Dental Amalgam Rule Update

NACWA National Pretreatment Workshop
San Antonio, Texas
May 17, 2017

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Pretreatment Coordinator
40 CFR 441
Dental Rule Schedule

- Proposal – Federal Register Notice
  September 22, 2014

- Final Rule - Administrator Signature –
  December 15, 2016

- EPA Withdrawal of Rule – January 23, 2017
Benefits

- EPA expects compliance with this final rule will annually reduce the discharge of mercury by 5.1 tons as well as 5.3 tons of other metals found in waste dental amalgam to POTWs.
What is Amalgam?

Dental amalgam is 49% mercury by weight, 35% silver, 9% tin and 6% copper and 1% zinc.
Applicability of Significant Industrial User (SIU) Status

- Dental dischargers are NOT Significant Industrial Users
- Dental dischargers are NOT Categorical Industrial Users
Applicability

- DENTISTS, to include institutions, temporary offices, clinics, home offices and dental facilities owned and operated by Federal, state or local governments.
Exemptions

- Oral pathology, oral radiology, oral surgery, orthodontics, periodontics or prosthodontics
- Mobile units
- Dentists that transfer waste to a CWT
Exemptions (cont’d)

- Dentists are exempt from further requirements of the rule ONLY if they:

  1) Do NOT place or remove amalgam **except in limited emergency or unplanned, unanticipated circumstances** AND

  2) Certify (responsible corporate officer signature) to the Control Authority to that effect that they do not and will not use or remove amalgam
Pretreatment Standards

- Incorporation of BMPs:
  - Scrap amalgam, including dental amalgam from chair-side traps, screens, vacuum pump filters, dental tools, or collection devices may not be flushed down the drain.
  - Chair side traps that may drain to a sewer must not be cleaned with oxidizing or acidic cleaners, including bleach or chlorine containing cleaners that have a pH lower than 6 or greater than 8.
Standards (cont’d)

Must install an amalgam separator compliant with either the American National Standards Institute (ANSI)/American Dental Association (ADA) Specification 108 for Amalgam Separators (2009) OR the ISO 11143 Standard (2008) OR an amalgam removal device that:

- Is certified to meet removal efficiency of at least **95%**
- Receives all amalgam process wastewater and is INSPECTED in accordance with the manufacturer’s operating manual of the separator. If not functioning properly, must be repaired or replaced within 10 business day after the malfunction is discovered by the dental discharger
Standards (Cont’d)

Separator must be:

Regularly MAINTAINED by replacing the amalgam retaining cartridge, canister or unit collection of retained solids reaches the manufacturers stated design capacity
What is an Amalgam Separator?

- It is a solids collector!
  - Designed to capture solids so that they can be recycled and disposed of properly.
  - Captures mercury by default, not by design.
  - Commonly designed to capture ~99% of solids by weight not mercury.
- Unit price from ~$400 to ~$1000.
- EPA estimates that dental offices that do not currently have separators will incur an approximate average annual cost of $800 per office.
Standards (cont’d)

- Existing Source: If separator is installed PRIOR to the date of publication in the federal register, the dentists satisfies the requirements for 10 years IF they continue to meet the following requirements:
  - Receives all amalgam process wastewater and
  - Is INSPECTED in accordance with manufacturer’s operating manual and
  - If not functioning properly, must be repaired or replaced within 10 business days and
  - Is regularly MAINTAINED by replacing the amalgam retaining cartridge, canister or unit collection of retained solids reaches the manufacturers stated design capacity
One Time Monitoring Report

- Report to include:
  Facility name, physical address, mailing address, contact information, name of the operator(s) and owner(s); and a certification statement that the design and operation of the separator meets the requirements in 441.40 or 441.50 and that the facility is employing the BMP’s specified
One Time Monitoring Report

- Existing Sources:
  - Within 3 years of the effective date of the rule

- New sources:
  - Within 90 days following introduction of wastewater into a POTW
Records

Dentists must maintain for three years from the date they are created:

- One Time Compliance Report
- Documentation of inspection
- Document specifying the date of amalgam retaining cartridge replacement
- Records indicating the date of cartridge sent off for proper disposal and the shipping address of the facility to which the cartridge are sent
- Documentation of repair or replacement of the separator
American Dental Association (ADA) Statement

“The Association has consulted with the EPA as it developed the rule and supports a reasonable national pretreatment standard for amalgam waste so long as it is not unduly burdensome on dental professionals.

Based on a preliminary review, the EPA’s proposed rule seems to largely parallel the ADA’s best management practices but further review is necessary.”
Where do we go from here?
### 12 States have mandatory program requirements

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Compliance (Installation Only) by New England States Within the First 3 Years of Legislation

- Vermont – 100%
- Maine – 100%
- Massachusetts – 98%
- New Hampshire – 95%
- Rhode Island – >90%
- Connecticut – 84%
Massachusetts POTW Results

- From 2004-2009, mercury levels in sludge at the state’s largest POTW (Massachusetts Water Resource Authority) decreased by about 48%.

- Reduction in environmental releases of mercury of ~136 pounds per year for this POTW alone.
The Narragansett Bay Commission (NBC) has developed the following set of Environmental Best Management Practices (BMPs) for the Management of Waste Dental Amalgam to help the dental community safely and economically reduce the amount of mercury released into the environment.

https://www.narrabay.com/~/media/Files/Pretreatment%20Documents/Dental_BMP.ashx
NBC Case Study

- Operates the two largest wastewater treatment plants in Rhode Island receiving wastewater from 10 cities and towns.
- ~1700 permitted users
- 2002: NBC began developing Dental BMP Program
- 2004: NBC began implementation of Dental BMP in cooperation with the Rhode Island Dental Association.
  - Require annual inspection since the implementation of the program
- 2004: 100% compliance with Dental BMP requirements
- 2007: Rhode Island passes state legislation requiring the installation of amalgam separators
NBC Options for Dentists

1. Install and maintain an amalgam separator
   - maintain efficiency of at least 99%
   - demonstrate compliance with the "Mandatory" BMPs.

2. Demonstrate continuous compliance with all applicable NBC discharges limits.
Field's Point & Bucklin Point WWTFs Influent Mercury Loading

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<th>Year</th>
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Questions?

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