

Assessing the Risk of Groundwater Contamination from Hazardous Waste Management

Why should I be concerned?

Consider the variety of products commonly used in households and on farms: paints, solvents, oils, cleaners, wood preservatives, batteries, adhesives and pesticides. Some of the most common disposal practices of these products not only threaten groundwater but also may be illegal.


Small, unusable amounts often wind up spilled, buried, dumped or flushed onto farm property. Minimizing the amounts of these substances used on the farm, along with practicing proper disposal practices, can reduce both health risks and the potential for groundwater contamination. Farmers and their families are generally familiar with the hazards of pesticides commonly used in the farm operation, but they may be less aware of the hazards of other chemicals that make many tasks around the home and farm easier or more efficient.

Improper use of hazardous products may cause toxic health effects. Improper storage may allow chemicals to leak, causing potentially dangerous chemical reactions, toxic health effects or groundwater contamination. Improper disposal allows these dangerous chemicals to enter directly into drinking water through surface water or groundwater.

Groundwater is least likely to be contaminated by your hazardous wastes if you follow appropriate management procedures and dispose of wastes at appropriately licensed facilities.

The goal of Farm-A-Syst is to help you protect the groundwater that supplies the drinking water for you, your neighbors, and the public. It is not used for, nor is it related to, any type of enforcement action from any agency.

How will this worksheet help me protect my drinking water?

- ◆ It will take you step by step through your drinking water well condition and management practices.
- ◆ It will rank your activities according to how they might affect the groundwater that provides your drinking water supplies.
- ◆ It will help you determine which of your practices are reasonably safe and effective, and which practices might require modification to better protect your drinking water.
- ◆ **When you see this symbol  behind any text in the worksheet you will know that it is an illegal activity. Remember this is for your use and will not in anyway lead to enforcement.**

- ◆ **Be sure to read the footnotes to see what the *, italicized or bold font means.**

How do you fill out the worksheets?

Focus on the well that provides drinking water for your home or farm. If you have more than one drinking water well on your farmstead, fill out a worksheet for each one.

- ◆ Use a pencil. You may want to make changes.
- ◆ For each category listed on the left that is appropriate to your farmstead, read across to the right and circle the statement that best describes conditions on your farmstead. (Skip and leave blank any categories that don't apply to your farmstead.)
- ◆ Then look above the description you circled to find your "Rank number" (4, 3, 2, or 1) and enter that number in the blank under "Your Rank."
- ◆ Directions on overall scoring are explained in the next section "What do you do with the rankings?"
- ◆ Allow between 20-45 minutes to complete the worksheet to figure out your risk ranking for management practices and complete the Farmstead Improvement Action Plan.

What do you do with the rankings?

Step 1: Look over your rankings for individual activities:

- ◆ Low-risk practices (4's): ideal; should be your goal despite cost and effort
- ◆ Low-to-moderate-risk practices (3's): provide reasonable groundwater protection but may still be illegal
- ◆ Moderate-to-high-risk practices (2's): inadequate protection in many circumstances
- ◆ High-risk practices (1's): inadequate; pose a high risk of polluting groundwater

Any individual rankings of "1" require immediate attention. Some concerns you can take care of right away; others could be major-or costly-projects, requiring planning and prioritizing before you take action.

Find any activities that you identified as 1's & 2's and list them under "High Risk and Medium-High Risk Practices" in the Farmstead Improvement Action Plan section following the worksheet.

Step 2: Read Fact Sheet # 5, improving Hazardous Waste Management and consider how you might modify your farmstead practices to better protect the public and your drinking water. This may help with filling out the Farmstead Improvement action Plan.

Step 3: Fill out the Farmstead Improvement Action Plan (FIAP). Contact your local Soil and Water Conservation District for technical assistance and help with the FIAP if needed.

Step 4: Implement the FIAP- Contact NRCS for possible designs and/or funding for practices. Funding availability depends on the practice installed and the current USDA farm programs.

Glossary

Hazardous Waste Management

These terms may help you make more accurate assessments when completing Worksheet #5. They may also help clarify some of the terms used in Fact Sheet #5.

Burn barrel: Any on-farm system of open burning, such as burning in a barrel. (See incinerator.)

Farm business: A farm that generates at least \$1000 in net annual income from farming.

Hazardous waste transporter: A hazardous waste collection service offered by businesses with vehicles licensed to transport hazardous waste to licensed hazardous waste facilities.

Household hazardous waste collection day: A one-day event where a town (or collection of towns) allow residents to bring items such as solvents, paint stripper, old fuel, fluorescent light bulbs and computer equipment to a central point for collection.

Household hazardous waste collection program: A program in which a community collects household hazardous waste and the waste is brought to a dedicated building or container. This waste is later disposed of or sent for recycling.

Household quantities: Less than five gallons of a household product.

Incinerator (municipal): A community incinerator specifically engineered to burn municipal quantities of home waste.

Incinerator (on-farm): Any home-built incinerator or any incinerator purchased for home use.

Licensed landfill: A landfill specifically designed to protect groundwater through the use of a high quality clay or clay/impermeable film liner, accompanied by a system of buried pipes to collect any liquids generated. Meets current state standards.

On-farm disposal: Any method of burning, dumping or land spreading of wastes on the farm. Also includes use of the septic system for disposal.

Recycling: Reusing waste materials.

Transfer Station: What has replaced the dump or landfill in most towns. A licensed facility that collects waste and then transfers it to another point.

Worksheet # 5

Hazardous Waste Management: Assessing Drinking Water Contamination Risk

Low Risk
(Rank 4)

Low-Mod Risk
(Rank 3)

Mod-High Risk
(Rank 2)

High Risk
(Rank 1)

Your
Rank

Ash Disposal

5.1 From farm burn-barrel or incinerator*

Trash not burned.

Ash collected and disposed of at licensed landfill or municipal incinerator.

Disposal of ash from dry combustibles only on farm or spread on fields.

Disposal of ash from mixed trash on farm less than 100 feet from well.

Building/Wood Maintenance Products

5.2 Adhesives, such as caulk and solvent-based glues

Used up or shared with someone else.** Hazardous waste transporter collection service used for leftover adhesives.

Liquid evaporated in open air. Sludge or leftover product taken to licensed hazardous waste landfill or haz. waste incinerator by a licensed transporter.

Disposal on farm over 100 feet from well.

Disposal on farm less than 100 feet from the well.

5.3 Brush or spray gun cleaners (solvent based)

Cleaned in contained, ventilated area. Solvent recycler collection service used for leftover cleaners.

*Cleaned in contained, ventilated area. Filtered cleaning solvents reused or evaporated in open air**. Sludge taken to licensed hazardous waste landfill or hazardous waste incinerator by a licensed transporter.*

Cleaned in uncontained, ventilated area and used cleaning solvents disposed of on farm over 100 feet from well.

Disposal of leftover cleaning solvents on farm less than 100 feet from the well.

Only Italicized type in the sections with  are not legal under Maine Law or may not be legal according to the pesticide label.

** Some restrictions apply.

	Low Risk (Rank 4)	Low-Mod Risk (Rank 3)	Mod-High Risk (Rank 2)	High Risk (Rank 1)	Your Rank
5.4 Lead-based paint	Hazardous waste contractor collection service used.	<i>Liquid evaporated in open air.</i> Paint or sludge taken to licensed hazardous waste landfill or licensed transport incinerator.	<i>Disposal of sludge or paint on farm over 100 feet from the well.</i>	<i>Disposal on farm less than 100 feet from the well.</i>	_____
5.5 Paint or stain (no lead)	Used up or shared with someone else. ** Hazardous waste transporter used for leftover paint or stain.	<i>Liquid evaporated in open air.</i> Paint or sludge taken to licensed landfill or municipal incinerator.***	<i>Disposal of oil-based paints or stains or latex paint on farm over 100 feet from well.</i>	<i>Disposal of oil-based paints or stains on farm less than 100 feet from well.</i>	_____
5.6 Stripper or thinner for paint/finish	Spills contained. Unused products used up. Hazardous waste transporter collection service used for leftover stripper or finish.	<i>Liquid evaporated in open air.</i> Stripper or stripper sludge taken to licensed landfill or municipal incinerator.***	<i>Disposal of sludge, stripper or thinner on farm over 100 feet from well.</i>	<i>Disposal on farm less than 100 feet from well.</i>	_____
5.7 Surface cleaners (solvent based)	Used up or shared with someone else. Hazardous waste transporter collection service used for leftover cleaners.	<i>Liquid cleaners evaporated in open air.</i> Cleaners or sludge taken to licensed landfill or municipal incinerator.***	<i>Disposal of sludge or cleaners on farm over 100 feet from well.</i>	<i>Disposal on farm less than 100 feet from well.</i>	_____

Italicized type: These actions are *not legal* under Maine Law or may not be legal according to the pesticide label.

** Some restrictions apply. ***Illegal if hazardous.

	Low Risk (Rank 4)	Low-Mod Risk (Rank 3)	Mod-High Risk (Rank 2)	High Risk (Rank 1)	Your Rank
Container Disposal					
5.8 Paper/cardboard pesticide container	Used up or shared with someone else. ** Hazardous waste transporter used for leftover packaging.	Empty container taken to licensed landfill, municipal incinerator or transfer station.	<i>Disposal of empty container on farm.</i>	<i>Disposal of partially filled container on farm.</i>	_____
5.9 Plastic pesticide container	Triple-rinsed general and restricted use containers returned to dealers, or taken to licensed landfill or municipal incinerator or container recycling drop-off. Rinsate applied to appropriate crop.	<i>Unrinsed container disposed of at licensed landfill, municipal incinerator or transfer station.</i>	<i>Disposal of empty but unrinsed container on farm or in field. Disposal of triple-rinsed general-use containers on farm.</i>	<i>Disposal of partially filled containers on farm or in field.</i>	_____
5.10 Plastic container for oil or other vehicle product	Product used up and container recycled.	<i>Any remaining ingredients evaporated in safe conditions.</i> Empty container taken to licensed landfill or municipal incinerator.	<i>Disposal of empty container at transfer station or on farm.</i>	<i>Disposal of partially filled container on farm.</i>	_____
5.11 Hazardous household product containers	Taken to recycling facility or reused for similar product.	Empty container taken to licensed landfill, municipal incinerator or transfer station.	<i>Disposal of empty container on farm.</i>	<i>Disposal of partially filled container on farm.</i>	_____

Italicized type: These actions are *not legal* under Maine Law or may not be legal according to the pesticide label.

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Low Risk
(Rank 4)

Low-Mod Risk
(Rank 3)

Mod-High Risk
(Rank 2)

High Risk
(Rank 1)

Your
Rank

Pesticides

5.12 Unwanted or banned pesticides

Participation in EPA banned pesticide buy-back program if available. Unused pesticides returned to place of purchase. Hazardous waste transporter collection service used.

Pesticides sold for restricted or general purposes used up. *Taken to licensed landfill or municipal incinerator.*

Disposal of unused pesticides at transfer station.

Disposal of unused pesticides on farm.

Vehicle/Metal Equipment Maintenance Products

5.13 Used antifreeze

Saved and taken to antifreeze recycling facility, or filtered and reused as water in other radiators.

Collected and disposed of at municipal sewage treatment drain with permission of municipality. Taken to licensed plant, municipal incinerator or transfer station.

Disposal on farm away from well *(including in septic system)*.

Dumped or disposal less than 100 from well.

5.14 Waste oil and grease

Taken to used oil collection tank for recycling.

Reused for lubrication. Burned for heat in an approved waste oil burner. *Disposed of in a licensed landfill or municipal incinerator.*

Disposal at transfer station.

Disposal on farm.

Only Italicized type in the sections with ! are not legal under Maine Law or may not be legal according to the pesticide label.

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	Low Risk (Rank 4)	Low-Mod Risk (Rank 3)	Mod-High Risk (Rank 2)	High Risk (Rank 1)	Your Rank
5.15 Waste oil sludge (left over after burning)	Hazardous waste transporter services used.	<i>Collected and disposed of at licensed landfill or municipal incinerator.</i>	<i>Disposal at transfer station.</i>	<i>Disposal on farm.</i>	_____
5.16 Spent organic solvent/parts cleaner	Hazardous waste transporter used for leftover cleaners.	<i>Filtered in ventilated area and reused or evaporated in open air. Sludge taken to licensed landfill or municipal incinerator.</i>	<i>Disposal of solvents or sludge at transfer station.</i>	<i>Disposal of solvents or sludge on farm.</i>	_____
5.17 Rust-removal products	Used up or shared with someone else. ** Hazardous waste transporter services used.	<i>Taken to licensed landfill, municipal incinerator or transfer station.</i>	<i>Disposal of leftover product on farm.</i>	<i>Disposal of used product on farm.</i>	_____
5.18 Lead acid battery	Taken to battery recycler or battery store for recycling.	<i>Used batteries taken to licensed landfill or municipal incinerator. Stored away from well if the batteries remain intact and not leaking.</i>	<i>Used batteries taken to transfer station or stored near well if the batteries remain intact and not leaking.</i>	<i>Disposal on farm within 100 feet of well.</i>	_____

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** Some restrictions apply.

	Low Risk (Rank 4)	Low-Mod Risk (Rank 3)	Mod-High Risk (Rank 2)	High Risk (Rank 1)	Your Rank
5.19 Vehicle maintenance drips and spills	Drips and spills caught in pans or trays.	Contained on paved area with sawdust. Contaminated sawdust disposed of at a licensed landfill, municipal incinerator or transfer station.	Occasional flushing onto farm property near well, or <i>discharged into a floor drain in maintenance area, discharging to soil or septic system.</i>	Frequent flushing onto farm property near well, or <i>frequent flushing through a floor drain connected to soil or septic system.</i>	_____

Wood Preserving

5.20 Application drips and spills	Drips and spills contained. Applicator and drop cloths disposed of at licensed landfill or municipal incinerator.	Drips and spills contained. Applicator and drop cloths disposed of at transfer station.	Application without containment more than 100 feet from well. Applicator and drop cloths disposed of on farm.	Application without containment within 100 feet of well.	_____
5.21 Disposal of unused preservatives	Used up or shared with someone else. ** Hazardous waste transporter collection service used for leftover preservatives.	<i>Disposal at licensed landfill or municipal incinerator.</i>	<i>Disposal at transfer station.</i>	<i>Disposal on farm.</i>	_____

Italicized type: These actions are *not legal* under Maine Law or may not be legal according to the pesticide label.

*This is an illegal activity in Maine.

** Some restrictions apply.

Worksheet Section #	List High Risk and Med-High Risk practice(s)	Alternative Low Risk practice (Include potential sources of technical and financial assistance.)	Action Plan	
			Planned completion date	Indicate date when completed

I understand that this farmstead assessment (Farm-A-Syst) and corresponding Farmstead Improvement Action Plan were developed on the basis that I have disclosed, to the best of my knowledge, all information pertaining to my farmstead operations.

Farmstead address:

Street _____

City _____ ME, Zip code _____

Watershed name: _____

___ Aerial map with farmstead boundaries is attached

Producer's signature _____

Date ___/___/_____

Farm-A-Syst conducted by:

Name _____

Title _____ Date ___/___/_____

Acknowledgments

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Revision Editors of Farm-A-Syst Worksheet #5: Megan Wooster, AVSWCD; Susan Gammon, AVSWCD; Andrews Tolman, State of Maine CDC Drinking Water Program; Marianne DuBois, Maine Department of Environmental Protection; Louis Fontaine, Maine Department of Environmental Protection; Peter Moulton, Maine Department of Environmental Protection; Cherrie Plummer, Maine Department of Environmental Protection; Henry Jennings, Maine Board of Pesticides Control. 2007-2008.

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