

PHOTO PROCESSING WASTES



Thurston County Business Pollution Prevention Program

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THE HAZARDS OF PHOTOS

Photo developing produces various hazardous wastes, which must be managed properly to protect the environment and worker health and safety. The Thurston County Nonpoint Source Pollution Ordinance requires that hazardous chemicals be disposed of by recycling or through a permitted hazardous waste management facility. Chemicals such as fixer, bleach fixer, stabilizer, C-41 RA bleach, and wash water may all contain silver, which is toxic to humans and aquatic organisms and therefore cannot be dumped down the drain. Used developers commonly contain hydroquinone, which may be disposed in the local sanitary sewer. However, no type of photographic waste may ever be disposed into a septic system.

How you decide to manage your waste partially depends on your generator status. Those who generate less than 220 pounds of hazardous waste per month are small quantity generators (SQG) and are conditionally exempt from state or federal rules; however, Thurston County regulations still apply. If you generate more than 220 pounds of hazardous waste per month, you must notify the Department of Ecology about your waste activities. Most photo processors are SQGs; if you are unsure, call the Thurston County Business Pollution Prevention Program at (360)786-5457.



ON-SITE MANAGEMENT OPTIONS

Managing silver-bearing waste is unique because silver is a valuable commodity. For businesses that generate a large amount of silver waste, installing an on-site silver recovery system may be a profitable method of waste disposal. These systems remove silver from your solutions and discharge the non-hazardous liquid into the local sewer system. There are many different types of systems available, at a variety of costs, so it is important to get a system that suits your needs. Whichever system you decide to purchase, you must comply with local discharge regulations by ensuring that your wastewater never exceeds 0.2 parts per million (ppm) total silver.

To ensure that your system complies with local sewer discharge regulations, LOTT Wastewater Alliance requires installed systems to contain two recovery units in series, with a sample port located in the middle. These dual systems provide the greatest assurance that your silver will be adequately treated before being discharged. Utilizing silver test strips, you will be required to test your wastewater from this sample port on a monthly basis to ensure that the system is operating properly. You will also be required to keep a log detailing sample dates and cartridge change-out frequency.

METALLIC REPLACEMENT OR CHEMICAL RECOVERY CARTRIDGES (CRCs)

CRCs are hollow canisters that contain steel wool or fiberglass impregnated with iron. When silver-bearing liquids are passed through this filter, the iron dissolves and is replaced by silver. CRCs are typically the most economical type of silver recovery system.

These systems have several drawbacks. To work properly, CRCs require regular use and maintenance. If the cartridges are only used intermittently, the filter media may dry out and not work effectively. Even with proper care, these systems may not remove enough silver to comply with LOTT wastewater discharge regulations, so check with the individual manufacturers.

OFF-SITE MANAGEMENT OPTIONS

Waste Management Companies. Utilizing a company to pick up your waste has certain advantages over on-site silver recovery systems. There are no start-up costs, and you never need to worry about equipment failure or maintenance. However, there are downsides to sending your waste off-site:

1. You will need to purchase storage containers, which require extra space and will add to your maintenance costs.
2. If you produce small quantities of waste, you may need to store the material for a long time before filling the container.
3. Storing waste on-site for long periods increases the risk of spills or leaks.
4. Even if your waste is managed by a third party, you are still responsible for the proper disposal of the material, so be sure to carefully select the right company.

In some cases, companies may allow you to mail small quantities of silver waste directly to their facilities, but be aware of shipping guidelines from the Department of Transportation. Contact your preferred mail service directly for the latest regulations and shipping prices.

Recycling at another Local Business. If you are a small quantity generator, you have the option of taking your silver waste to a local business that is able to properly treat photographic wastes with on-site silver recovery. If

you choose this service, be sure to obtain a receipt so you can document where your waste is managed. Any business that receives waste from an SQG must conduct proper treatment and ensure that local wastewater discharge limits are being met (0.2 ppm total silver). The following companies sell silver recovery systems and/or transport silver waste for recycling:

Free Local Drop-Off Services

- ◆ Evergreen State College, by appointment, (360) 867-6313
- ◆ LOTT Alliance – Budd Inlet Treatment Facility, no appointment necessary (360) 528-5708
- ◆ Thurston County HazoHouse, by appointment (360) 867-2912

BEST MANAGEMENT PRACTICES DEVELOPER:

Developer: Photo developer contains hydroquinone and is considered hazardous waste if unused. However, hydroquinone is chemically consumed during the developing process and consequently, spent developer is not considered hazardous.

- ◆ It is illegal to dump developer into a septic system, storm drain, dry well, or on the ground.
- ◆ Used developer may be disposed in the sanitary sewer, which will be treated at the LOTT wastewater treatment plant. However, unused product is not acceptable for sewer disposal.
- ◆ Consider using low-replenishment developers for both film and paper. They can substantially reduce replenishment rates.
- ◆ Do not put developer into chemical recovery cartridges (CRCs) for silver-bearing wastes. They can plug the CRCs, resulting in pressure build-up.

Fixer and Bleach-Fixer Solution: Fixers typically contain high amounts of silver (3,000-8,000 ppm) and designate as a hazardous waste. Thus, all fixers must be treated on-site or properly disposed or recycled off-site.

- ◆ Never put treated or untreated fixer into your septic system, storm drain, dry well, or on the ground.
- ◆ If you generate large amounts of waste fixer, a silver recovery system may be beneficial to your operation. These systems remove silver from fixer solutions, which can be sold to metal recyclers.
- ◆ Never put fixer into the sanitary sewer unless it has been treated and meets sewer discharge limits.
- ◆ Consider using low replenishment bleach-fixer, which can substantially reduce replenishment rates.
- ◆ If your fixer is sent off-site for disposal or stored on-site, the amount of waste counts towards your Washington State waste generator status on a monthly basis. This is not necessary if your fixer is sent directly to a silver recovery system.
- ◆ Make sure your employees know that fixer and bleach-fixer is a hazardous waste.

Bleach Solution: Used C-41 bleach may contain 3 ppm silver, which exceeds sanitary sewer discharge limits of 0.2 ppm.

- ◆ It is illegal to put bleach solution into your septic system, storm drain, dry well, or on the ground.
- ◆ If you use CRCs for on-site silver recovery, consider mixing used C-41 bleach with your used fixer and washless stabilizer prior to recovery.
- ◆ Consider regenerating your used bleach solutions. This will reduce waste and save you money. Check with your chemical supplier for more information.
- ◆ Make sure your employees know that bleach solutions must not be disposed in the sanitary sewer.

Stabilizer: Stabilizers typically contain 100-300 ppm silver, which designates as a hazardous waste.

- ◆ Never put stabilizer into your septic system, storm drain, dry well, or on the ground.
- ◆ If you do on-site silver recovery, mix stabilizer with your used fixer and bleach prior to treatment.

- If your stabilizer is sent off-site for disposal or stored on site, the amount of waste must count towards your monthly total. This is not necessary if your stabilizer is sent directly to a silver recovery system.
- Make sure your employees know that stabilizer solutions must not be disposed in the sanitary sewer.

Wash Water: Wash waters may contain small amounts of film developing chemicals, including fixer. Although these chemicals are found in very small amounts, the silver content may still exceed local sewer discharge limits. Before disposing of wash waters into the sanitary sewer, routinely test the water to ensure that the silver levels meet the local discharge limits (0.2 ppm). However, wash waters that are contaminated with silver or other chemicals must never go into a septic system.

Photographic Solution Filters: Fixer and washless stabilizer filters likely contain enough silver to be considered hazardous, so they should not be thrown into the garbage unless they can be proven non-hazardous by lab tests. If hazardous, these filters should be managed by a waste disposal company.

Cleaning Wastes: Various cleaning agents, such as bleaches and system cleaners, may be considered hazardous waste due to chromium, cyanide, corrosive characteristics, or other heavy metals.

- If the cleaners are considered hazardous wastes, it is illegal to dispose in the sanitary sewer, septic system, storm drain, dry well, or on the ground. If they are hazardous, collect and send off-site to a licensed disposal business.
- See if your chemical supplier sells less-toxic cleaners that do not designate as a dangerous waste.

Other Wastes: The following items are not considered hazardous waste and may be recycled. Contact the product manufacturer or local camera shops for additional information.

- Paper cores, film containers, single use cameras, film magazines: These items may be accepted for recycling by the various manufacturers. Check with individual manufacturers or local camera shops for more information.
- Scrap film and paper: In color photo finishing, all of the silver is removed from the film or paper during the photo finishing process. As a result, processed scrap film and paper do not designate as a hazardous waste and may be thrown away in the trash. Unprocessed film or paper will have some silver on it, but data indicates that silver in this form will not leach out over time. However, soaking film-ends in fixer to remove silver will leave a coating of leachable silver that may make the film-ends a hazardous waste.

ADDITIONAL INFORMATION

For more information, including how to set up a free on-site technical assistance visit:

- Call the Thurston County Hazardous Waste Hotline at 360-867-2664 / TDD 360-867-2603
- Email PHSSPollutionPrevention@co.thurston.wa.us
- Visit our website at www.co.thurston.wa.us/health/ehhw/index.html

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