

## QUICKSILVER CAUCUS

The Association of State Drinking Water Administrators (ASDWA);  
The Association of State and Interstate Water Pollution Control Administrators (ASIWPCA);  
The Association of State and Territorial Solid Waste Management Officials (ASTSWMO);  
The Environmental Council of the States (ECOS);  
The National Association of Clean Air Agencies (NACAA);  
The National Pollution Prevention Roundtable (NPPR)

Mary T. Smith  
Director, Engineering and Analysis Division  
U.S. EPA Office of Water  
1200 Pennsylvania Ave., NW (4303T)  
Washington, DC 20460

March 8, 2011

Re: Dental Amalgam Effluent Guideline Rulemaking

[Via E-mail]

Dear Ms. Smith:

The Quicksilver Caucus Dental Amalgam Work Group (work group) would like to express its support for U.S. EPA's efforts in pursuing an effluent limitation guideline rulemaking for dental facilities. The work group is appreciative that you and your staff have taken the time to learn about amalgam separator programs in states. As the time is nearing for U.S. EPA to begin drafting rules, the work group wanted to summarize our discussions to date, so that the issues raised can be considered further as the rulemaking process begins in earnest.

1. States with existing laws – Currently 11 states require installation of amalgam separators and use of best management practices. These states typically only allow separators with performance and efficiency that have been determined to be consistent with standards published by the International Organization for Standardization in ISO 11143 "Dental equipment — Amalgam Separators." Some of these states require that amalgam separators remove at least 95% of solids; others require 98% or 99% removal. States do not want to see these facilities put in a position of being penalized or having to replace existing equipment installed in good faith or under state requirements merely to achieve modest gains in removal efficiency.
2. Operation and maintenance of amalgam separators – States have found that some dental facilities do not perform routine maintenance on their amalgam separators. The type of maintenance considered to be appropriate would include removing captured mercury and recycling it. Routine maintenance is very important because, when a separator has exceeded its holding capacity, most wastewater will then bypass the separator and go directly to the municipal sewer or septic system. Some amalgam separators have audio or visual alarms to alert dental facility staff when maintenance is needed. Recordkeeping requirements are also an important component of a practice's operation and maintenance program.
3. Sizing of separator system – There is variation in the "rated chair capacity" of the amalgam separator models in the marketplace. Some are designed to only serve 1 chair, whereas some



serve 1 to 6 chairs or more. When choosing amalgam separators, dental facilities should make sure separators are properly sized for the volume and flow of the dental facility's amalgam wastewater in accordance with the manufacturer's specifications and recommendations. The maximum allowable flow rate through the amalgam separator at the dental facility should not exceed the maximum flow rate capacity at which the separator was tested and passed in meeting the ISO standards.

4. Waste Management – Mercury-containing waste from a dental facility may need to be managed as a hazardous waste. Some states regulate it as universal waste. Also, most states tell dentists not to dispose of mercury-containing waste with bio-medical waste, commonly referred to as “red bag waste,” as this waste is often incinerated or autoclaved.
5. Specialty dental practices – Not all dental practices use or remove mercury dental amalgam when treating patients and therefore do not dispose of mercury dental amalgam. Some states have addressed this by exempting specific specialists such as oral/maxillofacial surgeons, oral/maxillofacial radiologists, periodontists, and orthodontists. Others require all practitioners who place or remove mercury amalgam from the human oral cavity to install an amalgam separator.
6. Septic tank discharge – States with large unincorporated areas may have a large number of dental facilities that are not connected to a sanitary sewer system. All 11 states that require use of amalgam separators require all dental facilities, not only those discharging to a sanitary sewer system, to use them. When septic tanks are emptied the waste is usually taken to a POTW. Many POTWs will not accept either septic pump-out or segregated wastewater from dental facilities unless the wastewater passed through an amalgam separator prior to being brought to the POTW. Some states require that the dental wastewater be collected separately and managed as hazardous or universal waste.
7. U.S. EPA electronic reporting requirements – In 2005, there were an estimated 122,000 dental facilities in the US (based on information from the U.S. Census Bureau and American Dental Association). Electronic reporting would ease the data collection, management and paperwork burden on dentists, states, and local governments. Some states have developed self-certification systems for dental facilities to ease potential regulatory burdens. Dental facilities submit a certification to the state verifying that they have installed an approved amalgam separator and are complying with any other requirements stipulated under state law. They are then required to periodically, every 1 to 5 years depending on the state, certify they are operating and maintaining the separators in accordance with state requirements. Some states are concerned that complying with U.S. EPA's Cross-Media Electronic Reporting Regulation (40 CFR, Part 3 §3.2000) requirements may impede their implementing electronic reporting.
8. Temporary facilities – States are seeing temporary dental facilities being set up for service to homeless and impoverished populations. The temporary facilities may be set up in a building for a short period of time, or be mobile operations in a modified vehicle. For example, there is a program called Mission of Mercy (MOM) performed in several states. These treatment facilities may be set up in high school gyms or other large facilities. They see hundreds if not thousands of patients in a weekend in one facility, which is more patients than a typical dental office would see in a month or more. Mobile facilities generally contain a holding tank and ultimately discharge to a POTW. When a temporary facility is set up in an existing structure, the wastewater is generally discharged into that structure's existing sewage or septic system. It is unclear how the new effluent limitation guidelines would be implemented in a temporary facility. In these cases requiring the use of separators, which would address mercury discharges to wastewater and



reduce the potential for mercury contamination of the host building's wastewater plumbing system, may be warranted.

9. Dissolved mercury – Many amalgam separators capture particles, not dissolved mercury. In addition, mercury can become trapped in pipes and vacuum system hoses. Over time some of this mercury dissolves and can be a long-term source of mercury to wastewater. States have sought to partially address this potential long-term source by requiring the use of non-oxidizing cleaners in the wastewater systems.
10. Use of amalgam capsules – Some states require dentists to use precapsulated amalgams which eliminates the need for bulk mercury. The capsulated amalgams come in various sizes. Use of capsules results in less mercury being released to wastewater and ending up in solid waste. There are some states which prohibit the storage of liquid mercury. One-pound bottles of liquid mercury are no longer needed in dentistry. The ADA recommends only using capsules as well. Use of capsules reduces the amount of mercury and amalgam waste and reduces the opportunities for mismanagement (of wastewater and solid waste) and worker exposure.
11. Best management practices – Below is a compilation of BMPs currently being used in states, many of which the American Dental Association recommends as BMPs to its members.
  - a. Elemental Mercury Use
    - i. Use precapsulated amalgams.
  - b. Amalgam wastes
    - i. Remove and recycle all elemental mercury (free, bulk, or raw mercury).
    - ii. Recycle all amalgam waste, including amalgam from separator(s), amalgam scrap from screens, traps, or filters, and any scrap amalgam not fully used in dental procedures.
    - iii. Follow amalgam recycler's instructions for labeling, storing, disinfecting, pickup and shipping of amalgam waste.
    - iv. Do not place amalgam in sharps containers.
    - v. Do not place amalgam in biohazard (red) bags.
    - vi. Do not discard amalgam in the regular trash.
    - vii. Do not dispose of amalgam down the drain.
    - viii. Do not use high-speed suction (vacuum) lines to remove excess amalgam from the amalgam well.
    - ix. Do not place extracted teeth with dental amalgam in biohazard (red) bags.
    - x. Do not disinfect removed teeth with heat. Use a chemical solution.
    - xi. Recycle used amalgam capsules.
  - c. Disposable chairside traps
    - i. Recycle disposable chairside traps as directed by the recycler.
  - d. Reusable chairside traps
    - i. Do not rinse under running water.
    - ii. Remove all visible amalgam from reusable traps by tapping the contents into a container for amalgam recycling as directed by the recycler.
  - e. Vacuum pump filters
    - i. Change filters according to the vacuum pump manufacturer's recommended schedule.
    - ii. Recycle filters as directed by the recycler.
  - f. Cleaners
    - i. Use only pH neutral, non-bleach, non-chlorine-containing cleaners.
    - ii. Clean lines daily on chairs where restorative dentistry is performed or according to the vacuum pump manufacturer's recommendations.

- g. Amalgam separators
  - i. Maintain and operate amalgam separator(s) according to the manufacturer's instructions (i.e., necessary cleanings, cartridge changes, and other required servicing are performed on schedule).
  - ii. Visually inspect separator(s) at least weekly and maintain an inspection log.
  - iii. Maintain records related to the amalgam separator(s) (e.g., installation information, inspection logs, and amalgam shipping records) for at least three years.
- h. Staff training and recordkeeping
  - i. Inform facility staff about procedures for handling waste amalgam.
  - ii. Make sure at least one employee is familiar with procedures for operating and maintaining the installed amalgam separator.
  - iii. Keep records that document that the dental best management practices are met.

Please contact me, or ECOS staff liaison Matthew Jones ([mjones@ecos.org](mailto:mjones@ecos.org)) 202-266-4925 if you would like to discuss our comments. We look forward to continuing to work with EPA on this rulemaking process.

Sincerely,

*Becky Jayne*

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The Quicksilver Caucus is a coalition of state environmental association leaders working to reduce mercury in the environment. More information about the Caucus is available at:  
[http://www.ecos.org/section/committees/cross\\_media/quick\\_silver](http://www.ecos.org/section/committees/cross_media/quick_silver)

