



## Fact Sheet #5

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# Reducing the Risk of Groundwater Contamination by Improving Hazardous Waste Management

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Two key steps to minimizing the pollution potential on your property from farm, household and shed wastes are to minimize the amount of wastes and recycle when possible.

Some hazardous materials, such as lubricating oils or solvents for cleaning metal parts, are an unavoidable part of farm life. Take some time, though, to examine your activities that involve use of hazardous materials, to make sure that you really need all the products you are using. Keep in mind that hazardous waste generated from farm business activities must be managed in accordance with state and federal rules.

When you are certain that you are purchasing and using only essential products, carefully consider how to use the products safely, recycle or reuse them when possible, and dispose of remaining products in a way that will not pose a risk to your drinking water. A few simple management principles apply in every situation:

- Use hazardous products away from your well (150 feet or more), even when all your spills and drips will be contained.
- Return excess product, spills or drips to the original activity. For example, reuse filtered waste antifreeze as water in other radiators; contain oil or grease drips and use for future lubrication needs; dispose of pesticide container rinse water by spreading on fields at the proper application rate for the pesticide.
- Contain any unusable wastes, spills and drips for appropriate disposal.

## 1. Farm and household trash

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This category of potentially hazardous substances includes:

- **Ash and sludge** from burned farm home and garage trash and waste oil
- **Plastic wraps and containers**
- **Personal care products**, such as spot removers; dry cleaning fluids; moth balls; and shoe and leather polishes
- **Hobby products**, such as pesticides used in pet care; artist paints and solvents; undiluted photography and swimming pool chemicals; strong acids
- **Home cleaning and repair products**, such as air fresheners and pest strips; furniture and wood polishes and waxes; lead-based paint; other paints; stains and finishes; paint and finish preparation products; wood-preserving products.
- **Farm business hazardous waste**, including unusable or waste cleaners, solvents, pesticides and other hazardous chemicals that are generated from cleaning, maintaining or general use of farm equipment or farming procedures.

*For glossary,  
see Worksheet #5.*

Due to the rural location of farms, many farmers have traditionally disposed of their wastes on the farm site. Common disposal methods have included open air, barrel or domestic incineration of garbage and trash; or simply piling or burying trash in a ditch on the “back 40.”

Health concerns, toxicity and the increased volume of waste guarantees that a new approach to disposal practices is necessary to ensure that safe drinking water supplies are available for farm families and their neighbors.

Updated local, state and federal laws also reflect the increased concern with many disposal practices. For example, new rules require that environmentally protective conditions be met before some disposal practices are permitted. Other previously common disposal practices are now illegal because of their potential risks to human health and the environment.

This new approach suggests several changes in traditional practices:

The typical farm burning site should be eliminated for all but a limited number of needs. Disposal of trash on the farm should be eliminated, with the exception of organic waste that can be composted (such as household garbage, leaves and straw).

Uncontaminated trash should be taken to a recycling facility, a licensed landfill or a municipal incinerator whenever possible.

Farm and household hazardous waste should be separated from general trash and saved for a hazardous waste collection program where available. If not available, approved alternative management recommendations should be followed. (See Contacts and References.)

Household hazardous waste is excluded from hazardous waste management regulations and is often included with regular trash disposal. But neither household hazardous waste nor hazardous waste from the farm business can be safely disposed of in a “pollution-free manner” on the farm site. Improper disposal of hazardous wastes from the farm business on the farm site is a violation of state law.

### **Household waste vs. farm business waste**

~~New Mexico divides hazardous waste into two management categories: wastes produced from products used in the home, and wastes produced as part of the farm business.~~

Household quantities of hazardous wastes are exempted from regulation under state and federal law. Household hazardous wastes may be safely disposed of at household hazardous waste collection events sponsored by some communities.

For information about locations and dates of collection events, call your county Extension office, local recycling coordinator, or New Mexico Environment Department (NMED) office.

The disposal of hazardous waste from the farm business may require the services of a permitted hazardous waste disposal contractor. For more information about hazardous waste contractors, contact the NMED Hazardous and Radioactive Materials Bureau in Santa Fe, (505)827-4313.

## **Burning**

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Researchers estimate that ground-level concentrations of 2,3,7,8-TCDD dioxin due to burning household trash in a burn barrel are 7000 times the amount formed during trash burning in a municipal incinerator. Ash and sludge resulting from on-farm burning also contain significant amounts of such toxic substances as lead, cadmium, chromium, dioxin and furan compounds.

Though state law in New Mexico does not prohibit open burning of household garbage on the farm, local ordinances may vary. Burning is not a best management practice.

Burn waste oil, if uncontaminated with other solvents, in a furnace designed for burning oil as a fuel. Contain and dispose of any resulting ash or sludge in a licensed landfill. Waste contaminated with solvents may be a hazardous waste and must be properly managed if it is.

There are no specific design standards available to adequately protect the environment from air pollution or groundwater contamination resulting from burning and ash disposal of wet trash, plastic product containers, waste oil and other hazardous products used on the farm.

The typical operation at open burning sites, burn barrels and domestic incinerators is not adequate for burning at the temperatures required to eliminate the production of toxic substances such as dioxin compounds, chlorine products, solvent vapors and a residue of heavy metals.

While burning may destroy some toxic substances, others will become concentrated in the smoke, ash and sludge resulting from burning wastes. Repeated burning on the same location under similar weather conditions may cause the toxic substances in smoke (especially heavy metals such as lead, mercury and arsenic) to accumulate in a concentrated area around the burn barrel. These substances, as well as the toxic substances in ash and sludge disposed of through land spreading or burial, could also result in groundwater contamination.

Open burning of dry combustibles in small amounts is appropriate to the farm situation where it is permitted by local ordinance. Dry combustibles include clean, untreated, unpainted wood, paper and cardboard. Burn dry combustibles outdoors or in a well-ventilated area to minimize adverse health effects from smoke.

**Empty pesticide bags should not be burned.** If they must be burned, burn them well away from people, pets and farm stock, because air will carry pesticide particles from the fire. Burn in small quantities and only on fields where the pesticide was applied.

## **2. Building and wood maintenance cleaners and chemicals**

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This category of potentially hazardous substances includes:

- Solvent-based building and wood cleaners**, including wood polishes and products for wood floor and panel cleaning. (Detergent-based cleaners do not pose a threat to groundwater.)
- Equipment maintenance products**, such as stripping and finishing products, stains and paints, products for brush or spray gun cleaning, and adhesives such as glues and caulk. Also includes solvents as used in degreasers and paint thinners; stains and varnishes; and wood-preserved compounds.

Disposing of these products by dumping them on the ground or in a septic system could allow hazardous constituents to leach to groundwater. When used for the farm business, on-farm disposal of any of these products is illegal. Avoid on-farm disposal of these liquids whenever possible.

(For information about proper septic system management, see Worksheet and Fact Sheet #6, *Household Wastewater Treatment*.)

The best disposal method for these products is to use up leftovers or share unused products with others. Evaporate unused leftover household products, such as paints or adhesives, where conditions permit. Evaporation should occur in open air, away from flames. Dispose of any remaining hazardous liquid or sludge with a hazardous waste contractor.

Some products, such as paint thinners, can be filtered and reused. Other products, such as wood preservatives and lead-based paints, need to be labeled and saved for disposal by a hazardous waste contractor.

Because of the volume of these products used on the farm, even spills and drips can add up to a problem for groundwater. Avoid maintenance activities within 150 feet of your well. Generally, conduct maintenance activities in a location where spills and drips can be contained. Evaporate collected drips and dispose of the resulting sludge or hardened material in a licensed landfill.

### **3. Leftover or unusable pesticides and container disposal**

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Handle all categories of pesticides as directed on the label to prevent health and environmental problems. Pay particular attention to pesticides classified as “restricted use.” Pesticide labels and regulations concerning their use often change over time. Remember that pesticides might not have current warning labels, and some may even have been banned since the time of purchase.

The only acceptable management practices for pesticides are to use the pesticide according to current label directions or arrange for disposal with a hazardous waste contractor. When the EPA bans a pesticide it provides a “buy-back” and disposal program for a period of time. Pesticides purchased in mini-bulk tanks or returnable containers allow the return of excess chemical to the cooperative or retail store.

For leftover pesticides that cannot be disposed of in any of these ways, store them safely until they can be disposed of through a community hazardous waste collection program or a hazardous waste contractor.

Pesticide waste includes empty pesticide containers as well as leftover pesticides. Pesticides come in mini-bulk tanks, five-gallon plastic containers, or paper containers. Mini-bulk tanks are returned to the place of purchase when application has been completed. Some five-gallon plastic containers can be returned to the place of purchase for disposal. Paper containers should be bundled and taken to a licensed solid waste facility. Check with your local cooperative or retail store to learn whether container disposal opportunities have been arranged.

If you cannot return plastic containers to the place of purchase, triple-rinse the containers, return the rinse water to the spray tank and apply following labeled instructions. Take the rinsed containers to a licensed landfill. However, because of liability concerns, some landfills will not accept even

triple-rinsed and punctured containers. Triple-rinsed pesticide containers may still contain enough pesticide residue that they should not be used for any other purpose.

(For more detailed information about the management and storage of pesticides on the farm, see Worksheet and Fact Sheet #2, *Pesticide Storage and Handling*.)

#### 4. Vehicle maintenance chemicals

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This category of potentially hazardous substances includes:

- Vehicle maintenance products, such as antifreeze, oil and grease
- Solvents for oil and grease removal and disposal
- Engine, parts and equipment cleaners
- Lubricants
- Rust removers
- Paints and paint preparation products
- Brush or spray gun cleaners
- Lead acid battery replacement

Solvents used for cleaning metal parts, oils and fuels include toxic ingredients. Fortunately, good recycling opportunities exist for both solvents and waste oil. Consider contracting with a solvent recycler to rent a parts washer. Old solvents are picked up by the recycler and you are provided with clean solvent. To recycle waste oil, take it to an oil recycling tank. There is usually at least one in every county, and often more.

Solid and hazardous waste laws prohibit land spreading of waste oil for dust or weed suppression. Waste oil can be burned in a waste oil burner if the oil has not been contaminated with solvents or other materials. The waste oil furnace should be located according to building code requirements.

Use up old fuels (leftover quantity stored for several months) whenever possible. Dilute one part old fuel with five parts new fuel to protect your engine.

Antifreeze may be safely diluted and sewer in a municipal sewer system. Contact a nearby city to find the closest acceptable location. Do not dump antifreeze into your own drain if you have a septic tank. It may kill the organisms that the system depends on to break down wastes in the tank.

If you find yourself doing a lot of painting of vehicles or other farm equipment, use a paint booth. Some booths are structured to collect excess paint and spray gun cleaners for later disposal with a solvent recycler. Note that filters used with a paint booth must be considered a hazardous waste when discarded.

The design and location of the equipment maintenance area is important. Some farmers use a grease pit. Others allow drips and spills to collect on the shed floor. In both cases, the area is generally “cleaned” through periodic flushing.

If you prefer to keep your shed floor clean through flushing, you will need a system to contain waste liquids so that they will not be flushed onto soil. Flushing to a **paved** outdoor area is an acceptable method of disposal. Using sawdust to soak up drips and spills is another common practice. Evaporate volatile chemicals in a protected outdoor area with good ventilation and take the sawdust to a licensed landfill. Burning any of these substances can produce air emission deposits that have the potential to contaminate groundwater.

Evaporation of liquid wastes prior to flushing may take care of the problem of contaminated runoff, but it is not recommended due to air quality concerns and the potential for liquids to seep through cracks in floors. Flushing is one of many past waste management methods that should be re-evaluated to determine whether it is worth the risks of contamination to the environment.

## 5. Storage of chemicals and hazardous waste

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Some farmstead activities may result in leftover or used chemicals, such as waste oil and solvents, that need to be stored until disposal. Locate the storage area for these chemicals and their wastes at least 150 feet from your well. Dike storage areas to prevent well contamination from spills if the volume of the stored products and wastes exceeds 10 gallons.

Store chemicals in clearly labeled containers designed to contain that hazard category (flammables, poisons or corrosives). Provide a well-ventilated, flame-free area with sturdy shelving for storage of labeled containers in the building where you commonly use them. When choosing the storage location, keep indoor air quality, safety and flammability considerations in mind. Be sure that the area is adequately vented to prevent buildup of fumes. As a rule of thumb, if you can smell your products, ventilation is inadequate to protect your health. Also, be sure that the storage area provides a means to segregate flammables, poisons and corrosive wastes, to minimize accidental release due to chemical interactions.

Hazardous wastes generated in the course of maintaining farm equipment, such as solvents and parts washer solution, must be collected and placed in closed containers and labeled with the words “hazardous waste,” the name of the waste, and the date the waste was put into the container. Solvents that are hazardous for the characteristic of ignitability only (such as mineral spirits) may be mixed with used oil, as long as the solvent content is less than 10 percent of the total volume of the solvent-oil mixture.

Hazardous wastes generated from household vehicle maintenance should be stored safely until they can be taken to a household hazardous waste collection site. Evaporation of household hazardous wastes is not recommended due to the potential for spills, contact by children, and fire. Use evaporation only when no household hazardous waste collection program is available. If you’re not sure whether a particular waste is hazardous, contact the NMED Hazardous and Radioactive Waste Bureau.

Outdoor storage of wastes and products, especially liquids, should be on bermed surfaces constructed of materials that will contain any spills. For example, batteries may be stored in a plastic-lined area, but some solvents could dissolve a plastic liner. Spilled solvents may also be able to penetrate concrete or asphalt if they are not cleaned up quickly.

Store flammable chemicals and batteries in an area that will be shaded from direct sunlight. Rags used to clean up solvent spills may also be a fire hazard. Store them with the same care as hazardous materials.

Inspect all storage areas regularly for detection of spills or leaks, proper labeling, and to see that containers are in good condition, closed and not bulging. For more information on proper storage methods, contact the NMED Hazardous and Radioactive Waste Bureau.

## 6. Laws regulating disposal of wastes from farms

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Disposal of hazardous wastes from farms is regulated under federal statutes in RCRA (Resource Conservation and Recovery Act) and in New Mexico under the hazardous waste management regulations (HWMR-6) and the solid waste management regulations (SWMR-3). Waste from products used in the household do not fall under SWMR-3.

RCRA Subtitle D provides restrictions for land burial of trash not falling into hazardous waste categories. Open burning and on-farm incineration of trash fall under the jurisdiction of the NMED Solid Waste Management Bureau.

Under federal and state hazardous waste regulations, farms may be considered “conditionally exempt.” An operation is “conditionally exempt” if it accumulates less than 2.2 pounds of **acutely hazardous waste** or less than 220 pounds of **hazardous waste** per month. “Conditionally exempt” operations are not required to obtain an EPA identification number or a manifest form for disposal, but they still must deliver their wastes to a licensed hazardous waste facility.

“Acutely hazardous” and “hazardous” wastes are listed in federal and state regulations. Aldicarb and heptachlor, for example, are acutely hazardous pesticides.

A word of caution: Because some pesticides commonly used by farmers are listed as acutely hazardous waste in federal statutes, farmers with leftover pesticides may not be “conditionally exempt.” Farmers who accumulate more than 2.2 pounds of acutely hazardous waste need to acquire an EPA identification number and use the manifest system to dispose of those wastes.

New Mexico also designates these as conditionally exempt generators to correspond to federal regulations.

Disposal of veterinary medical wastes might present a problem on farms and ranches. Ask your veterinarian for advice on specific wastes (such as antibiotic containers). NMED district offices can provide information about regulations that might affect medical waste disposal.

New Mexico Water Quality Act (NMSA 1978), Section 74-6-4, Paragraph C and subsequent Water Quality Standards for Interstate and Intrastate Streams in New Mexico, Section 1.100, Paragraphs B and D, require that spills of any amount to streams or lakes be reported. NMED recommends the policy of reporting spills, which occur on soil or on mixing/loading pads, greater than one quart of concentrate material or greater than five gallons of dilute solutions. It is also advised to report spills of smaller quantities if there is a threat to water resources because of the particular compound or spill location.

To report a spill, call the 24-hour Emergency Hotline of NMED, Hazardous and Radioactive Materials Bureau at (505) 827-9329. Collect calls are accepted.