OWNERS MANUAL

As a septic system owner you are responsible for ensuring that your septic system is safe and working properly. A failing system is a health risk for your family and the community and may be causing harm to the environment.

As an owner, you are responsible for:

- Ensuring the house drains and tank do not leak
- Getting things fixed if they are not working properly
- Ensuring the system is checked regularly
- Getting the tank pumped (de-sludged) when it becomes too full to process the flow going into it
- Maintaining and protecting the absorption field
- Complying with the council's requirements for installation, maintenance service and operation and paying fees for inspections or maintenance

CHECKING YOUR SEPTIC SYSTEM

Your septic tank is a living ecosystem where bacteria digest waste. Like any living system, it can become sick if it is flooded, poisoned with chemicals, or not looked after.

Checklist:

Your septic may need attention if any of these conditions occur:

- The air around it smells – usually like rotten egg gas
- The ground is damp or soggy, or pools form downhill
- There is lots of dark green grass growing on or around the absorptions area
- The toilet or drains are slow to clear, or keep backing up
- There are lots of weeds growing downhill from the absorption area, in nearby drainage channels or on the banks of a nearby waterway
- The septic tank has not been checked for over 12 months
- The septic tank has not been pumped out (de-sludged) in the past 3-5 years (this is the most common cause of problems)

If any of these factors apply, you should act quickly so that the damage, and the cost of repair does not get any worse.

Here's what to do: If in doubt, call your council environmental health officer for advice. Often a phone call to the council will either solve the problem or put your mind at rest OR call a plumber, septic system expert or septic pumper (find them in the Yellow Pages under Septic Tank Cleaning Services).

COMMON CAUSES OF SEPTIC SYSTTEM PROBLEMS

Tank too full

If you have a septic tank and absorption trench the level in the tank should not be higher than the outlet. If you have a pump-out system, the tank should be no more than 2/3 full – Solution: See next section, pumping out

Too much sludge and scum in the tank

Septic tanks work by retaining solid scum and sludge and just letting liquid effluent flow out to the trenches. The solids don't move out of the tank, they just stay behind and build up. If you don't have the tank pumped out (de-sludged) regularly, it will eventually fail and untreated wastewater with heavy solids contamination will flow out of the tank, clogging pipes and the absorption trenches. You should have your tank pumped out every 3 to 5 years – Solution: See next section, De-sludging

Too much water going into the system

This causes the effluent to flow too quickly through the tank before the bacteria have a chance to work. As a result, solids can be pushed through the system, polluting the holding tank or clogging the absorption trenches – Solution: Use less water. Homes on tank water are already used to conserving water, but in homes connected to reticulated water, there is much more temptation to overuse water.

Toxic chemicals going into the system

Chemicals like solvents, oils, paints, disinfectants, pesticides, household cleaning products and bleaches can kill the helpful bacteria in your septic system. This may "kill" the system and stop it digesting effluent – Solution: Switch to natural cleaners if possible, and use smaller amounts

You can protect your septic system by using traditional non-toxic cleaners, like vinegar and bicarbonate of soda in the kitchen and bathroom.

Changing washing powders can make a difference to the amount of phosphorus entering rivers from on-site systems.

Using phosphorus-free detergents can mean less phosphorus in the waterways and that means less risk of fish kills and toxic algal blooms.

Septic systems don't work well if too much phosphorus is going into the system. Always look for low-phosphorus or phosphorus-free detergents.

SEPTIC TROUBLE SHOOTING

What's that smell? If your visitors or neighbours have said this recently, it might be a sign that the septic system needs some tender loving care.

If you have a pump-out system

If your system is smelly or the toilet is banking up, this is often a sign that the tank is overdue for a pump-out. Generally speaking, the tank needs pumping if it is more than two-thirds full of liquid effluent.

You can check how full it is by using a torch, or call your local council for advice on local pumpout service providers.

Generally, a pump-out septic system in full time use should be –

- Pumped out every 1-2 weeks (depending on the number of people) and
- Inspected every 1-2 years

How often you pump out depends on how large the tank is and how many people use the system. Check with your council for guidelines. You can check how full the tank is by lifting the inspection port or lid on top of the tank.

All pump outs should be fitted with a dip stick (copper pipe with a "+" on the end) in the collection well. The dip stick should be marked with a "full" level marking that says it's ready for a pump-out.

If you have absorption trenches

De-sludging (every 3 to 5 years)
You need to have sludge and grease removed from your septic tank regularly.

Septic tanks need "de-sludging" every 3-5 years because otherwise these solids build up and reduce the working volume. When this happens the wastewater has less time to settle and solids flow into the absorption trench and clog it up. This drastically shortens the life of the trench and may require costly repairs.

Newly pumped-out septic tanks should be filled with clean water and a handful of lime should be added to reduce odours and encourage helpful bacteria.

HOW TO KEEP YOUR ABSORPTION TRENCH WORKING WELL

What can you do to fix a failed trench? It's best to contact your council or consult a septic system specialist (find them in the Yellow Pages).

In the meantime, there are some simple Dos and DON'Ts to help keep your absorption trench working well

Trench Dos

- Ensure that the proper soil tests are done to determine the type of absorption system to be used and how large it should be. A reserve effluent application area should also be identified in case a new trench system is needed later.
- Plant small trees or shrubs down-slope and away from your trench system to help absorb effluent. Use water-loving and shallow rooted plants, such as tropical palms, banana palms, poplars, paperbark trees and wetland plants.
- Consider installing a dual trench system so the separate trenches and soil areas can be rested alternately. They will perform better and last much longer. Dual disposal areas should be swapped over every 12 months or so.
- Build a small earth bund wall (small ridge) about 15cm high that is longer than, and uphill from the trench area to divert surface runoff waste around it. This will help to reduce the load on your trench in wet weather.

HOW A SEPTIC TANK OPERATES

A healthy septic tank is a living ecosystem where the bacteria thrive in the right proportions to digest waste and treat the effluent.

Heavy solids sink to form a sludge layer on the bottom of the septic tank on side closest to the dwelling. Bacteria break down solids, then light solids float to form a scum layer which prevents odours escaping.

Health caution: Septic tanks do not kill pathogenic bacteria, viruses or parasites. Septic tank effluent must be treated with extreme caution and contact with people, food, clothing and pets must be prevented, always remember to wash your hands!

The contents of a healthy septic tank should form 3 layers:

- A layer of fats (scum) which floats to the surface
- A clear layer (effluent)
- A layer of solids (sludge or bio-solids) which sinks to the bottom

The scum helps prevent odours escaping and stops air entering. The treated effluent flows out of the tank through the outlet pipe as new waste water enters.

In some septic systems the effluent is stored in a holding tank (collection well) before being pumped out into a collection vehicle (pump-out systems), or to an off-site effluent drainage area (CED systems) or to a municipal treatment scheme.

In most septic systems the effluent is discharged from the septic tank directly into the soil by pipes and trenches (absorption field). In areas where soil is shallow or unsuitable, special absorption fields may be constructed (raised earth mounds, evapotranspiration beds, or modified earth absorption fields).

At this stage the effluent still contains large amounts of dissolved pollutants such as salts and nutrients (e.g. Compounds of nitrogen and phosphorous). It also contains disease causing pathogens (viruses, bacteria and worms).

In the absorption field, natural soil processes kill off more pathogens and break down some of the nutrients that cause pollution. This is a slow process, and soil bacteria need oxygen to work, so it is important not to overwhelm the soil with too much effluent. In time the effluent evaporates and is taken up by plants nearby or leaches into the groundwater zone. A hazard is created when effluent flows along surface or subsoil pathways into drainage channels, creeks or rivers.