

Operation and Maintenance

Operation

Benefits of proper design and installation of on-site sewage management systems can be completely overshadowed by improper operation, maintenance and/or repair activities. Inadequate maintenance is the primary reason for most on-site sewage management system malfunctions. Problems which can develop even in a properly designed and installed system include:

1. Excessive amounts of water, grease or non-biodegradable materials entering the wastewater system and resulting in backups to homes or flooding of the drainfield;
2. Uneven wastewater distribution;
3. Seepage from the disposal area and surface seepage resulting in pollution of ground or surface waters.

Maintenance

The most common on-site maintenance procedure is pumping out septic tanks. As sludge accumulates in a septic tank, the capacity of the tank to hold and treat incoming wastewater decreases and the quantity of solids leaving the septic tank increases. These solids can clog the soil at the disposal field (drainfield) and unnecessarily pollute the groundwater or a nearby stream or lake. Pumping out septic tanks periodically helps to avoid such problems. The septage, which is pumped out from a tank, must be properly disposed of either at a treatment plant or at an approved land disposal site.

Chemical or biological additives are not a substitute for pumping. In general, these products, which claim to “clean” septic tanks, contain biological based materials (bacteria, enzymes and yeast), inorganic chemicals (acids and bases) or organic chemicals (including solvents) that may result in sludge bulking and interfere with digestion. The resulting effluent may severely damage the soil structure and cause accelerated clogging, even though some temporary relief may be experienced immediately after application of the product.

It is not necessary to add anything but domestic wastewater to the septic tank. Materials that degrade slowly or do not settle well should not be put into septic tanks. Coffee grounds, cooking fats, cigarette butts, bones, wet strength towels, disposable diapers, condoms, feminine hygiene products and similar materials must be disposed of in another manner. They will not degrade in the tank and can clog inlets, outlets and the disposal system.

The recommended minimum frequency for pumping out septic tanks depends upon the size of the tank, flow of wastewater entering the tanks and the solids content of the wastewater. By assuming a minimum wastewater residence time within a tank and assuming a certain percentage of the retained solids are decomposed, minimum pump out frequencies can be estimated. Table LT-1 lists estimated pump out frequencies assuming wastewater residence time of 24 hours and assuming 50 percent of the solids are decomposed or digested.

Lack of any inspection and maintenance allows structural deficiencies to go unnoticed and possibly jeopardizes the absorption system. In septic tanks and pumping chambers, bad seals and cracks which go uncorrected may allow significant amounts of groundwater or surface water to infiltrate and overload the system; baffles which are no longer functional or in their proper location may be permitting significant amounts of undetected solids to pass into the absorption area.

Septic tank designs can be modified to produce an inlet and outlet device, which will be efficient and long lasting in a highly corrosive environment. Inspections made during the repair process often find baffles or concrete tees which have deteriorated and fallen off on the bottom of the tank, thereby allowing solids to flow into the soil absorption area, possibly clogging the soil. Inspection ports on septic tanks extended to the ground surface can help facilitate maintenance checks. Incorporation of ports or access openings would serve to continuously remind the users of the location of the facilities and allow ready access for maintenance.

TABLE LT-1

ESTIMATED SEPTIC TANK PUMPING FREQUENCIES (IN YEARS)
FOR YEAR-ROUND RESIDENCES (Source: Mancl, Karen)

Tank Size (gal)	Household Size (No. of people)									
	1	2	3	4	5	6	7	8	9	10
1000	12.0	5.9	3.7	2.6	2.0	1.5	1.2	1.0	0.8	0.7
1250	16.0	7.5	4.8	3.4	2.6	2.0	1.7	1.4	1.2	1.0
1500	19.0	9.1	5.9	4.2	3.3	2.6	2.1	1.8	1.5	1.3
1750	22.0	11.0	6.9	5.0	3.9	3.1	2.6	2.2	1.9	1.6
2000	25.0	12.0	8.0	5.9	4.5	3.7	3.1	2.6	2.2	2.0
2250	29.0	14.0	9.1	6.7	5.2	4.2	3.5	3.0	2.6	2.3
2500	32.0	16.0	10.0	7.5	5.9	4.8	4.0	4.0	3.0	2.6

NOTES: The frequencies estimated are based on a minimum 24-hour wastewater retention time and 50 percent digestion of the solids entering the tank. More frequent pumping would be needed if garbage disposals were utilized.

Performance Evaluation of Existing On-site Sewage Management Systems

The County Board of Health is routinely asked to conduct performance evaluations of existing on-site sewage management systems. Such evaluations shall be based on available data relating to the system including:

1. Inspection records of initial system installation;
2. Maintenance records of the on-site sewage management system;
3. Site evaluations to determine the current performance of the on-site sewage management system.

Representatives of the County Board of Health will verify the status of the system at the time of the evaluation, based on the availability of the above data using the Existing On-site Sewage Management System Performance Evaluation Report Form.

The Health Department representatives conducting the evaluation should document their findings by completing only one section of the evaluation report form when using Sections A, B, or C using criteria detailed below. Section D should be completed in conjunction with either Section A, B, or C.

Title Section

This section should be completed with the most accurate information available. The original property owner and/or directions may be listed. The Health Department representative should circle the purpose of the evaluation in the right-hand column. Any pertinent existing home information as described by the applicant should be listed in the appropriate box (e.g. 4 bedrooms or 600 gallons per day home with no garbage grinder on public water).

Section A

This section should be completed if all of the following criteria are met.

1. Existing inspection records on file indicated that the system was properly installed, inspected and approved at the time of installation.
2. A copy of the original inspection report is provided with the existing system form.
3. The owner produced maintenance records, which indicate that the tank has been pumped within the past five years, or was installed during that time. If the system has not been pumped within that time frame, it should be pumped, if needed, and documentation of such must be provided to the Health Department prior to completing this section.
4. An on-site evaluation of the property reveals no evidence of damage to the system, of system failure or of the existence of any conditions that would adversely affect the functioning of the system.

All items under this section must be circled yes or no by the Health Department representative. In addition, the comments section may be completed detailing any conditions which might affect the approval. (Ex: The home was unoccupied for more than thirty days prior to the evaluation; the yard was overgrown with weeds making visual inspection of the absorption field difficult, etc.)

Section B

The Health Department representative should complete this section for systems for which no record of inspection exists, provided the following criteria are met:

1. No records exist indicating the appropriateness of the construction, design or installation of the on-site sewage management system.
2. The septic tank was uncovered sufficiently to allow the Health Department representative to determine if the tank is properly sized, properly constructed and has acceptable inlet and outlet tees.

3. If allowed by the Health Authority, a Georgia Certified Installer has provided documentation indicating the septic tank and its tees are in good condition, and that it is properly sized and constructed.
4. The owner produces maintenance records that the tank has been pumped within the past five years. If the tank has not been pumped within that time frame, it should be pumped, if needed, and documentation of such must be provided to the Health Department prior to completing this section.
5. An on-site evaluation of the property reveals no evidence of damage to the system, of system failure or of the existence of any condition that would adversely affect the functioning of the system.

Either item number 2 OR 3 should be circled “yes”. All other items in this section must be circled yes or no by the Health Department Representative. In addition, the comments section may be completed detailing any conditions that might affect the approval.

Section C

This section should be completed if the initial installation of the system was disapproved by the Health Department and required corrections were never made, or if the on-site evaluation reveals an unapproved septic tank, evidence of system failure, significant changes to the home such as added bedrooms or added garbage disposals or other problems which would adversely affect the proper function of the system. The comments section may be used to detail the reason the system was not approved and/or the required corrective action.

Section D

This section should be completed in conjunction with ONE of the above sections. The Health Department representative should complete this section in cases where another local, municipal, or state agency requires the department’s approval prior to additions to the home, additions to the property, or a relocation of a home/mobile home provided the following are met:

1. An existing system is located on the property and has been evaluated in accordance with Section A or B.
2. An on-site evaluation of the property reveals no evidence of damage to the system, of system failure or of the existence of any condition that would adversely affect the functioning of the system; also, the provided information relating to the proposed construction (e.g. location of the construction, type of construction, etc.) or relocation of the home will adversely affect the performance of the system.

The addition or relocation should not include additional sewage loads. These increased sewage flows should be permitted by the Health Authority as an addition to the existing system. The approximate sewage flow that the existing system should be able to dispose of is to be indicated by number of bedrooms or gallons per day in its box. The septic tank size should be appropriate for a garbage grinder and indicated if so.

If all required corrections are made to a previously unapproved system, a new form must be completed.

Existing On-site Sewage Management System Performance Evaluation Report Form

Property Owner/System Owner Name:			Reason for Existing Sewage System Evaluation: (circle) (1) Loan Closing for Home Sale (2) Refinance (3) Home Addition (Non-bedroom) Type: _____ (4) Swimming Pool Construction (5) Structure Addition to Property Type: _____ (6) Mobile Home Relocation
Property/System Address:			
Subdivision Name:	Lot:	Block:	
Existing System Information: Water Supply (circle)	Number of Bedrooms/GPD:	Garbage Grinder: (circle)	
(1) Public (2) Private Well (3) Community		(1) Yes (2) No	

SECTION A – System on Record

(1) Yes (2) No	Existing On-site Sewage Management System inspection records indicate that all components of the system were properly constructed and installed at the time of the original inspection.	Comments: _____ _____ _____ _____
(1) Yes (2) No	A copy of the original On-site Sewage Management System Inspection Report is attached.	
(1) Yes (2) No	Maintenance records indicate that the system has been pumped out or serviced within the last five (5) years or the system was installed within that timeframe.	
(1) Yes (2) No	A site evaluation of the system on this date revealed no evidence of system failure or of conditions which would adversely affect the functioning of the system.	
Evaluating Environmentalist:	Title:	

I verify this data to be correct at the time of the evaluation. This verification shall not be construed as a guarantee of the proper functioning of this system for any given period of time. No liability is assumed for future damages that may be caused by

SECTION B – System Not on Record

(1) Yes (2) No	No inspection records are on file showing the On-site Sewage Management System was inspected and approved at the time of the installation.	Comments: _____ _____ _____ _____
(1) Yes (2) No	The septic tank was uncovered at the time of the evaluation and it appears to meet the required design, construction and installation criteria.	
(1) Yes (2) No	Documentation from a Georgia Certified Installer has been provided as to the condition of the septic tank and its respective components, certifying its design, construction, and installation criteria. A copy is attached.	
(1) Yes (2) No	Maintenance records indicate that the system has been pumped out or serviced within the last five (5) years or the system was installed within that timeframe.	
(1) Yes (2) No	A site evaluation of the system on this date revealed no evidence of system failure or of conditions which would adversely affect the functioning of the system; however, appropriateness of the sizing and installation cannot be verified since no initial inspection records exist.	
Evaluating Environmentalist:	Title:	Date:

I verify this data to be correct at the time of the evaluation. This verification shall not be construed as a guarantee of the proper functioning of this system for any given period of time. No liability is assumed for future damages that may be caused by

SECTION C – System Not Approved

(1) Yes (2) No	The On-site Sewage Management System was disapproved at the time of the initial installation and is thus not considered an approved system.	Comments: _____ _____ _____
(1) Yes (2) No	Evaluation of the system revealed evidence of system failure or malfunction, and will therefore require corrective action in order to obtain approval of the system.	
(1) Yes (2) No	Evaluation of the system revealed conditions which would adversely affect the proper functioning of the system, and will therefore require corrective action in order to obtain approval of the system.	
Evaluating Environmentalist:	Title:	Date:

I verify this data to be correct at the time of the evaluation. This verification shall not be construed as a guarantee of the proper functioning of this system for any given period of time. No liability is assumed for future damages that may be caused by

SECTION D – Addition to Property or Relocation of Home (section completed in conjunction with A, B, or C above)

(1) Yes (2) No	An existing On-site Sewage Management System is located on the property listed above and has been evaluated in accordance with Section A or B above.	Comments: _____ _____	
(1) Yes (2) No	A site evaluation on this date as well as the provided information indicate that the proposed construction to home or property or that the proposed relocation of the home should not adversely affect the proper functioning of the existing system provided that no additional sewage load is added to the system for the listed size		
Evaluating Environmentalist:		Title:	Date:
		Number of Bedrooms/GPD:	Garbage Grinder: (circle) (1) Yes (2) No

I verify this data to be correct at the time of the evaluation. This verification shall not be construed as a guarantee of the proper functioning of this system for any given period of time. No liability is assumed for future damages that may be caused by

**On-Site Sewage Management System
Operation and Maintenance Agreement**

Georgia,

This agreement made and entered into this _____ day of _____, 20____ by and between _____, a corporation under the laws of Georgia, or said county, hereinafter called "Company" and _____ of _____ County, Georgia, hereinafter called "Consumer."

WITNESSETH

Whereas, Company is the owner of the unencumbered fee simple title to the following described property.

Upon which is located an on-site sewage management system to serve the various properties that may now or hereafter be connected to the sewage management system and is also the owner of sewer lines in the streets in said subdivision and of easements for the installation and maintenance of such lines; and

Whereas Consumer is the owner of Lot ____ in _____ Subdivision in _____ County, Georgia, according to a plat thereof recorded in Plat Book _____, Page _____, Clerks Office, _____ County Superior Court and desires to obtain sewage management service which Company desires to furnish; and

Whereas, the parties hereto desire that the benefits and obligation of Consumer run with the land described above. Now, therefore, the parties hereto agree as follows.

1.

Company covenants and agrees to furnish sewage management service to the aforesaid property of the consumer, and to continuously furnish the same unless and until the operation of said sewage system is taken over or an adequate sewage system is otherwise made available to the property of Consumer by a municipality or other governmental agency or authority or public utility. Without limiting the generality of the foregoing, Company agrees that it will maintain said system in good order and repair.

2.

Company covenants and agrees that it has installed or will install sewer lines where Consumer's lot abuts; however, it is to be the responsibility of Consumer to make connection with said sewer line. Consumer shall first make a deposit of _____ to be held by Company so long as Consumer own the above-described property, which deposit may, at Company's option, at any time be applied in payment of any sum owed to Company by Consumer. In the event that any part of said deposit is so applied, Consumer shall immediately repay such amount to Company, so that Consumer will again have sum _____ on deposit with Company.

3.

Company covenants and warrants that the on-site sewage management system furnished by it shall be of the quality required by the _____ Health Department and that the system shall likewise meet the standards and requirements of the said department; however, nothing contained in this sentence or in this agreement shall be construed as enlarging the liability of Company for personal injuries to Consumer, any member of his family, or any other person, and Company shall be liable for such injuries only if negligent and such negligence shall be determined without regard to the provisions of this agreement. Company agrees to allow inspections of its system by said Health Department, as said Department may deem necessary.

4.

Consumer agrees to pay for the sewage management service provided for said premises the sum of _____ per month. Company shall have the right to change said rate and minimum from time to time but agrees that such rate and minimum shall not be changed to a rate and minimum higher than the highest rate and minimum charged by any town or municipality within a fifty mile radius of _____. Company shall bill Consumer for said service at least quarterly and not more often than monthly, and Consumer agrees to pay for said service within _____ days after a bill for the same is submitted and further agrees that, should he fail to do so, service may be discontinued. In the event that service is so discontinued, Company shall not be obligated to resume such service unless and until Consumer has paid all due bills plus _____ service charge.

5.

Company agrees so long as it is obligated to furnish sewage management service under this agreement that it will maintain a trust account for the benefit of the system in a banking institution or a federal savings and loan association in _____ Georgia in an amount not less than the total amount of deposits collected or per lot multiplied by the total number of lots in the subdivision, which ever is greater.

6.

In the event that Company should intentionally fail and refuse to furnish sewage management service in accordance with this agreement, all of the then owners of lots in _____ Subdivision, as shown on said plat referred to above, shall have the right to take over and become the owners of the complete system serving said Subdivision, and the trust account above referred to (but not the other assets of Company) which ownership should be deemed to be appurtenant to the lots in said Subdivision and to run with said lots.

7.

The benefits and obligations of Consumer under this agreement shall run with this lot described above; and this agreement shall bind and benefit Company, its successors and assigns.

8.

Company reserves the right to furnish sewage management service from or through said system to such additional properties as Company may deem proper, so long as Company complies with the terms of this agreement.

IN WITNESS WHEREOF the parties hereto have set their hands and affixed their seals on the day and year first above written.

_____, INC. (SEAL)

BY: _____ (SEAL)
(President)

Attest: _____ (SEAL)
(Secretary)

COMPANY

_____ (SEAL)

_____ (SEAL)

CONSUMER

Signed, sealed, and delivered in the presence of: