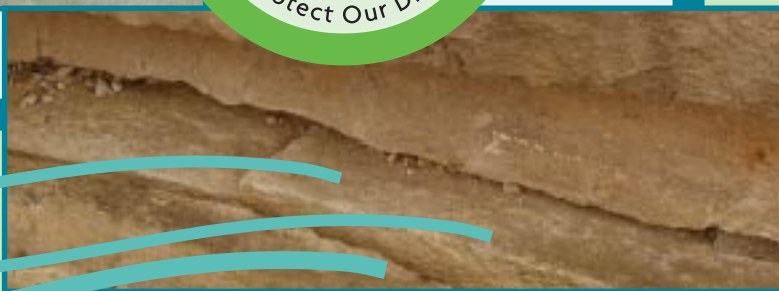
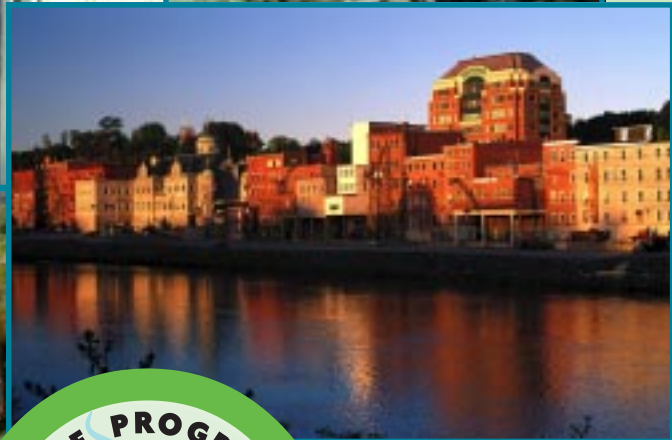


THE SAFE HOME PROGRAM



Prepared by the Maine Rural Water Association
in cooperation with the Maine Drinking Water Program
and EPA Region 1

Welcome!

Maine's water resources, including its lakes, rivers, streams, ponds and aquifers are among its most valuable resources. They provide safe drinking water for you and everyone else in the State.

Your household activities can greatly impact the water quality of these resources. The goal of this booklet is to assist homeowners in protecting drinking water resources both for themselves and others. Please feel free to contact us at the numbers listed in Fact Sheet 7 should you have any questions or want further information. Thank you for helping keep drinking water safe for the people of Maine.

- Maine Rural Water Association
- Maine Drinking Water Program
- Environmental Protection Agency, Region 1
- Maine Department of Environmental Protection
- University of Maine

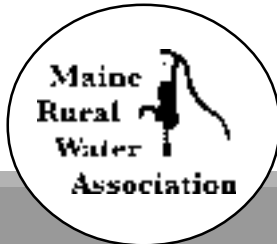


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CREDITS

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You Live In or Own Land in a Drinking Water Protection Area

FACT SHEET #1

The safety of the water we drink depends on how well we protect it from contamination. Many of our everyday activities can cause pollution.

What is a Drinking Water Protection Area?

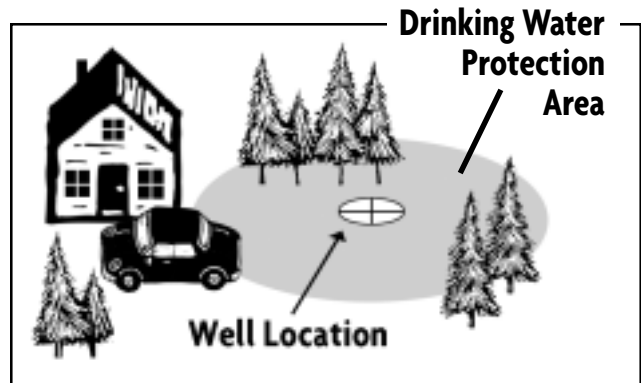
To protect a drinking water source, the first step is to figure out where the water is coming from. If it is surface water, such as a lake or river, the contributing area is called a watershed. If the source is ground water, the contributing area is called the recharge area. These areas are called drinking water protection or source protection areas. This is the land with the biggest potential impact to the water supply.

In an ideal world, the land in the drinking water protection area would be owned by the public water system, and there would be no threat of contamination from activities or existing development. Because this isn't often practical, it is up to the landowners and residents who live in the drinking water protection area to help keep the water supply safe.

Because you live or own land in a drinking water protection area, your actions impact the safety of the water supply, and the health of those who drink it. Potential sources of contamination include activities that involve chemicals, wastes, or nutrients—from cleaning the house and painting the walls to mowing the lawn and tending the garden. Any activity that contaminates ground or surface water is a violation of Maine law.



What if you're hooked up to your own private well? If your household practices are causing pollution, you will most likely contaminate your private well sooner as it is usually closer than the public supply. Your health and the value of your property may be compromised if your water source becomes contaminated.



Why should I be concerned? Is this drinking water protection area really so important?

Most public water suppliers have undergone exhaustive searches to find a good source of water, and in many areas, that source is the only really viable one in the community.

Cleaning up the water supply once it is contaminated is very expensive, if it can be done at all. Installing treatment facilities, locating new water sources, or cleaning up pollution are costly alternatives. It is a lot less expensive to prevent contamination in the first place! Keeping contaminants out of the water supply also protects your health.

THE BOTTOM LINE: **YOU can help protect our drinking water and public health, and ensure safe drinking water for future generations. We can't do it without you! The following fact sheets offer resources and ideas about how to reduce risks from your activities and keep drinking water safe. More information and assistance are also available from your public water supplier.**

The Basics: Surface and Ground Water

FACT
SHEET
#2

Your drinking water is provided by surface and ground water. Understanding these two sources will help you protect the safety of your own water supply and the other supplies in your community.

Surface Water

Surface water resources include lakes, ponds, rivers, and streams. These resources are enjoyed for their scenic beauty and are used for recreation by boaters, swimmers, and many others. A watershed consists of all of the land contributing water to a body of water. Water falling within this area flows into streams and ground water to the water body. Any substance within the watershed that can be transported by water eventually reaches the body of water and affects water quality.



In undeveloped watersheds, natural processes purify water. When we change watersheds to clear land and build houses, we impair natural purification processes. As the number of people living in each watershed increases, the number of pollutants in the watershed also increases.

Threats to Surface Water

The biggest threat to surface water quality in Maine today is phosphorus. Phosphorus is an element found in many substances including soil and fertilizers. It promotes plant and algae growth in lakes. Every lake needs a certain amount of phosphorus for plant growth and to maintain its fish and other living creatures. However, the increased stormwater runoff from developed land contains more phosphorus than runoff from undisturbed woodland. Phosphorus attached to soil particles in stormwater runoff is one of the biggest sources of lake pollution.

If phosphorus levels in the lake remain high over time, the lake will produce excessive amounts of algae. Algal blooms turn water green, reduce water transparency, deplete the oxygen supply, and smell terrible. Ultimately, these blooms alter wildlife habitat, impair scenic views, reduce recreational appeal, and lower property values.

Balancing development and the recreational needs of the community with the necessity of a safe water supply can be challenging. We all know it is not possible to maintain a watershed in a pristine, undisturbed state. Surface water quality can be protected by using the Best Management Practices (BMPs) described in this packet, particularly those in Fact Sheet 6. Surface waters may also be contaminated by the threats to ground water listed below.



Ground Water

Ground water is found in underground sand and gravel deposits and bedrock fractures. The saturated zone is the area where every space between rock and soil particles is



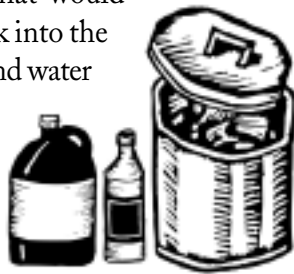
filled with water. The water table is the top of the saturated zone (see illustration).

An aquifer is a geologic formation capable of yielding a large amount of water to a well or spring. Public water supply wells generally tap either sand and gravel or bedrock aquifers. The source of ground water is precipitation. Rain and melting snow soak into the ground to recharge the aquifer.

Threats to Ground water

Threats to ground water can be divided into two categories: threats to water quantity and threats to water quality.

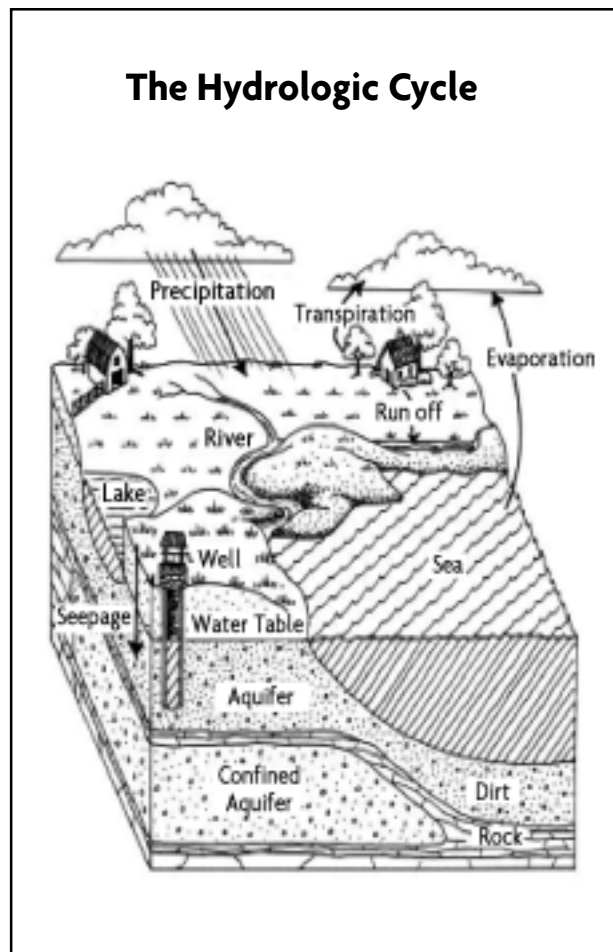
Threats to ground water *quantity* come from many sources. A drought decreases the amount of recharge to an aquifer. Development can also decrease aquifer recharge by covering soil that would otherwise allow water to sink into the aquifer. The quantity of ground water is also reduced when more water is pumped from an aquifer than is replaced through recharge. All of these conditions cause the water table to drop and may cause shallow wells to go dry. In coastal areas, excessive pumping may pull seawater into the well, making it unusable.



Threats to ground water *quality* also come from many sources. In some areas, naturally occurring elements such as iron, manganese, arsenic, chloride, and radon can contaminate ground water. However, the most severe problems are caused by human actions. Pollutants can come from sources such as landfills, road salt storage, animal wastes, septic systems, petroleum storage tanks, and the misuse and improper disposal of industrial, agricultural and household chemicals.



Contaminated ground water can have serious health and economic impacts on people and municipalities. Drinking contaminated ground water may cause major health problems including nervous system,



kidney and liver disorders, and cancer. The costs of cleaning contaminated ground water can be staggering. In many cases, the water will not be usable again as a drinking water supply. Property values in the affected area may fall sharply. Fact Sheets that follow give you suggestions on how to help protect the ground water resources in your community.

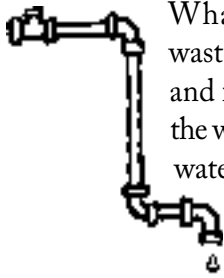
THE BOTTOM LINE: Please help protect your community's ground water and surface water!

Household Wastewater

FACT
SHEET
#3

An ounce of prevention can save you money. Regular maintenance to your septic system is cheaper than replacing a failing system.

Does Down the Drain Mean Gone Forever?



What you put into your household wastewater through toilets, sinks, tubs and floor drains may eventually get into the water supply. The quality of the wastewater and the ability of the system to handle it is dependent on how you use and maintain your system.

Your septic system takes in wastewater from your home and discharges it into ground water. The care you take maintaining your system and using it properly can reduce its effect on water quality. In many areas, people who use septic systems also rely on wells for their drinking water. A septic system that is improperly sited, improperly maintained, or overloaded can discharge bacteria, viruses, nitrates, and hazardous chemicals to surface and ground water—the same water you use for drinking water! Even if your drinking water supply, your neighbor's, or the public supply isn't affected, the pollutants may travel to nearby water resources such as lakes, streams, or coastal waters. This can harm these resources by increasing algae growth and threatening fish and other wildlife, or may result in closed shellfish harvesting areas.

Proper maintenance of your septic system will protect ground water, lakes, rivers, the ocean and your property value.

I Have a Septic System. What Can I Do To Protect Water Quality?

The average life of a septic system is 15 to 25 years. How long yours will last depends on many factors, including: size, amount of use, how often you pump it and what you put in the system. Here are some tips for better septic system performance.

Use less water. Less water in the septic tank allows better settling of solids. The result is that fewer solids make it to the disposal field, so the system is less likely to clog. See the next page for some water-saving ideas!

Don't put chemicals into your septic system. Household chemicals kill the good bacteria that help your septic system work. Chemicals can contaminate the sludge (the waste material that settles out in your septic tank), making sludge disposal more dangerous. Chemicals also travel through the disposal field and contaminate ground water. Chemical additives and treatments said to prolong the life of your system are not reliable and cannot substitute for regular pumping. These products may hurt your system by keeping solids in suspension, which then clog the disposal field.

Don't use the toilet as a wastebasket.

Non-biodegradable materials such as diapers, sanitary napkins, tampons, and cigarette butts will not break down in a septic tank. Flushing them down the toilet will cause the septic tank to fill faster and adds to litter problems when septage is spread. Avoid putting large amounts of fats and grease into your septic system because they will clog the system.



Don't use a garbage disposal. Finely ground solids can travel through the septic tank and clog the disposal field.

Have your septic tank pumped every three to five years. Timely pumping can extend the life of your system. Pumping a tank costs between \$50 and \$150. This is much cheaper than \$3,000 to \$10,000 for a new leachfield. Some towns, neighborhoods or lake associations get together to arrange for a pumper to service an area at a reduced rate.




A few ideas to decrease water use:

- ◆ Do only full dishwasher and laundry loads and take shorter showers.
- ◆ Use low-flow toilets, faucets and shower heads.
- ◆ Fix dripping faucets or leaky toilets right away.
- ◆ Run water only when needed (for example, to rinse when shaving or brushing teeth).
- ◆ Spread out activities that use a lot of water over the day or week. For example, don't run the dishwasher, do laundry and take showers all in a short period of time. Give the system a chance to work between large doses of water. This allows solids to settle in the septic tank and time for the bacteria in the tank and the soil to do their work.

Keep surface water away. Septic systems shouldn't handle unnecessary water. Divert roof drains, house footing drains and runoff from driveways and hill-sides away from the septic system area.

Check for signs that your septic system is not working.

Wet areas or areas of lush green growth  in your lawn, sewage odors, slow draining of pipes or backup of wastewater into your home, and ponding or outbreak of wastewater onto the ground surface all are signs that your system is malfunctioning. Fix problems promptly. Tell your water supplier if there is a problem.

Keep records of your system, including a pumping schedule, name of installer, age of system and a sketch of the location on your lot. This will help you maintain the system and boost the confidence of future

buyers that the system is well cared for. An example record sheet can be found on the following page.

Connect to public sewer, or have a replacement leachfield area ready. Where sewer is available, please consider connecting your home. Connecting to a public sewer system gets wastes out of the drinking water protection area, and is one of the best things you can do to protect the water supply. If you can't connect to public sewer, plan ahead. The average life of a septic system is 15 to 25 years. Designate a suitable area for a replacement leachfield on your property.

If you are concerned about a septic system, first contact your local plumbing inspector or code enforcement officer. Additional help is available from the state agencies listed in Fact Sheet 7.

I'm on a Sewer System. What Can I Do to Protect Water Quality?

Don't dump chemicals into household drains or storm drains that are connected to treatment plants, or in gutters or on roads where chemicals can wash into storm sewer systems. Chemicals can contaminate treatment plant sludge, cause the plant to exceed its discharge limits for contaminants, and harm fish and wildlife.

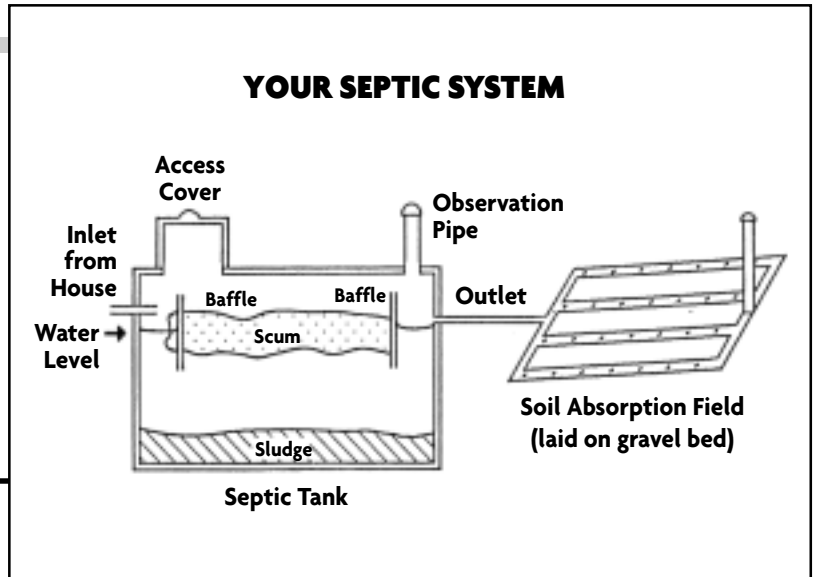
Use less water. The less water a treatment plant has to process, the less treatment capacity is needed. New, larger plants are costly. The longer an existing plant lasts, the lower the burden on rate payers and taxpayers.

Keep an eye on your yard, plumbing, and pipes. Leaking sewer lines in the drinking water protection area can pollute the water supply. If you suspect a leak, check it out and fix it promptly. In sensitive areas, it is best to use leakproof, lined pipes. Your sewer district or water supplier can give you advice.

THE BOTTOM LINE:

Simple prevention techniques save you money and lengthen the life of your waste disposal equipment!

Septic System Maintenance Record



SEPTIC SYSTEM INSTALLED BY: _____

Address _____

Phone _____

Date Installed *(Average life of a septic system: 15-25 years)* _____

PUMP OUT RECORD

*Keeping a record of your septic system maintenance will help you anticipate when the next cleaning may be needed
(Recommended: have your septic tank pumped every 3-5 years)*

SEPTIC SYSTEM PUMPED BY: _____

Address _____

Phone _____

Size of Tank (in gallons): _____

Date Pumped: _____ Cost: _____ Date Pumped: _____ Cost: _____

Date Pumped: _____ Cost: _____ Date Pumped: _____ Cost: _____

Date Pumped: _____ Cost: _____ Date Pumped: _____ Cost: _____

Date Pumped: _____ Cost: _____ Date Pumped: _____ Cost: _____

**SEE NEXT PAGE FOR
SEPTIC SYSTEM AND DISPOSAL FIELD MAP**

SEPTIC SYSTEM AND DISPOSAL FIELD MAP

1. Make a rough sketch of your house, driveway, water well and other landscape features such as trees, rocks or fences.
2. Measure and record distances from your house to the cover of your septic tank and to the corner of your disposal field, if possible. As long as the distances are correct, do not be concerned whether or not the drawing is to scale.
3. Keep this information on file as a permanent record for use in maintenance and to pass on to subsequent owners.

A large grid of dotted lines for drawing a septic system map. The grid consists of 10 vertical columns and 10 horizontal rows, creating a 10x10 grid of squares. The lines are evenly spaced and extend across most of the page area.



Household Chemicals and Hazardous Waste



There are more hazardous materials in your home than you might imagine: in your garage, your basement, or under your kitchen sink.

Everyday Dangers

Many products found in households may pose a threat to your family's health. These products can also contaminate the water supply if improperly handled. Harmful products include drain cleaners, oven cleaners, art supplies, lead-based paint, paint remover, solvents, gasoline, motor oil, antifreeze, pesticides, and de-icing salt.

This fact sheet will help you identify and safely dispose of hazardous wastes in your home. It also suggests safe alternatives to many hazardous products used in and around your home.

What Makes a Substance Hazardous?

A substance is considered hazardous if it is flammable, corrosive, toxic or can explode. If hazardous substances are poured into a septic system or sewer, they can disrupt the function of the septic system or treatment plant and end up in the water supply. Disposed of in the trash, they can harm waste handlers or be spilled. And when they reach a landfill, they can contaminate ground water. In a residential fire, stored chemicals could cause explosions or release toxic fumes that could injure occupants and/or firefighters, or cause further damage to your property.



Looking at Product Labels in Your Home

Ingredients such as lye, petroleum distillates, phenols and trichlorobenzene indicate that the products pose a threat to your health and the environment. Did you

know products with hazardous ingredients must bear a label showing the toxicity of the product? Warning labels on containers can give you information on the threats posed by the contents. The levels of hazard are indicated by three terms:

DANGER-POISON: Substances that are extremely flammable, toxic, or corrosive

WARNING: Moderately toxic substances

CAUTION: Slightly toxic substances

Because you want to protect your family's health and reduce threats to the water supply, *read labels before you make a purchase, and purchase the least toxic chemical that can do the job.*

Here are some examples of common household products and the hazardous substances they contain:

Oven cleaners contain lye, naphtha, petroleum distillates and methylene chloride. These ingredients can cause respiratory distress, or burn the skin, and can affect the liver and kidneys. *Some of these chemicals can accumulate in sediments, plants and animals.*

Paint thinners and solvents contain toluene, acetone, naphthalene, and other ingredients. These can cause dizziness, eye and throat irritation, and lung and kidney damage. These chemicals accumulate in the environment and harm aquatic life.

Toilet bowl cleaners contain sodium hydroxide, chlorinated phenols and complex phosphates. These chemicals are toxic and corrosive. Long-term exposure

causes headaches, and liver and kidney damage. Some of these chemicals build up in fatty tissues of wildlife and humans. Products with blue dye contain chromium, which is toxic.

Mercury is toxic to both humans and wildlife. It is found in a variety of household products including some fever thermometers, fluorescent lights, button cell batteries, and certain types of electrical switches and relays. Mercury levels in Maine fish, loons, and eagles are among the highest in North America. For assistance in the event of a **LARGE** mercury spill, call the Maine DEP at 1-800-452-4664. The DEP can also help you with mercury disposal, as can any household hazardous waste collection center.

When possible, minimize your use of **household chlorine bleach**. It is corrosive and can cause respiratory distress. See the box at the end of this Fact Sheet for alternatives to chlorine bleach.



Safe Disposal: Not Always Easy

Household hazardous waste disposal is a difficult problem. Wastes should not be poured on the ground, into a sewer or septic system or sent to a town landfill. In fact, the only safe way to dispose of many substances is to turn them in on household hazardous waste collection days. Unfortunately, few Maine towns offer these programs due to the expense. Tell your town officials and state legislators about the need for household hazardous waste collection. Providing safe disposal options protects homeowners and the environment.

Keeping Disposal in Mind

Meanwhile, what to do about hazardous substances? First, try to prevent disposal problems from occurring. Before buying any product with hazardous ingredients, ask yourself:

- *Do I really need this product? For example, is a special toilet bowl cleaner really necessary?*
- *Is there a less toxic product I could use?*
- *How much do I need? Is this just enough to do the job, or will I have leftover product?*

Can I bring this product somewhere for recycling? For example, call 800/454-1942 to see if there is a service station near you that will recycle used motor oil.

Less Toxic Alternatives for Household Products

- ▶ **GLASS CLEANERS:** Use 2 tablespoons of vinegar in 1 quart of water.
- ▶ **CHLORINE BLEACH:** Use oxygen bleaches or borax.
- ▶ **TOILET BOWL CLEANERS:** Use baking soda and vinegar or a non-chlorinated scouring powder.
- ▶ **ANT CONTROL PRODUCTS:** Pour a line of cream of tartar, red chili powder, paprika, or dried peppermint leaves at point of entry.
- ▶ **FLEA CONTROL PRODUCTS:** Give pets nutritional yeast, garlic tablets, or vitamin B as preventatives; prepare herbal baths with fennel, rue or rosemary to repel fleas.
- ▶ **DEODORIZERS:** Use an open box of baking soda in refrigerator or closets; for rooms, simmer cinnamon and cloves in water or place potpourri (herbs or dried flowers treated with scented oils) in open dishes.
- ▶ **FURNITURE/WOOD POLISH:** Rub furniture with 1 tablespoon of lemon oil mixed in one pint of mineral oil.
- ▶ **DRAIN CLEANER:** Use a plunger, then add 1/4 cup baking soda followed by 1/2 cup vinegar; let sit for 15 minutes then rinse with 2 quarts of boiling water.
- ▶ **CARPET SPOT CLEANER:** Apply club soda immediately, blot dry, then repeat. Or sprinkle with cornmeal and cornstarch and vacuum after 30 minutes.

And When You DO Use Hazardous Substances...

- *Reduce the amount of chemicals and hazardous products you use and store in your home or garage. Use and dispose of products carefully and according to label directions.*
- *Never pour chemicals down the drain or on the ground. Before you throw something away, **ask yourself if you want it in your drinking water.***
- *Store chemicals in a safe place. Check containers regularly.*
- *Let your public water supplier know what chemicals you use and have on hand.*
- *Work with your town to support household hazardous waste collection days.*
- *If you have an accidental leak or spill, clean it up right away, and notify the Maine DEP at 800/452-4664 and your public water supplier.*

THE BOTTOM LINE:



Fuel Use and Storage

FACT
SHEET
#5

Did you know that gasoline is one of the most dangerous chemicals that you regularly handle? It is both flammable and toxic. A spill of less than one gallon can pollute drinking water.

The improper use and storage of gas and other liquid petroleum products can cause fire and explosions and lead to contamination of the water supply. Both outcomes can endanger the environment and your family, and negatively affect property values.

This fact sheet will help you identify and properly use and dispose of petroleum-based liquids in your home and on your property.

Sources of Household Petroleum-Based Liquids

Many tools and toys today contain petroleum liquids, each needing a separate container that holds stored fuel in the form of gasoline or a gasoline and oil mixture. So the number of threats to your water supply can be larger than you think.

Tools, toys and containers that contain petroleum-based liquids include:

Lawn mowers, lawn tractors

Chain saws (even electric ones)

Snowmobiles

Weed-wackers

Wood splitters, chippers

Motor-boats

All-terrain-vehicles (ATVs), automobiles and campers (recreational vehicles, RVs)

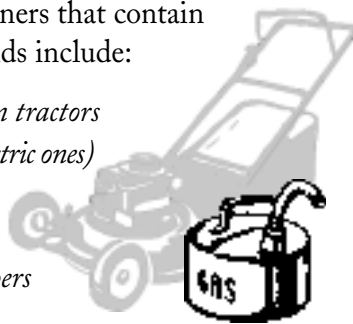
Kerosene heaters

Gas cans containing gasoline (for four-cycle engines)

Gas cans containing mixed gasoline and oil (for two-cycle engines)

Bottles and jugs containing used crankcase oil

Home heating oil tank (often containing 275 gallons)



If you have an Oil or Gasoline Spill at or near your property, call the Maine DEP Spill Report number (800/482-0777) for information and assistance on clean up. Please also report even small spills to your public water supplier.

Tips for the Safe Management of Household Petroleum-Based Liquids

- Buy or mix only what you need. If you have a gallon of gas left at the end of the season, then buy that much less next season.
- Most manufacturers do not recommend storing fuel in power equipment for more than a month, so make sure to run your equipment dry.
- If you do end up with leftover fresh gas, add a stabilizer before it gets old (generally more than 30 days from purchase).
- Unmixed “old” gas can be burned in your car by diluting one part old fuel with five parts new fuel.
- Never burn brush with leftover gasoline or oil!
- There are no cheap or easy answers for the proper disposal of gasoline that has become “gummy” or contaminated with dirt and water. Check to see if your town sponsors a household hazardous waste collection day. Or, contact a licensed hazardous waste professional. Hazardous waste haulers will pick up contaminated gas for a fee of approximately \$20 per gallon. Call the Department of Environmental Protection at (207) 287-2651 for more information.
- Store gasoline in UL-approved (red for gasoline, blue for kerosene and diesel) containers fitted with a spout to prevent spills while pouring.
- Store all gasoline containers in a well-ventilated shed or detached garage, away from the reach of children.

- Once a month check for leaks from fuel tanks, engines and storage containers. Little leaks and spills can add up to cause ground water contamination.



- Park vehicle(s) on a paved or other impervious surface.
- If you change your own crankcase oil, transmission fluid, or hydraulic oil, make sure you store it in a container with a secure screw top (such as empty windshield washer bottles or one-gallon milk jugs). Many local transfer stations accept waste oil, or you can take it to a service station in the Maine Oil Recycling Program (MORP). Call the Department of Environmental Protection at 207/287-2651 for a list of participating stations.

- **Never mix the waste gasoline/oil mixture from a two-cycle engine with other waste oil** because the mixture could be explosive, especially if it is burned in a waste oil burner.

- Keep absorbent material and secure containers on hand to clean up spills promptly. Hardware and auto supply stores sell inexpensive cleanup kits. Cat litter or sawdust, rags, and 5-gallon buckets will do in a pinch.

- Avoid the mess. Have your oil changed at a station that recycles used motor oil.

THE BOTTOM LINE:

 Stop spills! Look out for leaks!

Special Focus: Your Oil Tank

Pay special attention to your home heating oil tank, the largest "container" of petroleum liquids for most households. The Maine DEP responds to an average of one spill per day from home heating oil tanks in single family residences. As we all know, Maine weather takes its toll, causing ground shifts, frost heaves, rust, and general wear, all of which can affect a heating oil supply tank and its piping. Weather, corrosion, and poor maintenance lead to spills, smells, leaks, well water and home contamination, and lower property values.

NOTE: New underground storage tanks are prohibited by State law in wellhead protection areas.

IS YOUR TANK IN SHAPE?

Take this list and check out your oil tank. If you see something that may be a problem, such as rust or an oily patch of wetness on the tank's surface, don't touch your tank. It's best to call your licensed oil heat technician and let a professional take care of it.

- Are the tank legs unstable or on an uneven foundation?
- Do you see rust, weeps, wet spots, or excessive dents on the tank's surface?
- Are there any drips or signs of leakage around the oil filter or valves?
- Do the oil lines run either under concrete or aboveground without being encased in a protective tubing?
- Are there any threats of snow or ice falling on the oil tank or the filter?
- Are there any signs of the tank's vent being clogged or blocked by ice or snow? (Screened vents will prevent insect nest problems)
- Is the overfill whistle obstructed, or silent when the tank is being filled? (It should whistle.)
- Are there any signs of spills around the fill pipe?
- Is the tank's gauge cracked, stuck or frozen? Do you see oil or staining around it?
- Is your tank more than 25 years old?
- Is your outdoor tank a dark color? (It should be painted a light color to minimize corrosive condensation inside the tank.)
- If the tank starts to leak, will the fuel run onto the ground or into a floor drain?

▶ **If any of your answers to this checklist are YES, please call a licensed oil heat technician for a more detailed inspection and corrective measures.**





Safe Land and Animal Care

FACT SHEET #6

Ordinary yard work and animal wastes can pollute your water supply.

Many people find making home improvements to be a fun and continuous process. These activities can also improve the beauty and the value of your home, but may also cause water contamination. Any work that disturbs soil can cause erosion and sedimentation, and may harm surface water sources. Over-application of fertilizers and the misuse of pesticides and herbicides can affect the quality and safety of the water supply. Many of us also enjoy keeping pets or livestock. Animal wastes are a common source of bacteria, pathogens, and nutrients in water, and need to be carefully managed.

This fact sheet will help you evaluate whether your small construction projects and landscaping and gardening activities have the potential to contaminate drinking water. It will also give you ideas for low impact gardening and landscaping, and help you make sure your animals aren't a source of pollution.

Soil Disturbance

Small construction projects such as building an addition to your home or building a new road can greatly impact surface water quality. If disturbed soils are not stabilized, stormwater runoff can carry loose soil to the water body. Phosphorus attached to the soil promotes algae growth in the lake. Here are some tips to help protect surface waters whenever you are disturbing soils:

Stabilize disturbed areas before any storm event. Applying seed and hay or straw mulch works well for areas to be grassed. In other areas, wood mulch works

well as temporary stabilization until native vegetation can take over. On steeper slopes, consider using a layer of angular rock to stabilize soils. For larger construction sites where mulch and rock are not appropriate, contact the DEP at the number listed in Fact Sheet 7 for more information.

Safe, Effective Lawn Care

A well-groomed, healthy lawn can be a source of pride and can improve the look of your home. Here are some tips:

Carefully select turf varieties. First, choose seed with a high percentage of perennial grasses and a low percentage of annual grasses. An annual grass only lives for one year; it must be reseeded (either naturally or with your help) each year to maintain a dense, thick turf. Second, adjust the species mixture to match the different conditions of the lawn. For example, plant shade-tolerant species near trees or on the north side of the house. In areas of the lawn that receive heavy use, consider a mix of seed adapted to wear and tear. A good lawn and garden store will be able to help you select varieties for the different areas of your lawn. Proper variety choices will make for a healthy lawn and will reduce the need for chemical fertilizers and pesticides.

Fertilize moderately, if at all. Many lawns in Maine have an adequate amount of nutrients to maintain an established lawn, and over-fertilizing can actually harm the grasses. The first step in a lawn fertility program is to have your soil tested. Pick up a soil test

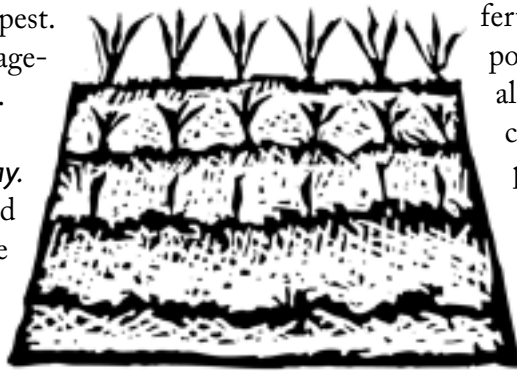


kit from your county office of the University of Maine Cooperative Extension and send in a soil sample to the Maine Soil Testing Lab. They will send you a report detailing the levels of important nutrients and recommend a fertilizer formulation. Frequently, an application of lime will be recommended. This may be the most important thing to add to your lawn as it makes many of the nutrients that are already there more naturally available. If necessary, use a slow-release fertilizer to limit the amount of nitrogen released at any one time. Use a phosphorus-free fertilizer in lake watershed areas. Remember to use caution with fertilizers. Excess fertilizer can burn plants. It can also run off your lawn and pollute streams and lakes by promoting algae growth.

Maintain your lawn properly. Mowing at the right height and keeping the mower blade sharp are critical for maintaining a healthy lawn and protecting water resources. Your lawn will be healthier if you cut at a two-inch height and remove only about one-third of the grass blade in any one cutting. A mulching mower will return the grass clippings to the lawn and will decrease the need for fertilizers. A sharp lawnmower blade cuts grass leaves without tearing. Torn leaves are sites for fungal infection, which may require a chemical fungicide to control.

Limit pesticide application. Fortunately, insect damage to turf is not common in Maine. Chinch bugs and white grubs are the major pests found in Maine lawns. While it may become necessary to use pesticides to control these insects, remember that a healthy lawn is less susceptible to insect damage than an unhealthy lawn. Be sure you know what insect is causing the damage before using a pesticide. The Pest Management Office of the University of Maine Cooperative Extension can help you identify insects, and can suggest safe methods to control the pest. You can contact the Pest Management Office at 207/581-3880.

Identify weeds before you spray. The most common weeds found in lawns are dandelion, white clover, crab grass and plantain. The most effective control method varies for each weed.



Therefore, it is important to correctly identify the weed before you start a control strategy. There are many books available to help you identify weeds, or you can call the Pest Management or county offices of the University of Maine Cooperative Extension for help. They can also suggest good control strategies for the weeds found in your lawn. Many weeds can be controlled without chemicals. With some persistence on your part, hand removal of weeds can be quite effective.

If you decide to use a chemical control method, buy only enough product to meet your needs. Apply the product as recommended by the label, and be very careful when applying around your well or near surface waters. Finally, for your own safety, wear the protective clothing recommended on the label.



Safe and Healthy Gardening and Tree Care

One of the fastest growing activities is home gardening. Matching this growing interest is a growing market of fertilizer and pest control products that manufacturers try to convince home gardeners that they need. The keys to a healthy garden include:

Plan to avoid pest and weed problems. With proper planning, a gardener can often avoid pest and weed problems. Use of row covers, early or late plantings, rotation of crops within the garden, and row spacing are ways you can avoid pest problems.

Monitor soil fertility. As with your lawn, fertilization of your garden should be based on soil test recommendations. Fertilize when plants are established and are able to make best use of the nutrients. Over-fertilization can damage plants and pollute the water supply. You should also consider using composts, which can provide many of the nutrients provided by chemical fertilizers. In addition, composts improve the physical properties of the soil, allowing better retention of water and easier rooting for plants. If you use manures, don't apply on

frozen ground or before storms, and don't irrigate until the manure is well incorporated in the soil and decomposed.

Plant disease-resistant species. Plant breeders have been successful in breeding disease-resistant plant stocks. These plants are less likely to be damaged by diseases and insects. The use of disease-resistant plants will help you reduce your use of pesticides.

Store pesticides safely. Proper, safe pesticide storage is as important as safe pesticide use. Since pesticide poisonings are all too common, the most important thing to remember is to keep pesticides out of the reach of children. Store these products in a locked cabinet with a sign noting what is inside. If possible, the cabinet should be well-ventilated and have metal shelves. Keep pesticides in their original containers with the labels intact. The disposal of old and outdated pesticides is a problem. Maine has no official program to help homeowners dispose of unwanted pesticides. To avoid this problem, if you have to use pesticides, do not buy more than you can use.

Use good cultural practices. Using proper soil preparation techniques, mulching, pruning and crop rotation can all help prevent weed and insect problems, and can reduce or eliminate the need for chemicals. For example, the use of mulches, such as straw and washed seaweed, can control weed growth, and some mulches may provide beneficial nutrients. Mulches also help reduce the amount of water that needs to be applied to the garden. Diseases can be controlled by rotating plants between beds each year, and by removing diseased plants from the garden. The University of Maine Cooperative Extension publishes a number of fact sheets that can give you further information on this subject.

Use pesticides and herbicides only as a last resort. If despite your best efforts, it becomes necessary to use pesticides or herbicides, consider the following:

- Identify the pest or weed, and use pest-specific pesticides.
- Identify the products that can control the pest. Be aware that more and more "natural" pesticides are becoming available.

- Purchase only the amount of pesticide you need. **READ THE LABEL**, and follow the instructions.

- Wear appropriate clothing, including all protective gear required by the label.

- Don't apply pesticides to frozen ground, or immediately before a storm.

- Whenever using chemicals, be prepared for the worst. Keep a supply of cat litter or similar material to absorb a chemical spill. Also, be sure to wear proper clothing if you are cleaning up a spill.

Safe Animal Care

Pet and livestock wastes, and runoff from pastures, feedlots, dog runs, kennels, and yards can pollute the water supply just as much as human waste can. To minimize the threat of contamination, please:

- Store manures in covered areas on impervious pads where wastes won't run off or seep into the ground. Remove wastes regularly to a place outside of the drinking water protection area.




- Keep animals away from wells, waterbodies, and shallow-to-bedrock areas. Fence sensitive areas where possible.

- Be careful about how many animals you keep. A horse generates as much waste in a year as about 13 humans!

THE BOTTOM LINE:
Your day-to-day activities impact water quality.

For Your Information: Important Contacts by Subject

ften, more in-depth answers to your questions can be as close as your telephone or your computer screen. Here are some of those resources.

Information by Telephone

Emergencies

Oil and Hazardous Materials Spill

- Maine Department of Environmental Protection (DEP) spill hotline: 800.482.0777
- Your local water system

Poison Ingestion

- Maine Poison Control Center,
- Maine Medical Center: 800.222.1222

Agricultural Practices & Chemicals

- Maine Board of Pesticides Control: 207.287.2731
- Maine Department of Agriculture: 207.287.3871
- Maine Organic Farmers and Growers Association: 207.568.4142
- Your local Soil and Water Conservation District

Coastal Water Quality

- Maine State Planning Office: 800.662.4545

Community Involvement

- Your water system and/or local town officials

Gasoline and other Hazardous Materials

- Maine Department of Environmental Protection Bureau of Remediation and Waste Management (BRWM): 207.287.2651

Heating Oil Tanks and Fuels

- Maine Department of Environmental Protection (DEP): 800.452.1942
- Maine Oil Dealers Association: 207.729.5298
- Maine Oil and Solid Fuel Board: 207.624.8629
- Your county office of the University of Maine Cooperative Extension (Administrative Office: 800.287.0274)

Household Practices

- Your county office of the University of Maine Cooperative Extension (Administrative Office: 800.287.0274)

Human Health

- State Toxicologist: 866.292.3474

Land Use Practices

- Maine State Planning Office: 800.662.4545

Maps, Well Driller Data and other Publications

- Maine Geological Survey: 207.287.2801

Septic Systems

- Your municipal planning board, code enforcement officer, or licensed plumbing inspector
- Maine Department of Human Services Division of Health Engineering: 207.287.5338
- Maine DEP Bureau of Land and Water Quality: 207.287.3901

Surface and Ground Water Quality and Quantity

- Maine DEP Bureau of Land and Water Quality: 207.287.3901
- Maine Drinking Water Program: 207.287.2070

Water and Wastewater Systems

- Maine Drinking Water Program: 207.287.2070
- Maine Rural Water Association: 207.729.6569
- Maine Water Utilities Association: 207.832.2263
- Maine Department of Environmental Protection (DEP): 207.287.3901

Water Testing

Suspected contaminants in your drinking water

- Maine Bureau of Health 866.292.3474
- Maine Health and Environmental Testing Laboratory (HETL): 207.287.2727
- Look for a private laboratory in the phone directory

Information about test results for a public water supply

- The water system
- Maine Drinking Water Program: 207.287.2070
- Maine Rural Water Association: 207.729.6569

Wellhead (Aquifer) and Watershed Protection

- Maine Drinking Water Program Source Water Protection Section: 207.287.2070
- Maine Rural Water Association: 207.729.6569

Selected Web Site Addresses and Available TTY

Maine Department of Environmental Protection

<http://www.maine.gov/dep/index.shtml>
TTY 800.492.0859 or 207.287.7556

Maine Poison Control Center

<http://www.aapcc.org/Centers/mepc.htm>
TTY: 877.299.4447

Maine Health and Environmental Testing Lab

<http://www.maine.gov/dhs/etl/homepage.htm>
TTY: 207.287.4479

Maine Drinking Water Program

<http://www.state.me.us/dhs/eng/water/>
TTY: 207.287.5550

Maine Rural Water Association

<http://www.mainerwa.org/>
No TTY, use 711 relay

Maine State Planning Office

<http://www.state.me.us/spo/>
No TTY, use 711 relay

University of Maine Cooperative Extension

www.umaine.edu/waterquality
TTY: 207.581.2832 or 800.287.0274