

Homeowner's Guide to Sewerage Systems



HOMEOWNER'S GUIDE TO THE PROPER OPERATION & MAINTENANCE OF SEPTIC TANK AND INDIVIDUAL TREATMENT PLANT SYSTEMS

ON-SITE SYSTEMS

When a public or central sewerage system is not available to a suburban or rural home, an approved septic tank system is the required sewage treatment alternative. This system provides a place for heavy solids in the sewage to settle and to be partially decomposed by naturally occurring bacteria. The remaining liquid, known as effluent, then flows through a secondary treatment process to further decomposition.

The preferred secondary treatment process is the underground absorption field. In most cases, however, the soil conditions in St. Tammany Parish make an absorption field inadequate as a secondary treatment process since the effluent cannot readily seep through the soil.

Consequently, filter beds have been routinely used for secondary treatment purposes, with the clarified, but still unhealthy effluent usually discharged into a nearby ditch. Unfortunately, these contaminated ditches drain into and pollute our bayous, rivers, and lakes. Filter beds, appropriately enough, are no longer permitted for installation in St. Tammany Parish.

When on-site conditions inhibit the construction/use of a septic tank system, an individual treatment plant system is authorized for installation. Also known as an aeration treatment system, its process requires electric powered mechanical components to mix air with the sewage in an underground tank.

The biological activity and digestive process in an aeration tank is much more efficient than in a septic tank. As such an aeration tank accumulates less sludge and scum.

Like a septic tank system, though, an individual treatment plant system discharges effluent. To reduce the amount of pollution flowing into our waterways, it is now the law that an individual treatment plant system to be

installed shall be so constructed that the effluent is disposed of on-site. This can be accomplished by any one of six approved disposal methods:

- Effluent Reduction Field
- Mound
- Overland Flow
- Oxidation Pond
- Rock-Plant Filter
- Spray Irrigation

The LA Office of Public Health, with branches in Mandeville and Slidell, is the agency responsible for issuing the permit which is required to install any on-site sewage treatment system.

WHAT MAINTENANCE IS NECESSARY?

SEPTIC TANKS

Routine maintenance is critical to prevent septic system failure. Over time, a considerable amount of sludge and scum will accumulate in the tank and can pass through and clog the secondary system if not timely and properly extracted.

The tank should be inspected at least once a year to determine the accumulation rate of sludge and scum. With ordinary use and care, a septic tank usually requires pumping every three to five years to remove the buildup of sludge and scum.

The number of people using the system, the amount and type of waste generated, and the size and design of the system will determine how often the tank will have to be pumped.

Proper maintenance of the septic tank will definitely increase the life of the system; but, unfortunately, all septic tank systems eventually fail.

INDIVIDUAL TREATMENT PLANTS

Any aeration treatment system includes mechanical components that may require periodic lubrication and, perhaps, adjustment. Each unit should be serviced and maintained according to the manufacturer's recommendations.

The State Health Code requires a dealer to issue a two-year initial service policy to the purchaser of an individual treatment plant. This policy shall provide for a

service call at least every six months, which includes inspection, adjustment, and servicing of the electrical and mechanical components.

In time, some sludge will accumulate in the bottom of the settling compartment and will have to be removed.

WHAT SHOULD I DO TO PROPERLY MAINTAIN MY TREATMENT SYSTEM?

- First and foremost, inspect your sewage treatment system once a year. If the sludge and surface scum combined are 1/3 the liquid depth of your septic tank, have the tank pumped out by a licensed sewage pumper.
- Products that claim to make the pumping or cleaning of septic tanks unnecessary should not be used nor considered as a substitute for proper maintenance. These products can cause the sludge and scum to clog the secondary system.
- Do not flush grease or other undigestible material such as cigarette butts and coffee grounds into the system.
- Minimize or eliminate the use of your garbage disposal unit which grinds up food wastes and places a burden on the treatment system. If you use a disposal unit, you may need to pump the solids from the tank every year.
- Use good quality toilet paper that breaks up easily when wet. Never flush paper towels, disposable diapers, newspapers, rags, and other items not normally considered sewage into the system.
- Do not flush harmful materials into a treatment system. Pesticides, paint thinner, gasoline, used motor oil, chlorine, and other caustic or toxic substances kill the naturally-occurring bacteria in the tank and/or impair its function. Soaps, detergents, bleaches, or other household cleaning compounds used in sensible quantities should not interfere with the system.
- Do not bother to flush enzymes or similar additives into a septic tank system. The trillions of bacteria already present provide all that is needed for decomposition.
- Do not use a continuous toilet bowl cleaner and/or disinfectant, like the type placed inside the toilet tank. These products can adversely impact the system's biological effectiveness.
- Conserve water; too much water can overload your treatment system.

MAINTENANCE

Preventive maintenance is the key to keeping the system working properly and prolonging its life. 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 an on-site sewage treatment system.

Know the location of all components of your system. Make a sketch showing location 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.

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 and 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

NONPOINT SOURCE POLLUTION

An on-site sewage treatment system can provide suitable wastewater disposal only if it is adequately designed, carefully installed, properly operated, and sufficiently maintained. If yours is not, it is a source of pollution that poses a serious threat to public health and the vitality of our parish's waterways.

For more information, please contact:

St. Tammany Parish Department of Environmental Services
Covington/Mandeville 985-898-2535

Louisiana Office of Public Health
Covington/Mandeville 985-893-6297
Slidell 985-646-6448

Environmental Services Definitions

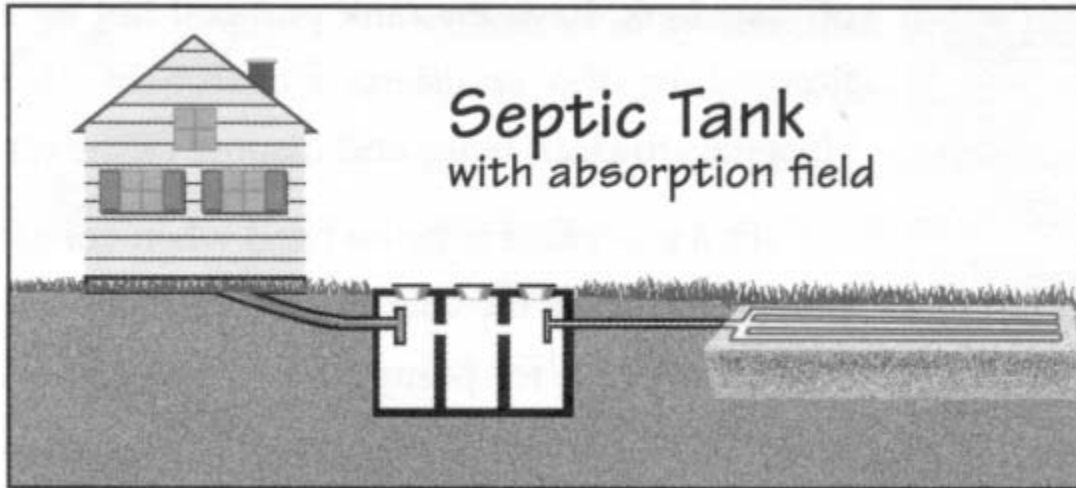
Septic Tank System

Household wastewater 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.

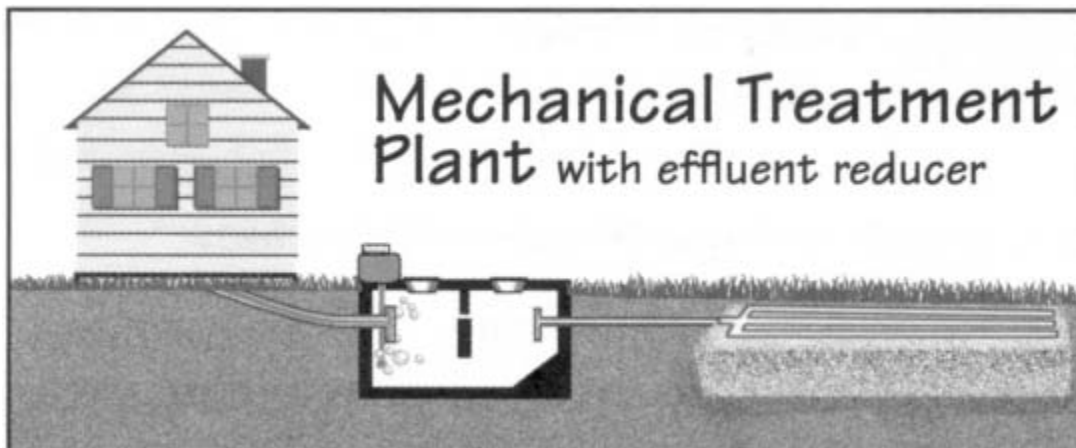
(2) Grease and other light materials float to the top, forming a scum layer which is retained in the tank by vertical baffles.

(3) The intermediate liquid layer, know as effluent, flows through an outlet to the absorption field, which is a series of parallel distribution pipes running 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.



Individual Treatment Plant System

Individual treatment plants (mechanical treatment plants) operate like many municipal wastewater treatment plants, using aerobic bacteria combined with mechanical aeration. The individual treatment plant provides primary and secondary wastewater treatment. Prior to discharge, the volume of effluent is further reduced by using an approved effluent reducer system.



Effluent Reduction Field

The Effluent Reduction Field is similar in construction to the conventional absorption field system. The field itself is not visible at the surface, and therefore, care must be taken not to drive or park vehicles over it.

Mound

The Mound System is a soil absorption system that is elevated above the natural soil surface in a suitable fill material. The purpose of the design is to overcome site restrictions that prohibit the use of conventional soil absorption systems. The Mound system serves to improve absorption of the effluent by utilizing the more permeable topsoil and subsoil.

The Mound System, if constructed properly, will have no discharge. It takes up a large amount of property (approximately 40 ft. x 100 ft.) and is expensive to construct.

Overland Flow

Where the size of the property is sufficient (three (3) acres or more) and suitable soil is not present for the use of absorption trenches, an Overland Flow system may be utilized. The Overland Flow system cannot be utilized on soils composed of gravel and coarse sands texture as these soils may not provide the necessary treatment to protect water quality. The discharge from the Overland Flow system must be distributed in such a manner as to confine the effluent within the boundaries of the property. The location of the Overland Flow discharge must have permanent vegetative cover maintained. The discharge point and the Overland Flow field must be located at a minimum distance of fifty (50) feet from the nearest water well. The point of discharge must be located at a minimum distance of 200 feet from any property line.

Oxidation Pond

The Oxidation Pond is a shallow pond that uses a the natural system of evaporation as a means of effluent reduction. It requires considerable amount of property. The Oxidation Pond must be located at least fifty (50) feet (preferably more) from any water well. The Oxidation Pond must be enclosed by a woven wire fence at least 5 feet in height with a locked gate. The Oxidation Pond and its levee must be approximately 30 ft. x 30 ft.

Rock-Plant Filter

The Rock-Plant Filter system uses evapotranspiration to reduce, if not completely eliminate, effluent. The effluent flows through an outlet to the Rock-Plant Filter bed where it is distributed through a series of parallel pipes. This process allows the effluent to percolate through the soil in the Rock-Plant Filter bed, and nutrients are absorbed by the roots of the growing plants. When completed, the

Rock-Plant Filter system looks the same as a garden. The Rock-Plant Filter system requires a small amount of maintenance and should be treated the same as a garden. The Rock-Plant Filter system is three (3) feet wide and the length is determined by the size of the Individual Treatment Plant System (50 ft. - 150 ft.).

Spray Irrigation

The Spray Irrigation system is a process of on-site disposal using pressurized dispersion of effluent through sprinkler heads. The effluent collects in a pumping chamber. At a predetermined level, a float switch activates a pump that forces the effluent through piping to pop-up or elevated rotating type sprinkler heads. Evaporation of the dispersed effluent prevents any runoff from occurring. The effluent must be adequately chlorinated prior to being dispersed.