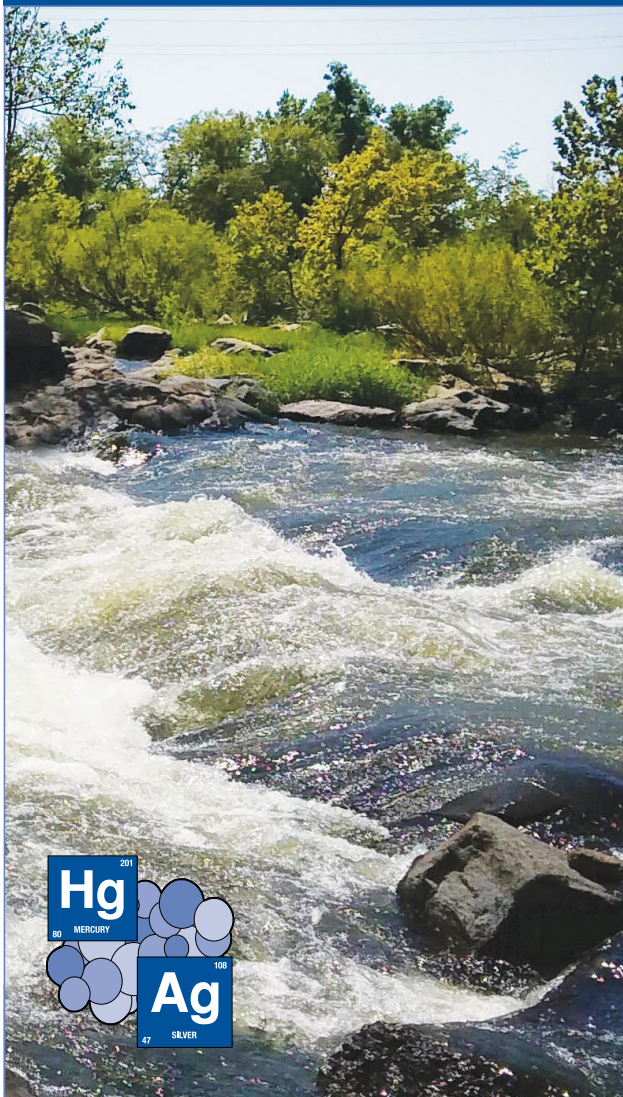


Preventing Mercury and Silver Pollution



Chesterfield County
Department of Utilities

804-748-1401 M-F 8:30 a.m.-5 p.m.

804-744-1360 M-F After hours

MERCURY

Mercury Facts:

- Liquid at room temperature.
- Blends well with other metals.
- Is converted to methyl-mercury, a highly toxic form of mercury, when it enters lakes and rivers.
- Commonly used in dental prostheses.

Environmental Hazards of Mercury:

- Evaporates slowly and does not degrade easily.
- Accumulates in fish, resulting in human consumption advisories.
- Mercury is not treatable once it enters the environment, it must be prevented.

Major Health Concerns of Mercury:

- Limits fetal and child development.
- Leads to irreversible brain damage.
- Impairs ability to walk, talk, see and hear.

Common Sources of Mercury:

- 25 percent from naturally occurring sources.
- 75 percent from pollution, e.g., incineration, bypass, etc.

Why is dental amalgam such a problem?

- Dental amalgam is 49 percent mercury.

What can I do to help?

- Keep dental amalgam out of drains, trash and biohazard containers.
- Use precapsulated amalgam instead of bulk mercury.
- Keep a variety of amalgam capsules on hand to minimize waste.
- Use alternatives to silver fillings, such as composites.
- Connect an amalgam separator to the vacuum pump to remove fine amalgam particles.
- Flush vacuum lines with disinfecting solutions that are “bleach-free” at the end of the day.
- Retain all chair-side traps, vacuum pump filters, extracted teeth and waste capsules containing dental amalgam in a wide-mouth covered plastic

container and label it “Amalgam for Recycling.”

- Contact an amalgam waste recycler in your area.

Questions to ask your recycler:

- Are you a licensed recycler?
- What types of amalgam waste do you accept?
- Do you pick up containers of waste amalgam or should I ship them?
- Do I need to separate the different types of amalgam waste prior to pick up?

SILVER

Sources of Photographic Silver:

- Chiropractors, dentists and hospitals which develop X-ray film.
- Financial institutions and government agencies which archive data on microfilm.
- Photofinishers.

Is silver harmful to the environment?

- Free ionic silver is toxic, but quickly forms complexes with chlorides and sulfides when released to the environment.
- Silver thiosulfate, the most common form of silver discharged from photographic processes, eventually becomes silver sulfide. Silver sulfide is both nontoxic and environmentally inert.

Why should I be concerned?

- Silver is a nonrenewable resource used to manufacture a variety of products ranging from dental amalgam to x-ray film.
- Untreated silver-rich solution is considered a hazardous waste.
- Silver reclaimed from photographic wastewater can be a source of revenue.

What can I do to help?

- Identify how much silver-rich solution is produced and how much process wastewater is discharged from your facility on a daily basis.
- Install a recovery system (chemical, electrolytic, etc.) to remove silver from solutions of waste fixer, washes stabilizer and low-flow wash.

- Regularly monitor the silver concentration of wastewater leaving the recovery system and keep a log of the results.
- Set up a routine maintenance schedule for the recovery system and implement good house-keeping techniques to reduce chemical usage.
- Ship silver-rich solutions to an offsite recovery facility using a licensed hauler.
- Develop a response plan to address potential spills of silver-rich solution.

For more information on preventing mercury pollution, visit:

<http://www.ada.org/en/member-center/oral-health-topics/amalgam-separators>

<http://www.deq.virginia.gov/Programs/Pollution-Prevention/MercuryReduction.aspx>

For more information on preventing silver pollution, visit

www.deq.virginia.gov/Portals/0/DEQ/Land/preciousmetalrecovery.pdf

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