



ShopTalk

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A quarterly
publication for
hazardous waste
generators

On-Site Treatment of Wastes Encouraged

Have you ever wondered whether using a water evaporator or neutralizing a hazardous waste is okay under the hazardous waste regulations? The answer is yes, businesses are being encouraged by regulators to treat their dangerous wastes on-site. "Treatment by generator" is the term used to describe the process when generators treat their own hazardous waste on-site. There are many types of treatment technologies generators may legally use without a hazardous waste treatment permit. Ecology recently revised its treatment by generator guidance and produced Focus Sheets for these six treatment methods:

✓ **Filtration**, such as using a filtration unit to de-water oily sludge from an oil/water separator

✓ **Separation**, such as precipitating metals out of solution with a flocculent

✓ **Evaporation**, such as driving the water off a hot tank and

accordingly disposing of the remaining sludge

✓ **Carbon adsorption**, such as passing wastewater through a carbon filter to remove heavy metals from a rinse water

✓ **Neutralization**, such as adding acid to an alkaline etching solution to reduce/eliminate the corrosivity

✓ **Solidification**, such as taking a liquid hazardous waste that can't be detoxified and changing it to a solid form so that it can be disposed of at a hazardous waste landfill.

The treatment by generator guidance is intended to be self-implementing. Generators can proceed on their own without approval or paperwork from Ecology. It is no longer necessary to obtain case-by-case approval for treatment by generator processes.

Generators who treat their wastes on-site must comply with regulatory requirements for accumulation and proper management of tanks and containers.

Ecology has several reasons for actively promoting treatment by generator; these include:

✓ **Waste treatment is preferred over waste disposal:** By encouraging proper on-site treatment, Ecology is promoting the legislatively mandated waste management preference of treatment over disposal.

✓ **Managing hazardous wastes "close to home" is beneficial:** On-site management is preferred because it can minimize transportation risks, limit risk to other communities, and result in greater use of appropriate waste-specific technologies.

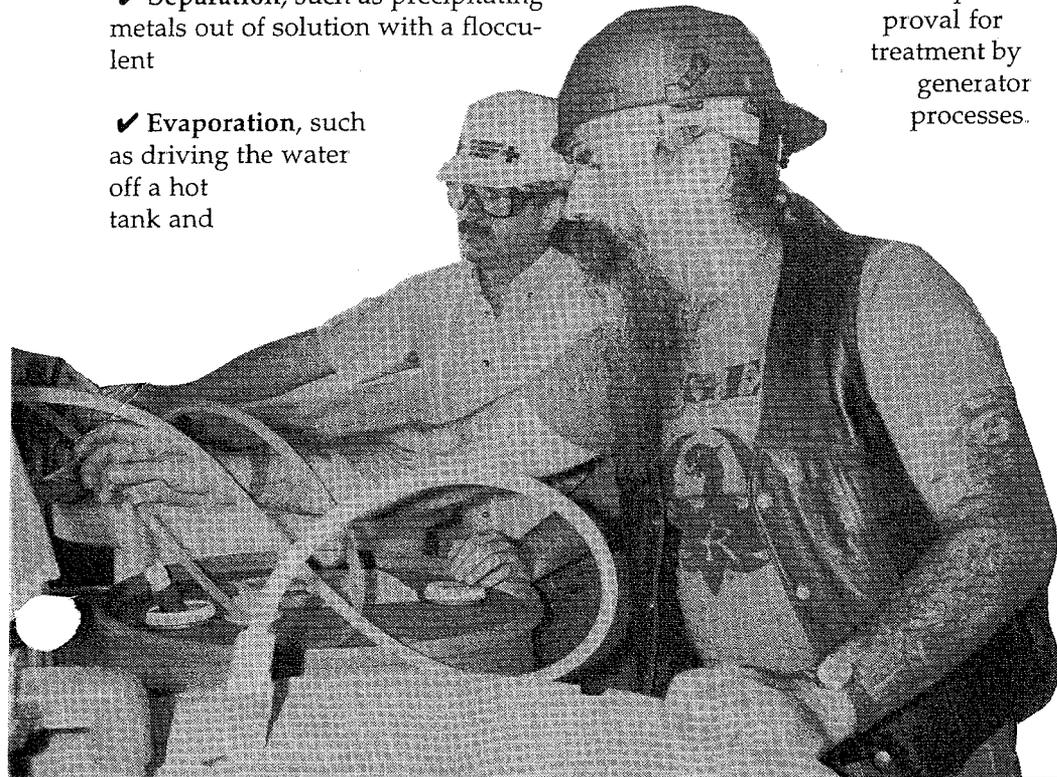
✓ **Ecology wants to make treatment by generator clearly allowable, understandable, and self-implementable.**

The revised guidance document (Technical Information Memorandum No. 86-3) and the six Focus Sheets will be available Sept. 13th. Please contact a hazardous waste specialist at your nearest Ecology regional office for a copy, telephone numbers are on page 6.

Rocky Becker, Director of Environmental Hazards (left) and Don Beard, Environmental Leadman check the flocculation device used at AK-WA in Tacoma. Since Aug. 1992 the company has been removing copper and zinc from hydroblast water with this separation technique. Resultant water tests clean and is discharged to sewer.

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Emergency Planning for Hazardous Waste Generators

Do your employees know how to protect themselves and your facility in the event of a hazardous waste spill? Planning for emergencies can help you prevent a small hazardous waste spill from becoming a dangerous and expensive contamination problem. Emergency planning is required by Washington's Dangerous Waste Regulations.

Who needs an Emergency Plan?

Facilities which generate more than 220 lbs of hazardous wastes in any one month or accumulate 220 lbs at any time, (about 1/2 of a 55 gallon drum) are required to prepare plans.

Small quantity generators are conditionally exempt from the Dangerous Waste Regulations. They are required to have an emergency plan only if they are specifically directed. To be safe, Ecology encourages small quantity generators to read and follow the requirements for medium quantity generators. Emergency planning is an investment to protect your employees and facility, and to prevent future liability.

Requirements Summary

Medium Quantity Generators

Here are some of the most important parts of any emergency plan:

- ✓ The first action is to designate an emergency coordinator. This person is responsible for the facility and staff in an emergency. A back-up coordinator is also advisable. Make sure he/she is knowledgeable about your operation, the hazards present, the location of records, and the terms of agreements for emergency services that have been made with state or local authorities.

- ✓ Develop emergency procedures for responding to hazardous waste fires, explosions, spills, or releases to the air. These will include how to contain and clean up potential spills; phone numbers for emergency services such as the fire department; and how to report the incident to Ecology and, if appropriate, the National Response Center.

- ✓ Educate employees on the proper waste handling and emergency procedures that relate to their job duties. For example, someone who is responsible for putting hazardous waste in a barrel would need different training than staff who only occasionally walk through the shop.

- ✓ Post and keep current an emergency directory containing emergency phone numbers and the location of emergency equipment *next to each phone and intercom.* (See sample below.)

Large Quantity Generators

- ✓ Begin by designating an emergency coordinator (see above).

- ✓ Prepare a written contingency plan which includes: the actions employees will take in an emergency; the arrangements you have made with local police, fire departments and state or local emergency response teams to coordinate emergency services; your emergency directory; a list of emergency equipment on site and where it can be found; and an evacuation plan.

- ✓ Develop a workable emergency procedures plan. Keep the plan accessible, and use it in the event of an emergency.

- ✓ Prepare and follow a written training plan and keep records documenting that your employees have received the required training(s).

- ✓ Post and keep current an emergency directory containing emergency phone numbers and the location of emergency equipment *next to each phone and intercom.* (See sample below.)

For More Information

Ordering information is on the Bookshelf column on page 3, for a complete set of Ecology's emergency planning guidelines, information on preparing training and contingency plans, and how to work with local authorities for emergency response arrangements. See hazardous waste fact sheets 4. *Perform Preventive Maintenance* and 6. *Plan for Emergencies*. See page 6 for telephone numbers of Ecology's hazardous waste specialists who can answer specific questions.

HAZARDOUS WASTE EMERGENCY INFORMATION

EMERGENCY COORDINATOR _____

TELEPHONE NUMBER WK _____ 24 HOUR _____

ALTERNATE _____

TELEPHONE NUMBER _____

LOCAL FIRE DEPT. _____

HOSPITAL _____

POLICE _____

LOCATIONS

FIRE EXTINGUISHERS _____

FIRE ALARMS _____

SPILL CONTROL MATERIALS _____

SPILL REPORTING CONTACTS

DEPT. OF ECOLOGY:	CENTRAL REGION	1-509-575-2490
	EASTERN REGION	1-509-456-2926
	NORTHWEST REGION	1-206-649-7000
	SOUTHWEST REGION	1-206-753-2353
NATIONAL RESPONSE CENTER		1-800-424-8802



Cut out and post at all telephones

Bookshelf

These materials are available from Ecology. Call 1-800-RECYCLE or (206) 459-6472.

Treatment by Generators, Technical Information Memo. No. 86-3. How generators may treat their own dangerous wastes on-site.

Fact sheet 4. Perform Preventive Maintenance. Checklist to use in accident prevention.

Fact sheet 6. Plan for Emergencies. Clear guidelines of required emergency procedures for businesses generating more than 220 lbs per month or batch of hazardous waste.

Hazardous Waste Pesticides - Determining if Your Pesticide Waste is a "Hazardous Waste" and Pesticide Waste Reduction Guidance

Pesticide Application - Hazardous Waste Do's and Don'ts

Your Home, Your Health and Pesticides - Safe Handling and Disposal of Home-Use Pesticides

Empty Pesticide Container Disposal - Guidance for Growers and Commercial Applicators

Improving the energy efficiency of pumping systems in Wastewater Treatment Facilities. Washington State Energy Office publication.

Improving the energy efficiency of aeration systems in Wastewater Treatment Facilities. Washington State Energy Office Publication.

Cost Analysis for Pollution Prevention. A guidance document that can help compare the total costs of a current process to the total costs of a pollution prevention alternative by using the net present value.

Understanding Ion-Exchange

Businesses have found that reducing industrial wastewater discharges to the sewer, ground, or surface waters can cut costs may eliminate the need for permits, and reduces time needed to comply with regulations.

One method to stop the discharge of liquid waste is to recycle most or all of the water used in a process. This is called "closed-loop recycling." Ion-exchange is one of the most popular closed-loop recycling and water conservation methods for water containing heavy metals. Closed-loop recycling recovers water plus many of the materials and contaminants that end up in the water, thus increasing efficiency and reducing raw material costs for the facility. Choosing the best recovery technology depends on the contaminants present in the water.

Ion-exchange works like a water softener, where harmful ions (such as heavy metals) are exchanged for safe ions. The system is made up of one or more columns packed with small resin beads. Some water pretreatment may be needed to remove suspended solids from the water prior to contact with the resins. Waste water is then pumped through the ion-exchange columns, where undesirable ions are traded for desirable ions that attach to the surface of the resin beads. The water that comes

out of the ion exchange system has been cleaned and can be reused in many industrial processes.

After a time, the ion exchange resin beads become saturated with harmful ions and must be regenerated. Regenerating the system usually consists of back-flushing the columns with safer ions which release the toxic ions from the columns for removal from the system.

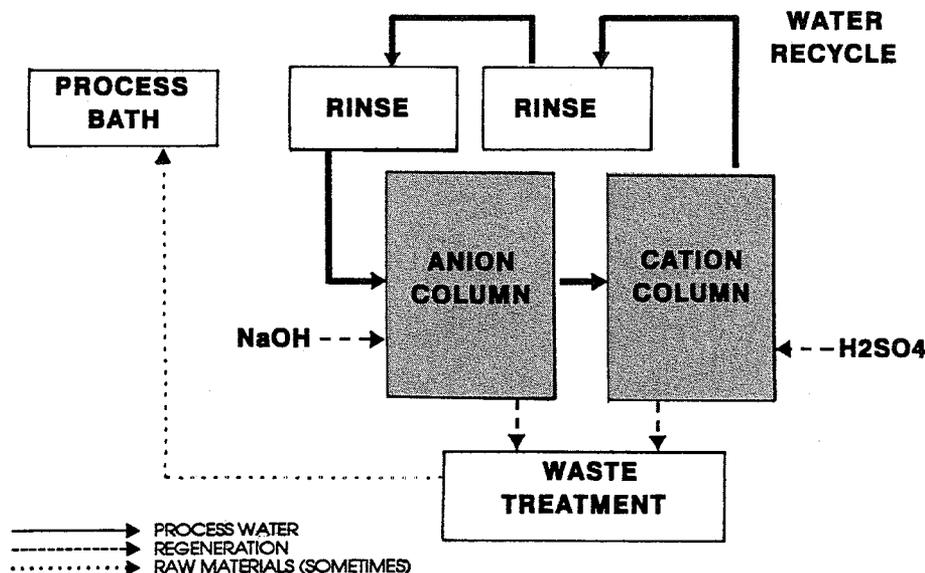
The effluent from the regeneration process often has high concentrations of heavy metals, and can sometimes be returned to the original process. If the material cannot be returned to the process, it must be disposed of as a dangerous waste.

Ion exchange has many advantages including:

- ✓ Proven technology
- ✓ Little or no sewer discharge
- ✓ Conserves hazardous materials
- ✓ Low operating expense
- ✓ Cleaner effluent

Please note that ion exchange will **not** remove organic contamination, such as solvents, greases or oil. Depending on your process you may consider other closed-loop recycling methods such as; reverse osmosis, ultra-filtration, evaporation, or electro dialysis. If you have any questions, contact a toxics reduction specialist at your regional office. (See Ecology contacts on page 6.)

Typical Ion-Exchange Process



Case Study: Reusing Wastewater to Reduce Costs

Centralia's Kinnear Door manufactures wooden sections for overhead garage doors and employs up to 100 workers. Its manufacturing processes center on drying, milling, jointing, and gluing wood sections to form door panels and other building products.

When the plant was built in 1963, a septic system was used to dispose of the wastewater which contained glue from wash-down water. Kinnear Door disposed up to 2,500 gallons of wastewater a month.

Increasing environmental regulations meant the company had to find a better solution. John Ver Valen called Ecology for assistance. "We worked on this project for 14 - 15 months to find a method that would work for the company, Ecology, and our raw material suppliers."

After evaluating many options, including pre-treatment, the final solution came from the employees. Ver Valen says, "The idea started with the people who do the actual operation, who know the processes the best." It was economical, simple, promoted worker safety, and eliminated most of the waste. The key was to reuse the glue wash-down water. Kinnear employees suggested:

- ✓ **Switching to powdered glue products.** The melanin-urea and PVA glues are water-based so the washwater is now reused.
- ✓ **Applying flow reduction techniques.** Trash compactor bags are used to line the 3-gallon glue mixing pots and rinsing is no longer required.

Now, the non-hazardous glue solids which settle from the wastewater can be drummed and sent to the local landfill. Landfill disposal fees were also reduced and the problems of storing and handling hazardous chemicals were avoided. All that was needed were two barrels, pumps, and a fiberglass settling tank at a cost of \$1,500.

Funding Available for Energy Efficiency

If you're planning to install, upgrade, or expand process lines, pollution prevention equipment, or other systems at your facility contact your local utility conservation staff. The Bonneville Power Administration and many electric utilities offer incentives for purchase of energy efficient equipment.

The software program MotorMaster can help you improve your motor systems efficiency. It is available for a \$50 registration fee. Call the Electric Ideas Clearinghouse at (800) 872-3586 for information.

Annual Savings to Kinnear Door:

Estimated \$14,600

Permit fees	\$ 1,000
Sewer fees	\$ 3,600
Pre-treatment costs	\$10,000

Tackling Problems:

Pollution Prevention Plans

Many facilities are working hard to finish their pollution prevention plans by Sept. 1, 1993, as required by the Hazardous Waste Reduction Act. Here are some of the more challenging planning issues with some possible solutions from facility operators and Ecology regional staff.

Problem: Getting upper management support.

Solution: Ecology can contact your CEO or general manager with information about pollution prevention. Ecology staff have written letters, made phone calls, and scheduled meetings. This has helped gain support for pollution prevention and jump-started the planning process.

Problem: Deciding when a detailed economic analysis is necessary for a waste reduction opportunity.

Solution: To start, identify your opportunities, next conduct a technical review of each opportunity. Then ask the following question: Will the opportunity be implemented?

If yes, outline the goals and schedule. You are not required to do an economic evaluation.

If no, conduct an economic evaluation which may involve a risk analysis. If the opportunity is not favorable, describe the obstacles.

Problem: Working through the economic evaluation.

Solution: Ecology staff can help assign values and show you how they add up to give a useful economic evaluation. Cost comparisons can be made for items such as; capita equipment, start-up, engineering, disposal, liability, compliance, and oversight.

Problem: Describing the accounting system and how it is used to track environmental costs and savings.

Solution: Talk to your accounting manager. Your current accounting system may be expanded by adding line-items to existing inventory and annual report records. This will help track the costs associated with liability, regulatory compliance, and oversight. This system can help in tracking success and savings too.

Toxics Reduction staff can answer questions about the planning process, and let you know about what has worked at other facilities. (Please see Ecology contact numbers on Page 6.)

Pesticide Applicators: Visits Reveal Problems/Solutions

In an effort to combat insects, weeds and disease, 20,000 pesticide applicators do business in Washington. Pesticides are applied to golf courses and lawns, they are used for wood treatment, maintenance of right-of-ways, mosquito control and crop protection. Wastes generated during pest control work are definitely part of the hazardous waste problem.

With more than 90 pesticide contaminated cleanup sites in the state, and many public calls to the Department of Ecology complaining about pesticide disposal, Ecology needed to take action. To learn more about pesticide applicators, a recent Ecology pilot project investigated the waste management practices of 123 pesticide applicators across the state. Commercial as well as governmental operations were surveyed.

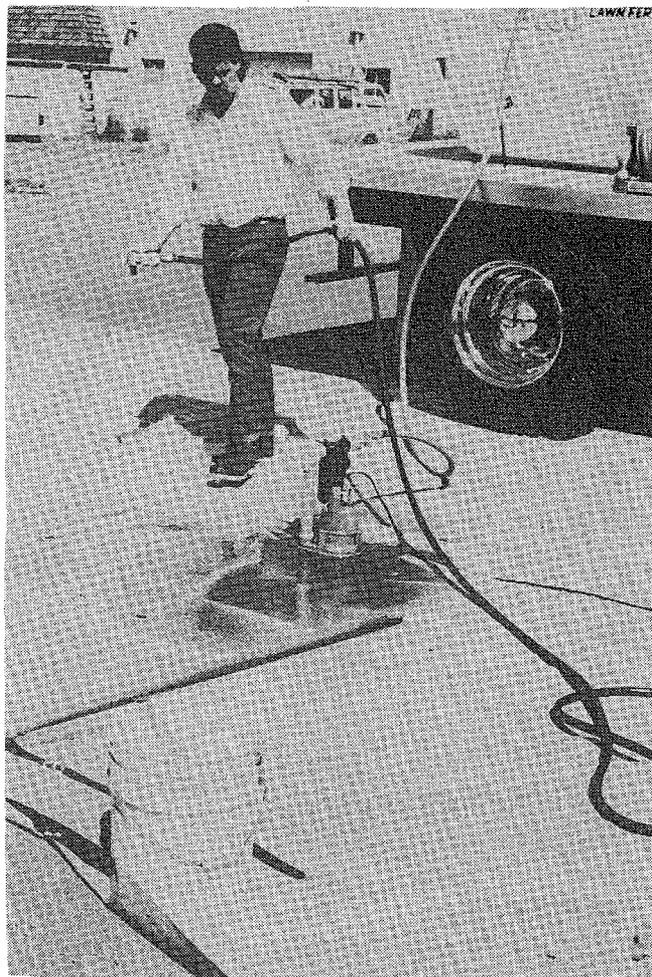
We set out to learn which wastes are causing the most trouble for applicators and if any applicator groups need more help. Unfortunately, hazardous waste violations were found within nearly every applicator group. Ecology's approach with the pilot project was to educate and provide technical assistance to the industry, rather than assessing immediate fines. Inspectors provided information on how to safely identify, manage and reduce the amount of pesticide hazardous wastes. They provided written information, made group presentations and visited individual sites.

Survey Findings

Applicators that had the most problems included agriculture, wood treaters, golf courses, schools and mosquito control districts.

One of the main problems found was that facilities are allowing washwater or rinsates from pesticides to be disposed of into drains or onto the ground. These practices are illegal and lead to site contamination.

✓ Clean application equipment in the field, where the rinsates might be



Rick Carmichael operates a portable wash pad at Green Baron in Yakima. Chemically contaminated washwater is pumped from the heavy-duty tarp into the sprayer tank with a portable sump-pump. This way the wastewater is used as make-up for the next spray load, instead of becoming a hazardous wastewater. Only the pump filter wastes are regulated.

Photo by Greg Schuler.

applied to the job at hand instead of being improperly disposed of back at the shop. Always apply pesticides according to label instructions.

✓ Many applicators choose an alternative to field-cleaning by building facilities for cleaning equipment at the shop. These help capture spills during chemical mixing and loading, and are designed to contain and keep rinsates separate for reuse. This minimizes wastes and disposal costs. Land disposal of mixed rinsates is illegal. Pesticide rinsates should not be mixed together unless the mixture can be used in a legal application.

✓ Unusable, outdated or banned pesticides often stored in a damaged condition were another common problem. Such pesticides may be an

accident or spill waiting to happen, and unusable pesticides are regulated wastes.

✓ Inventory all pesticides every year and remove unusable products. Many older pesticides are extremely toxic or persistent in the environment. When found they should be properly disposed of right away to avoid the risk of a leak or spill. Smart disposal up front may prevent serious contamination and expensive clean up later.

To obtain a copy of the final project report, or any of the pesticide guidance materials see the Bookshelf on page 3 for list and ordering information. Hazardous waste specialists at your nearest Ecology regional office can answer questions. (See Ecology contacts on page 6.)

Questions and Answers

Q If I hire a transporter to ship my waste to a treatment, storage or disposal facility and a spill occurs during transport, am I responsible?

A As the generator, you remain responsible for your waste from "cradle to grave". Your transporter, however, must take proper steps immediately to clean up the spill and report it to the proper authorities. Make sure that you use a responsible, professional transporter and check all manifests. (See Shoptalk Spring '93 for tips on hiring a transporter.)

Q I've heard that there are some new changes to the Dangerous Waste Regulations. Is that true?

A Proposed changes were made in June and public hearings were held in July. For a copy of the Focus that highlights the proposed regulatory changes, call Bert Ponton at (206) 438-7560. The rules will not change before the end of 1993 and *Shoptalk* will keep you up to date.

Q I want to buy an evaporator so that I can "treat" my waste. Will I be able to take waste from other small businesses to help them out?

A No, a generator may not take waste from others. You may only treat your own dangerous waste.

We're Moving

The Department of Ecology is relocating. Our new headquarters will be located on 300 Desmond Drive, in Lacey. Our 1-800 telephone numbers and mailing address will remain the same: P.O. Box 47600, Olympia, WA 98504-7600. Effective October 18, 1993, our headquarters reception telephone number will be (206) 407-6000, TDD (206) 407-7155, and facsimile number, (206) 407-6035.

We're Reorganizing

Changes are being made at Ecology to improve service and emphasize pollution prevention. Two new programs have been formed by merging the Waste Reduction Recycling and Litter Control Program and the Solid and Hazardous Waste Program.

The new *Hazardous Waste and Toxics Reduction Program* will promote pollution prevention and facilitate hazardous waste regulatory understanding and compliance. Technical assistance will continue to be a high priority for the program. Each regional office will have non-regulatory toxics reduction staff who are separate from the hazardous waste compliance staff.

The *Solid Waste Services Program* will assist local government and promote sound waste management practices.

Ecology Contacts

Remember, your business is liable for all hazardous wastes generated. If you are uncertain about your responsibilities as a hazardous waste generator, call your nearest Ecology office and ask for a hazardous waste specialist. For information on reducing or recycling hazardous waste, ask for the toxics reduction staff, also at the following numbers:

Bellevue: (206) 649-7000

Tumwater: (206) 753-2353

Yakima: (509) 575-2490

Spokane: (509) 456-2926

Americans With Disabilities Act

The Department of Ecology is an Equal Opportunity and Affirmative Action employer and shall not discriminate on the basis of race, creed, color, national origin, sex, marital status, sexual orientation, age, religion or disability as defined by applicable state and/or federal regulations or statutes. If you have special accommodation needs or want more information, please contact Dave DuBreuil at (206) 459-6311 (Voice) or (206) 438-8721 (TDD).

Shoptalk

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