

Water Quality Standards

Mercury Minimization Programs

December 10, 2018

Willow Lake Water Pollution Control Facility
in Salem, Oregon

Topics

- What is a mercury minimization plan?
- How effective are MMPs in reducing mercury?
- What is in federal and state MMP guidance?
- What do other states do??
- What minimization efforts have occurred in Oregon?

ABCs of MMPs (or PMPs or PRPs)

- Pollutant Minimization Programs – PMPs
- Pollutant Reduction Plans - PRPs
- Mercury Minimization Programs – MMPs
- **Mercury Minimization Plans – MMPs**
 - Source Reduction Measures or Options – SRMs or SROs
 - Best Management Practices – BMPs
 - Source Control Measures – SCMs
 - Mercury Minimization Measures – MMMs or M³s

What is an MMP?

A systematic plan to reduce mercury discharges by evaluating and eliminating or minimizing sources and reducing discharged loads.

- Source reduction is limited to actions a regulated entity can effectively and reasonably take.
- The extent of the plan effort should be proportional to the facility discharge flow, the potential impact, and the discharger's available resources.

EPA 2010 MeHg Criteria Guidance

- Identify and evaluate current and potential mercury sources
- Identify large industrial sources and other commercial or residential sources that could contribute large mercury loads.
- Monitor to confirm current or potential sources of mercury
- Identify potential methods for reducing or eliminating mercury
- Implementation appropriate minimization measures.
- Monitor effluent and influent to verify the effectiveness of pollution minimization efforts

EPA Region 5 2004 MMP Guidance

1. A Program Plan with commitments to:
 - a. identify potential sources of mercury;
 - b. implement reasonable, cost-effective activities to reduce or eliminate mercury loadings;
 - c. track mercury source reduction implementation and mercury source monitoring;**
 - d. monitor influent, effluent and biosolids,** including at least quarterly influent monitoring;
 - e. resources and staffing;**
2. Implementation of cost-effective control measures for direct and indirect contributors; and
3. An **annual status report**

DEQ IMD - Implementation of Me-Hg Criterion

Objectives of MMP:

- Reduce or eliminate potential sources of MeHg and Total Hg within the production process or collection area
- Improve public and business awareness of mercury issues
- Reduce the transfer of mercury from effluent via biosolids
- Quantify the effectiveness of the MMP to eliminate or reduce mercury in the discharge

DEQ IMD - Implementation of Me-Hg Criterion

- Identify and evaluate current and potential mercury sources
- Identify and evaluate conditions that contribute to methylation in collection and treatment systems
- Identify large industrial and other commercial or residential sources that could contribute significant mercury loads
- Monitor to confirm current or potential sources of mercury
- Identify potential methods to reduce or eliminate mercury
- Identify methods for reducing or eliminating conditions that contribute to methylation of elemental mercury

Other States' MMP Guidance

- Consistent with EPA Region 5 guidance, but with some differences
 - Wisconsin – Analytical monitoring at facilities NOT implementing BMPs
 - Michigan – Subset of required elements from Region 5 PMP Guidance
 - North Carolina – Only required at POTWs with >2 MGD design capacity & quantifiable Hg in effluent
- California – Consistent with EPA 2010 MeHg Guidance, but allows alternate options (public ed on fish consumption risk, mine cleanup participation, fund residential collection, 10 year study on fish accumulation)
- Minnesota – Offers MMP template nearly identical to DEQ's

Statewide Mercury Reduction: Product Legislation 1990s - 2012

- Oregon Legislature adopted many laws to restrict, ban or otherwise manage mercury in products
 - Lighting fixtures, novelty items, thermostats, vehicle switches
 - PLUS, 2007 dental amalgam separator requirements and related best practices



Statewide Mercury Reduction: DEQ Program Activities Since 2007

- Materials Management and Hazardous Waste Program Actions
 - Collecting and managing mercury waste
 - Household hazardous waste events and facilities
 - Free collection of mercury for small businesses
 - Dental amalgam collection events
 - Mercury vehicle switch collection
 - Thermometer and dairy manometer collection
 - School lab clean out program



Statewide Mercury Reduction: DEQ Program Activities Since 2007

- Mercury waste minimization education and assistance
 - Business assistance on mercury waste management (e.g. fluorescent lights, switches)
 - Partnership with local government and Oregon
 - Dental Association on amalgam best practices
 - Residential education on proper management of mercury wastes, including compact fluorescents



Photo Courtesy of Aron Borok

Clean Water Services MMP

**Mercury Minimization Plan
2015**



CleanWater Services

Key Elements:

- Survey/inspect dental offices
- Review of industrial contributions
- Outreach to schools/healthcare facilities/laboratories
- Commercial/residential outreach
- Other site specific considerations

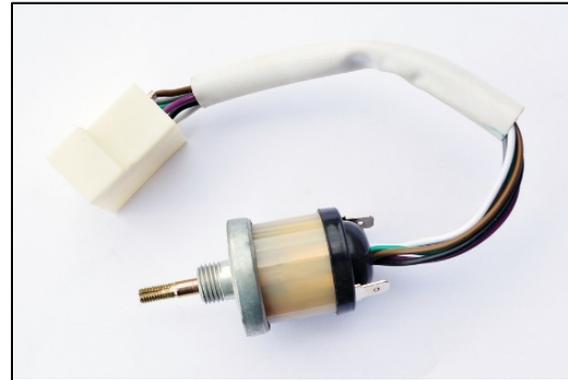
Stevens Point, Wisconsin MMP

- Inventory medical and dental offices and schools.
- Contact dental and non-dental facilities
- Community education and outreach
- Maintain ability to sample
- Update City Sewer Ordinance to ensure relevance



Summary

- We expect that most facilities that will get variances will be required to operate their system well and implement MMPs (i.e., HAC option 3).
- Most efficient way to address point sources, particularly given small contribution to overload.



Questions and discussion



Documents can be provided upon request in an alternate format for individuals with disabilities or in a language other than English for people with limited English skills. To request a document in another format or language, call DEQ in Portland at 503-229-5696, or toll-free in Oregon at 1-800-452-4011, ext. 5696; or email deqinfo@deq.state.or.us.