to eliminate multiple regulatory authorizations.
- Streamline the process.
- Ohio EPA goal to promote legitimate beneficial uses resulting in diversion of materials from landfills and less reliance on virgin materials.

# Beneficial Use Rules

- OAC Chapter 3745-599
- Materials
  - Dredge from Lake Erie
  - Foundry Sand
  - Sewage Sludge Incinerator Ash
  - Drinking Water Treatment Material
  - Waste burnt for energy recovery
- General Permits, Individual Permits and Authorizations in Rule

# Developing Beneficial Use Rules

- DMWM and DSW worked together to promulgate OAC Chapter 3745-599 under rulemaking authorities found in ORC Chapters 3734 and 6111.
- Through beneficial use, byproducts can be used as ingredients in products that meet industry standards.
- The beneficial use rules remove the stigma of a waste material being a solid waste.
- Became effective on March 31, 2017.

# Summary Flow Chart of the Beneficial Use Methodology

Methodology for Evaluating the Beneficial Use of Industrial Non-Hazardous Secondary Materials

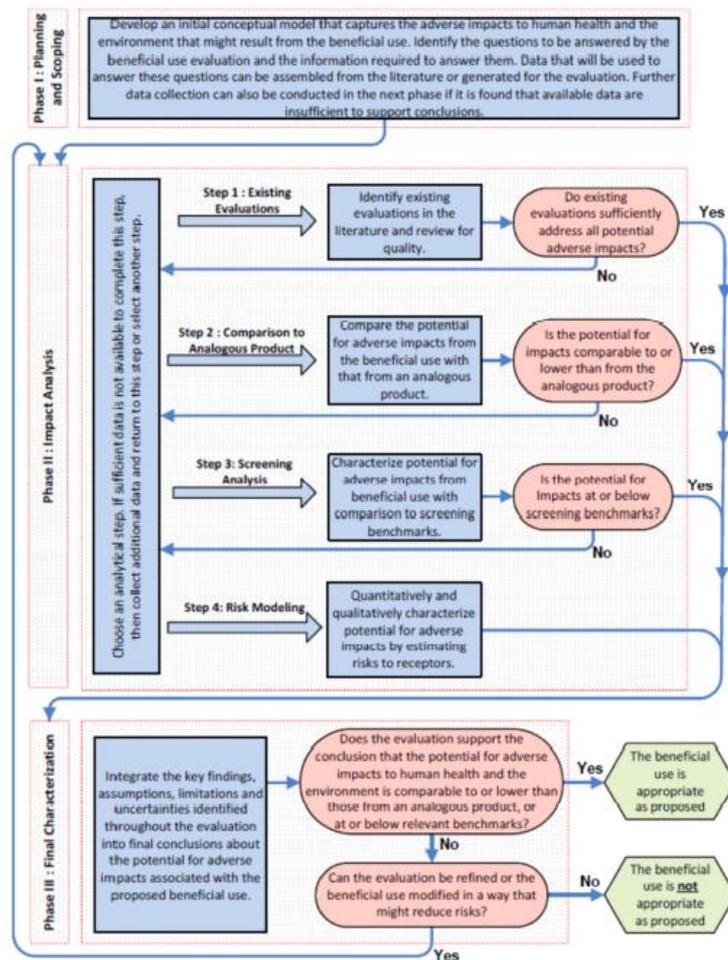


Figure 1. Summary Flowchart of the Beneficial Use Methodology

# Materials Approved for Beneficial Use

1. Foundry sands that are a solid waste, industrial waste or other waste.
2. Material from public water system's drinking/industrial water treatment (aluminum and lime residuals).
3. Material excavated or dredged from a federal navigational channel during harbor or navigation maintenance activities.
4. Sewage sludge incinerator ash (SSIA/BIA).
5. Solid waste, industrial waste or other waste for use as fuel or ingredient in combustion unit.

# Standards

- Clean-up vs “Throw Down”
- RSLs, MCLs, HW, 503, VAP, Compost, Background, DSW Sediments, Totals, TCLP, SPLP, ASTM, LEAF, TEQs, Risk Assessment, DSW 400.007.....
- In Rules or Permits?
- Emerging Contaminants of Concern?
- Bioavailability – Phytotoxicity – “Ecological Risk”
- Defendability

# Standards General Permits

- Unrestricted use
  - Examples — soil blend and land application.
  - U.S. EPA Regional Screening levels and/or U.S. EPA 40 CFR Part 503 Pollutant Concentrations.
- Leaching limits (TCLP or SPLP) for use as fill
  - Foundry sands and DWTM are 20 times MCL or SCL.
  - SSIA is 10 times MCL or SCL.
  - Dredged Material – No leaching requirement.

# Beneficial Use Authorizations

- Permits: general or individual
  - Constituents of Concern appropriate for use (sampling and analysis)
  - Operating conditions
  - Best Management Practices - BMPs (storage and use)
  - Reporting requirements
  - Record Keeping (Legitimacy Criteria)
- Authorized in rule: no permit required if byproduct is used in a construction material meeting engineering specifications
  - Encapsulation
  - Legitimacy criteria

# Beneficial Use General Permit

- Permit issued by the director.
- Issued for five years.
- To apply for coverage, send in Notice of Intent (NOI).
- Contains operating conditions and constituents limits.
- Two foundry sand general permits and one SSIA general permit.
  - Example: Foundry sand used as an ingredient in a soil blend

# Beneficial Use Individual Permit

- Same four materials as the general permit.
- Apply if you cannot operate or meet conditions in a general permit.
- Fill out the individual permit form.
- Process involves characterization of material, BMPs, record keeping and reporting.
- Approval will depend on use of the material and the constituents in the material.

# Issued General Permits

- Foundry Sand
  - Soil Amendment
  - Fill Material
  - U.S. EPA risk assessment
- Sewage Sludge Incinerator Ash
  - Soil Amendment
  - Two generators
    - NEORSD and Cincinnati

# Draft General Permits

- **Dredged Material**

- Dewatered dredged material from Cleveland Harbor
  - Used in a soil blend.
  - Used for fill.

- **Drinking Water Treatment Material**

- Drinking Water Treatment Materials by Placement on Land for Agronomic Benefit as a Liming Material.
- Drinking Water Treatment Materials by Placement on Land in a Soil Blend.

# Drinking Water Treatment Material

- Drinking Water Treatment Material by Placement on Land for Agronomic Benefit as a Liming Material.
- General Permit under final development
  - Interested Party review
  - Working with American Water Works Association (AWWA) Ohio Chapter, The Ohio State University and others
- Current research

# Drinking Water Treatment Material

(continued)

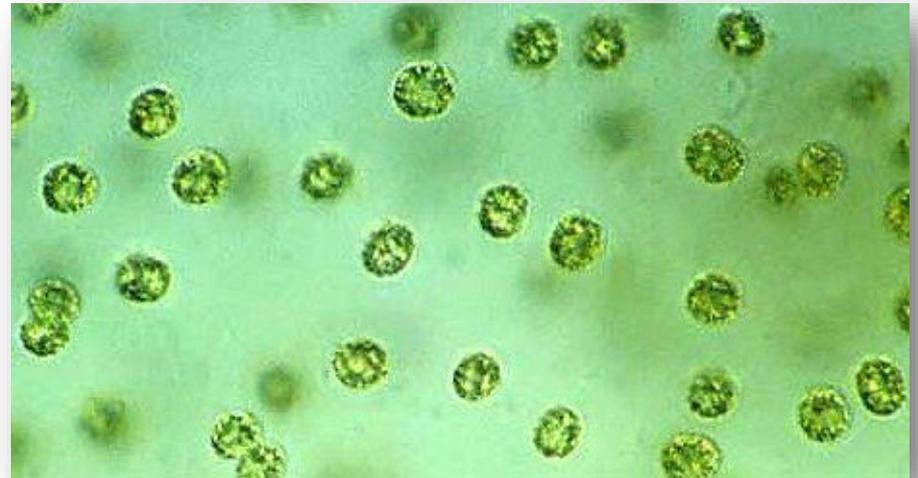
- Current LAMP Permits
  - When current LAMP Permits expire transition/apply for coverage under OAC 3745-599
  - 180 Days prior to expiration of LAMP apply for new permit
  - Maintain current operations until general permit is issued

# Microcystins

- Harmful Algal Blooms
  - Microcystin-producing cyanobacteria
- Collaborating with DDAGW HAB unit to sample and test - DWTM and dredge.
  - Concentrated in DWTM
  - Persistent in soils
- Emerging contaminant of concern
  - Plant uptake
  - Ground water leaching
  - Surface water runoff
- Ohio Board of Higher Education - Sea Grant Project
  - Ohio State – Dr. Basta, Dr. Lee, Dr. Dayton
  - Participate in research?

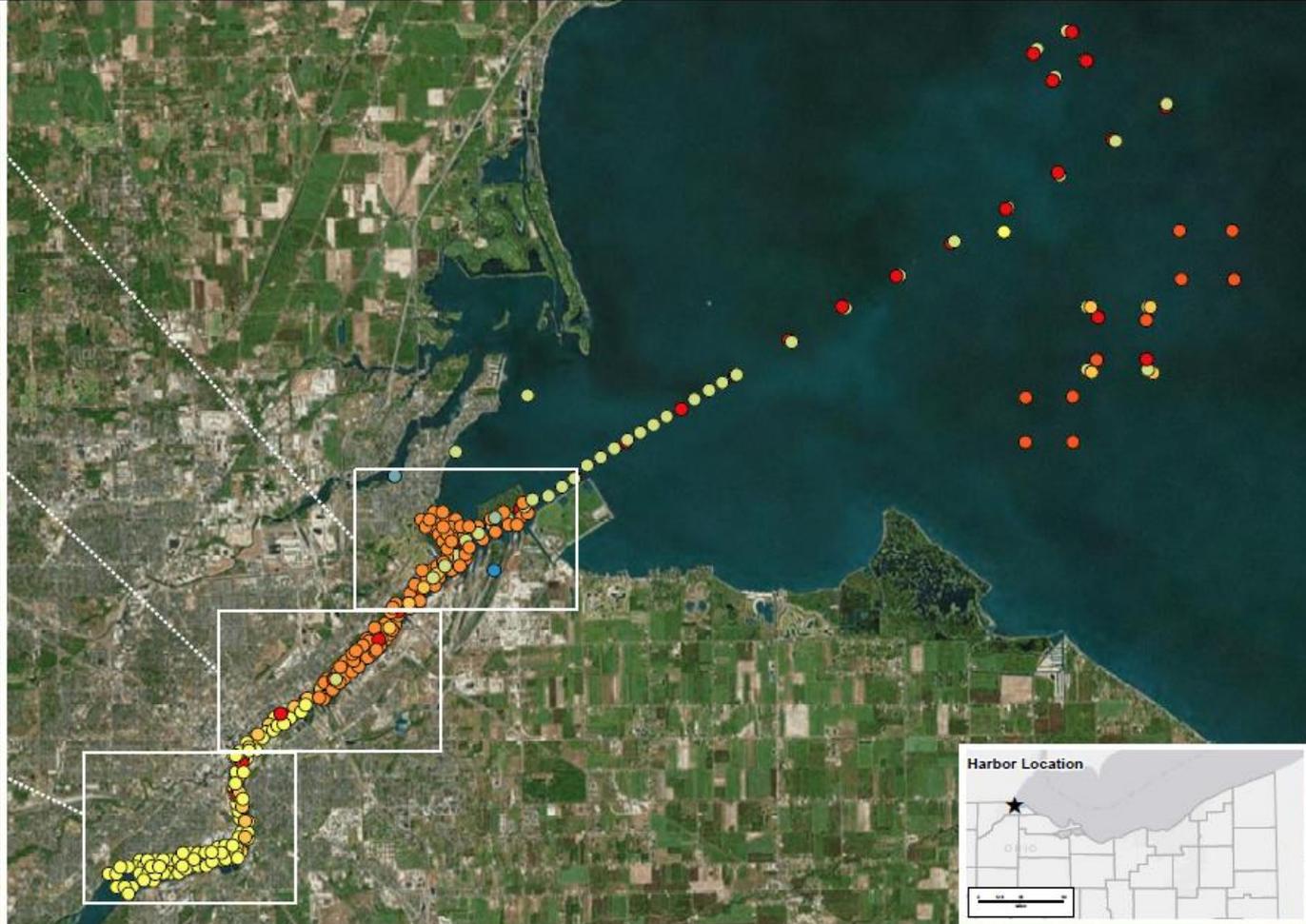
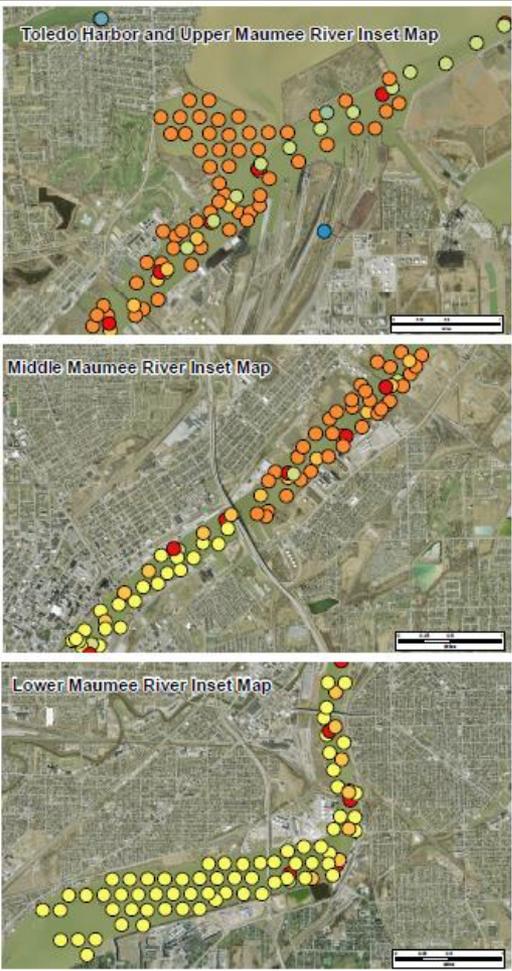
# Microcystins (continued)

- Fate and transport in the environment
- Developing standards
- Sampling and testing methodologies
- Labs
- Best management practices
  - Application rates
  - Setbacks
  - Tillage



# Lake Erie Dredge Materials

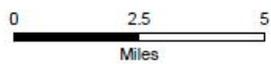
- Senate Bill 2 signed by the governor on July 7, 2017.
  - Establishes new rule-making authority to address when/how beneficial use of certain dredged material is not an ORC 6111 “other waste” or ORC 3734 “solid” waste.
  - Blast furnace slag or steel slag are not “industrial waste” or “other wastes”
    - Cannot exceed water quality standard under 6111.041
    - Cannot exceed primary or secondary maximum contaminant level in ground water under 6109.04
    - Must be sold in commerce
- This involves amending Beneficial Use OAC Chapter 3745-599.
  - Interested Party review pending

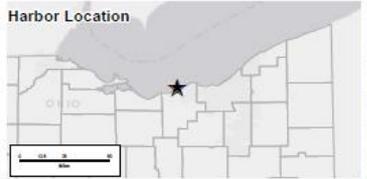
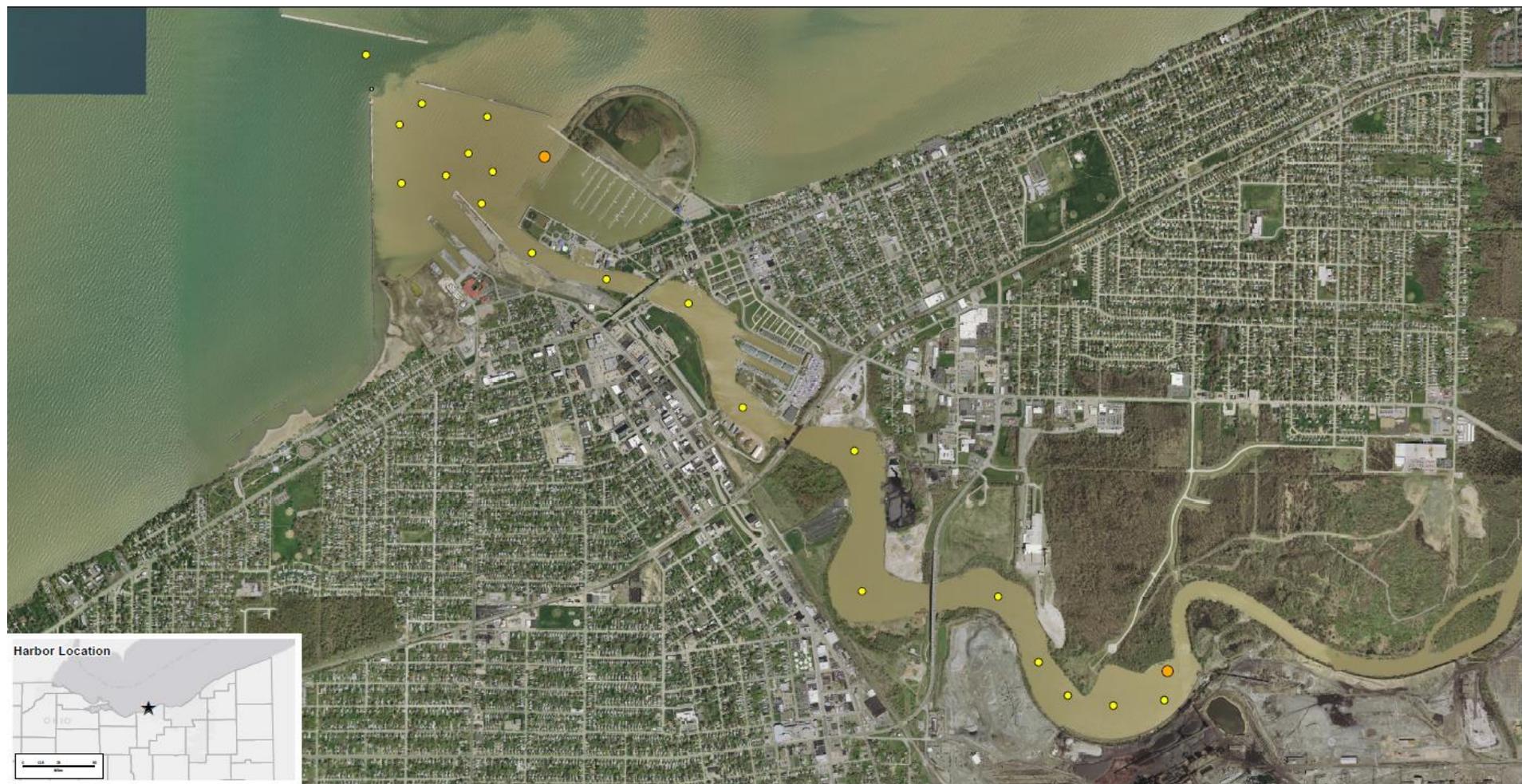


**Sample Year (# locations)**

● 2006 (1)	● 2010 (49)	● 2013 (90)
● 2008 (2)	● 2011 (90)	● 2014 (12)
● 2009 (1)	● 2012 (36)	● 2015 (36)

## Dredge Sampling Locations Toledo Harbor

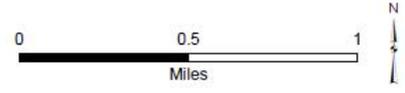




- Percent above Standard - Metals**
- 0 - 100 %
  - 100 - 1,000 %
  - > 1,000 %
- All Harbor Sampling Sites

**Metal Results above Standard**

**Dredge Sampling Locations  
Lorain Harbor**



# Future

- “Shake down” - new program
- Additional permits development/revision
- Improve tracking/communication
- Improve application platform
- Education and research
- Adding new beneficial use materials

# Discussion/Questions/Feedback?

Ohio EPA

Division of Materials and Waste Management

Beneficial Use Group

<http://epa.ohio.gov/dmwm/Home/Beneficial-Use>



# Challenges Past, Present, Future

- Inconsistencies through time
- Centralized vs Decentralized
- Tracking
- Qualitative vs Quantitative
- Silo affects
- Resources/Reorganizations/Turnover
- ORC 6111