F.Y.I. (For Your Information)
Home aeration sewage system info

County operational permit inspection program for home aeration sewage systems runs annually from January 1 – December 31
Initial inspection $35, Reinspections $35 each, Late penalty fee 25%

Aeration Maintenance Contract FAQs (Frequently Asked Questions)

1. **What is an aeration maintenance contract?**

   - It is an agreement with an aeration contractor to inspect, maintain, and service your aeration system for an annual fee.

2. **What do aeration maintenance contractors do?**

   - At least twice per year they inspect your aeration system to check its operation, make any necessary lubrication, make any adjustments to the blower/timer/skimmer, report to you about the system, and file necessary paperwork with the Health Dept.

3. **Isn't the Health Dept. like an aeration maintenance contractor?**

   - No. The Health Dept. only inspects and reports on the system once per year and they do not provide maintenance service or repair to the aeration system. The Health Dept. sends an order to repair to the owner if the system is not working, and then the owner needs to find someone to fix the system.

4. **If you have a maintenance contract do you also have to get a Health Dept. inspection?**

   - No. If you have a valid maintenance contract with an aeration contractor registered with the County, you are exempt from a County aeration inspection and County aeration fee.

5. **What is the advantage of a maintenance contract?**

   - Your system is monitored more often to attempt to prevent major break-downs from occurring, the system receives basic maintenance/adjustments during inspections, a maintenance contractor can repair the system for you if major work needs to be done, and you are exempt from the County inspection and fee.

6. **What companies provide aeration maintenance contracts?**

   - See the listing on the back of this sheet.

07/01/2008

Public Health
Prevent. Promote. Protect.

Board of Health
Sidney-Shelby County

202 W. Poplar Street, Sidney, OH 45365

Steven J. Tostrick, MPH, RS
Health Commissioner

Phone: (937) 498-7249
Fax: (937) 498-7013
sschd@odh.ohio.gov
shelbycountyhealthdept.org

Household Aeration Sewage Treatment Systems

Important Information – See Details Below

In accordance with section 23.3 of the Sidney-Shelby County Health Department Sewage Treatment System Regulations, a reinspection fee may be assessed for each follow-up inspection required to determine compliance.

The reinspection and the reinspection fee will be waived if a registered aeration system service contractor makes the necessary repairs and proof of repair is received by the Health Department before the compliance deadline on the inspection form. The system components repaired must be reinstalled by the service contractor to qualify for reinspection exemption. A list of registered service contractors and their phone numbers is attached for your convenience.

* * * * * * * * * * * * * **clip and return bottom portion** * * * * * * * * * * * * *

Sidney-Shelby County Health Dept.
202 W. Poplar St.
Sidney, OH 45365
Fax: 937-498-7013 Email: sschd@odh.ohio.gov

Reinspection Fee Exemption Form

Return this form with a photocopy of the work report and/or itemized receipt from the contractor. (All repairs must be made for exemption from reinspection and fee.)

Owner Name: _____ Phone: _____

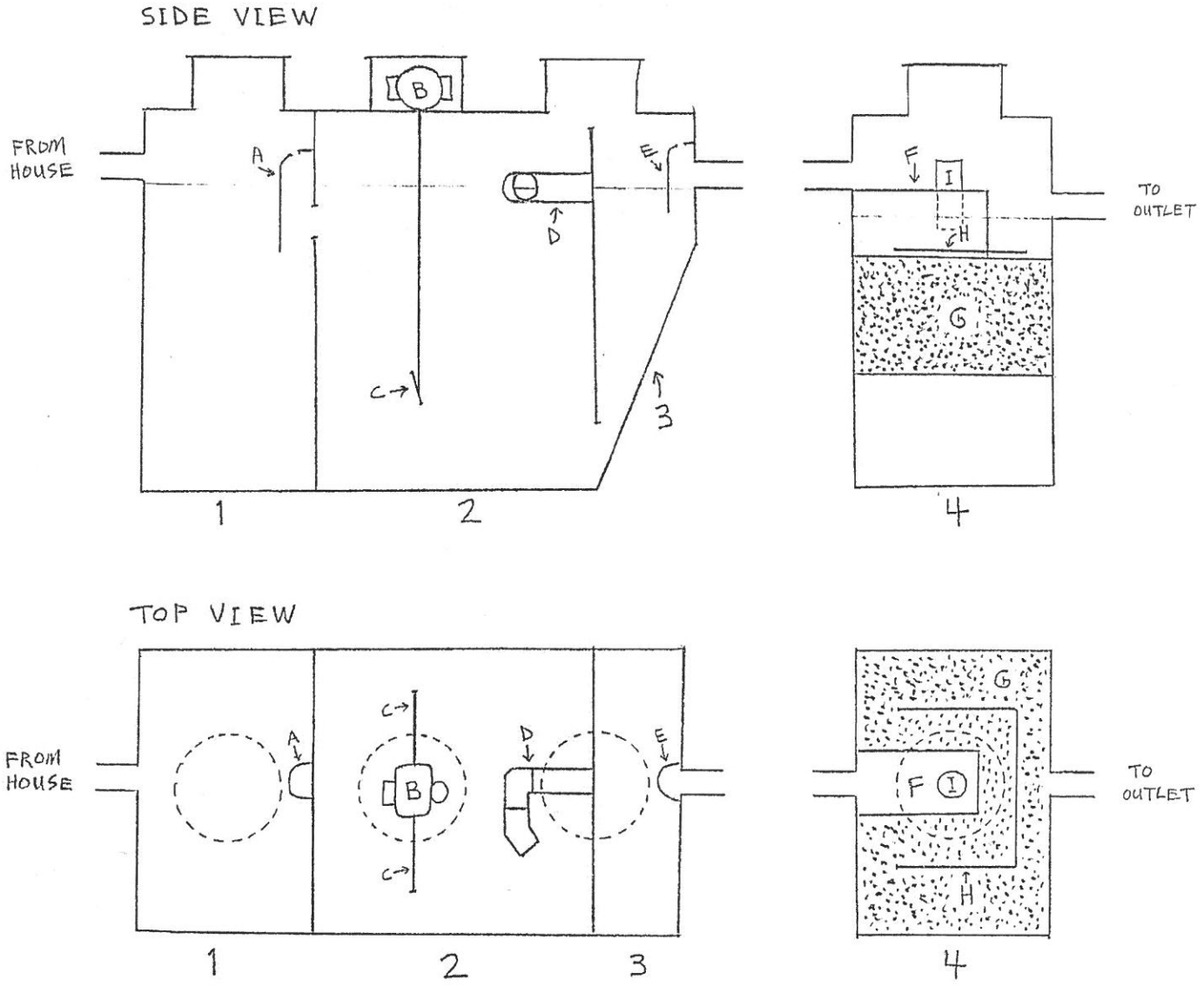
Address of Aerator: _____

Township: _____ Service Contractor: _____

Terms: Exemption form due by compliance deadline on inspection form. If this form is not received by the due date, a reinspection will be made which will result in a reinspection fee being assessed. Please contact the Health Department if circumstances exists that will make it impossible for the system to be repaired by the deadline, or you are unable to get this form turned in by the due date.

Rev. 8/23/10

DIAGRAM OF AEROBIC SEWAGE TREATMENT SYSTEM



1. Primary clarifier or trash trap
2. Aeration chamber
3. Final clarifier
4. Upflow sand filter (not on all systems)

A. Baffle

B. Airmotor/blower, air filter, and timer

C. Air diffuser

D. Surface skimmer

E. Baffle or vented elbow

F. Downflow channel

G. Filter sand

H. Air diffuser

I. Chlorinator (not on all systems)

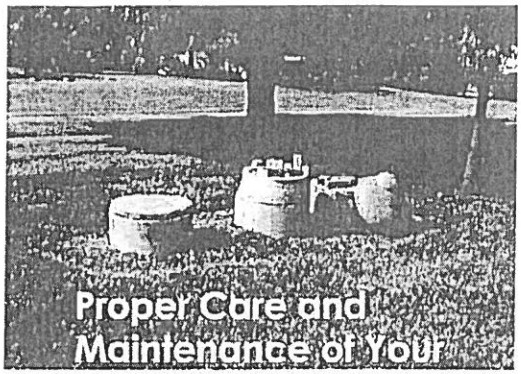
Proper Care and Maintenance of Your Home Aeration Sewage Disposal System

Prepared by The Sidney-Shelby County Health Department

(937) 498-7249

Sidney, Ohio

Sponsored by OEPA - Ohio's Nonpoint Source Pollution Program (319) and the Sidney-Shelby County Health Department



Proper Care and Maintenance of Your Home Aeration Sewage Disposal System

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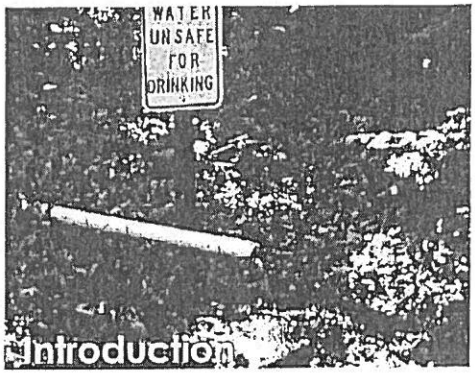


Introduction

As our population grows it is becoming increasingly important to protect the surface and groundwater supplies from pollution. Maintaining your home sewage treatment system will ensure that you are doing your part to protect this precious water supply.

We humans use a LOT of water, and produce a LOT of waste. An average family produces 350 gallons of wastewater each day! That's more than 100,000 gallons each year.

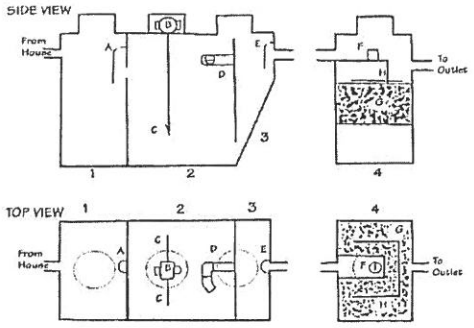
Your home aeration sewage disposal system discharges treated wastewater where you live. If the treatment is not effective, **contaminated water** can reenter the freshwater supply of your neighbor, or even your own.

Remember, the amount of water on the Earth is finite and it is under constant change and reused often. What we flush, we drink!

Poorly treated human waste can carry **diseases** such as dysentery, hepatitis A, typhoid fever, salmonella, and other intestinal diseases and parasites.

Over longer periods of ineffective treatment, water in streams, rivers and lakes can suffer from decreased oxygen levels, excessive algae growth, increased nitrates and ammonia levels, all of which can destroy the water's capacity to support aquatic life. Improperly treated waste can cause environmental nuisances as well, causing ugly discharge areas and offensive odors, which decrease quality of life and may even depress your property value.

Regular monthly inspections and maintenance of your Home Aeration Sewage System can assure that the hundreds of thousands of gallons of wastewater discharged from our homes every year is clean and free of pollutants.



KEY TO DIAGRAM

1	Primary clarifier or trash trap
A	Baffle
2	Aeration chamber
B	Air motor/blower, air filter and timer
C	Air diffuser
D	Surface skimmer
3	Final clarifier
E	Baffle or vented elbow
4	Upflow sand filter (not on all systems)
F	Downflow channel
G	Filter sand
H	Air diffuser
I	Chlorinator (not on all systems)

Overview of systems

There are a number of manufacturers of home aeration sewage treatment systems, but they all work on the same principle.

First, wastewater exits your home through plumbing and gathers in the first chamber. This chamber is called the **Primary Clarifier(1)**. The main function here is to allow heavy solids to settle to the bottom, while grease and light solids float to the top. The relatively clear water between the floating scum at the top and the sinking sludge at the bottom flows into the second chamber.

The second chamber is called the **Aeration Chamber(2)**. Air from outside is blown into the waste water. This provides oxygen to the bacteria that live in the system.

The bacteria breathe the oxygen (that is what "aerobic" means) and eat the organic waste, producing harmless carbon dioxide and clean water as waste.

The air is injected in cycles, so the water has a chance to settle occasionally. Any solids in the system settle to the bottom, and the clarified water flows into the third chamber.

The third chamber is called the **Final Clarifier(3)**. In the Final Clarifier, any remaining suspended solids settle out, and return to the Aeration Chamber as food for the aerobic bacteria.

Once the water has settled in the Final Clarifier it may be discharged directly to a surface water supply, or into a leach field, or an upflow filter.

If your system has an **Upflow Filter(4)**, the water is piped under a bed of sand or gravel, and forced by pressure to flow up through the gravel bed. Any remaining solids in the water are trapped by the gravel, and the clarified, filtered water is then discharged to the surface for natural run-off.

Your system may also have a **chlorinator(I)**, which will provide disinfection of the discharged water as it flows over solid chlorine tablets.

Inspection and Maintenance Record

Date																				
Lids																				
Primary Clarifier																				
Baffles																				
Timer																				
Blower Motor																				
Air Filter																				
Agitation																				
Water Color																				
Skimmer																				
Upflow Filter																				
Chlorinator																				
Discharge Area																				
Pump Tank																				
Backwash Filter																				

How to check your system's performance

Your Home Aeration System is a mechanical system, and parts can break or wear out.

If you **smell a bad odor** around your system, the system needs to be carefully inspected. If the odor is especially sulfurous, a rotten egg smell, then the bacteria in the second chamber are not doing their job.

Listen for the motor of the air injector. It should turn on and off regularly, according to a timer switch you set.

Make it a point once in a while to **listen for the blower** running. Make sure it is turning on and off after the proper length of time.

Visually **inspect the discharge location**, if possible. Solids should not be exiting the system, but if so a baffle may be broken, or the chambers are getting full.

Look for black or gray deposits around the discharge area. These are signs the system is not functioning properly.

Some systems have a warning light or alarm to alert you that something is wrong.

In addition to these casual observations, you should have a schedule of regular, detailed inspections.

Safety Notice
There are health and safety hazards present when working on home aeration sewage treatment systems.
PLEASE USE CAUTION.
If you are uncertain about your ability to inspect or repair your system, consult a professional.

- ✓ Check the condition and accessibility of the lids to the chambers. Cracked lids may need to be replaced.
- ✓ Check the baffles between chambers to assure that untreated water is not flowing prematurely through the system.
- ✓ Be sure the timer is working and set to appropriate on-off cycles.
- ✓ Be sure the blower motor is working effectively, and the air filter is clean.
- ✓ Assure that sufficient volumes of air can flow into the aeration pipe, and that the aeration adequately stirs up the water in the second chamber.
- ✓ Check the color of the water in the second chamber. It should be a chocolate brown, not gray.
- ✓ Check the surface skimmer between the final clarifier and the aeration chamber. It should be pulling any floating scum from the clarifier back to the aeration chamber.
- ✓ Assure that the condition of the upflow filter is good. Look for excess solids.
- ✓ Check the condition of the chlorine tablets.
- ✓ Read the manufacturer's manual and follow directions for any maintenance instructions for your system.

Maintenance

Even when all parts of the system are working properly, your system will need regular maintenance.

You should consider purchasing a **service contract** from a local contractor. They will provide regular detailed inspections, plus periodic maintenance of your system. Contact the Sidney-Shelby County Health Department for a list of licensed contractors in your area.

The solids settling in the first two chambers will need to be **pumped out by a licensed waste hauler** every three to five years - more often if your household puts a heavy load on your system.

The **air filter** in the aeration chamber will need to be cleaned or replaced.

The **gravel** in the upflow filter will need to be backwashed.

Check the **chlorinator** often and replace the tablets with the recommended type and quantity.

Reducing the load on the system

Here are some tips you can use to reduce the load on your system, and allow it to function most efficiently.

- **Do** spread laundry throughout the week. A typical wash load uses about 40 gallons of water. Five loads of laundry in one day would pump 200 gallons of detergent-laden water into your aeration system.
- **Do** reduce water use in other ways. Take shorter showers, use flow restrictors on faucets and shower heads, and use low-flush toilets.
- **Don't** use a garbage disposal. Ground up food solids will settle in the first chamber. If you use a garbage disposal regularly, you will fill up your chambers very quickly, and require frequent pumpings.
- **Don't** flush trash. Cloth and paper products other than toilet tissue, rubber and plastic items - even those labeled "flushable" - and cat litter will not break down. At best, they will fill up the chambers. At worst, they will clog the system or cause a part to break.
- **Don't** pour oils, poisons, pesticides, chemicals, paint or large quantities of bleach down your drains. These substances are not biodegradable, and some can even kill the good bacteria in your system, stopping the natural breakdown of other waste.

Water Efficiency at Home

It's high time that you and your family practice water efficiency - whether you live in a suburban home or a city apartment, whether you depend on your own private well or the municipal water works.

Water has always been one of Ohio's most abundant natural resources, but it's a resource we can't take for granted. To ensure an adequate supply of water for your needs today - and for the needs of future generations - we must make the most efficient use of Ohio's water resources. Here are some ways you and your family can practice water efficiency where it matters most - right in your own home.

Toilets

In many homes, 43% of daily water consumption is used to flush toilets. That's nearly half of all the water used in a typical household. A standard toilet uses more than 5 gallons of water for each flush, but you can easily reduce that to 3 1/2 gallons or less. You can even install one of the newer low-consumption toilets, designed to use as little as 1.6 gallons at a time.

To reduce water usage in an existing toilet, fill a gallon plastic jug with water and place it into the tank (add some gravel to the jug to weigh it down). Don't use a brick, it could deteriorate and crack the tank! And don't use the toilet as a trash can. You waste gallons of water every time you flush just to dispose of such things as tissues, diapers - or spiders.

Showers

Showers are the second biggest water-waster in our homes, pouring out 5 to 10 gallons per minute. The average shower can use as much as 200 gallons of precious water. Reduce that waste by keeping shower time under 5 minutes and replacing the showerhead with a low-flow model.

You'll reduce water used for showering by as much as 50% and save nearly a fifth of all the water used in your household. Bathing is usually more water-efficient that showering, especially if you fill the tub just halfway (about 30 gallons). If you have small children, consider bathing them together, instead of one at a time.

Bathroom and Kitchen Sinks

Inexpensive low-flow aerators also save water in bathroom and kitchen sinks. A single indoor faucet without a low-flow aerator can pour out 2 to 8 gallons a minute. Other tips: Fill the sink with water, rather than letting the water run whenever you clean vegetables and fruits, shave, brush your teeth, wash and so forth.

Need a drink of cool water? Rather than letting the faucet run for a minute, keep some cold water in the refrigerator. Consider not using your in-sink garbage disposer, it's a big water guzzler.

Repairing a dripping faucet saves water - and money, since the repair can quickly pay for itself. Leaks can account for as much as 20% of an average household's water use. Even the smallest drip can add up to a significant loss of water (and energy, if a hot water faucet is leaking). A leaking toilet can waste up to 200 gallons a day. You can detect a toilet by adding a few drops of food coloring to water in the tank. If colored water shows up in the bowl, without flushing, a leak is present.

Dishwasher and Washing Machines

If a water-using appliance has a level/load switch, make sure your family knows how to use it appropriately. Washing machines and automatic dishwashers can account for about 20% of your household weekly water needs: 30 gallons for each load of laundry and 17 gallons for each load of dishes. Consolidate loads as often as possible. When it's time to purchase a new appliance, make water-efficiency a top consideration.

Lawns and Gardens

Your family can practice water-efficiency out of doors as well. During the hot, dry summer months, frequent water of lawns and gardens can more than double the normal household's water usage. You'll conserve water resources by watering lawns and garden plants early in the day, before 10 a.m., to reduce evaporation and sun scalding. Lawns should be watered once a week with no more than 1" of water applied.

The ODNR Division of Water's Fact Sheet: Water Efficiency in Your Own Back Yard offers detailed information and tips to help you conserve water when caring for your lawn and garden plants.

Private Wells

If you're among the many Ohioans who depend upon private wells for their household water needs, consult the ODNR Division of Water's Fact Sheet: Private Wells - Solutions to Common Problems.

For additional information on water efficiency and the conservation of Ohio's water resources, contact:

The Ohio Department of Natural Resources
Division of Water
Fountain Square
Columbus, OH 43224-1360
(614)265-6717

HOW AEROBIC TREATMENT WORKS

Aerobic systems treat wastewater using natural processes that require oxygen. Bacteria that thrive in oxygen-rich environments work to break down and digest the wastewater inside the aerobic treatment unit.

Like most onsite systems, aerobic systems treat the wastewater in stages. Sometimes the wastewater receives pretreatment before it enters the aerobic unit, and the treated wastewater leaving the unit requires additional treatment or disinfection before being returned to the environment.

Such a variety of designs exist for home aerobic units and systems that it is impossible to describe a typical system. Instead, it is more practical to discuss how some common design features of aerobic systems work and the different stages of aerobic treatment.

PRETREATMENT

Some aerobic systems include a pretreatment step to reduce the amount of solids in the wastewater going into the aerobic unit. Solids include greases, oils, toilet paper, and other materials that are put down the drain or flushed into the system *(see the list of what not to flush on page 5)*. Too much solid material can clog the unit and prevent effective treatment.

Some pretreatment methods include a septic tank, a primary settling compartment in the treatment unit, or a trash trap. Pretreatment is optional but can greatly improve a unit's performance.

AEROBIC TREATMENT UNITS

The main function of the aerobic unit is to collect and treat household wastewater, which includes all water from toilets, bathtubs, showers, sinks, and laundry. Aerobic units themselves come in many sizes and shapes—rectangular, conical, and some shapes that defy classification. Figure 1 on this page and figure 2 on page 4 show two aerobic unit design possibilities.

Suspended Growth Units

The process most aerobic units use to treat wastewater is referred to as suspended growth. These units include a main compartment called an aeration chamber in which air is mixed with the wastewater. Since most home aerobic units are buried underground like septic tanks, the air must

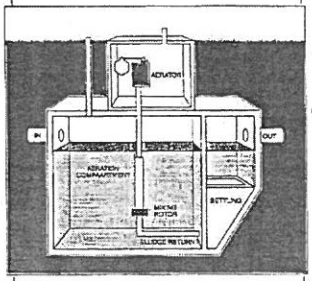


Figure 1—An example of a possible aerobic unit design
Adapted with permission from Pennsylvania State University College of Agriculture Extension Service

be forced into the aeration chamber by an air blower or a compressor.

The forced air mixes with wastewater in the aeration chamber, and the oxygen supports the growth of aerobic bacteria that digest the solids in the wastewater. This mixture of wastewater and oxygen is called the mixed liquor.

The treatment occurring in the mixed liquor is referred to as suspended growth because the bacteria grow as they are suspended in the liquid unattached to any surface.

Unfortunately, the bacteria cannot digest all of the solids in the mixed liquor, and these solids eventually settle out as sludge. Many aerobic units include a secondary chamber called a settling chamber or clarifier (see figure 1) where excess solids can settle. Other designs allow the sludge to accumulate at the bottom of the tank (see figure 2 on page 4).

In aerobic units designed with a separate settling compartment, the sludge returns to the aeration chamber (either by gravity or by a pumping device). The sludge contains bacteria that also aid in the treatment process. Although, in theory, the aerobic treatment process should eventually be able to consume the sludge completely, in practice, the sludge does build up in most units and will need to be pumped out at least once a year so that solids don't clog the unit.

Attached Growth Units

An alternative design for aerobic treatment is the attached growth system. These units treat wastewater by taking a surface made of material that the bacteria can attach to, and then exposing that surface alternately to wastewater and air. This is done either by rotating the surface in and out of the wastewater or by dosing the wastewater onto the surface. Pretreatment is required. The air needed for the process is either naturally present or is supplied mechanically.

Attached growth systems, such as trickling filters and rotating disks, are less common than suspended growth systems, but have certain advantages. For example, there is no need for mixing, and solids are less likely to be washed out of the system during periods of heavy household water use.

Flow Design

The way and the rate in which wastewater is received by and flows through the aerobic unit differs from design to design. Continuous flow designs simply allow the wastewater to flow through the unit at the same rate that it leaves the home. Other designs employ devices (such as pretreatment tanks, surge chambers, and baffles) to control the amount of the incoming flow. Batch process designs use pumps or siphons to control the amount of wastewater in the aeration tank and/or to discharge the treated wastewater in controlled amounts after a certain period of time.

Controlling the flow of wastewater helps to protect the treatment process. When too much wastewater is flushed into the system all at once, it can become overburdened,

HOW AEROBIC TREATMENT WORKS (Continued)

and the quality of treatment can suffer. The disadvantages to mechanical flow control devices are that, like all mechanical components, they need maintenance and run the risk of malfunctioning.

Homeowners can help their system's performance by conserving water. Leaking faucets and running toilets should be repaired, and washing machines and dishwashers should be used only when full. Installing water saving devices in toilets, faucets, and showers can reduce water use by up to 50 percent. Also, homeowners should try to space out activities requiring heavy water use (like laundry) to avoid overloading their systems.

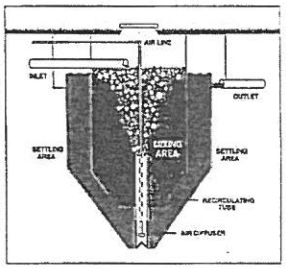


Figure 2—Another example of a possible aerobic unit design
Adapted with permission from Pennsylvania State University College of Agriculture Extension Service

FINAL TREATMENT AND DISPOSAL

Although properly operated and maintained aerobic units are very effective, the wastewater leaving the units is not ready to be returned to the environment and must receive final treatment or disinfection. Methods for final treatment include discharge to a soil absorption field, a sand filter, or an evapotranspiration bed. Sometimes, the wastewater receives disinfection before being discharged to the soil or directly to a body of water. Your health department is familiar with local regulations and the treatment options that are best in your area and for your property.

Soil absorption fields (or drainfields) are the most common method of final treatment used for septic systems. If an aerobic system is being used in place of a septic system or to replace a failing septic system, a drainfield may not be an option. However, an aerobic unit can sometimes help to prolong the life of a drainfield.

The amount of dissolved oxygen contained in wastewater from an aerobic unit can help the growth of microorganisms that treat the wastewater in the soil, and can help prevent the pores in the soil from clogging. However, when aerobic units malfunction, they can release solids that can clog the drainfield, which may cancel out any potential benefits.

Evapotranspiration beds are a less common method of final treatment and use vegetation and evaporation to naturally treat the wastewater. Drip irrigation is another less commonly used method to treat and dispose of wastewater.

Sand filters are sometimes used to treat the wastewater from aerobic units. The wastewater is pumped evenly over several layers of sand and gravel, which are located either above or below ground. As with soil treatment systems, the purification process is aided by bacteria that occur naturally in the sand.

Disinfection is another method of treatment commonly used with aerobic units. Some units have the disinfection process incorporated into the unit design. In some cases, disinfection may be the only treatment required of the wastewater from an aerobic unit before the water is released into the environment. Added costs for disinfectants, such as chlorine, should be taken into account with aerobic units.

OTHER DESIGN CONSIDERATIONS

Controls and Alarms

Most aerobic units have controls that can be switched on and off by the homeowner in case of emergency. Aerobic units also are required to have alarms to alert the homeowner of malfunctions. Depending on the design of the system, controls and alarms can be located either inside or outside the home, and alarms can be visible, audible, or both.

Homeowners should make sure that controls and alarms are always protected from corrosion, and that the aerobic unit is turned back on if there is a power outage or if it is turned off temporarily.

Size

Aerobic units should be large enough to allow enough time for the solids to settle and for the wastewater to be treated. The size of most units range from 300 to 1,500 gallons per day, but local regulations often require that the unit be at least large enough to handle 500 gallons of wastewater per day.

The needed size of an aerobic unit is often estimated the same way the size of a septic tank is estimated, by the number of bedrooms (not bathrooms) in the house. It is assumed that each person will use approximately 50 to 100 gallons of water per day, and that each bedroom can accommodate two people. When calculated this way, a three-bedroom house will require a unit with a capacity of 300 to 600 gallons per day.

Some health departments require that aerobic units be sized at least as large as a septic tank in case the aerobic unit malfunctions and oxygen doesn't mix with the wastewater. In such cases, the aerobic unit will work as a septic tank—which will, at least, provide partial treatment for the wastewater.

Temperature

Lower temperatures tend to slow down most biological processes, and higher temperatures tend to speed them up. The aerobic process itself creates heat, which, along with the heat from the electrical components, may help to keep the treatment process active. However, cold weather can have adverse effects on the performance of aerobic units.

In one 1977 study of aerobic units, bulking of the sludge seemed to occur when the temperature of the mixed liquor fell below 15 degrees Celsius (59 degrees Farenheit). Problems can sometimes be avoided by insulating around the units. Your health department should know whether aerobic systems are suitable for your area.

AEROBIC SYSTEM DO's *AND* DON'Ts

DO's

Do maintain the contract service arrangement offered by the manufacturer after the initial two-year period has expired (unless your community offers its own management program). It is extremely important that aerobic systems receive regular maintenance.

Do keep your system accessible for inspections and pumping, yet protected from unauthorized entrance. If access to your system is locked, make sure that your service contractor has a key.

Do call a service professional whenever you experience problems with your system, whenever the alarm is activated, or whenever there are any signs of system failure.

Do keep detailed records about your aerobic system, including a map of where it is, and general information, such as model name, capacity, state license, date installed, contract service agreement, records of service visits, and maintenance performed.

Do conserve water to avoid overloading the system. Be sure to repair any leaky faucets or toilets.

Do divert other sources of water, like roof drains, house footing drains, and sump pumps away from the aerobic system.

Do become familiar with how your own particular system operates, and the way it looks, sounds, and smells when it is working correctly. This way, you may be able to identify problems before they become serious and alert your service provider to anything unusual.

Do be sure to ask your service provider questions about how to know if your unit is malfunctioning.

DON'Ts

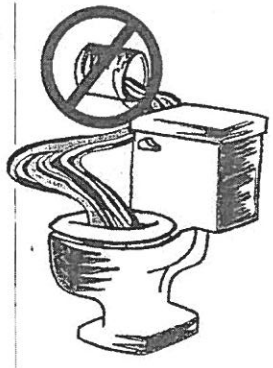
Don't allow anyone to drive over or park on any part of the system.

Don't make or allow unauthorized repairs or changes to your aerobic system without obtaining the required health department permits.

Don't use your toilet as a trash can or poison your treatment system and the groundwater by pouring harmful chemicals down the drain. Harsh chemicals can kill the beneficial bacteria that treat your wastewater.

Don't use a garbage disposal without checking with your local regulatory agency to make sure that your aerobic system can accommodate this additional waste.

Don't attempt to clean or perform maintenance on any sealed aerobic unit components.



WARNING SIGNS

of Aerobic System Problems

- ! Alarms or lights going off
- ! Any changes in the system's normal operating sound
- ! Any changes in the normal color of the wastewater in the aeration chamber (for example, if the color is greyish brown rather than chocolate brown, this can sometimes indicate problems)
- ! Excessive solids, foam, or scum in the unit
- ! Plumbing backups
- ! Sewage odors in the house or yard

Don't Flush These Items

coffee grounds
dental floss
disposable diapers
kitty litter
sanitary napkins
tampons
cigarette butts
condoms
gauze bandages
fat, grease, or oil
paper towels

and never flush chemicals, such as:

paints
varnishes
thinners
waste oils
photographic solutions
pesticides

As with septic systems, these items can overtax or destroy the biological digestion taking place within your aerobic unit.

Aerobic System Maintenance

Q&A

How much does aerobic treatment cost?

The cost of aerobic treatment varies depending on factors, such as design, size, location, and operation and maintenance requirements. Some of the factors affecting the cost of aerobic treatment are as follows:

- unit price,
- cost of unit installation and electricians' fees,
- cost of construction of the drainfield or cost of other method of additional treatment if required,
- cost of electricity (per year),
- maintenance service contract fee (per year), and
- cost of disinfection (if applicable).

The price of some of these factors, such as unit price, may be adversely affected by the lack of demand for aerobic systems in certain areas. Installation costs may be higher for aerobic units than for septic tanks because of the electrical work required.

All of these factors need to be carefully considered when determining the cost-effectiveness of aerobic treatment versus other treatment methods. Your local health official can help you evaluate your options.

It is important that mechanical components in aerobic systems receive regular inspection and maintenance. For example, air compressors sometimes need to be oiled, and vanes, filters, and seals may need to be replaced. Malfunctions are common during the first few months after installation. In most cases, homeowners do not have the expertise to inspect, repair, and maintain their own systems.

If your unit carries the NSF approval, it will include the first two years of service visits with the purchase price and an option to renew the service contract after two years. It is a good idea for homeowners to renew their service agreements after two years, or to find another service organization to take over the job.

In addition to routine maintenance, NSF requires service contractors to stock replacement parts for mechanical components and to be available for emergency servicing. Under the original two-year agreement, failed equipment is replaced at no additional cost to the homeowner.

The service contract may or may not cover such problems as damage from power failures, breaking or crushing of pipes leading to and from the system, flooding, fires, homeowner misuse, and other catastrophics beyond the control of the manufacturer.

Service visits will most likely be carried out by the dealer or another independent service organization that has an agreement with the manufacturer. In other cases, health departments will have maintenance management programs, such as sanitary districts, for aerobic systems and other onsite systems in their area.

What To Expect at a Typical Service Visit

The first service visit should be scheduled immediately after the system is installed to make sure that everything is working correctly. The service contractor may also arrange a meeting with the homeowner to go over issues, such as proper operation, what to do in case of emergency, etc. For seasonal properties, homeowners will need With the first visit, the maintenance service contract should be issued to the homeowner.

The maintenance contract should include at least two service visits per year for the next two years. The number of visits and service performed will differ from unit to unit and location to location depending on manufacturers' recommendations and local regulations.

During a typical visit, the service provider will remove the unit's cover and check its general appearance. He or she will check pipes and the inside of the aeration chamber, and will note the appearance of the wastewater inside the unit and its color and odor. If the unit includes a chlorinator, this too will be checked and may be cleaned. Samples may be taken of the mixed liquor from the aeration chamber, as well as the final treated wastewater. The operator will also check to see that all mechanical parts, alarms, and controls are in working order, and that solids are pumped from the system if needed.

The soil absorption field, sand filter, or other method of final treatment may also be inspected by the service provider.

Record Keeping

It is a good idea for the homeowner or the service provider to keep detailed records about the system and service visits. NSF-approved units are required to include a user's manual that describes such things as the manufacturer's recommendations for the unit, the system design, how to operate and maintain it, as well as how to tell if it is working properly. The state license, the date the system was installed, the type of disinfection, and any modifications to the system should also be recorded.

Other important information to keep on hand includes where to contact the owner if nobody is home, where to find a key to the system, and the schedule for service visits.

Homeowners should keep their own copies of all records and permits.