



On-site Sewage System CARE

OWNER RESPONSIBILITIES

1. For residential systems with no garbage disposal determine the level of solids and scum in the septic tank at least once a year. This is especially true if a garbage disposal is installed, or the OSS serves a business.
2. Employ an approved pumper to remove the septage from the septic tank when the level of solids and scum indicates that removal is necessary.
3. Have regular preventive maintenance/system performance monitoring inspections conducted and any indicated service performed by a certified person.
4. Operate and maintain the OSS in accordance with Title 13, with pertinent alternative system guidelines issued by the Washington Department of Health (DOH), and with this OSS owner's manual. Title 13 requirements and DOH requirements are summarized in this manual.
5. Protect the OSS area, including the reserve area, from:
 - a. Cover by structures or impervious material;
 - b. Surface drainage;
 - c. Soil compaction, for example, by vehicular traffic or livestock; and
 - d. Damage by soil removal and grade alteration.
6. Maintain the flow of sewage to the OSS at or below the approved design limits for both quantity and waste strength.
7. Direct drains, such as footing or roof drains, and surface water away from the area where the OSS is located.

The owner must not allow:

1. Use or introduction of strong bases, strong acids or organic solvents into the OSS for the purpose of system cleaning.
2. Use of a sewage system additive unless it is specifically approved by the DOH, and
3. Use of an OSS to dispose of waste components atypical of residential wastewater, for example, but not limited to, petroleum products, paints (including latex), solvents, or pesticides.

The following is practical advice concerning how to extend the operating life of the OSS and meet the requirements listed above.

ACTIVITIES NEAR THE SYSTEM

You should not build on, excavate, pave, drive over, or allow livestock on any parts of the system, including the reserve area. Particularly critical to a drainfield on a sloping site is the area within 30 feet down slope from the drainfield. This is the area where most of the treated wastewater will travel as it is absorbed into the native soils. For drainfields on relatively flat, level sites it is important not to compact the soils or alter the site within 30 feet in any direction from the drainfield. It is very important that this area remain undisturbed. Homeowners should protect the septic system and drainfield and surrounding area and inspect them on a regular basis. Wet spots on or near the system or drainfield are potential indicators of advanced problems or OSS failure.

LANDSCAPING AND SOIL PROTECTION

Grass or vegetation with shallow non-penetrating roots is the best cover for your system and drainfield. The grass should be of a shallow rooted but drought resistance type. Perennial rye mixed 50/50 with tall or fine fescue, "Northwest Mix", is a readily available good choice. New blends, which include these grasses along

with clover and other broadleaf plants, will stay greener in the summer without watering and fertilizer. *Eco-lawn* and *Fleur de Lawn* are two available brands. Since the native, natural soil is required for completing the treatment process, it must not be disturbed or altered. Digging through it or compacting it, e.g., by driving over it, destroys the structure of the soil and greatly reduces its ability to provide sewage treatment. Anyone who has dug a hole and then tried to refill it has witnessed the destruction of soil structure. That is why there rarely seems to be enough dirt left to refill the hole. Sprinkler systems should not be installed in or within about 10 feet from the OSS for three reasons:

- (1) damage to the system by digging into it to install the sprinkler;
- (2) the additional water load to the system, especially drainfield and/or sand filter, sand mound if applicable
- (3) the crossing of sewer and water lines is generally not permitted due to the potential for direct contamination of drinking water with sewage.

With lawn care equipment, such as riding lawn mowers or tractors, be careful not to travel on a sand filter, drainfield, sand mound, or the downslope area when the soil is saturated, as during wet wintertime. Winter landscape work on a sand filter, sand mound and drainfield should be avoided to minimize frost penetration or compaction. Any landscaping you choose to do must not adversely alter or disturb a sand filter, sand mound, drainfield or the soils around them. You should not place fill soils over a sand filter, sand mound, drainfield, or the ground around them. This will block airflow into a sand filter, sand mound and drainfield and greatly reduce their effectiveness and shorten their operating lives. Placing concrete or asphalt sections or plastic sheets over a sand filter, sand mound or drainfield also reduces the supply of oxygen necessary for the sewage treatment process. Placing a vegetable garden over the drainfield is not recommended.

IMPORTANT:

Do not allow any surface runoff to be directed onto or around a sand filter, sand mound, drainfield, or the reserve area. Equally important, do not allow any construction or ground compaction in the reserve area or within 30 feet down slope from the drainfield.

ADDITIVES

The Health Department recommends against the use of septic tank additives of any type. Septic tank additives will not reduce the need for septic tank pumping. Some additives may actually cause solids to be carried out of the septic tank and into a sand filter, sand mound, or drain field. This will begin plugging the sand filter bed, sand mound bed, or laterals in the drain field gradually causing it to fail. Other additives may pass into the soil and pollute the groundwater. In Washington State persons may not use, sell, or distribute any septic system additive unless the Washington State Department of Health (DOH) has reviewed the additive for safety. DOH approval indicates only that an additive is not known to be harmful, not that it is known to be useful. DOH evaluation of additives does not include investigation of the validity of performance claims by manufacturers. Manufacturers' use of the word "approved" is prohibited, but a product may be advertised as "complying with Washington laws regarding harm to public health and water quality."

WHAT CAN AND CANNOT GO DOWN THE DRAIN

Your OSS is for treatment of typical kitchen, bathroom, and laundry wastewater and should not be used as a disposal site for other types of waste. Any materials that do not readily biodegrade within the septic tank should not be flushed down a toilet or poured down a drain. This would include sanitary napkins, tampons, coffee grounds, grease or oils of any kind, hair, "disposable" diapers, cigarette butts, paper towels, paper napkins, newspaper, dental floss, all paints (**latex paint is very bad for filter, baffles, sand filter, sand mound, drain field**), solvents, degreasers, pesticides, or any toxins. Large quantities of disinfectants (e.g., bleach) should also be kept out of your septic tank. Normally spaced clothes washing or household cleaning chores should not pose a threat to your system. Avoid putting products labeled "Danger" down the drain. This includes caustic oven cleaners and caustic drain cleaners. Drains can often be cleaned using a mix of baking soda and vinegar, followed by boiling water. Prolonged, routine use of some types of prescription drugs, such as chemotherapy drugs or antibiotics, may be harmful to your system. If you suspect that drugs might be disrupting your OSS your system maintainer can arrange for sample collection and testing of the system effluent. S/he can check your OSS and determine whether problems are occurring. Early detection will prevent permanent harm. There

is also evidence that the repeated, frequent purging associated with the eating disorder bulimia can damage an OSS by making the sewage very acidic, killing bacteria required for normal OSS operation.

GARBAGE DISPOSALS

It is recommended that a garbage disposal not be used. If you must use it, do so very sparingly. Garbage disposals, by design, use large volumes of water and pass significant quantities of suspended solids into the septic tank. Garbage disposals very commonly overload OSSs. If you use the disposal you will need to have the septic tank pumped much more frequently. Regardless of the frequency of septic tank pumping, garbage disposals will increase the waste concentration, which can overload a sand filter and sand mound. When you consider the total cost associated with operating a garbage disposal, it might be the most expensive appliance in your home.

HOW MUCH WATER CAN YOUR OSS HANDLE?

Each OSS is designed based upon a residence's anticipated wastewater production, called the "loading rate". Loading rate projections are based on the expected maximum number of people that will reside in a house (usually considered to be two people per bedroom) with a maximum daily wastewater production per person of about 60-75 gallons per day. Exceeding the expected loading rate can seriously damage the OSS. The normal average monthly water use, as indicated by your water bills, should be no more than about two-thirds of the system's design loading rate. This will allow for occasional higher peak flows without damaging the OSS. If your water bill indicates that you have been using excessive water, the source of the excess water could be either a leaking plumbing fixture (toilet or faucet). A check of all indoor plumbing fixtures (e.g., toilet tanks) can rule them out as the source. Also, sometimes surface water or ground water leaking into the septic tank can overload a drainfield. Surface runoff should always be diverted away from the tank. Groundwater intrusion is a more difficult problem, suggesting tank or piping damage, and you should consult the system designer or installer or an OSS maintenance firm to help with diagnosis and corrective measures. Tank leaks are most common during winter months, when sites are wettest and sealing mastics harden and fail. A test for the level of dissolved oxygen in the septic tank wastewater can often reveal the presence of water leaking into a tank. Ground and surface water contain more dissolved oxygen than does sewage.

The system will not continue to operate properly at a loading rate higher than that for which it is designed. The maximum designed loading rate for your OSS is _____ gallons per day.

A common cause of periodic overloading is saving a number of wastewater generating activities for the weekend, when the laundry, dishwasher, bathtub and shower are used heavily. This overloads the system on weekends while a lower loading rate occurs during the weekdays. This high weekend water use can cause the system alarm to go off if the OSS is equipped with a pump timer, or can literally "blow out" a sand filter, doing *permanent* damage, if the OSS is not equipped with a properly adjusted timer. These peak load spikes should be avoided by spreading wastewater-producing activities (e.g., clothes washing) evenly throughout the week. **In many cases life styles may need to be adjusted to accommodate living within the limitations of an OSS.** Remember that all OSSs have a limited capacity to treat and dispose of wastewater. Monitoring your family's water use habits will help you to estimate how you are impacting your OSS. This will be especially useful if your home has no water meter. The following are some typical water use figures for various household activities. These figures will help you calculate your families OSS loading rate.

1. Showers typically use 25 gallons of water.
2. Clothes washing per load - 40 gallons. (Front loading washers and the new spray-rinse washers use much less.)
3. Dishwasher - 9 gallons per load.
4. Toilet flushing - 1.6 gallons-per-flush toilets are now the standard for new construction.
5. Garbage disposal - 2+ gallons per use.

WATER CONSERVATION

It is important that you practice good water use habits to get the maximum life span from your OSS. Laundry washing should be spaced throughout the week and not all done on a single day. Wash only full loads of laundry

or dishes. Low flow plumbing fixtures (toilets, faucet aerators, and showerheads) should be installed if not already present in the house. (Low flow fixtures will be present in homes built since 1993.) Water-conserving appliances, such as front-loading clothes washers or the new spray-rinse washers, should be chosen when replacing your appliances. Any water-generating activity should be thought of in terms of its impact on the OSS. If your system has a pump timer, the alarm will sound should the design capacity of the system be exceeded (see TIMERS). If this happens repeatedly it can serve as a warning of excessive OSS loading.

NOTE: You can obtain water conservation pamphlets from the Health Department.

POWER FAILURES

During a power failure, the wastewater cannot be pumped and therefore, will accumulate in the pump tank. This is only true if you system is equipped with a pump. You should begin severe water conservation measures as soon as the power goes out. All new systems using pumps are now equipped with timers. The timer limits the frequency with which the pump starts and, thereby, limits how much effluent goes into the down stream component in a 24-hour period. It ensures that the downstream component only gets as much effluent as it was designed to handle. A timer-controlled system will take care of itself over time once the power comes back on, if it has not been overloaded with too much water (i.e. the water isn't backing up into the house). In order to let your pump system catch up, continue to conserve water for an additional day or more once power is restored. If the high water alarm sounds when the power comes back on, this will indicate that the effluent has backed up into the emergency storage area of the pump tank. The alarm can silenced manually and will shut itself off once the pump system has pumped the excess wastewater from the tank. **If the system is not equipped with a timer** controlling the pump tank's pump, that pump should be turned off at the pump's control panel or your circuit breaker box. Do not turn off the pump located in the sand filter unless it is shut off by the same circuit breaker used to turn off the pump tank's pump. Without a timer, *if the power outage is extended (e.g., 6 hours or more), precautionary measures should be taken when the power returns, to avoid flooding the downstream component with excessive effluent.* In the absence of a timer, after the power returns, switch the pump on and let it run for no more than 5 minutes, then turn the pump off again. Repeat this manual switching not more frequently than every 6 hours until the pump switches off on its own. (Often you will be able to hear a hum when the pump is running, which stops when the pump shuts off. Also, if your pump control panel includes an hour meter, it will show time accumulating if the pump is running.) At this point, the normal, automatic cycling will once again be appropriate, and you may resume normal water usage. If there has been little water use during the outage, the pump may automatically turn off during the first manual switching. In this case the switch can be left "on".

PERIODIC MAINTENANCE

It is essential that your OSS be inspected and maintained on a regular basis. This will catch most problems before they harm the system. Recent amendments to the state and county OSS regulations require periodic system monitoring. Sand filter, sand mound, and aerobic systems are relatively complex, susceptible to abuse and costly to repair, and therefore should be monitored on a regular basis.

SEPTIC TANK PUMPING

Wastewater from all plumbing fixtures drains into the septic tank. Heavy solids settle to the bottom where bacterial action produces digested sludge and gases. Lighter solids that float, such as grease, fats, and oils, rise to the top and form a scum layer. Sludge and solids that are not decomposed remain in the septic tank. These solids must be removed periodically by pumping the tank. Septic tank pumping is only one aspect of OSS maintenance, but it is the first line of defense for your OSS and should not be neglected. The average pumping service interval recommended by the Health Department is 3-5 years. However, this interval depends on the a number of factors which can vary greatly from home to home. So this frequency schedule can vary a great deal and is not applicable to all homeowners. A more frequent pumping schedule may be necessary depending on your family's garbage disposal use and cooking and cleaning (especially dish washing) habits. **Inspecting the sludge and scum accumulation annually is the only sure way to determine whether a tank needs to be pumped.** As sludge and scum gradually accumulate, less and less room is available for the sewage coming into the tank. This results in the sewage passing through the tank more and more quickly, allowing less time for scum and solids to separate from the sewage before it leaves the tank, as "effluent". Therefore the tank becomes

decreasingly effective in protecting the down stream components from contaminants. **The tank should be pumped before either the scum mat or sludge layer is thirteen inches thick.** Once your characteristic sludge accumulation rate is known, pumping frequency can be adjusted accordingly. The Health Department can supply you with a brochure including information on how to measure accumulated scum and sludge. Measuring the sludge and scum levels can be an awkward process. OSS maintainers or septic tank pumpers can do this for you if you prefer. Knowing the location of your septic tank and pump tank will save time and money when it is time to have them checked or pumped. Current code requires that newly installed tanks have access lids at the surface. Also, you can locate your septic tank by referring to your OSS as-built drawing. The lids of your septic tank and pump tank should be at grade and visible. Once you have located the tank, contact the Health Department for a list of tank pumpers currently certified to operate in Clark County. You may want to call several, because prices and details of the service provided may vary. **When the septic tank is pumped, make sure that both septic tank compartments are pumped. If you have a pump chamber and the effluent is dirty or there are visible signs of scum build up it is advisable to pump that tank as well.**

TANK BAFFLES

Septic tank baffles are devices within the septic tank that are essential to keep the solids in the tank, where they belong. Baffles also separate the floating scum layer from the liquid layer, promote settling of solids to the bottom of the tank, and allow only clarified liquid to leave the tank. There are three baffles located in a two compartment septic tank -- one on the inlet, where the sewage enters the tank; one on the wall dividing the tank into two compartments; and one on the outlet, where the effluent leaves the tank. Tank baffles should be inspected whenever the sludge and scum levels are measured. To thoroughly inspect the baffles, it is sometimes necessary to pump the tank. A broken outlet baffle can allow floating scum to leave the tank through its outlet, so that the tank retains no scum. This defeats the purpose of the tank and makes it appear that it does not require pumping. Sewage scum entering a sand filter, sand mound, or drain field can ruin it. Baffles must be replaced if they are in poor condition or missing. **The outlet baffle will probably contain a filter (unless the OSS is an older system)** to keep any solids larger than 1/8th inch from passing out of the tank. This filter will need periodic checking and cleaning. If the filter clogs, plumbing drains may drain slowly or sewage may backup in the house. The filter baffle should be checked, and generally cleaned, annually, e.g., as part of your annual septic tank inspection, which you can do yourself. No water should be used inside the house while the filter is removed for checking and cleaning. This will minimize the escape of sludge and scum from the septic tank. Cleaning the filter generally involves simply removing it and hosing it off into the access for the inlet compartment of the tank.

CAUTION: Some of the filter baffles when removed for cleaning may pass solids into the pump tank. If this is the case, the septic tank might need to be pumped down before removing the filter baffle for cleaning.

If there is not a screened baffle at the outlet there should be a screen around the pump,(provided this is not a gravity fed system) located in the pump tank. Make sure that the pump screen or the filter baffle are cleaned at the time of tank pumping. Any time that the tanks are checked, these screens should also be checked for blockage. The frequency of cleaning required will depend on user habits but is rarely greater than once a year. More typical is once every six months.

PUMP TANK AND PUMP CONTROLS

Wastewater leaving the septic tank is a liquid called “effluent”. While it has received some treatment in the septic tank, it is still unpleasant smelling and contains disease organisms, organic wastes, and other pollutants. This effluent requires proper treatment and disposal; otherwise there can be significant environmental and public health problems. In a sand filter system or sand mound, a pump is used to convey the effluent to the sand filter or mound and, often, another pump is used to transfer the effluent from the sand filter to the drainfield for final treatment and disposal. (In some cases effluent is moved from the sand filter to the drainfield by gravity.) A pump tank containing a sewage effluent pump, control floats, and a high water alarm is placed between the septic tank and the down stream component. The control floats are set so that a specific volume of effluent is sent to the down stream component. This specific amount is referred to as a “dose”. If your system is equipped with a timer, it will determine the time between doses. If you have a contractor maintaining you system, as part of your OSS annual monitoring, your system maintainer will check to see that the float switches are clean and free in their movements and will test the alarm float by lifting it. The alarm should sound. If it does not and the

circuit breaker is not tripped, servicing is required. The maintainer will also adjust the pump cycles to make sure that they meet the original specifications of the design. If the pump tank's pump cycle is too long, (or the residual pressure in the distribution lines is too high) this may indicate that some orifices within the sand filter/sand mound/drainfield pressure lines are plugged. This can damage your one of these components by causing some portions of it to be overloaded with effluent. A cleaning of the pressurized lines may be in order; consult your system maintainer for corrective action. If the pump's cycle is too long (or the residual pressure in the drainfield distribution pipes is too high), this suggests that the orifices within the pressure distribution drainfield are plugged and should be cleaned before the system is damaged.

****Information provided in this document was supplied by the Washington State Department of Health.*

IMPORTANT INFORMATION FOR OWNERS OF SEPTIC AND ONSITE TREATMENT SYSTEMS Items to Avoid in Onsite System

The following guidance is a collaborative effort of wastewater professionals within the National Onsite Wastewater Recycling Association (NOWRA). The purpose is to identify common issues that can cause problems with the operations of newer onsite treatment and traditional septic systems. Many operational problems exist today because owners are either unaware of the results of daily practices to these systems. NOWRA's goal is to ensure that owners are educated and informed about the safe practices for their treatment systems, in order to avoid costly repairs and to protect groundwater quality. The items listed below are known to have caused failures of onsite treatment systems and must be considered if waste generated by/from a particular site will contain them in excessive quantities. Since excessive is a subjective word, it is highly recommended by NOWRA that you share concerns with your Wastewater Professional to come up with a treatment strategy for your particular needs.

Inert Materials: Plastic, Rubber, Scouring Pads, Dental Floss, Kitty Litter, Cigarette Filters, Bandages, Hair, Mop Strings, Lint, Rags, Cloth and Towels do not degrade in an on-site treatment system. Inert Materials will build up solids, and lead to system malfunction, clogging or increased pump out frequency.

Paper Products: Disposable Diapers, Paper Towels, Baby Wipes, Facial Tissues, Baby Wipes, Lotioned, Scented or Quilted Toilet tissue, Moist Toilet Paper, do not dissolve readily in an onsite treatment system. Excessive Amounts of toilet tissue will also not decompose. All can lead to system malfunction, back-up or increased pump out frequency.

Food Wastes: Do not put Animal Fats & Bones, Grease, Coffee Grounds, Citrus & Melon Rinds, Corn Cobs, Egg Shells, down the sink. Garbage disposal use should be limited to waste that cannot be scooped out and thrown in the trash. Spoiled Dairy Products and Yeasts from home Brewery or Baking may cause excessive growth of microbes that do not degrade sewage.

Household Products: Do not flush Baby Wipes, Lotioned, Scented or Quilted Toilet tissue, Female Sanitary Products, Cotton Balls or Swabs, or Condoms. Antimicrobial Soaps and Automatic Disinfection Tablets (blue, clear or otherwise) may kill the organisms needed to consume waste.

Medications/Aliments: Normal uses of over the counter medications do not affect the performance of onsite systems. Do not flush expired Medicines/Antibiotics into an onsite treatment system. Some prescription medications are known to cause biological disrupt. Among these diseases or conditions are those suffering from bulimia, severe infections (including AIDS), chronic diarrhea, intestinal/colon by-pass, or other gastrointestinal conditions and cancer. Oral or intravenous chemotherapy is known

to cause serve disruption to the treatment process and will require more frequent pump out intervals or the use of biologically based additives.

Commercial Additives: Both the U.S. Environmental Protection Agency and the Small Flows Clearing House have reported that there is no evidence to support the use of additives with normally functioning Onsite Treatment Systems. Some Septic Tank additives have been shown to do more harm than good. A normally functioning system should not require additives.

Chemicals & Toxins: These materials kill the microbes necessary for the biological treatment to occur. Paint, Paint Thinner, Solvents, Volatile Substances, Drain Cleaners, Automotive Fluids, Fuels, Pesticides, Herbicides, Fertilizers, Metals, Disinfectants, Sanitizers, Bleach, Mop Water, Floor Stripping Wastes, Excessive use of Household chemicals, and Backwash from Water Softener regeneration.

Laundry Practices: On-site systems must process the water as it enters the system. Laundry should be spread out over the week, not all run at one time. Excessive use of Detergents, especially those containing bleach, can affect system performance. Liquid detergents are recommended over powders. Fabric Softener sheets are recommended over liquid softeners. Bleach should be used sparingly and at half the rate indicated on the container.

Clear Water Waste: From A/C Discharge lines, Floor Drains, Gutters, Whole House Water Treatment Systems and Sump Pumps can increase the flow to your treatment system. These flows can at least disrupt, if not destroy your treatment process.

****Remember – if you have additional questions, if you have additional questions or concerns please feel free to contact us. 360-263-7950 email@seppanen.com www.seppanen.com*