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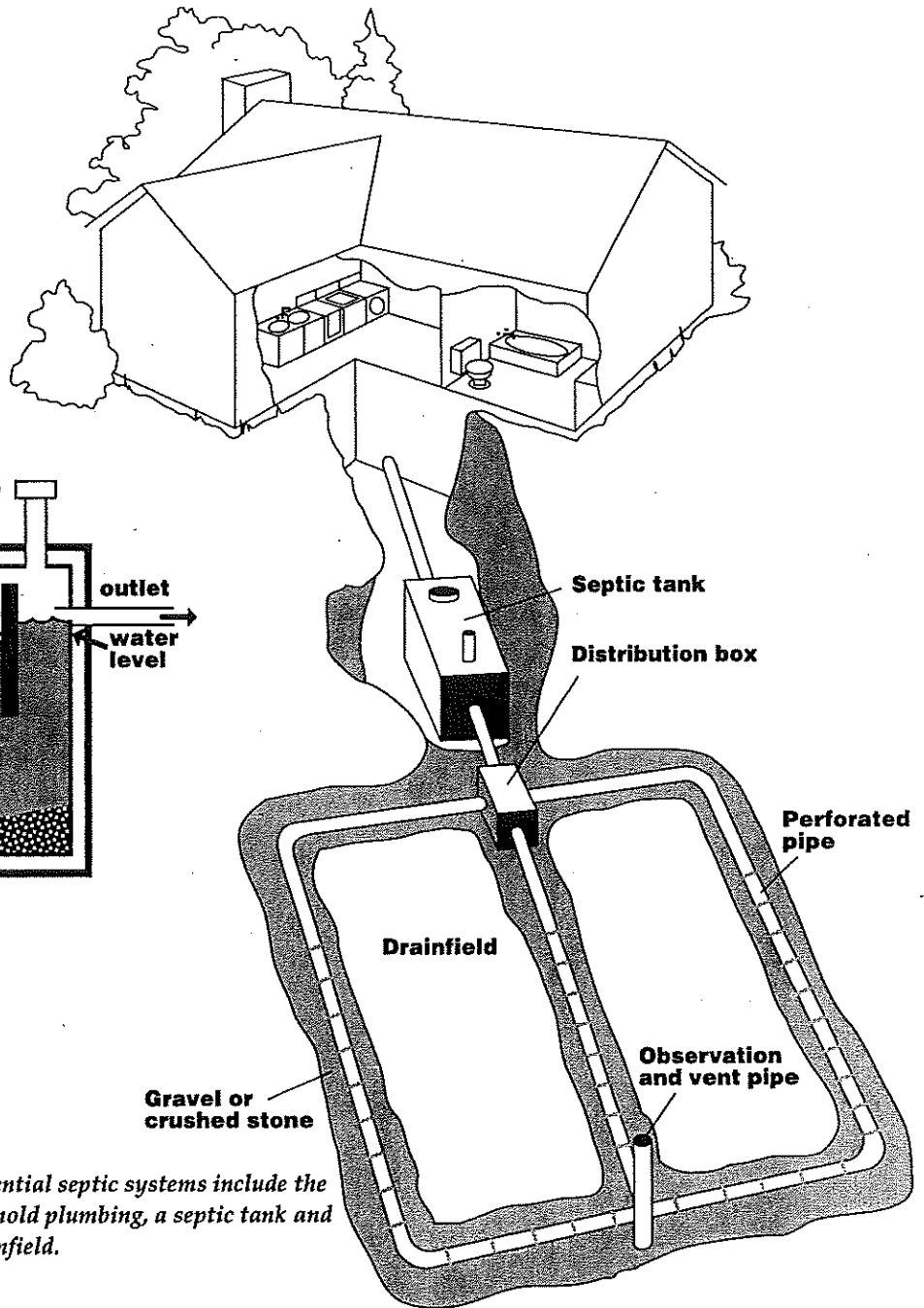
Care and maintenance of residential septic systems

Backed up sewage or flooded drainfields are not only smelly, messy nuisances, but can spread diseases and contaminate drinking water sources. Simple attention to the care and maintenance of your septic system can prevent problems and save the cost of repair and early replacement.

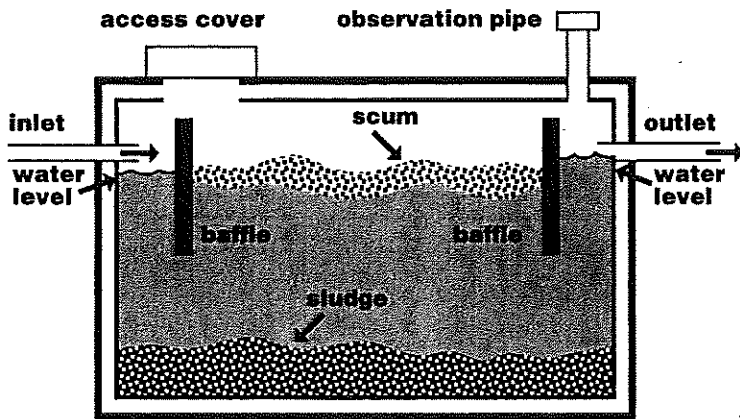
This fact sheet explains how a septic system works and provides a few simple steps to help prolong the useful life of your septic system.

How septic systems work

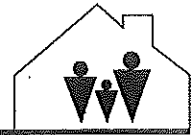
The diagram below illustrates how a residential septic system works.



Septic tank



Residential septic systems include the household plumbing, a septic tank and a drainfield.



As the waste water from your home flows into the septic tank, most of the dense, heavy solids settle to the bottom. Bacterial action then partially decomposes these solids into digested sludge and gases. Materials lighter than water, such as fats and grease, rise to the top and form a scum layer. A baffle holds the scum layer, and prevents it from leaving the tank and clogging the drainfield system. The waste water then goes out through the drainfield, seeps through the soil filtering out bacteria, and returns to the groundwater.

Bacterial action needs time to break down sewage. As sludge builds up in your tank and the scum layer thickens, waste water is forced into the drainfield faster. Since waste water remains in the tank less time, bacterial treatment is less effective. Unless removed, the sludge and scum layers will eventually clog either the intake or outlet pipes or the drainfield, and cause your system to fail.

Schedule regular maintenance and pumping

Regular maintenance and pumping are good ways to prolong a septic system's proper functioning. Like changing the oil in your car, consider regular maintenance "insurance" since the cost is likely to be one-tenth of the cost of replacing a neglected system.

A rule of thumb for having your septic system inspected is once a year. Pick a date you will remember — your birthday or another family member's, or the first day of school — and arrange to have the system inspected then. A liquid waste pumper/hauler will check sludge and scum layer depth and remove them if necessary. Baffles should also be checked to see that they are in place and the septic tank is functioning properly.

NEVER go into the septic tank yourself. Sewer gases are extremely hazardous and can quickly kill an unprotected person.

Reduce sludge and scum build-up

Minimizing the amount of solids entering your septic system will reduce sludge and scum build-up. This will extend the time between necessary pumpings and avoid the crisis of dealing with a failed system.

Do not put fats and oils down the drain. Fats and oils can collect inside plumbing pipes and cause hair or other debris to accumulate, decreasing water flow. Fats, oils and greases are lighter than water and will rapidly increase the scum layer in the septic tank, requiring more frequent pumping.

Keep food waste out of your system. Compost kitchen waste or put it in the trash rather than using a garbage disposal. Fruit and vegetable peelings ground up in a disposal tend to stay in solution rather than becoming part of the sludge or scum layers. As a result, they move out through the system and clog drainfields more easily.

If you use a garbage disposal, your septic tank should be twice as large as otherwise recommended. Some septic tank installers recommend two tanks working in series rather than one larger tank. The extra time the material is in the septic tanks allows more solid material to settle out.

Keep non-degradable materials out

Never flush into a septic tank materials that do not break down easily. Such materials include coffee grounds, bones, disposable diapers, sanitary napkins, tampons, paper napkins, paper towels and cigarette butts. Pharmaceutical packaging such as adhesive bandage wrappers, dental floss, pill capsules, tampon applicators, and other packaging material can quickly accumulate and clog a septic tank and drainfield as well. Put a waste basket in the bathroom, and use it.

Avoid dumping hazardous household chemicals down the drain.

Some components such as solvents, acids and degreasers may be left untreated by the bacteria. They can pollute drinking water if they seep from the drainfield area, through the soil, and into the groundwater.

To determine whether you might be contaminating drinking water, ask your Wisconsin county UW-Extension office for Farm-A-Syst Worksheet #6 *Assessing the Risk of Groundwater Contamination from Household Wastewater Treatment* (G3536-6W).

Reduce waste water volume

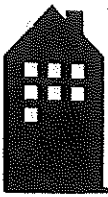
By reducing the volume of water entering the system, you can avoid overloading the septic tank and drainfield.

Use less water. A household with four members will typically use more than 225 gallons of water a day. A washing machine can use as much as 60 gallons of water on each cycle. Flushing a toilet can use 3 to 7 gallons of water. Consider water-saving appliances and fixtures when you must replace them.

Fix plumbing leaks. Repair leaky faucets and plumbing fixtures to avoid inadvertently overloading the septic system. A single faucet that leaks one drop per second wastes more than 3 gallons a day, or 1,000 gallons a year!

Keep water softeners adjusted.

For households with water softeners, recharging that system uses a significant amount of water. Some water softeners recharge on a timed cycle. However, a system that recycles only after a specified volume of water has been used will save water. A properly adjusted water softener can prevent wasting water.



During water softener regeneration, a salt solution is added to displace calcium and magnesium ions that make water "hard." The water softener is flushed out, and waste water is often disposed of through a floor drain. Research findings indicate that salts from softener regeneration waters should not harm the septic system. However, it is permissible to divert waste water to surface drainage rather than allowing it to go directly into the septic tank.

Keep storm water out of the septic system. Make certain that roof drains, basement sump pumps, or foundation curtain drains do not empty directly into the septic system.

Keep bacteria working
Your septic tank and drainfield are full of living organisms that make the system work. Some common household products can kill bacteria in the system. Excess amounts of chlorine bleach, disinfectants, strong acids, medicines, pesticides, oil-based paint or

petroleum-based paint thinners can all harm your septic system and pollute the environment.

Depending on what you put into the system, it may take 30 to 60 hours for bacteria to recover to a level that the system can again treat sewage properly.

Read labels on household cleaning products carefully. Avoid adding to your septic system those products containing significant amounts of chlorine or strong acids.

Avoid unnecessary additives

Research indicates no apparent value in adding enzymes or other "miracle" products to residential septic systems. While additives that claim to clean your tank, improve its efficiency or "restart" the system will probably not harm your system, with regular maintenance and pumping they are an unnecessary bother and expense.

Protect the septic system drainfield

The septic system drainfield consists of a network of perforated pipes laid in gravel-filled trenches or beds. Waste water trickles out of the pipes through the gravel layer and into the soil.

The drainfield is a delicate structure.

- Take care not to plant deep-rooted trees or bushes near the system.
- Do not drive over the system. The vehicle's weight can compact the soil, crush pipes and even break the septic tank, resulting in system breakdown and requiring costly repairs or replacement.
- Divert surface water runoff away from the septic system drainfield.

Heed early warning signs

Septic systems beginning to fail typically have early warning signs that signal you to take action.

Warning signs of septic system problems:

- When you take a shower, do you end up with water up to your ankles? Water draining too slowly indicates septic system problems.
- Drain pipes gurgle or make noise when air bubbles are forced back through the system — another early warning sign.
- Smelling sewage signals a serious problem.
- If water backs up in your sink or basement it may be too late — your system may already be failing.
- Watch for increasing level of water standing in the drainfield vent or observation pipe, and
- Soggy soil above the drainfield.
- Settling of the soil over the septic tank indicates a break in the tank.

REMEMBER! Nothing can take the place of regular inspection, maintenance and pumping.

To test your toilet for leaks, add two or three drops of food coloring to the toilet tank. Leave for a few hours or overnight, and then check the water in the toilet bowl. If the water is colored, your toilet is leaking and wasting water.