



CITY OF EVERETT

Industrial Pretreatment Program

Best management practices for dental facilities that discharge to Everett's publicly owned treatment works

Amalgam

Scrap amalgam (non-contact scrap, chairside trap waste, sludge from pump filters, sludge from wastewater treatment units, and teeth with amalgam fillings) is hazardous waste due to mercury and silver content. Mercury is a persistent, toxic contaminant that bioaccumulates in the tissue of fish which pose serious health risks to the people and wildlife that consume them. Any mercury or silver discharged to the sewerage system enters the wastewater treatment plant and will end up in land applied biosolids or in the liquid effluent that is discharged to the river and sound. Everett Municipal Code Chapter 14.40 (Wastewater Pretreatment Regulations) prohibits the introduction of any pollutant which causes pass through or interference, whether the user is or is not subject to categorical pretreatment standards or any other national, state, or local pretreatment standards or requirements.

All dental practices that discharge scrap amalgam into the City of Everett sewerage system must be in compliance with city limits for mercury and silver. To demonstrate compliance a dental office must install an approved amalgam separator and apply the following best management practices or sample its wastewater and apply for a discharge permit. A list of approved amalgam separators or an application for a discharge permit is available by contacting the City of Everett Industrial Pretreatment Program at (425) 257-8240.

Best Management Practices for amalgam wastes:

- Keep amalgam out of sinks and never rinse amalgam wastes down the drain. The trapped mercury-containing amalgam will go directly to the sewer and the wastewater treatment plant.
- Clean or replace chair-side traps on a regular schedule and properly dispose of amalgam wastes. Never rinse traps, filters, or screens over or down the drain.
- Clean vacuum pump filters regularly, according to the manufacturer's recommendations, and properly dispose of amalgam wastes.
- Send amalgam wastes to a licensed TSDR (treatment, storage, disposal or recycling facility).
- Maintain all disposal records on-site for 3 years.

- Never place amalgam waste of any kind in the biohazard (red) bag, the trash or the sharps container. Incineration and solid waste disposal can release mercury directly into the environment.
- Store scrap amalgam, including amalgam from traps, in a container filled with depleted fixer to reduce the release of mercury vapor. Please keep in mind, the spent fixer used to store waste amalgam should not be poured into chemical recovery cartridges, or into the container that spent fixer is collected in for recycling.
- Fixer will become contaminated with mercury. Once spent fixer has contact with waste amalgam, it should only be used for storage of waste amalgam.
- Empty amalgam capsules can be discarded with municipal solid waste.

Amalgam separators:

Chairside wastewater that contains amalgam residue must not exceed 0.1 mg/L mercury (City of Everett local limits) at point of discharge. Fine amalgam particles from tooth preparation or amalgam removal may pass through amalgam traps and filters and be released to the sewer. A properly installed and maintained amalgam separator can reduce mercury discharges by 95 percent or more. City of Everett will only approve amalgam separators that have been certified as meeting or exceeding ISO-11143 as verified by an ISO certified testing laboratory.

X-rays

Spent X-ray fixer is considered a hazardous waste when the silver concentration is 5 parts per million or greater. City of Everett local limits for discharge to sewer is 0.49 mg/L silver. Spent X-ray fixer, and developer that is mixed with fixer should not be discharged into the sanitary sewer without first recovering the silver from the waste stream.

Best management practices for handling spent X-Ray fixer:

- Spent fixer should be collected and stored in a closed container appropriately labeled "**Spent Fixer - Hazardous.**"
- When your office accumulates 5 gallons of spent fixer, return it to the company that sells you photoprocessing equipment or send it to an outside facility for silver recovery.
- If you are located next to other dental offices, the recycler can be contracted to pick up all the offices spent fixer on a prearranged schedule.



- If you recycle your spent fixer, your office should receive a manifest from the recycler. A generator is responsible from "cradle to grave." Make sure that your office has the proper documentation!
- Silver recovery equipment can be purchased or leased. The two most widely used types of treatment systems are (1) chemical recovery cartridges (CRCs) and (2) electrolytic recovery units.
- Two chemical recovery cartridges in series, properly sized and maintained according to the manufacturer's recommendations, are required to reduce silver levels to acceptable levels. The silver precipitates from the spent fixer which can then be reclaimed by a recycler.
- Electrolytic units use electrical current to plate out metallic silver, which can be reclaimed and recycled. Typically, electrolytic units do not reduce silver concentrations to levels that allow for disposal to the sewer system. Electrolytic units require the addition of a CRC to reduce the silver concentration to levels acceptable to City of Everett sewers.

X-ray developer:

Developer mixed with fixer, and unused developer, should not go into the drain, but should be handled as hazardous waste. Uncontaminated spent developer can be discharged to the sanitary sewer.

