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OPERATING GUIDELINES FOR YOUR SEPTIC SYSTEM

A septic system is like any other equipment in your house. If you operate and maintain the system responsibly, it will work well and should last a long time. A properly functioning septic system provides a safe, reliable way of treating your household wastewater. If you don't maintain your septic system, you could be endangering your family's health, the integrity of the natural environment and nearby water sources. If something goes wrong with your septic system, the replacement cost can be up to \$25,000.

The Province of Ontario is committed to ensuring that Ontarians can enjoy safe and clean water for generations to come. The Province has taken steps such as the passing of the *Clean Water Act, 2006* and making changes to the *Building Code Act, 1992* to better ensure that septic systems in Ontario are well maintained to help protect the quality of water.

WHAT YOU NEED TO KNOW...

The way you treat your septic system will influence how long the system lasts and how well it functions. If you own or rent a property served by an on-site sewage system, you need to think about how your actions affect the system. You need to be careful about what substances you flush down the drain and how often your septic tank is cleaned out and inspected.

These decisions will impact on the effectiveness of your septic system and making the wrong one can lead to expensive and time consuming problems. Sometimes, they can also result in harm to the natural environment or public health by polluting lakes or contaminating drinking water supplies.

In order to avoid the inconvenience and cost associated with the repair or replacement of a failed septic system, you should know how to properly operate and maintain your septic system. This guide provides some helpful advice for property owners about the steps they can and should take to help their septic system perform well for years to come.

HOW YOUR SEPTIC SYSTEM WORKS...

Your on-site sewage system consists of two or three major parts: a septic tank, a treatment unit (if installed) and a leaching bed area. The septic tank has two chambers and is constructed of concrete, is watertight and buried underground. The purpose of the septic tank is to separate solids from liquids in the wastewater

stream and begin the process of breaking down contaminants. Solids settle at the bottom of the tank and scum floats to the top of the tank. This process occurs without oxygen, so the tank needs to be sealed.

The treatment unit takes the effluent from the septic tank and provides further microbial treatment using oxygen. This 'aerobic' treatment improves the quality of the effluent to a much higher degree than was previously attained with conventional septic tank systems. By doing this, the amount of 'work' required by the natural treatment process in the soil is greatly reduced. Therefore the size of the leaching bed area and its separation from groundwater can be reduced.

Wastewater from the treatment unit then flows to the leaching bed area. Numerous Leaching Bed options are available under the code: Filter Bed, Area Bed, Conventional Trench Bed (in Fill or Native Soil) or Shallow Buried Trench systems. The purpose of the leaching bed is to further treat the wastewater through a process where bacteria requiring oxygen digest and remove impurities such as suspended solids, organic chemicals, viruses and/or bacteria. The leaching bed disposes of the treated wastewater into the natural soil and, ultimately, into the groundwater.

Toilets and Drains are NOT Garbage Cans !

Some items you flush down a toilet or pour down a drain can significantly reduce the ability of the beneficial bacteria in a septic system to break down and treat domestic sewage. Harmful chemicals and substances will kill bacteria and render a septic system useless. Bulky or hard-to-break down products can clog pipes, quickly fill septic tanks and decrease the effectiveness of the system. Septic tank additives/starters may be harmful to septic systems and are not necessary to begin or continue septic tank operation.

NEVER put the following items or substances into your septic system:

- fats, oils and grease, gasoline, antifreeze,
- varnishes, paints and solvents,
- caustic drain and toilet bowl cleaners,
- photographic solutions,
- bleach, pesticides, nail polish remover,
- cat box litter, tampons, sanitary napkins, diapers, paper towels, facial tissues, condoms,
- plastics,
- coffee grounds, egg shells and other kitchen waste or
- cigarette filters.

TIPS ON MAINTAINING YOUR SEPTIC SYSTEM ...

There are a number of steps property owners can take to improve the functioning of their septic system and extend its life:

- conserve water and reduce wasteflow into the system by installing water saving features in plumbing fixtures, using dishwashers and laundry machines only with full loads, taking shorter showers rather

than full baths, fixing leaky faucets and avoiding the use of garbage disposal units — too much water will overload a septic system

- ensure septic system is inspected at least once a year by a qualified person and pump septic tanks out at least every 3 - 5 years (or sooner since frequency depends on tank/household size). These actions can be combined
- do not impair access to the septic tank so that proper maintenance and servicing can occur
- reduce the use of phosphate-based detergents, soaps and cleaners to minimize algae growth in nearby lakes and rivers. Phosphates can impair water quality and fish habitat
- avoid the construction of parking areas, patios, tennis courts or decks in the area of or over the leaching bed. The extra traffic or weight can compact the soil and fill material. Construction can also limit oxygen from getting into the soil or fill
- do not use snowmobiles over the leaching bed area in winter since this reduces the natural insulation of the bed provided by the snow cover
- minimize grass watering around the leaching bed area. Extra water can reduce the bed's ability to absorb and treat wastewater from the house
- exercise caution about waste flows from water treatment units, furnace condensate discharges and **water softener** back washes. These substances can harm the septic system, especially in large quantities
- direct rainwater runoff from roofs, patios and driveways away from the leaching bed area and septic tank access ports to avoid system overload.
- a properly installed and maintained septic system should avoid contamination of nearby wells. A private well should be tested for bacteria at least 3 times per year.
- know the location of your tank and bed and have the tank contents pumped out when necessary (generally every 3 to 5 years).

TANK INSPECTION AND CLEANING ...

Having your septic system inspected regularly is one of the least costly ways to avoid the inconvenience and expense of doing a major septic system repair. Inspections can determine if the outflow to the leaching bed is clogged because of a back-up in the tank, if too much solid or scum material is in the tank or whether the tank needs to be pumped more frequently. Because they contain deadly gases, septic tanks should only be inspected by firms specializing in this work.

How often you need to pump the septic tank depends on the size or capacity of the tank, the flow of wastewater entering the tank and the volume of solids in the wastewater stream. The building code requires that a tank must be cleaned out when solids and scum occupy 1/3 of the working capacity of the tank (OBC 8.9.3.4). Generally, this should occur every 3 - 5 years, but factors can change during the life of the septic tank. More people living in the house or the addition of a high water use appliance can exceed the capacity of the existing tank, requiring more frequent pump outs.

Summer and early fall are the best times to pump out a septic tank. Pumping at this time of the year leaves sufficient time before winter for the tank to refill and bacterial activity to become re-established. As well, the ground around the tank will not be frozen (allowing easier access) and higher water tables which typically occur in the spring will have receded.

COMMON SEPTIC SYSTEM PROBLEMS...

There are a number of common signs of trouble with septic systems. These include:

- toilets or drains which are backed up or run more slowly than usual
- foul odours in the house or drinking water
- sogginess in the ground around the septic tank or leaching bed area
- surface flooding of sewage or septic tank effluent around the septic system
- activated alarm signals (lights or bells)
- dosing pumps which run constantly or not at all (Note: not all systems have pumps)
- unusually green or thick grass growing in or around the leaching bed area
- significant algae growth in or around nearby lakes or water bodies
- high levels of nitrates, bacteria or other contaminants in well water

SEPTIC SYSTEM RE-INSPECTIONS

Time of Sale Inspections:

- buyers, real estate agents and financial institutions commonly request that septic systems be inspected prior to finalizing a sale to protect against unexpected costs.
- a time of sale inspection might involve pumping the tank and examining the leaching bed for any signs of problems.
- this type of inspection may be conducted by a licensed septic system installer, a licensed sewage hauler or a professional engineer.

Re-inspection Programs:

- some municipalities have initiated re-inspection programs of existing septic systems to address water quality concerns.
- these programs are conducted by the local enforcement agency to determine the integrity of the system.
- this type of inspection could involve assessing the condition of the tank, as well as examining the bed for signs of problems

Reference material from the following sources:

Ontario Waste Water Association - www.oowa.org

Ontario Rural Waste Water Association - www.uoguelph.ca/orwc

Canada Housing and Mortgage Corporation - www.cmhc.ca