

A Guide on Hazardous Waste Management for Florida's

Photo Shops



Florida Department of Environmental Protection Hazardous Waste Compliance Assistance Program



This document was published to help educate businesses on hazardous waste management issues affecting them. The suggested options may help businesses operate in an environmentally appropriate manner. Some of the options may go beyond what is required to remain in compliance with regulations. Business owners are responsible for obtaining complete information about applicable regulations. Misrepresentations or omissions by the Florida Department of Environmental Protection or the Florida Center for Solid and Hazardous Waste Management do not relieve any person from any requirement of federal regulations or Florida law.



This document will help you with the RCRA definition:

- ◆ What is hazardous waste?
- ◆ Characteristics of wastes
- ◆ Typical hazardous wastes
- ◆ Recommended processing of waste
- ◆ How to reduce hazardous waste

These regulations are available at many public libraries. In addition, the Florida Department of Environmental Protection and the United States Environmental Protection Agency have posted links to copies of these regulations on the agencies' Internet sites:

<http://www.dep.state.fl.us>
<http://www.epa.gov>

These sites also provide access to agency forms, fact sheets, checklists, rule summaries, answers to frequently asked questions and reports from our public information databases. Individuals who do not have Internet access may obtain copies of department publications through the contact information listed on pages 22 and 23 of this document.

Revised May 2004

Why should I care about hazardous wastes?

As a business owner, operator or employee, you may be producing materials that can harm people and the environment. This booklet offers helpful tips on how to:

- ◆ Comply with federal and state hazardous waste regulations.
- ◆ Avoid penalties by properly managing hazardous wastes.
- ◆ Save money on disposal costs by reducing hazardous wastes.



Health and Environment

Hazardous wastes spilled or dumped on the ground or disposed of in dumpsters may seep into the groundwater and contaminate drinking water supplies.

Hazardous wastes may run off into the nearest body of water where they may poison or kill fish and other wildlife.

Hazardous wastes pose a risk to you, your employees and your community.



Cost Savings

State and county inspectors may visit your business to ensure that hazardous wastes are being managed properly. State penalties range from \$100 to \$50,000 **per violation per day**.

Reducing hazardous wastes can reduce your production and disposal costs and reduce your risk of future liability.



Public Image

Your customers will appreciate your efforts to prevent pollution.

Your community will recognize your business as a good neighbor.

What is a hazardous waste?

A waste is hazardous if:

- ◆ It is listed as a hazardous waste in the Title 40 Code of Federal Regulations (CFR) Part 261, Subpart D.
- ◆ It has any of the characteristics described below:

Characteristic Wastes

Ignitable

Ignitable wastes are flammable or spontaneously combustible. If they have a flashpoint of less than 140 degrees Fahrenheit or an alcohol content of 24% or more, they are hazardous wastes. Examples include film cleaners, mounting glues and adhesives, some types of alcohol, waste paints and solvents.



Corrosive

Corrosive wastes can burn the skin or corrode metals. Liquids with a pH of 2 or lower or 12.5 or higher are corrosive. Examples include concentrated bleaches and stabilizers and other old and expired chemicals.



Reactive

Reactive wastes are unstable and may explode or react rapidly or violently with water or other materials. Reactive wastes are not generally used in photo chemistry.



Toxic

Wastes are toxic if they contain certain heavy metals above specific concentrations, such as chromium, lead, mercury or silver, or toxic organic chemicals. Examples include waste fixers, washless stabilizers, low flow washes, rack and system cleaners (chromium-based).



Listed Wastes

Some industrial processes and chemical wastes are listed specifically as hazardous in the federal regulations under 40 CFR 261, Subpart D. Copies of the rule can be found at many public libraries, on the Internet (<http://www.gpoaccess.gov/cfr/>) or may be purchased from the Government Printing Office.

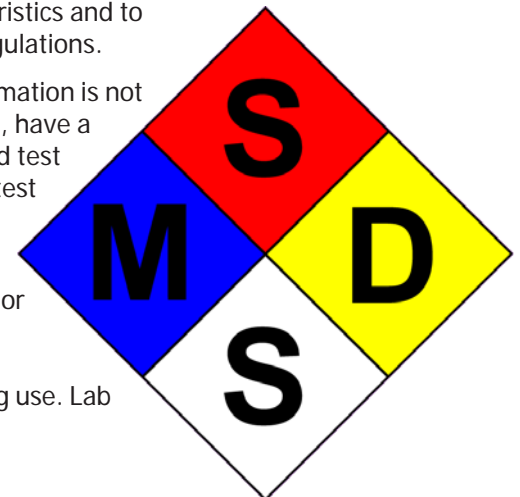
Acutely Hazardous Wastes

Small amounts of very dangerous wastes, such as arsenic and cyanide compounds, are regulated in the same way as large amounts of other wastes. A business that generates 2.2 pounds (1 kilogram) or more of these acutely hazardous wastes per month is subject to full regulation as a Large Quantity Generator (LQG, see page 12) under the hazardous waste rules.

Identifying Your Hazardous Wastes

It is very important to determine whether a waste is hazardous or non-hazardous. There are several ways to identify hazardous wastes.

- ◆ Always ask for a Material Safety Data Sheet (MSDS) before ordering any new product. The MSDS will give you valuable information about the product. Note: the MSDS does not identify chemicals present in concentrations less than 1%, or 10,000 parts per million.
- ◆ Talk to product suppliers and manufacturers.
- ◆ Read product labels.
- ◆ Compare product and process information to hazardous waste characteristics and to wastes listed in federal regulations.
- ◆ If product or process information is not available or is inconclusive, have a commercial lab sample and test the waste using the TCLP test or other appropriate analytical tests.
- ◆ A non-hazardous material or product may become a hazardous waste due to contaminants added during use. Lab testing may be necessary.



SOURCES OF HAZARDOUS WASTE

Processing Chemicals and Washes

Waste fixers, system cleaners, low flow washes and washless stabilizers may be hazardous due to heavy metals or organic chemicals they may contain. For example, waste fixers and stabilizers may contain hazardous levels of silver. Prior to disposal, determine whether waste fluids are hazardous.

Solvents

Common solvents used for cleaning film, work surfaces and equipment may contain hazardous substances. For example, film cleaners may contain trichloroethylene, a listed hazardous waste, or they may be hazardous due to flammability. Before disposal, determine whether solvent waste is hazardous.



Photographic Film

Undeveloped photographic film contains high concentrations of silver. Before disposing of undeveloped film waste, take the proper steps to remove the silver from the film. Film ends and tabs can be soaked in waste fixer to remove the silver from the film before disposal.

Black and white film and x-rays do contain residual levels of silver after developing. Before disposing of these negatives, contact a film recycling contractor for reclamation of the residual silver and the film.

Properly developed color negative film and prints do not contain residual levels of silver and can be properly disposed of with other solid waste. Large quantities of negatives can be cost-effectively recycled through film manufacturers' reclamation programs.

Silver Recovery Units

Two popular methods of silver recovery produce wastes and effluents that are hazardous. Wastes sent to a contractor for reclamation or recycling are exempt from hazardous waste regulations. It is important to properly maintain silver recovery units.



Electrolytic recovery units cause silver to collect on electrolytic cathodes. The silver can be recycled and the desilvered fixer can generally be discharged to a sewer or reused. Provide written notification to your sewer authority before discharging. Care must be taken to prevent the formation of sulfides. Silver concentrations in the effluent may be high.

Metallic replacement or chemical replacement cartridges form a silver sludge that may be reclaimed. Silver concentration in the effluent is high unless two units are in series.

Batteries



Many photo shops recycle batteries for their customers. Rechargeable nickel-cadmium batteries, lead-acid batteries, lithium cells, mercury-oxide button batteries and other alkaline button cell batteries can be recycled. Most manufacturers and suppliers have take-back programs for batteries. If batteries are not recycled, determine whether they are hazardous prior to disposal.



Mercury-Containing Lamps and Devices

Spent fluorescent tubes, quartz-mercury studio lights and some flash bulbs may be hazardous due to their mercury content. Recycling contractors can recycle many bulbs and devices. If the items are broken, they may need to go to a hazardous waste contractor. Mercury-containing items cannot go to solid waste incinerators and should not go to landfills.



Aerosol Cans

Empty aerosol cans that contained hazardous paints, dyes or solvents may be thrown in the trash only if punctured and all the contents have been removed as completely as possible.

Wastewater

Waste processing chemicals and washes or wastewaters from metal recovery units should never be discharged to the ground or to a septic tank system. Waste processing chemicals, wastewater, etc. should be discharged only to a sanitary sewer system with written permission from your local sewer authority.

Substances commonly used in photo processing and subject to wastewater regulations include:

- ammonia
- silver
- iron
- sulfites/sulfates
- formaldehyde
- heavy metals, especially cadmium, chromium and zinc

Fixers, washless stabilizers and other silver-rich wastewater should undergo silver recovery before being discharged to a sanitary sewer system. It may be necessary to contract with a licensed photographic wastes disposal company to properly dispose of your silver-rich solutions.

Check with your local sewer authority to determine the allowable limit for silver in your discharge. Some Florida cities have very low limits. Know the limits for your area.

Rags and Paper Towels



Rags and paper towels are hazardous waste when they are contaminated with solvents that contain hazardous substances. Rags can be disposed of as hazardous waste, or cleaned by a linen service that discharges its water to a sanitary sewer system.

TYPICAL HAZARDOUS WASTES

Heavy Metals in Processing Chemicals

Chromium
Lead
Mercury
Selenium
Silver

Recovered Silver

Flake silver
Silver cartridges
Ion-exchanged resins
Silver precipitates

Caustics and Acids

Acetic acid
Ammonium hydroxide
Chromic acid
Hydrochloric acid
Nitric acid
Oxalic acid
Phosphoric acid
Sodium hydroxide
Sulfuric acid

Process Solution Wastes

Reversal bleaches
Bleaches
Fixes
Low-flow washes
Washless stabilizers

Solvents

Acetone
Ethyl alcohol
Isopropyl alcohol
Methyl alcohol
Methyl ethyl ketone
Methylene chloride
Naptha
Petroleum distillates
Toluene
1,1,1-Trichloroethane
1,1,2-Trichloroethane
Trichloroethylene
Xylene

For more information on hazardous wastes, contact FDEP. (See page 21 for FDEP phone numbers.)



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Dos and Don'ts



DO
keep
containers
closed.



DON'T
leave
containers
open.

HW / Used Oil Container Inspection Log

Date	Time	Inspector's Name	# of Containers	Container Condition	Observations	Date & description of discharges and cleanup

DO
keep accurate inspection logs.



DO
label all
containers.



DON'T
leave
containers
unlabeled.

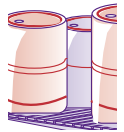
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How should I manage hazardous wastes?

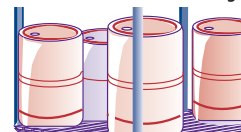
First, determine how much hazardous waste you generate **each month**. The rules you must follow depend on how much you generate, how much you store and how long you store it.



Less than 220 pounds per month (100 kilograms or about half a drum), and never accumulate more than 2,200 pounds (1,000 kg) at any time: you are a “Conditionally Exempt Small Quantity Generator” (CESQG).



220 -2,200 pounds per month (100-1,000 kilograms or about half a drum to 5 drums): you are a “Small Quantity Generator” (SQG).



More than 2,200 pounds per month (1,000 kilograms or more than about 5 drums): you are a “Large Quantity Generator” (LQG).

The following practices may be required for your business. Even if they are not required, they are good waste management practices. Additional information is available from FDEP.

Containers

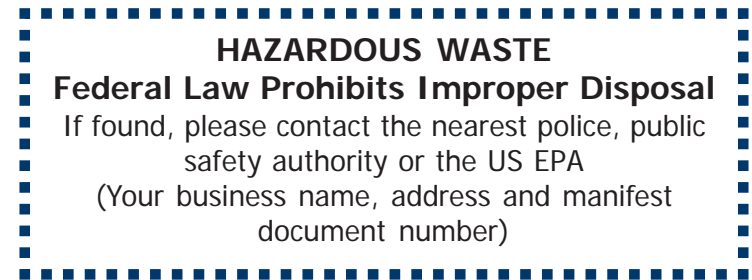
- ◆ Maintain containers in good condition. Prevent leaks, ruptures and accumulation of rainwater on tops of drums.
- ◆ If a container leaks, transfer waste to a new container.
- ◆ Keep containers closed. Use self-closing funnels when adding waste. Do not allow wastes to evaporate; this is a serious offense.
- ◆ Wastes must be compatible with the container. For example, use HDPE plastic containers for corrosive wastes.
- ◆ Never place incompatible wastes, such as wastes that react with each other (e.g., acids and bases), in the same container.

Storage

- ◆ Maintain adequate aisle space between container rows to allow inspection for leaks and damages.
- ◆ Store ignitable and reactive wastes at least 50 feet from property boundaries.
- ◆ Store containers with incompatible wastes in separate areas.
- ◆ Time limit for SQGs is 180 days and 90 days for LQGs.

- ◆ For some hazardous material containers, secondary containment pallets or platforms may be a cost-effective option for spill-prevention.

Labels



- ◆ The above label represents proper wording for a hazardous waste label. You must also comply with Florida Department of Transportation requirements.
- ◆ Label every container with the type of waste and whether it is hazardous or non-hazardous.
- ◆ Include the accumulation start date (the date when waste was first placed in the container).
- ◆ Include your company name and address.
- ◆ Include federal waste code numbers.

Transport and Disposal

- ◆ Make sure your transport and disposal facilities have US EPA identification numbers.
- ◆ Use manifests for all hazardous wastes shipped off-site. Keep the manifests on-site.

Inspections and Recordkeeping

- ◆ Inspect containers at least once a week and keep a written log of container inspections.
- ◆ Keep a record of larger spills and use this information to identify the spill prevention options that might help your company.
- ◆ Keep training and inspection records for three years.
- ◆ Keep manifests and shipping receipts for three years.
- ◆ Keep records of lab tests for three years.
- ◆ Keep land disposal restriction forms for three years from the date the waste was last shipped.

How can I reduce hazardous wastes?

Reducing hazardous wastes in your photo shop makes good business sense. Benefits include:

- ◆ Saving money on waste management costs.
- ◆ Reducing concerns about penalties and liability.
- ◆ Creating a safer, healthier workplace.
- ◆ Promoting positive public relations with clients, customers and the local community.

How do I begin?



- ◆ Make a commitment to reducing wastes in every area of your business.
- ◆ Evaluate your shop's wastes and identify areas where changes can be made.
- ◆ Encourage the participation of all employees through education, training and incentives.

Processing

- ◆ Use silver recovery units or similar devices to reduce the volume and/or toxicity of waste processing chemicals and washes.
- ◆ Recycle reclaimed or recovered silver.
- ◆ Collect waste film for recycling with a waste film recycler.
- ◆ Replace hazardous chemicals with less hazardous or non-hazardous substitutes where possible.
- ◆ Return out-of-date or unused chemical products to the manufacturer.
- ◆ Install squeegees or air curtains between processing tanks to reduce carryover and help maintain low replenishment rates.
- ◆ Follow manufacturer recommendations for replenishment rates.
- ◆ Change filter cartridges in accordance with manufacturer guidelines.
- ◆ Use only low replenishment rate chemistry.

- ◆ Mix only what is needed.
- ◆ Be aware of "free samples" that may end up needing special and costly handling for disposal.
- ◆ Take advantage of recycling opportunities for plastic film containers, single use cameras and steel film magazines.

Solvents

- ◆ Reduce or eliminate solvent use by determining whether cleaning is really necessary.
- ◆ Use a multi-purpose solvent to reduce the types of hazardous waste that need to be managed.
- ◆ Find less hazardous substitutes for solvents, such as citrus-based, water-based or detergent-based cleaners.
- ◆ Replace solvent only when necessary.
- ◆ Use dedicated containers and equipment to minimize cross-contamination.



Training

- ◆ Train all personnel to identify, reduce and properly handle wastes.
- ◆ Train employees to use photographic chemicals and solvents efficiently, using minimal amounts to get the job done.
- ◆ Train new employees before they handle hazardous wastes.
- ◆ Training must cover hazardous waste management; OSHA and Right-to-Know training alone are not sufficient.
- ◆ Training must be documented. Some ways to document include the use of sign-in sheets and completion certificates.
- ◆ Make pollution prevention everyone's responsibility.

Shop Practices

- ◆ Minimize inventory and use a "first-in, first-out" system to prevent the need for disposal of old unused materials.
- ◆ Prevent leaks and spills. Keep floors clean.

Waste Reduction Checklist for Silver Recovery

Electrolytic Recovery

- ❑ Check the current on electrolytic units frequently (at least daily) to ensure it is within the range specified by the manufacturer.
- ❑ Check the units to ensure that agitation is adequate (the cathode or anode is rotating, the solution pumps are working).
- ❑ Use a filter to remove dirt and other particles from fixer solution before it enters the electrolytic unit.
- ❑ Use silver test strips daily on discharge water to make sure the units are operating efficiently.



Metallic Replacement or Chemical Replacement

- ❑ Use silver test strips daily on discharge water to make sure the units are operating efficiently.
- ❑ Change the canister immediately whenever the test strip shows silver in the discharge.
- ❑ Inspect the canister system often for plugging, channeling and leaks from the hose connection.
- ❑ Make sure the canister has a constant flow of solution running through it, rather than intermittent dripping during operation.

Silver and Waste Film Recyclers in Florida

Solely as a service to the public and Florida businesses, the Florida Department of Environmental Protection maintains a list of companies identified as providing reclamation, recovery and recycling services. The information is voluntarily supplied by the companies. A company's absence from the list does not imply prejudice or impropriety. The FDEP does not endorse specific equipment or companies.

The FDEP, by providing this list, does not imply that the companies are in compliance with applicable laws and regulations. Users of this list are responsible for assuring that products, equipment or services comply with the requirements of local, state and federal law. The FDEP cautions users to personally evaluate the services and compliance status of any company they use. The list is subject to change without notice. The FDEP welcomes information from companies who wish to have their products or services listed.

A more complete list of silver and waste film recyclers, including companies in other regions of the United States, can be obtained by calling FDEP at (850) 245-8723.

Action Metals & Refining

East-West Industrial Park Blvd. #3
West Highway 50
Clermont, FL 32711
Phone: (407) 877-2004

Intervent Recycling

4045 U.S. Highway 301 North
P.O. Box 2177
Dade City, FL 33526-2177
Phone: (800) 621-6102

Chemical Pollution Control

3428 SW 15th Street
Deerfield Beach, FL 33442
Phone: (954) 480-9999

Photographic Waste Control

1943 High Street
Longwood, FL 32750
Phone: (407) 328-9651

Tips from Inspectors

Drums



- ◆ You cannot have any mystery drums. All drums must be labeled and have a “birthdate” on them.
- ◆ Evaporation of hazardous waste is a serious violation. Do not allow the hazardous waste to evaporate. When you are not in the process of putting waste into the drum, you must keep it closed.

- ◆ You also are required to keep the top of the drum clean.
- ◆ Do not store old drums outside. If they get stormwater inside them, you will have to sample the stormwater and determine whether the water in the drum is hazardous. Insist that the person who sold you the drum and its contents takes the drum back when you are done with it.
- ◆ Inspectors go into dumpsters and walk the entire property line of a business. They go back into trees looking for orphan drums and distressed/dead vegetation.



Spills

- ◆ Clean up your spills at the time of the spill.

Transport

- ◆ The only generators who are allowed to transport their own waste are conditionally exempt small quantity generators. All other generators must use a hazardous waste hauler that has registered with the FDEP and the US EPA.

Waste

- ◆ The most common violation occurs with waste determination.
- ◆ Abandoned products are wastes.
- ◆ If you throw away containers, make sure the container is completely empty before you place it in a waste receptacle. Aerosol cans may be disposed of as hazardous waste in lab pack containers. You may also purchase a device which allows the cans to be punctured and drained safely. Empty cans may then be disposed of in the trash, while the contents may either be used or disposed of as waste.

Water

- ◆ If you discharge any waste that could be construed as a hazardous waste into a city sewer, you must have written permission of the city sewer system. The city sewer system must be a Publicly Owned Treatment Works (POTW). It cannot be a privately owned package plant.
- ◆ If you use rags, you should send the rags to a linen service that is served by a publicly-owned sewage treatment plant. If you use paper towels, you must make a determination as to whether the used paper towels are hazardous waste.
- ◆ Know where your drains go. All drains that lead from a hazardous materials area to a stormwater area should be sealed shut.



Who needs to know if my business generates hazardous waste?

Post Emergency Information

Post the following information near every telephone:

- ◆ Fire department phone number.
- ◆ Emergency coordinator's name and phone number.
- ◆ Locations of fire alarms and extinguishers.
- ◆ Locations of spill control materials.

Notify FDEP

If your company is a small or large quantity generator, notify FDEP to obtain a US EPA identification number. Local environmental agencies also should be notified.

Notify local authorities

Police and fire departments and local hospitals that would respond to an emergency need to know that hazardous wastes are on your property.

Designate an emergency coordinator

This person must know what to do in case of fire, spill or other emergency and must be on the premises or on call 24 hours a day.

Develop a contingency plan

Guidance on contingency plans is available from FDEP. Large quantity generators must have a written plan that includes:

- ◆ Emergency response arrangements with police and fire departments, hospitals and emergency response contractors.
- ◆ Emergency coordinator's address and phone number.
- ◆ On-site emergency equipment descriptions and locations.
- ◆ Evacuation plan and routes, including a site diagram.
- ◆ Spill reporting procedures.

Smaller generators (SQGs and CESQGs) should also have a contingency plan.

Checklist

This checklist will help you prevent the most common hazardous waste violations. For more detailed information on hazardous waste management requirements, contact FDEP.

- Each month, identify and record types and quantities of hazardous wastes.
- Notify FDEP and obtain a US EPA identification number.
- Use proper containers to collect and store wastes.
- Label all containers, whether product or waste, as to their contents.
- Include accumulation start dates on labels for each container.
- Keep all containers of hazardous waste or products containing regulated solvents closed at all times unless actively removing from or adding to them.
- Maintain aisle space between containers for inspection.
- Inspect containers weekly for rust, leaks or damage and keep a log.
- Never discharge hazardous wastes to a septic tank.
- Train employees to properly handle hazardous wastes.
- Designate an emergency coordinator.
- Notify police, hospitals and fire department.
- Post emergency information near each phone.
- Develop a contingency plan for emergencies.
- Use manifests for all waste transported for disposal.
- Keep all records for at least three years.

Where can I get more information?

Additional information on hazardous waste reduction and regulations is available from many sources.

Florida Department of Environmental Protection

District offices and the Tallahassee office offer technical assistance, fact sheets and other publications on hazardous waste regulations.

DEP Information Line

Phone: (800) 741-4DEP
Fax: (850) 245-8810

Bureau of Solid and Hazardous Waste

Phone: (850) 245-8707



Twin Towers Office Building
2600 Blair Stone Road
Tallahassee, FL 32399-2400
<http://www.dep.state.fl.us/waste/>

Northeast District
7825 Baymeadows Way, Suite 200B
Jacksonville, FL 32256
(904) 807-3300

Northwest District
160 Governmental Center, Room 308
Pensacola, FL 32502
(850) 595-8300

Southwest District
3804 Coconut Palm Dr.
Tampa, FL 33619
(813) 744-6100

South District
P.O. Box 33902-2549
2295 Victoria Ave., Suite 364
Fort Myers, FL 33901
(239) 332-6975

Central District
3319 Maguire Blvd., Suite 232
Orlando, FL 32803
(407) 894-7555

Southeast District
400 N. Congress Ave., Suite 200
West Palm Beach, FL 33401
(561) 681-6600



Available publications include:

Summary of Hazardous Waste Regulations
Requirements for Conditionally Exempt Small Quantity Generators
Requirements for Small Quantity Generators
Handbook for Small Quantity Generators of Hazardous Waste

U.S. Environmental Protection Agency

The US EPA has published a series of industry-specific guidelines and handbooks on preventing pollution and complying with hazardous waste regulations. RCRA Hotline: (800) 424-9346

Your Trade Associations

Many trade associations have published guides to help you find solutions to your hazardous waste management problems.

Florida Small Business Assistance Program



The Small Business Assistance Program helps businesses with environmental concerns and problems related to compliance with air regulations. Assistance is confidential and staff experts have business experience.

Phone: (800) 722-7457
<http://www.dep.state.fl.us/air/programs/sbap.htm>

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This project and the preparation of this booklet were funded in part by a Section 3011 Hazardous Waste Management State Program grant from the U.S. Environmental Protection Agency (US EPA) through a contract with the Hazardous Waste Regulation Section of the Florida Department of Environmental Protection. The total cost of the project was \$50,000, of which \$50,000 or 100 percent was provided by the US EPA.

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