

“...A universal environmental ethic is the only guide by which humanity and the rest of life can be safely conducted through the bottleneck into which our species has foolishly blundered.”

EDWARD O. WILSON, *THE FUTURE OF LIFE*

7

Do Keepers of Hazardous Materials Know Who They Are and What to Do?

HAZARDOUS MATERIALS

Contemporary society is perpetually engaged in manufacturing, purchasing, storing, using, generating, and discarding chemical products and wastes that pose varying degrees of risk to human health and the environment. Chemicals are everywhere, and one of the most difficult problems we face is determining how much risk we are willing to accept. In the case of source water protection areas, it is clearly important that we accept as little risk as possible.



To address the huge volumes of municipal and industrial solid waste generated nationwide, Congress enacted the Resource Conservation and Recovery Act (RCRA). Since 1980, under Subtitle C of RCRA, U.S. EPA has developed a comprehensive program to ensure that hazardous wastes are managed safely from the time they are generated to their ultimate disposal—from cradle to grave. Most New England states have authority to implement their own RCRA programs that are consistent with, if not more stringent than, the federal program.

This cradle-to-grave management program is one of the most comprehensive requirements that EPA has ever developed. It addresses issues such as the following:

- hazardous waste identification
- large and small hazardous waste generators
- hazardous waste transportation
- recycling, treatment, storage, and disposal
- land disposal restrictions
- hazardous waste permitting
- cleanup of hazardous spills or releases



U.S. EPA and the states continue to improve the RCRA program by promoting new initiatives, such as encouraging waste minimization, improving the federal/state partnership in the hazardous waste program, and aiding state and local governments in reaping the environmental and economic benefits of source reduction and recycling. Yet, water suppliers and local governments still have their work cut out for them.

Where Are the Hazardous Materials and What Can You Do About Them?

Chemical waste materials can reach source waters through spillage or disposal—intentional or accidental. Chemical use includes, but is not limited to, activities associated with combustion, degreasing and other cleaning, mixing, dilution with other chemicals or water, and catalytic reactions. Some waste materials are recycled on a limited scale during the process.



Resource Conservation and Recovery Act (RCRA)

A federal law that encourages environmentally sound methods for managing commercial, industrial, household, and municipal waste and regulates facilities that generate, transport, treat, store, or dispose of hazardous waste (CFR Title 40, Parts 260 to 279).

RCRA programs regulate the generation and storage of hazardous waste, but they typically do not have jurisdiction over facilities that use hazardous non-waste materials or the location of facilities. Many hazardous materials (e.g., those used at homes, schools, public works facilities) are not subject to RCRA regulations—this is where community efforts are particularly important!

For a municipality, any threat to drinking water is a concern, so consider following some basic common-sense tenets:

Be aware. Make sure that you know what types of materials are located in the source protection area and how to deal with any spills, accidents, and fires. Businesses and other facilities that produce, use, or store hazardous materials in significant quantities are considered potential contamination sources. Homeowners are of particular concern because they may be engaging in activities that threaten source water (e.g., lawn care, disposal or storage of hazardous materials), but they aren't regulated. Make sure homeowners and businesses know about such threats and what they can do to protect the water supply. Meet in person with owners, or communicate by letter, and provide them with a map of the source protection area.

Keep contamination out. The best way to protect your water supply is to keep potential contamination sources out of the source protection area. If you can't keep a potential contamination source out of your source protection area, you can limit the size or scale. Try to keep the risks as small as possible.

Enforce proper maintenance and practice. If a business or facility is using a potentially hazardous material, make sure proper best management practices (BMPs) are in place to protect the water supply. Use a multi-barrier approach, so that if there is an accident (e.g., a problem with a holding tank or containment structure, or one person fails to do what they are supposed to) there is a backup to protect the water supply.

For example, water suppliers or municipal entities can work with local industries/commercial businesses by setting up a voluntary inspection program where the entity meets with the business periodically to review the types of chemicals stored on-site and how they are used, stored, and disposed of. New Hampshire has a program where water systems can reclassify their groundwater sources for greater protection for their important groundwater resources. (*Groundwater Reclassification and How It Affects the Property Owner*, WD-WSEB 22-3 - <http://www.des.state.nh.us/factsheets/ws/ws-22-3.htm>) As part of this program, if water sources are reclassified, water suppliers or municipal entities must complete inspections of local potential contaminant sources every three years.

WEB SITE



Groundwater Reclassification and How It Affects the Property Owner, WD-WSEB 22-3 - <http://www.des.state.nh.us/factsheets/ws/ws-22-3.htm>

Know when there is a problem. Require facilities with hazardous materials located in the source protection area to promptly notify the town and water supplier when there are spills or accidents involving hazardous materials.

Consider potential future uses. It is tempting to allow structures or uses in your source protection area because they seem innocent enough when they are proposed...or you know the owner to be responsible and careful. But remember to consider future uses. What happens when the property changes hands? That three-bay garage for the hobby woodworker may look like the perfect place for an auto body shop when the property goes on the market.

The work of keeping hazardous wastes and materials out of the environment is far from over. So take a closer look at these sources and address the following issues:

- what to do about hazardous waste generators and hazardous materials users that are frequently overlooked (e.g., hazardous products in households, schools, golf courses, farms, public works operations)

FYI



What Is a Hazardous Waste?

To be considered a hazardous waste under RCRA, a material must first be classified as a solid waste. U.S. EPA defines solid waste as garbage, refuse, sludge, or other discarded material (including solids, semisolids, liquids, and contained gaseous materials).

Note: Each state has specific hazardous waste laws, so be sure to check with your state program.

If a waste is considered to be solid waste, businesses must then determine if it is a hazardous waste. Wastes are defined as hazardous if they are specifically named on one of four lists of hazardous wastes, or if they have certain characteristics:

Listed wastes – known to be harmful to human health and the environment when not managed properly, regardless of their concentrations.

Characteristic wastes – If a waste does not appear on a hazardous waste list, it still might be regulated as a hazardous waste if it exhibits one or more of the following characteristics:

- Ignitability
- Corrosivity
- Reactivity
- Toxicity

How Are Hazardous Waste Generators Regulated?

Hazardous waste generators must manage their wastes according to regulations for three specific generator types, based on how much waste they generate in a calendar month.

Large Quantity Generators (LQGs) – generate 1,000 kg or more of hazardous waste per month, or greater than 1 kg of acutely hazardous waste per month.

Small Quantity Generators (SQGs) – generate more than 100 kg but less than 1,000 kg of hazardous waste per month.

Conditionally-Exempt Small Quantity Generators (CESQGs) – generate 100 kg or less of hazardous waste per month, and 1 kg or less of acutely hazardous waste per month. (Some states do not recognize this class.)

Generators must comply with whichever standard is applicable for a given month. In many cases, small businesses that fall into different categories at different times choose to always satisfy the more stringent requirements. Certain wastes, such as those that are reclaimed or recycled continuously on site, are not counted under the federal regulations.

What Types of Businesses Are Likely to Produce Hazardous Wastes?

- automobile maintenance and body shops
- electroplaters and metal fabricators or finishers
- printers
- photographic and x-ray processors
- dry cleaners
- chemical laboratories (including schools and universities)
- furniture manufacturers and strippers
- construction
- pest control
- chemical manufacturing
- textile manufacturing
- funeral services
- arts and craft studios

- how to ensure that the risk of a release of a hazardous waste or hazardous material is minimized to the greatest extent possible
- how to ensure that regulated businesses in source protection areas are in compliance with all applicable regulations and are properly operated and maintained on an ongoing basis
- how to reduce or eliminate current and future threats from the source protection areas

Let's look at some of the Strategies for Action municipalities can employ to minimize threats to their water supply sources from hazardous wastes and materials. *As a general rule, always check your state requirements and statutes.*

Strategies for Action

Consider establishing a comprehensive hazardous materials management program to prevent the contamination of present and future source water.

Have you reviewed your Source Water Assessment report to determine the extent to which potential threats from hazardous materials have been red-flagged? Have you set goals and priorities for addressing potential risks in source protection areas? Is there a local or watershed official who is responsible for inspecting hazardous materials facilities and educating owners? Do you have a household hazardous waste disposal program? Do you have local ordinances and BMPs that address hazardous materials users and hazardous waste generators? Does your town comprehensive plan locate high-risk land uses away from vulnerable areas? Is your municipality doing hazardous waste housekeeping at its own facilities?

Take a close look at existing hazardous waste threats in your source protection area and review existing ordinances, programs, and policies to see if you can do more to prevent water supply contamination.

Take advantage of readily available GIS map resources to inventory all land uses that might handle hazardous wastes/materials in your source protection area.

Does your Source Water Assessment report accurately depict the potential hazardous materials threats in your source water area? Does your municipality have up-to-date information on the location of hazardous waste generators on GIS? Verify and update this information on your Source Water Assessment map and any other planning map. Make it a point to keep this information updated, so that your map can be a useful planning and emergency response tool.

Review municipal regulatory/best management requirements to see if potential threats from hazardous materials and hazardous wastes are addressed adequately in your source protection area.

Zoning is the most powerful tool local governments have to ensure that new hazardous materials and waste sources are not located in source water protection areas, so you can focus your management activities on existing facilities. Take the following steps:

- Review and update zoning in source protection areas and consider prohibiting the siting of new facilities that use, store, or generate hazardous materials and wastes.
- Regulate storage of hazardous materials in the same way that hazardous waste is regulated.
- Identify areas where new lower-risk commercial/industrial facilities may be permitted by right or by special exception in less critical portions of the source water protection area.
- Establish a hazardous material and waste management ordinance that includes performance standards for design, siting, management, recordkeeping, and monitoring for both proposed and existing uses.
- Encourage businesses and municipal operations to train employees so they understand the regulations and why they are important.

The following are examples of BMPs for chemical use that communities can use as guidance when putting together their own set of land use regulations:

- Recycle, reuse, and reduce hazardous materials, using non-hazardous chemicals whenever possible.
- Identify, store according to hazard, and properly dispose of waste materials that are abandoned on the property or awaiting pickup.
- Store drums of materials and wastes outside of the building on an impervious surface and have secondary containment (e.g., berms), if drums are stored outside. Roofed coverings are advisable. Empty and clean drums.
- Store road salt in a shed so that stormwater cannot wash it into a water body or contaminate groundwater.
- Label drums, tanks, and other containers with the name of the material they hold (e.g., waste oil), the type of hazard they present (e.g., flammable), and the date when contents were first added.
- Be sure lids are tight-fitting and sealed, and bungs are closed.
- Ensure that there are no leaks or spillage in chemical or waste storage areas, including around solvent sinks, pumps, pipes, hoses, and valves.
- Connect floor drains to the sewer (with approval from sewer authority) or connect them to an approved tight tank that is pumped regularly by a licensed hauler.
- Ensure that there are no cracks in the floor that would allow spills to penetrate.

NEW IDEA



Promote School Chemical Cleanouts

Stocks of outdated, unidentified, excessive, or unnecessarily hazardous chemicals are present in many schools. These chemicals can pose safety and health risks to students and staff, and a number of widely reported incidents involving such chemicals have resulted in school closures and costly cleanups. In some cases, bomb squads have been called in to remove shock-sensitive chemicals from schools.

Identifying and removing these regulated wastes from schools is a key step in preventing accidents and protecting the environment. Once a school has removed its unnecessary chemical hazards and good purchasing and management practices are in place, periodic cleanouts can be a final touch in ensuring a chemically safe school environment. It is important that chemical inventories be conducted prior to cleaning out chemicals from schools. Chemical inventories and cleanouts should only be undertaken by those with the technical qualifications to identify potentially dangerous situations and properly handle the chemicals.

New Hampshire's Pollution Prevention in Schools Project

The New Hampshire Pollution Prevention Program (NHPPP) is helping schools address their hazardous materials management responsibilities through outreach, site visits, and assistance with school cleanouts. NHPPP staff are available to provide on-site assistance in schools, focusing on the science, art, industrial arts, technology education, and custodial departments.

To learn more about DES environmental education programs and publications for teachers, visit www.des.state.nh.us/teachers/. This Web site provides guidance to school administrators and staff on common questions NHPPP receives regarding managing hazardous and universal wastes, disposal of unwanted chemicals, elemental mercury and mercury compounds, and energy and water conservation strategies.

- Ensure that a spill prevention (SPCC) plan has been prepared and is on file at facilities that store over 660 gallons of petroleum in any one above ground tank, or over 1,320 gallons aggregate, where a spill could reach water. (See page 20 for more SPCC information.)
- Permit waste oil furnaces by appropriate state agency or local fire departments (as required).
- Be sure the facility has written contingency plans for fire prevention, emergencies, and spill control, posted near phones and potential sources of spills.
- Be sure spill-control materials are available on-site.
- Be sure Materials Safety Data Sheets (MSDSs) are available for all chemicals.
- Store drained waste fluids such as waste oil, antifreeze, and solvents in separate drums or tanks.
- Ensure that waste oil is removed by a licensed transporter or burned on-site in an approved heater.
- Puncture oil filters and hot drain them over a waste oil drum for the required amount of time, and recycle or dispose of them properly.
- Use a licensed transporter to pick up and recycle solvents or dispose of solvents as hazardous waste.
- Handle parts cleaner filters as a hazardous waste.
- Store batteries in a single layer on pallets of shelving with a non-corrosive base, and properly recycle them.



Establish a program to reduce, eliminate, recycle, or reuse hazardous materials and wastes in all municipally owned facilities.

Identify town-owned facilities that use or store hazardous materials. Evaluate management practices at these locations as well as in routine operations, such as road maintenance and landscape care. Install model practices at town facilities. Coordinate these activities with Phase 2 stormwater planning. (See Chapter 8.) U.S. EPA provides information for municipalities and public works departments on how to comply with environmental requirements and how to prevent pollution at <http://www.epa.gov/nel/municipalities/index.html>.



Educate homeowners, businesses, and local officials about the importance of proper hazardous materials and waste management, and provide them with guidance on proper operation and maintenance.

Prepare and distribute audience-specific outreach materials on hazardous materials/waste management requirements and practices. Educate the regulated community through inspections and presentations to civic group and business association meetings. Your state may have outreach materials or other guidance to support such activities. Hold hazardous waste collection days for businesses and residents.



Explore financing options for the various aspects of your hazardous materials management program.

For information on financing your community's hazardous waste materials program, see Chapters 9 and 10.