

# City Of Spokane Wastewater Treatment Facility

## Approved Amalgam Separators and Other Devices

An amalgam separator is a device designed to remove solids from dental office wastewater. The amalgam separator is placed at some point in the vacuum line which services chairs and sinks where amalgam is used, before the vacuum line intersects with plumbing in other parts of the building.

Practically all amalgam separators on the market operate using sedimentation processes.

Installation, operation, and maintenance of one or more amalgam separators that meet the following requirements:

- i. Compliant with either the American National Standards Institute (ANSI) American National Standard/American Dental Association (ADA) Specification 108 for Amalgam Separators (2009) with Technical Addendum (2011) or the International Organization for Standardization (ISO) 11143 Standard (2008) or subsequent versions so long as that version requires amalgam separators to achieve at least a 95% solids removal efficiency. Compliance must be assessed by an accredited testing laboratory under ANSI's accreditation program for product certification or a testing laboratory that is a signatory to the International Laboratory Accreditation Cooperation's Mutual Recognition Arrangement. The testing laboratory's scope of accreditation must include ANSI/ADA 108-2009 or ISO 11143.
- ii. The amalgam separator(s) must be sized to accommodate the maximum discharge rate of amalgam process wastewater.
- iii. The amalgam separator(s) must be inspected in accordance with the manufacturer's operating manual to ensure proper operation and maintenance of the separator(s) and to confirm that all amalgam process wastewater is flowing through the amalgam retaining portion of the amalgam separator(s).
- iv. In the event that an amalgam separator is not functioning properly, the amalgam separator must be repaired consistent with manufacturer instructions or replaced with a unit that meets the requirements of this section as soon as possible, but no later than 10 business days after the malfunction is discovered by the dental discharger, or an agent or representative of the dental discharger.
- v. The amalgam retaining units must be replaced in accordance with the manufacturer's schedule as specified in the manufacturer's operating manual or when the amalgam retaining unit has reached the maximum level, as specified by the manufacturer in the operating manual, at which the amalgam separator can perform to the specified efficiency, whichever comes first.

Installation of one or more amalgam removal device(s) other than an amalgam separator is allowed under certain conditions. The amalgam removal device must meet the following requirements:

- i. Removal efficiency of at least 95 percent of the mass of solids from all amalgam process wastewater. The removal efficiency must be calculated in grams recorded to three decimal places, on a dry weight basis. The removal efficiency must be demonstrated at the maximum water flow rate through the device as established by the device manufacturer's instructions for use.
- ii. The removal efficiency must be determined using the average performance of three samples. The removal efficiency must be demonstrated using a test sample of dental amalgam that meets the following particle size distribution specifications: 60 percent by mass of particles that pass through a 3150  $\mu\text{m}$  sieve but which do not pass through a 500  $\mu\text{m}$  sieve, 10 percent by mass of particles that pass through a 500  $\mu\text{m}$  sieve but which do not pass through a 100  $\mu\text{m}$  sieve, and 30 percent by mass of particles that pass through a 100  $\mu\text{m}$  sieve. Each of these three specified particle size distributions must contain a representative distribution of particle sizes.

- iii. The device(s) must be sized to accommodate the maximum discharge rate of amalgam process wastewater.
- iv. The demonstration of the device(s) under 2.1.1(B)(i-iii) must be documented in the One-Time Compliance Report.

In all cases:

- i. The 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.
- ii. The device(s) must be inspected in accordance with the manufacturer's operation manual to ensure proper operation and maintenance, including confirmation that amalgam process wastewater is flowing through the amalgam separating portion of the device(s).
- iii. In the event that a device is not functioning properly, it must be repaired consistent with manufacturer instructions or replaced with a unit that meets the requirements of this section as soon as possible, but no later than 10 business days after the malfunction is discovered.
- iv. The amalgam retaining unit(s) of the device(s) must be replaced as specified in the manufacturer's operating manual, or when the collecting container has reached the maximum filling level, whichever comes first.