CUYAHOGA COUNTY

BOARD OF HEALTH

YOUR TRUSTED SOURCE FOR PUBLIC HEALTH INFORMATION

HOUSEHOLD SEWAGE TREATMENT SYSTEM

RECORD KEEPING FOLDER

A properly designed, installed, and regularly maintained system will treat your wastewater without harming the environment or threatening public health.

This folder provides a place to record and store information about your system and its maintenance.

For more information about proper care of your septic system please contact the Cuyahoga County Board of Health at (216) 201-2020.

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Local Watershed Organizations

Big Creek Connects/Friends of Big Creek
P.O. Box 609272
Cleveland, OH 44109
216-661-7706
http://www.friendsofbigcreek.org/

Chagrin River Watershed Partners
P.O. Box 229
Willoughby, OH 44096-0229
440-975-3870
http://www.crwp.org/

Cuyahoga River Restoration
1299 Superior Ave. E
Cleveland, OH 44114
216-241-2414
http://cuyahogariver.org/

Friends of Euclid Creek
P.O. Box 21384
South Euclid, OH 44121
http://www.euclidcreekwatershed.org/

Mill Creek Watershed Partnership
P.O. Box 347113
Cleveland, OH 44134
http://www.millcreekpartnership.org/

Tinkers Creek Watershed Partners
P.O. Box 444
Twinsburg, OH 44087
330-963-6243
http://www.tinkerscreekwatershed.org/

Rocky River Watershed Council
6100 West Canal Road
Valley View, OH 44125
http://myrockyriver.ning.com/

West Creek Conservancy
P.O. Box 347113
Cleveland, OH 44134
216-749-3720
http://westcreek.org/

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What You Need to Know About Your NPDES Sewage Treatment System

Before the household sewage treatment system (HSTS) servicing your residence was installed, your property was granted coverage under the Ohio EPA's National Pollutant Discharge Elimination System (NPDES) General Permit for HSTS. This permit enables your residence to legally discharge treated wastewater to the environment. This permit requires that the effluent from the system meet certain water quality standards.

What does CCBH do?

A Cuyahoga County Board of Health (CCBH) staff member will contact you in order to schedule a time to visit your property. A CCBH staff member will be out to your property once per year to collect the effluent samples that are required annually by the Ohio EPA. During the visit, our staff will record field measurements for color, odor, turbidity, dissolved oxygen, and chlorine residual (if applicable). An effluent sample will be collected and transported to a laboratory where it will be analyzed for carbonaceous biological oxygen demand (CBOD), total suspended solids, ammonia, and *E. coli*.

Many systems can be sampled without the homeowner being present; however, some systems will require that the homeowner or another responsible person be home to run water inside the house. At the conclusion of the visit, the staff member will leave a report with you or at your residence in your absence. The system's sampling results will be mailed to you once they are received from the laboratory.

Keep in mind that the cost of this required sampling is included in your annual operation permit fee. There is no additional cost for this service.

What does the homeowner need to do?

As the owner of a discharging HSTS that has received coverage under the Ohio EPA's General Permit, you are required to maintain a service contract for the life of the system. The conditions of the NPDES permit require that a service contract be maintained with a registered service provider in order to ensure that the system is operating properly. In addition, proof of your annual service contract must be submitted to CCBH with your yearly operation permit fee.

Visit our website at http://www.ccbh.net/household-sewage for more information and to view a list of registered service providers.

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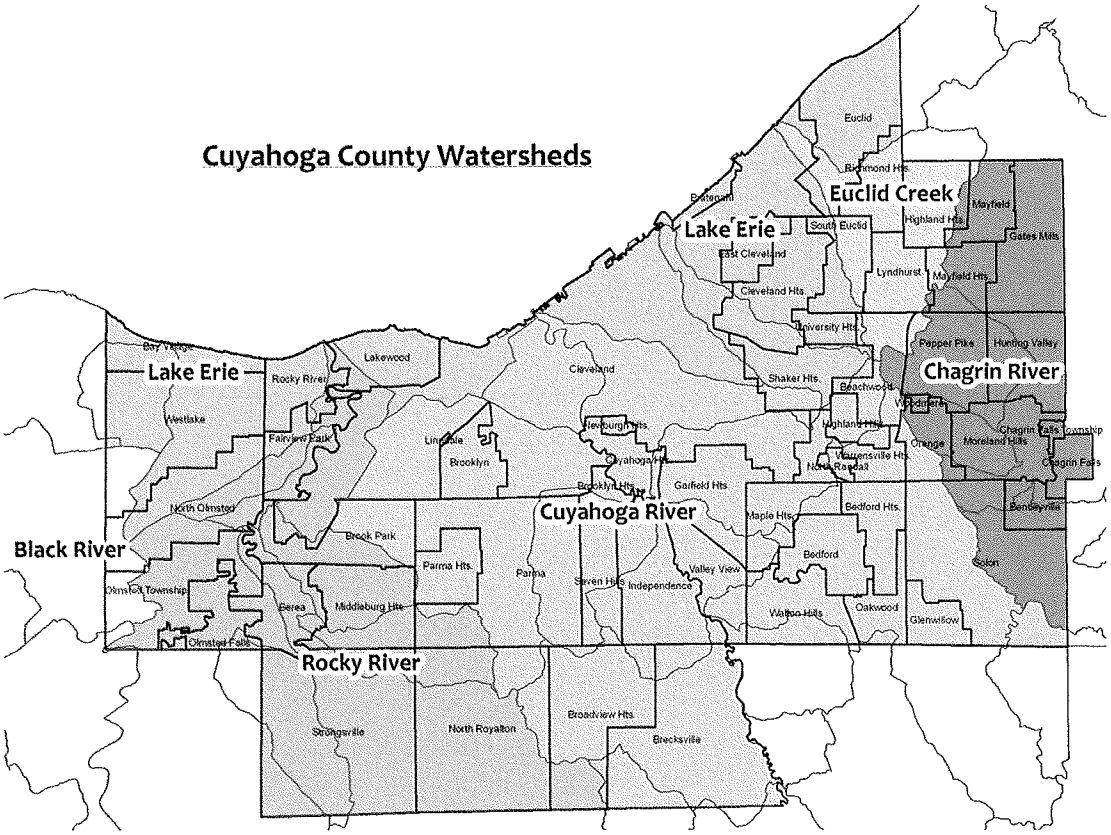
Household Sewage Treatment Systems and Your Watershed

A watershed is a drainage basin – an area of land from which all water flows to a common water body, such as a river or lake. In Cuyahoga County, all of the streams and rivers eventually drain into Lake Erie, which ultimately empties into the Atlantic Ocean. This is important since any pollution in our local streams and rivers can impact Lake Erie, which provides our drinking water, fish habitat, and areas for fishing and recreation.

The effluent from your household sewage treatment system (HSTS), therefore, not only impacts the water quality in your local stream or waterway, but also the water quality of the larger stream or river that the local stream flows into. The combined effect of numerous failing septic systems in an area can negatively impact water quality , which can effect the quantity and variety of macroinvertebrates and fish that live in the stream or river. Proper care and maintenance of your HSTS will minimize the risk of harm to our local water quality and that of the Lake Erie watershed.



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Aeration Systems

Home aeration systems require special care. The most important part of an aeration system is the aeration motor. The motor must operate continuously in most aeration systems. If the motor stops running, the microorganisms that thrive in the aeration system will begin to die due to a lack of oxygen. These "sewage bugs" help to break down the organic matter in the wastewater and biologically convert it to stable substances in the form of gases and liquids. The aeration and mixing of the wastewater ensures that it comes into contact with the microorganisms so that thorough treatment can occur. Loss of suitable aeration will result in little or no sewage treatment taking place within the aeration unit.

Several aeration system designs also incorporate the use of filters to provide additional treatment. These filters need to be checked and cleaned on a routine basis to work effectively. If these filters become clogged, then the wastewater has no place to travel within that system, which eventually could lead to a sewage backup. Solids could also clog the motor, which would shorten its useful life. Untreated wastewater may eventually leave the system and pollute the environment.

Aeration systems have mechanical components which also require service and eventual replacement. Since much of the additional care and maintenance required with these systems is beyond the expertise of the average homeowner, various companies have been certified by the original manufacturers to offer extended service contracts.

Modern aeration systems have an alarm box that is situated in a conspicuous location either inside or outside of your home. This alarm box will let you know if there is a problem with the system. An alarm will typically sound if the motor is not operating or if there is a backup within the tank. Once this alarm sounds, you should contact the service provider whose name appears on the alarm box. You should also minimize water usage until a technician arrives to repair your system. You can still flush your toilets and use water sparingly during this time, but refrain from doing laundry or conducting other activities that generate a large volume of wastewater. A sewage backup into your home or ponding of wastewater on your lawn could result.

Visit our website at http://www.ccbh.net/household-sewage for more information and to view a list of registered service providers.

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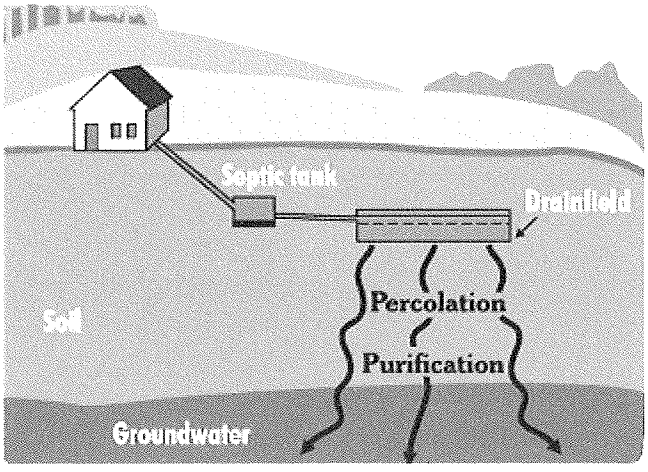
Leaching Tile Fields

The most common septic system installed throughout much of the country for decades has utilized a septic tank and a leaching tile field. By design, the sewage flows out of the tank and into either a clay tile or perforated pipe that is laid in trenches filled with gravel. The wastewater then drains from the pipes and enters the soil where it is treated and absorbed. This effluent must be properly filtered so that it does not pose a threat to the groundwater.

Leaching tile fields work well in areas with well drained, sandy soils. Unfortunately, much of Cuyahoga County consists of relatively poorly drained clay soils. These soils typically have little absorption capacity. The soil permeability, or the rate at which water percolates into the soil, is very slow in much of this area. Poorly drained soils are typically saturated with water during wet weather and stay wet for long periods of time after a heavy rain.

Leaching tile fields are designed to keep all of the effluent from the septic system on the property. If your system utilizes a leachfield and it is instead discharging off your property, your system is not operating properly. Leachfields will fail once the soil can no longer absorb the water that is being sent to it from the septic tank. Once this occurs, the wastewater will either pond on top of the ground or find an alternative path and be discharged at another location. In this situation, replacement of the system may be necessary to eliminate any nuisance conditions present.



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Septic Tank

How the tank works:

The contents of the septic tank separate into three layers:

- Floating Scum layer – soaps, greases, toilet paper, etc.
- Liquid layer – water, other liquids, and suspended solids
- Sludge – heavy organic and inorganic materials settle to the bottom of the tank

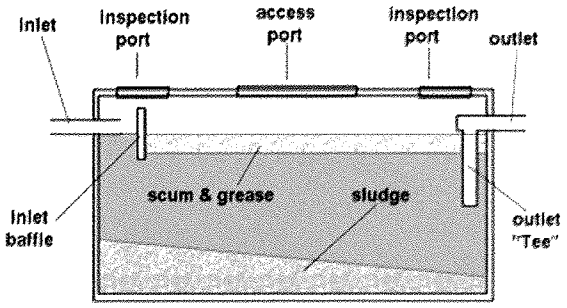
Bacteria that naturally occur in the sewage which enters the tank are necessary to break down organic materials in wastewater. This is often referred to as primary treatment. Pathogens in the waste are not destroyed in the septic tank. The septic tank and its bacteria prepare the wastewater for treatment by the remainder of the system.

Components of the tank:

The septic tank performs the first step of the wastewater treatment process. The septic tank is a solid watertight tank designed specifically to accept wastewater from the home. Some installations may have one tank or two tanks in series. All tanks should feature inlet and outlet baffles, along with an access covers/inpsection ports for cleaning.

The inlet baffle ensures that entering wastewater mixes with the liquid contents of the tank to begin bacterial breakdown of organic materials and separation of solids. The inlet baffle also prevents the floating scum layer from floating back and clogging the inlet pipe.

The outlet baffle ensures that only liquid is able to leave the tank and enter the secondary treatment portion of the system. If the scum layer reaches the outlet pipe, the pipe or secondary treatment component could become clogged.



Filter Bed Systems

Although their design has changed over the years, filter bed systems have been installed in Cuyahoga County for decades. Filter beds installed prior to the early 1970s typically utilized gravel to treat wastewater. The beds consisted of clay tile pipes laid on top of a 15 to 24 inch thick bed of large gravel. A clay tile line was also placed below the gravel bed to act as a collection pipe. Wastewater from the septic tank would drain into the top pipes, filter through the gravel and be collected in the bottom line. This effluent was then discharged to the environment. Many of these systems are still in use today throughout Cuyahoga County.

Unfortunately, many of these old gravel beds did not function well and did not have the ability to properly filter the sewage prior to discharging it to a ditch, stream, or storm sewer. For this reason, filter sand was then utilized to treat wastewater in more modern filter bed systems. Perforated pipe was laid in gravel both above and below the filter sand. The sand could treat wastewater much better than gravel.

Filter bed systems installed in the last few decades typically use a diversion box, also known as a splitter box. This box contains a flow diversion device that directs the flow of wastewater to one side of the filter bed or the other. This allows one part of the bed to rest while the other is in use. This helps extend the life span of the filter bed system. The flow to the filter beds should be changed at least annually. For this reason, the flow diversion box must be kept accessible. If you do not know where it is located, contact your septic pumper, service provider, or the Board of Health.

Despite the improvements in filter bed design, even these more modern sand filter bed systems may not be capable of properly treating wastewater before discharging it into our local waterways. Filter beds are no longer permitted as an acceptable type of discharging sewage treatment system. This is due to the water quality standards set by the Ohio EPA for new systems that discharge treated wastewater off of the property.

See the reverse side for a diagram of a filter bed.

Proper Care and Maintenance of Your Household Sewage Treatment System

Cleaning the Tank:

Having your septic tank(s) pumped on a regular basis is an essential part of keeping your system in good working order. Materials like sludge and grease will accumulate in the septic tank and must be removed regularly before they impact the rest of your sewage system.

County regulations require that septic tanks be pumped out at least once every three to five years. If you have a large family, you may need to have the tank(s) pumped out more often.

The access lid for your septic tank is required to be kept above ground level. This allows the tank to be easily located, pumped, and inspected. If your tank lid is not above ground level, an extension riser can be installed at the time of your next cleaning.

Products to keep out of your system:

Organisms inside your sewage systems thrive on waste water from the household. However, certain chemicals can harm the delicate balance in a septic tank and should not be run through the system. These chemicals include:

- Paints, paint thinners, and solvents
- Drain cleaners
- Motor oil, kerosene, and gasoline
- Floor wax
- Chlorine bleach

Other materials may not chemically harm the system, but may cause pipes to clog or create a blockage. These items will not break down and cannot be digested by microorganisms. The following materials should never be flushed down the toilet or run down the drain:

- Grease, cooking oil, and animal fat
- Cotton balls and cotton swabs
- Sanitary napkins and tampons
- Condoms
- Plastics
- Coffee grounds

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5550 Venture Drive Parma, Ohio 44130
216-201-2000 www.ccbh.net

MAINTENANCE RECORD

Date of Cleaning/Service	Maintenance Contractor/Telephone Number