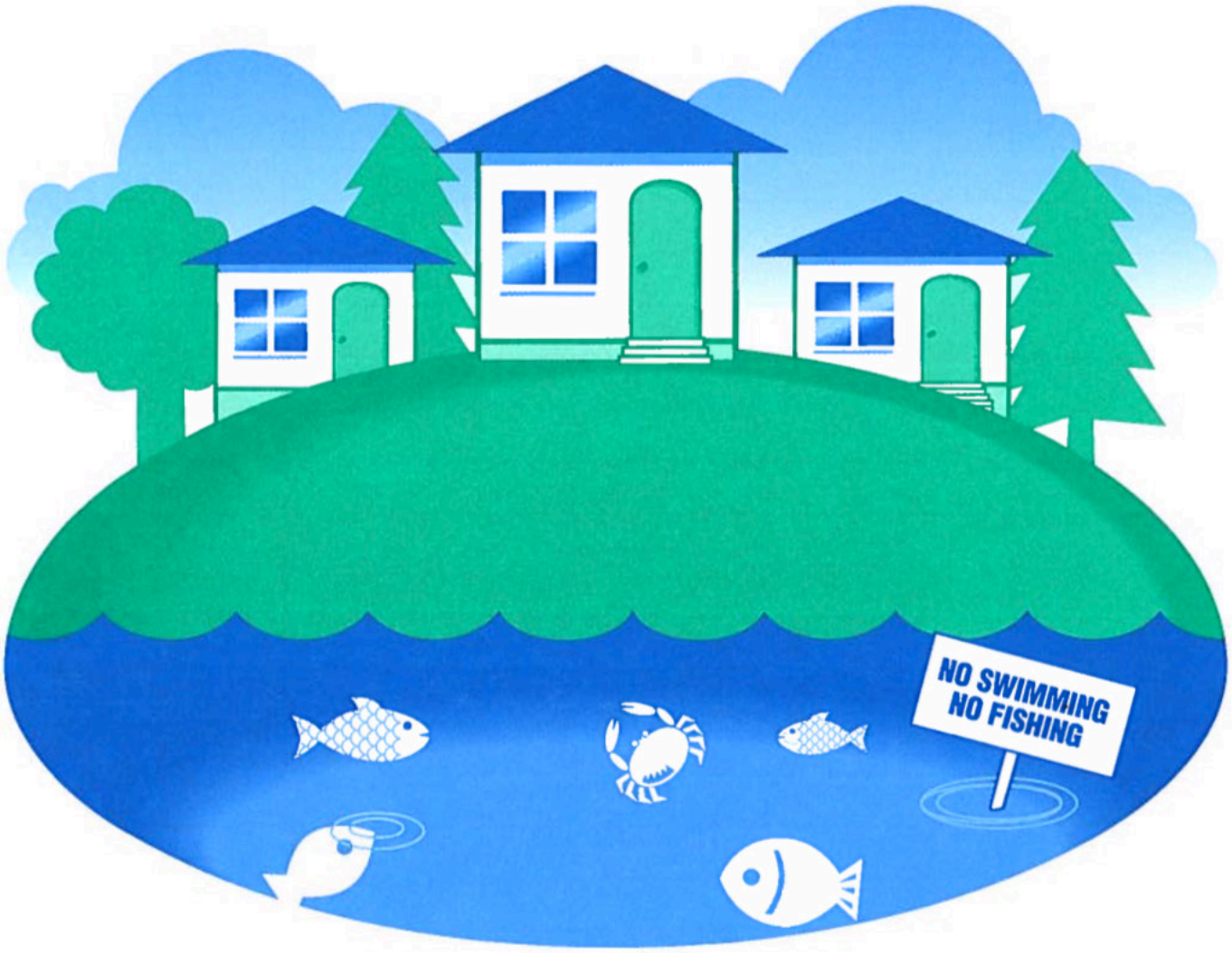
Proper Waste Water Treatment



Why Is It Important?

MAINTENANCE RECORD

System Installer________________________________ Date__________

Date	Work Done	Performed By

Proper Waste Water Treatment

Why Is It Important?

WE USE WATER for showers, baths, toilets, washing dishes and clothes, and many other activities. But do you ever think about where your household waste water goes? If your sewage isn't properly treated, you could be contributing to the posting of the "No Swimming—No Fishing" sign. State officials post the sign when they find rivers, lakes, bayous and streams containing bacteria that could cause serious illness in people who drink it, swim in it or eat oysters harvested from the polluted water.

If your home or camp is not connected to a community treatment system... YOU are responsible for treating your waste water!

Having an individual sewage treatment system installed or buying a house or camp with an existing system doesn't relieve you of responsibility. Toilets that flush and sinks that drain do not necessarily indicate a properly functioning sewage treatment system. You should check your system at least once a year and perform proper maintenance as needed.

Possible Diseases Found In Polluted Water

PARASITES
- Beef tapeworms
- Pork tapeworms
- Fish tapeworms
- Giardia lamblia
- Cryptosporidium species

VIRUSES
- Polio
- Hepatitis A
- Rotavirus
- Enterovirus

BACTERIA
- Salmonella
- Vibrio cholera
- Escherichia coli
- Bacillus cereus
- Shigella species (dysentery, sonnei)

Why is proper maintenance important?

Sewage treatment systems must be maintained regularly to keep them working properly. Neglect or abuse of your system can cause it to fail. An inadequate sewage treatment system or a system that is not properly maintained can result in your waste water leaking into the ground around your home, potentially contaminating ground water or nearby surface waters that serve as vital habitat for fish and wildlife. In addition to degrading the environment, a failing system can pose a serious health threat to your family and neighbors, reduce the value of your property and be very expensive to repair or replace.

How can I tell if my sewage treatment system is working properly?

Your system should be inspected at least once a year. Have a professional check it, or call your parish health unit. Preventive maintenance is the key to keeping the system working properly and prolonging its life. Accumulated solids should be periodically removed from the tank before the system shows any sign of problems. Keep a detailed record of pumping, repairs, inspections and other maintenance. Get complete design and maintenance records from the previous owner when you buy a house with a sewage treatment system. Know the location of all components of your system. Make a sketch showing locations and distances. Keep these records handy for future service visits. Sewage treatment systems generally offer little or no warning that they are about to fail. Take corrective action immediately if you notice any problems.

Remember, proper care and maintenance is much easier and less expensive than repair or replacement of a failing system.

Signs of a failing system

- Sewage odors near the sewage treatment system or absorption field
- Sewage surfacing over the absorption field, especially after heavy rainfall
- Slow draining toilets or drains
- Plumbing backups or gurgling sounds in the plumbing
- Lush, green growth or wet or mushy ground over the absorption field
- Laboratory test results indicating the presence of bacteria in well water

How often does my system need to be pumped out?

Safety considerations

- Fence or restrict access to oxidation ponds to prevent drowning and recreational use. Be careful when inspecting your system. The sewage treatment process can generate dangerous hydrogen sulfide and methane gases.
- Never lean into or enter the tank, particularly during pumping; you could be poisoned by breathing hydrogen sulfide fumes.
- Methane is explosive, so avoid using torches or other flames near tank openings.

Don't wait until your system shows signs of failure to have your tank pumped out. If the sludge and surface scum combined are one third or more of the liquid depth of your tank, have the tank pumped out by a contractor licensed by the Louisiana Department of Health and Hospitals to clean tanks and dispose of the contents.

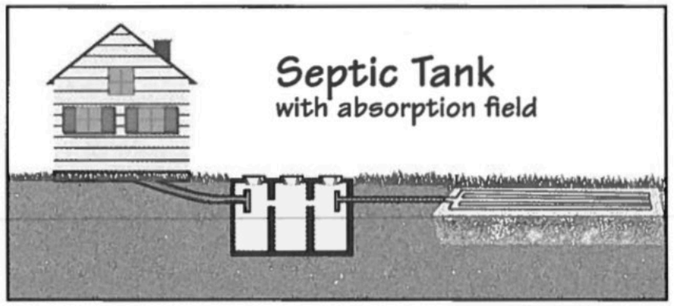
It's a good idea to be on hand when your tank is being pumped. Be sure the contractor uses the manhole, not the inspection ports, for pumping to prevent possible damage to the baffles or tees. Make sure all material in the tank is removed; it is not necessary to leave sludge in the tank as seed. Incoming sewage contains all bacteria needed for proper operation of the system. It is also unnecessary to scrub or disinfect the tank.

For a list of pumpers in your area, consult the yellow pages of your telephone directory under Septic Tanks and Systems Cleaning. Consider organizing a neighborhood pumpout. Pumpers often reduce the price for large volume jobs.

Checklist for inspection of sewage treatment systems

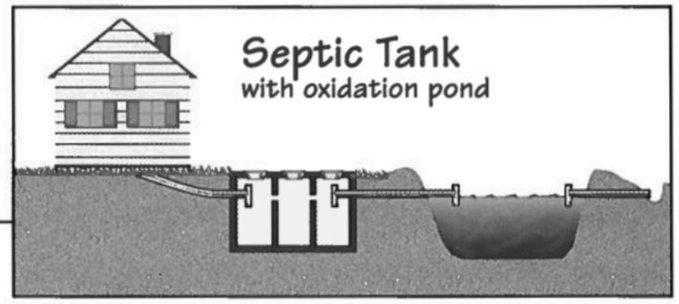
1) Examine the tank for signs of sludge buildup. Pump out if needed.
2) Be sure the inlet and outlet baffles or tees are working properly. If broken, have repairs made.
3) Check the inlet to see if waste water is continuously flowing into the tank from previously undetected water leaks. Locate and repair leaks.

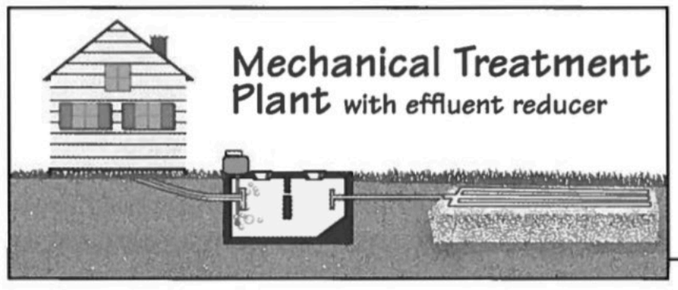
Four types of individual sewage treatment systems are approved for use in Louisiana:



Household waste water enters a watertight, multi-compartment septic tank, made of concrete, coated metal or fiberglass, where it separates into three layers: (1) The settling process, which takes at least 24 hours, reduces volume by about 50 percent. With the help of naturally occurring bacteria, heavy solids settle to the bottom and partially decompose, producing gases and dissolved solids and forming a sludge layer. The sludge must be periodically removed to ensure that solids do not block the tank outlet or block or overflow into the secondary treatment system. (2) Grease and other light materials float to the top, forming a scum layer which is retained in the tank by vertical baffles. (3) The intermediate liquid layer, known as effluent, flows through an outlet to the absorption field, which is a series of parallel distribution pipes runnin through a bed of gravel. This allows partially treated liquid sewage to leak down through the gravel and soak into the soil. The soil filters out the remaining minute solids, which are digested by bacteria. Nutrients are absorbed by the roots of growing plants or slowly percolate to surface or ground waters. The preferred secondary treatment process is an underground absorption field,

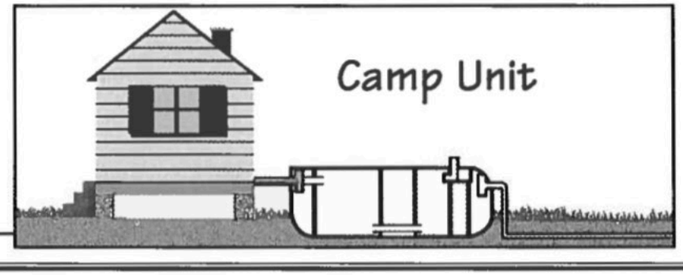
After primary treatment of sewage in a septic tank, effluent is collected in an oxidation pond or lagoon for secondary treatment, where the volume is reduced by evaporation. Exposure to sunlight and oxygen enables aerobic bacteria to digest organic matter, thus improving water quality and making it suitable for discharge.





Mechanical plants operate like many municipal waste water treatment plants, using aerobic bacteria combined with mechanical aeration. The mechanical plant provides primary and secondary waste water treatment. Prior to discharge, the volume of effluent is further reduced by using a small absorption field or another approved method.

If you have a camp over water or in the marsh used by no more than three people at one time and no more than three days per week, a self-contained 1,100 gallon above-ground camp unit can be used, but must be carefully maintained. This unit provides both primary and secondary treatment plus chlorination.



Tips to keep your home sewage treatment system working properly

- **Don't use biological or chemical additives.** Trillions of bacteria that are present naturally in the system provide everything needed for decomposition. No product can eliminate the need for periodic cleanout. Some can kill beneficial bacteria in the tank, cause sludge and scum to clog the secondary treatment system or contaminate ground water or surface waters.

- **Minimize or eliminate the use of your garbage disposal unit** by composting food wastes or placing them in the trash. Ground food wastes from the garbage disposal fill your tank faster, requiring more frequent pumping. They also increase the thickness of the scum blanket, which could eventually spill into the effluent pipe and clog the leaching system. If a garbage disposal is used, it is recommended that the tank size be increased by 50 percent. It may be necessary to pump solids from the system every one to two years.

- **Don't dig in your absorption field,** drive over it or construct anything over it. The area over the absorption field should have only a grass cover, which prevents erosion and absorbs excess water. Up to one third of the water in septic system effluent evaporates through the ground above the field.

- **Protect your system from encroaching trees** and shrubs as their roots can clog, break or block pipes and interfere with the distribution system.

- **Use only good quality toilet paper** that breaks up easily when wet.

- **Never flush paper towels, facial tissues,** newspapers, rags, plastics, sanitary napkins, tampons, condoms, disposable diapers, dental floss, cat litter, grease, cooking oil, cigarette butts, coffee grounds or other indigestible materials. Because these items cannot be broken down by the microorganisms, they can quickly fill the tank or block the outlet.

- **Avoid the use of liquid fabric softeners,** and don't allow backwash from home water softeners to enter the system. They can contribute to excessive scum in the tank. Install a lint trap on your washing machine; lint can clog the pipes in the absorption field.

- **Never flush harmful substances** such as pesticide, disinfectant, acid, medicine, paint, varnish, solvent, photo developing solution, paint thinner, gasoline, used motor oil or chlorine.

Minimize the use of bleach and avoid drain cleaners. Caustic or toxic substances kill the naturally occurring microorganisms in your system or impair their function. (In sensible quantities, soap, detergent and other household cleaners should not cause problems.)

- **Don't use a continuous toilet bowl cleaner** or a disinfectant such as the type placed inside the toilet tank. These products can adversely impact the system's biological effectiveness.

- **Divert surface water runoff** from roofs, patios and driveways away from the absorption field. Do not connect roof drains, basement sumps or foundation drains to the system.

- **Dump cleaning water outside** instead of in the toilet or sink.

- **Don't drain water** from whirlpools or hot tubs into the treatment system, especially if the water is chlorinated.

- **Reduce unnecessary water usage,** especially during periods of heavy rainfall. Give your system time to rest after heavy use. The less water you use, the better your sewage treatment system will work. Too much water can overload your system and cause discharge of incompletely treated sewage.

Ways to reduce household water usage

- Use low flow faucets, shower heads and toilets.
- Repair dripping faucets and leaking toilets.
- Run the dishwasher only when full.
- Adjust the water level in the washing machine to fit the size of the load.
- Limit shower time and bathtub levels.

How can I determine the right sewage treatment system for my homesite?

Sewage includes household waste water from kitchen sinks, toilets, tubs, showers, washing machines, dishwashers and all other household sources. The quantity and content of household sewage depends upon the number and age of residents, their water usage and the number, type and condition of fixtures and appliances.

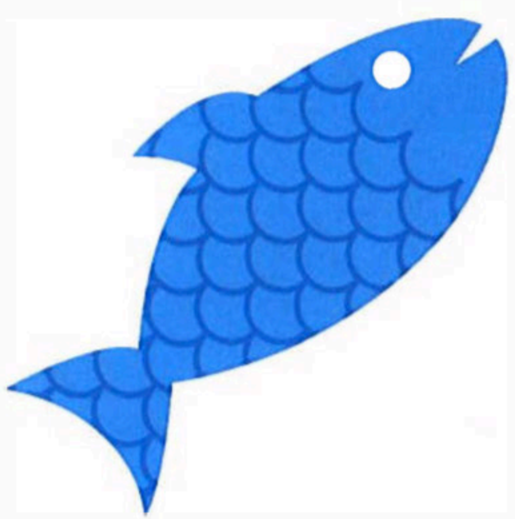
The size of the system is very important. To ensure satisfactory performance of a sewage treatment system over a projected lifetime of 15 to 20 years, a safe design rate of 100 gallons per person per day is used to calculate the size needed.

The ground water table (the upper layer of water saturation in the ground) is also a factor in system selection. Its depth varies according to location, season and rainfall.

Soil type must also be considered when designing a sewage treatment system. An underground absorption field is the preferred secondary treatment process, but only 20 to 25 percent of the soils in Louisiana are suitable for this method.

Unfortunately, these soils are not concentrated in one area, but scattered throughout the state. Some parcels of property are so small or narrow that certain types of sewage treatment systems cannot physically be placed on the lot when setbacks from property lines, recreational waters and water wells are considered. When unsuitable soil characteristics are also present, some parcels may not be well-suited for any system or for only one choice, at best.

In suburban and rural areas of Louisiana where no public or centralized sewage treatment facility is available to homeowners, septic tanks are the most common method of primary sewage treatment, with secondary treatment provided by an absorption field or an oxidation pond. Mechanical treatment plants provide both primary and secondary treatment of waste water. In some locations, a mechanical treatment plant is the only option.



WE ALL LOVE LOUISIANA. *We fish the bayous and lakes; we swim in the same waters. To avoid polluting those waters, each of us needs to make sure our family's sewage treatment system is the right size and is properly maintained.*

Remember, YOU are responsible for your waste water!

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Who can I contact for further information?

Sewage treatment regulations

- Your parish health unit (La. Department of Health and Hospitals)

Determining your soil's suitability for a particular system

- Your parish health unit (La. Department of Health and Hospitals)
- Your district office of the Natural Resources Conservation Service (U. S. Department of Agriculture)
- Your parish extension agent (La. Cooperative Extension Service)

How sewage treatment systems work

- Your parish health unit (La. Department of Health and Hospitals)
- Your parish extension agent (La. Cooperative Extension Service)

Problems with sewage treatment systems

- Your parish health unit (La. Department of Health and Hospitals)
- Your parish extension agent (La. Cooperative Extension Service)

Preventing nonpoint source pollution

- Louisiana Department of Environmental Quality
  Water Quality Management Division
  Nonpoint Source Pollution Prevention Program
- Your parish extension agent (La. Cooperative Extension Service)

Louisiana Department of Environmental Quality

Barataria-Terrebonne NATIONAL ESTUARY PROGRAM

LOUISIANA Department of HEALTH and HOSPITALS

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

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