

DENTAL AMALGAM SEPARATOR PROGRAM

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Summary

The focus of the Temple University Dental Amalgam Separator Program (DASP) is to ensure waste amalgam, including, but not limited to, dental amalgam from chair-side traps, screens, vacuum pump filters, dentals tools, cuspidors, or collection devices, is not discharged to a Publicly Owned Treatment Works (POTW).

1. Program Description

Mercury in dental wastewater originates from waste particles associated with the placement and removal of amalgam fillings. Dental amalgam is used to restore teeth in dental practices. It is an alloy that contains mercury (approximately 50%) bound together with other metals. EPA estimates there are 160,000 dentists working in over 120,000 dental offices who use or remove amalgam in the United States- almost all of whom discharge their wastewater exclusively to Publicly Owned Treatment Works (POTWs).

The goal of the Dental Amalgam Separators Program (DASP) is to ensure all Temple University (TU) dental office or clinics comply with the following requirements:

- Installation of amalgam separator (filtration system to reduce the amount of mercury solids passing into the sewer system).
- Proper maintenance of such separators, including documentation and maintenance logs.
- Implementation of adequate best management practices, such as the recycling of all amalgam waste collected in dental office or clinics.

2. Scope

This Program and related procedures set the standards and responsibilities for the installation, modification, replacement, repair, inspection, maintenance, and waste amalgam

collection from all mercury amalgam separators located in the Temple University Kornberg School of Dentistry and affiliated locations.

3. Definitions

- 3.1. **Amalgam Separator:** means a collection device designed to capture and remove dental amalgam from the amalgam process wastewater of a dental facility.
- 3.2. **Dental Amalgam:** means an alloy of elemental mercury and other metal(s) that is used in the practice of dentistry.
- 3.3. **Dental Discharger:** Means a facility where the practice of dentistry is performed, including, but not limited to, institutions, permanent or temporary offices, clinics, home offices, and facilities owned and operated by Federal, state, or local governments, that discharges wastewater to a publicly owned treatment works (POTW)
- 3.4. **Publicly Owned Treatment Works (POTW):** A treatment works which is owned by a State or municipality which includes any devices and systems used in the storage, treatment, recycling and reclamation of municipal sewage or industrial wastes of a liquid nature. For Temple University this would be the Philadelphia Water Department (PWD).

4. Responsibilities

The following employees or groups have specific responsibilities assigned to them in this program as appropriate.

4.1. Department Directors/Chairs/Deans are responsible for:

- Ensuring that all personnel under their authority comply with the concepts and procedures provided in this program; and
- Notifying EHRS if any additional/new locations are proposed and/or identified that may require a mercury amalgam separator.

4.2. Environmental Health and Radiation Safety (EHRS) is responsible for:

- Developing and implementing the Mercury Amalgam Separator Program (MASP).
- Ensuring regulatory compliance and acting as the University liaison for regulatory agencies that oversee mercury amalgam separator activities and/or conduct on-site inspections.
- Provide technical guidance on existing and/or proposed mercury amalgam separators.

- Conducting periodic audits of existing amalgam separators to ensure regulatory compliance.
- Maintaining chemical waste contracts with vendors; and
- Facilitating the removal and disposal of amalgam waste collected from installed mercury amalgam separators.

4.3. Project Delivery Group is responsible for:

- Notifying EHRS if new sources of a potential mercury amalgam discharge to the POTW are identified and/or a new mercury amalgam separator is anticipated to be required.
- Review any newly proposed amalgam separators designs with EHRS.
- Ensuring that all personnel and/or contractors working on any existing and/or new mercury amalgam separator are trained and adhere to the techniques and concepts provided in this program as well as any departmental internal procedures.

4.4. Dental Dischargers are responsible for:

- Ensuring that all personnel and/or contractors working on any existing and/or new mercury amalgam separator are trained and adhere to the techniques and concepts provided in this program as well as any departmental internal procedures.
- Conduct and document all required inspections and maintenance as stated in the operations manual.
- Maintaining all visual inspection and repairs logs for a minimum of 3 years.
- Notify EHRS when the collection container has reached its maximum filling level and/or requires removal for disposal.
- Notify EHRS prior to installing any new Mercury Amalgam Separators.

4.5. Environmental Health and Safety-Safety Committee (EHSSC)

The EHSSC was established to assist and guide the University with the development and implementation of applicable Chemical and Occupational Safety programs. The EHSSC consist of representatives from colleges and departments with facilities and personnel that are affected by the programs and procedures applicable to Chemical and Occupational Safety. Periodically reviews the program and revises as appropriate. Responsibilities applicable to the DASP include, but not limited to:

- Reviews the ongoing compliance with the program and appropriate standards.
- Provide a mechanism or point of contact to distribute vital information to departments and personnel covered by the DASP.
- Support EHRS with the authority for the enforcement of the DASP

5. Program Components

5.1. Amalgam Separators

5.1.1. New Sources of Discharge- A University approved amalgam separator must be installed in any location that discharges wastewater from a Dental practice into a POTW. Contact EHRS for assistance in selecting an appropriate amalgam separator.

5.2. Reporting Requirements

5.2.1. Existing Amalgam Separators- A one-time compliance report was submitted to the Philadelphia Waster Department (PWD). The one-time compliance report is maintained with EHRS and is available for review upon request.

5.2.2. New Sources of discharges to the POTW- A one-time compliance report must be submitted to the PWD (or local Control Authority) within 90 days following the introduction of wastewater to a POTW.

5.3. Best Management Practices

5.3.1. All device(s) must be accompanied by the manufacturer's manual providing instructions for use including the frequency for inspection and collecting container replacement such that the unit is replaced once it has reached the maximum filling level at which the device can perform to the specified efficiency

5.3.2. All devices must be visually inspected weekly to ensure proper operation and maintenance, including confirmation that amalgam process wastewater is flowing through the amalgam separating portion of the device(s). Documentation of the date, the individual conducting the inspection, results of the inspection, and a summary of follow-up actions, if applicable. Inspection results must be recorded on the Amalgam Separator Inspection Log.

5.3.3. If a device is not functioning properly, it will be repaired consistent with the manufacturer instructions or replaces with a unit that meets the University requirements as soon as possible, but no later than ten business days after the malfunction is discovered by the Facilities Management a contactor and/or a vendor. Documentation of repair or replacement of amalgam removal device, including date, person making repair/replacement, and description of the repair. All repairs must be recorded on the Amalgam Separator Inspection Log.

5.3.4. The amalgam retaining unit(s) of the device(s) must be replaced as specified in the manufacturer's operating manual, or when the collection container has reached the maximum filling level, as specified by the manufacturer in the operating manual, at

which the amalgam separator can perform to the specified efficiency. Contact EHRS to request removal for disposal.

5.3.5. Waste amalgam including, but not limited to, dental amalgam from chair-side traps, screens, vacuum pump filters, dental tools, cuspidors, or collection devices, must not be discharged to a POTW.

5.3.6. Dental water lines, chair side-traps, and vacuum lines that discharge amalgam process wastewater to a POTW must not be cleaned with oxidizing or acidic cleaners, including but not limited to bleach, chlorine, iodine, and peroxide that have a pH lower than or greater than 8.

5.4. Recordkeeping Requirements

6. PROGRAM EVALUATION & IMPLEMENTATION

Temple University Dental Amalgam Separator Program (DASP) is continually evaluated to determine if areas for improvement exists.

6.1. Implementation

EHRS will provide oversight and technical guidance on the placement of new mercury amalgam separators. EHRS will collaborate with various stakeholders throughout the University in the implementation phase of the program.

6.2. Performance Measures

- Document quarterly audits of existing mercury amalgam separators. These records are available in the EHRS department for review and inspection. A summary of these efforts will be made available on the EHRS website.

6.3. Program Review

This program will be reviewed every three years and amended, as necessary. When it becomes apparent that the plan is deficient, it will be revised.

Performance measures will be monitored at least annually.

7. RECORDKEEPING

The following records (either physical or electronic) must be maintained for a minimum of 3 years:

7.1.1. Copy of the compliance form.

7.1.2. Amalgam Separator Inspection Logs

7.1.3. Disposal records- Documentation of dates dental amalgam is picked up or shipped for disposal and name of the permitted or licensed disposal company.

7.1.4. Manufacturer's manual- Operating manual for the current device (s) in operation.

EHRS will maintain all compliance forms and disposal records and associated documentation. Facilities Management will maintain all Amalgam inspection Logs.

8. REFERENCES

- 40 CFR Part 441-Dental Office Point Source Category
- Amalgam Separator Inspection Log