



Clean Water Act Methods

Overview of EPA's CWA Method Activities

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CWA Analytical Methods Program



- Many industries and municipalities are permitted under the CWA NPDES program to discharge pollutants
- They use analytical methods to analyze the chemical, physical, and biological components of wastewater and other environmental samples
- CWA requires EPA, through rulemaking, to establish test procedures to measure pollutants for CWA programs
- EPA promulgates test procedures in 40 CFR Part 136





Method Update Rule (MUR)

- Clean Water Act Methods Update Rule for the Analysis of Effluent
 - Proposed February 19, 2015
 - 175 sets of comments received
 - Originally signed on December 15, 2016
 - Withdrawn from the FR, being reconsidered



2015 MUR Proposal Summary



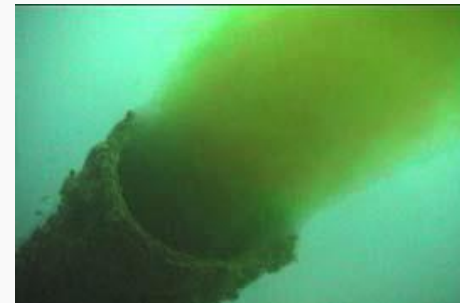
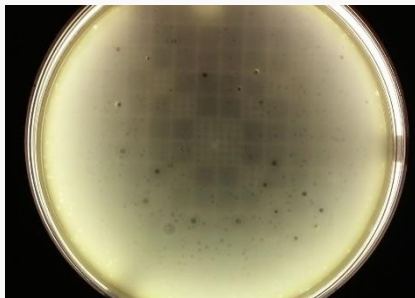
- Proposed ~100 method revisions from ASTM International and Standard Methods
- 6 Alternate Test Procedures (ATPs)
- 1 USGS Method (based off of an ATP)
- Revisions to Methods 608, 624, and 625
- Method Detection Limit (MDL) Revision



CWA Microbiology Method Activities



- Coliphage method
 - Completed multi-laboratory validation for wastewater and recreational water
 - Method and study report forthcoming
- Human microbial source tracking
 - ORD collaboration
 - Completed multi-laboratory validation study for recreational water
 - Method and study report forthcoming



CWA Chemistry Method Activities



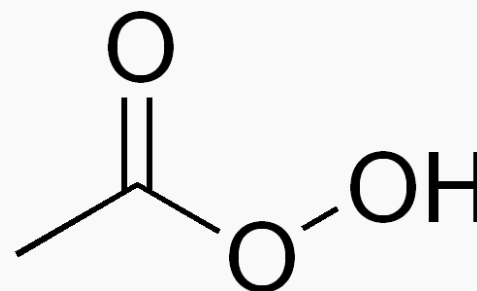
- Peracetic acid and hydrogen peroxide method
- Continuous monitoring – total residual chlorine
- PCB congener method
- ATP reviews



Peracetic Acid and H₂O₂



- Alternative antimicrobial
 - Almost no residual – unlike chlorine
 - Hydrogen peroxide and acetic acid byproducts
 - Already in use at some POTWs
- Drafting white paper (pre-study plan)
 - Received input from multiple vendors and voluntary consensus standard bodies
- Colorimetric method most commonly used
- Must be performed onsite
 - Degrades quickly



Continuous Monitoring



- Total residual chlorine pilot study
- Based on EPA Drinking Water Method 334.0
- Recruited POTWs to generate side-by-side data for monitors and an onsite lab
- One POTW currently compiling data packages
 - Next steps may include a multi-utility study



PCB Congener Method



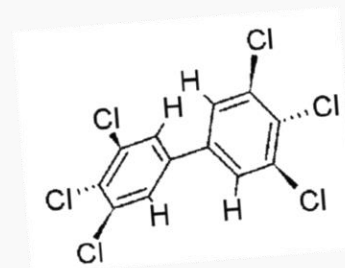
- Single-laboratory validation goals:
 - Identifies and quantifies PCB contamination using individual congeners
 - Improves sensitivity over Method 608, less sensitive than typical laboratory background
 - Implementable at a typical mid-sized full-service environmental laboratory
- Single-laboratory testing completed
- Drafting method and study report





- Quantification

- 29 carbon-13 isotope dilution standards
- Calibration of 65 congeners
- Other 144 congeners quantified indirectly



- Extraction

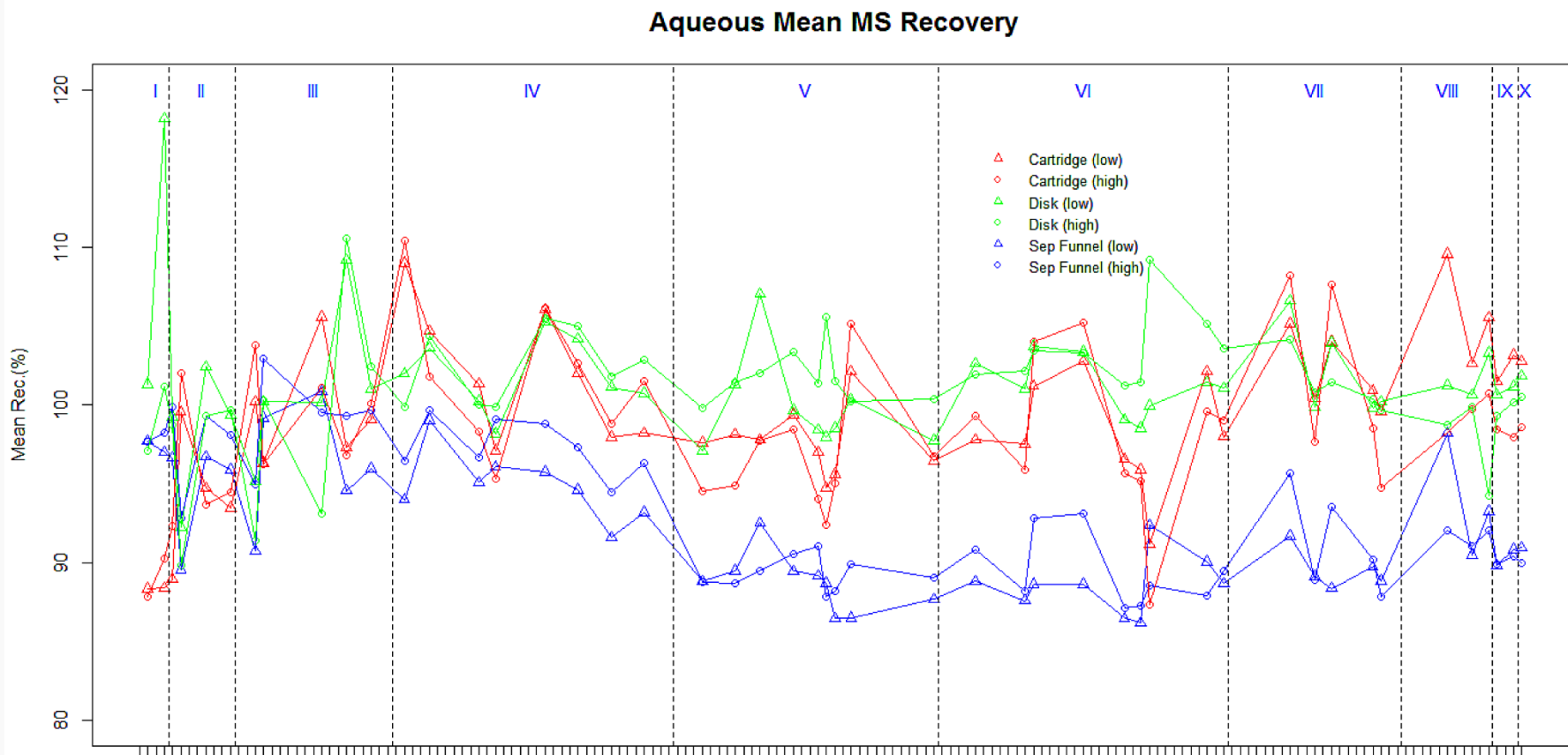
- Tested 2 SPE procedures and 1 LLE procedure
- Tested Soxhlet extraction for biosolids, sediment, and fish tissue

- Sensitivity

- Aqueous MDL generally 0.2 to 1.5 ng/L (except mono chloro congeners)

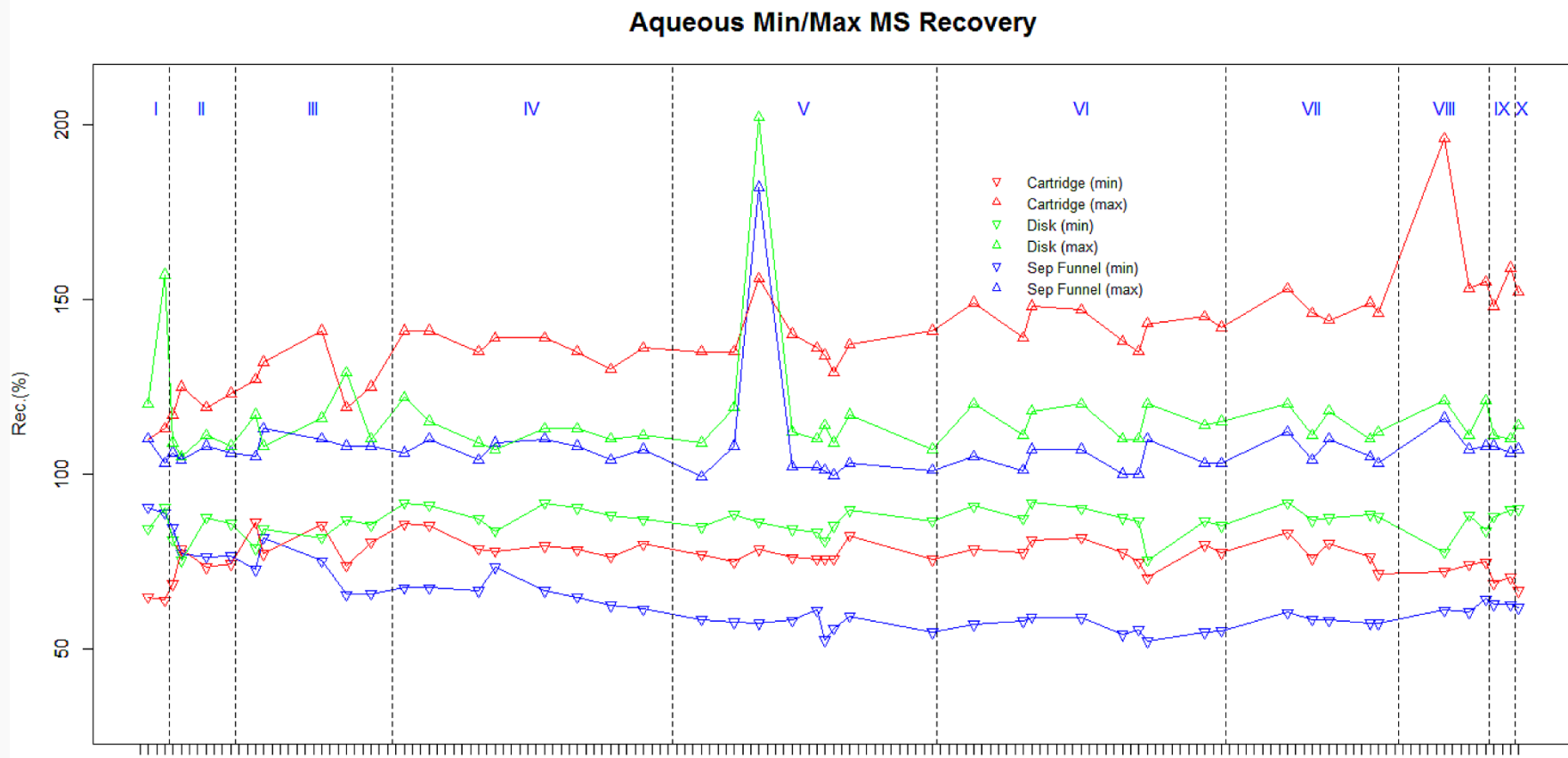


Aqueous Mean Matrix Spike Recovery





Aqueous Min/Max Matrix Spike Recovery



PCB Cong. Method Cont.



- Want more details?
- See poster presentation!

ATP Reviews



- Alternate test procedures (ATPs) for nationwide use are submitted to EPA HQ for review
 - Codified at 40 CFR 136.4 and 136.5
- Protocols for EPA review of alternate test procedures are available at:

<https://www.epa.gov/cwa-methods/alternate-test-procedures>

Anticipated Projects



- Microbiology
 - Cyanotoxin single-laboratory study
- Chemistry
 - Multi-laboratory validation of PCB congener method
 - Multi-laboratory validation of 608.3, 624.1, and 625.1
 - Total nitrogen





For more information or additional feedback, please contact:



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