SEPTIC TANK

INFORMATION BOOK

How to operate my Septic Tank System

October 2017

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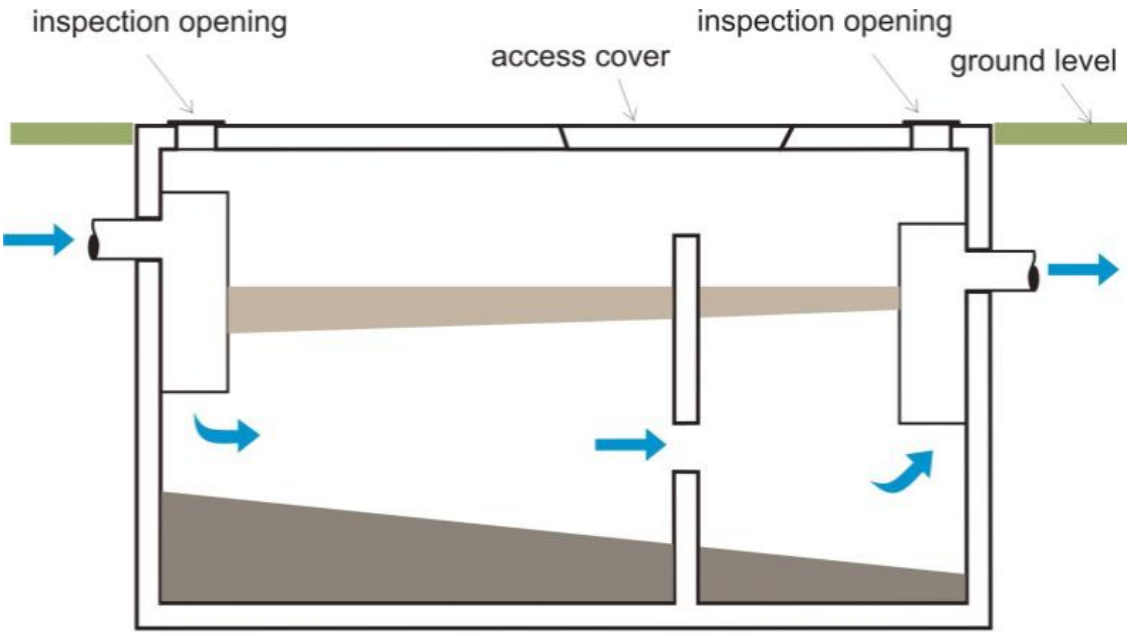
What is a Septic Tank?

A septic tank is a watertight vessel usually made from concrete, plastic or fibreglass, which receives liquid wastes from water closet toilets and in some cases kitchens, laundries and bathrooms.



SEPTIC TANK

What does a Septic Tank do?

When the liquid wastes are received into the tank, any solid faecal matter heavier than water forms a sludge layer at the bottom of the septic tank. Solid matter lighter than water floats to the top to form a scum layer. Bacteria decompose or “digest” the solid matter in the tank to produce gas bubbles. As wastes enter the inlet of the tank, they displace the liquid effluent already treated in the tank. The displaced liquid flows out of the septic tank into the absorption trench.

The septic tank treats the wastewater naturally by holding it in the tank long enough for solids and liquids to separate. The wastewater forms three layers inside the tank. Solids lighter than water (such as greases and oils) float to the top forming a layer of scum. Solids heavier than water settle at the bottom of the tank forming a layer of sludge. This leaves a middle layer of partially clarified wastewater.

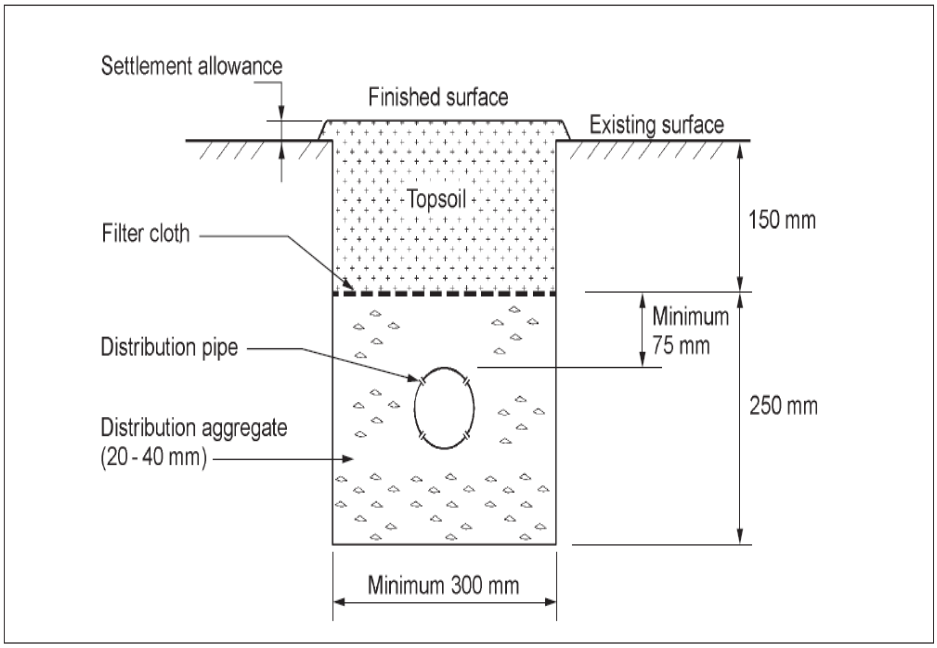
The layers of sludge and scum remain in the septic tank where bacteria found naturally in the wastewater work to break the solids down. The sludge and scum that cannot be broken down are retained I the tank until the tank is pumped. The layer of clarified liquid flows from the septic tank to the absorption trench.

How is Septic Tank effluent disposed of and treated?

The effluent leaving the septic tank flows into an “absorption trench”, the size and length of which is based on the various site factors such as the absorptive characteristics of the soil. The trench should be excavated parallel with the contour of the land. Some of the effluent is absorbed into the soil, some transpires through vegetation and some vaporates. The process of effluent filtering through the soil removes microorganisms and some nutrients.

What is an Absorption Trench?

Absorption trenches are used for distributing both sullage water and septic tank effluent into the ground for further treatment. A typical cross section of an absorption trench is shown below.



Absorption trenches will not last forever, eventually they ‘clog up’ and new absorption trenches are required. Please consult Council’s Environmental Health Officers for information on the process for installing new trenches. The length of time that absorption trenches lasts depends on:

- How much wastewater enters the trench;
- The absorptive capacity of the soil;
- Maintenance of the septic tank, e.g.: Pumping out;
- Ensuring that the trench isn’t damaged by vehicles or livestock;
- Use of sub soil drains to divert surface drainage away from the absorption area, and how much your property is affected by seepage or ground water; and
- The amount of sodium salts in the wastewater.

Location of absorption trenches should be 1.5 metres from upslope boundaries and a sufficient distance from the side and down slope boundaries to prevent effluent discharging onto a neighbouring property. The slope of the land and soil conditions will significantly influence this distance.

How often should I empty my Septic Tank?

Generally, it is advisable to have your septic tank pumped out every three to five years. Obviously, the number of people living in the house and whether the dwelling is occupied permanently will influence the frequency of pumping required. Septic tanks should be filled with water after pumping.

What is the difference between single and dual purpose Septic Tanks?

A single purpose tank only receives toilet waste and has a minimum capacity of 1600 litres.

Duel purpose tanks receive toilet wastes and all other wastewater from the kitchen, bathroom and laundry and are at least 3000 litres in capacity.

Can I spray irrigate my sullage water?

No. Untreated sullage water should not be spray irrigated. Only wastewater that has been treated can be irrigated in this manner and only in controlled circumstances.

Spray irrigation of sullage water on residential size properties increases the risk of disease transmission by:

Contaminating fruit and vegetables:

- Children may mistake sprinklers for spraying sullage water with drinking water sprinklers;
- Pets or children coming into contact with diseases after playing in areas where sullage water has recently been sprayed;
- Sullage water may also emit offensive odours and disturb surrounding neighbours.

Sullage water may contain high levels of sodium, which can affect the soil structure, particularly in clayey soils. Certain plants are also more sensitive to saline waters (such as sullage water).

I have problems with sewage smells in my backyard.

Two common problems may cause this problem.

Septic tank effluent absorption trenches may be ‘clogged’ and not functioning effectively causing pools of effluent to form on the surface of the ground. New absorption trenches will be required.

Sewer vent pipes (SVP) that ventilate plumbing waste pipes may be the source of odours. Many factors may contribute to this problem such as local weather patterns, and the location and height of the SVP pipe. If this problem occurs frequently, increasing the height of the SVP may allow the prevailing winds to disperse the gases more effectively.

When I flush my toilet the water does not drain away or takes a long time to disperse.

The soil around the absorption trenches for the septic tank effluent become ‘clogged up’ after many years of use. This will cause water to either come to the surface of the ground or not allow wastewater from the septic tank to easily flow along the sewer pipe causing water in the toilet bowl to not drain or drain slowly. A new absorption trench may be required. Alternately, a simple blockage may have occurred in the pipe. Please contact your plumber for advice.

Sullage water is overflowing out of the overflow relief gully.

This may also be caused by the problems listed in item above.

Can I build a dwelling, shed or driveway over my septic tank or absorption trench?

No. Structures are not permitted over an absorption trench or the septic tank unless approval from Council has been obtained. Driveways or driving cars over areas where absorption trenches are situated will reduce soil permeability or damage the pipe work or PVC arch. All of which will cause the trench to be ineffective.

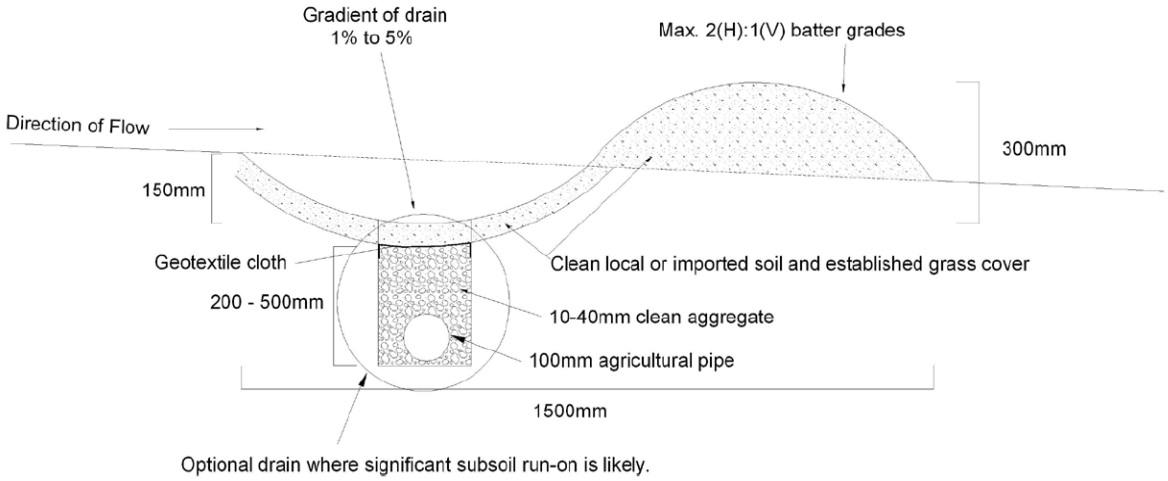
Subsoil/Cut-off/Agricultural Drains.

Subsoil drains divert surface or subwater away from absorption trenches. These are vital in areas that are subject to runoff or seepage. An example is shown in the following diagram.

Sub-soil drains eventually clop up with silt particularly in sandy/silty soils or where Geo-fabric is not used. A flushing point will allow the drains to be cleaned.

Correct location, construction and maintenance of sub-soil drains may be the difference between absorption trenches working effectively or not.

Cross Section: Upslope Diversion Drain



My Septic Tank and sullage absorption trenches are not working effectively, what can be done?

Absorption trenches may need to be replaced. Seek the advice from a plumber, wastewater designer or Council's Environmental Health Officers. The following items may also assist:

1) Reduce water consumption by;
   a) Checking for leaking taps;
   b) Avoid high water consumption devices like dishwaters, kitchen disposal units and large washing machines;
   c) Prefer short showers to baths and fit fine sprayheads to showers;
   d) Using dual flush cisterns;
   e) Avoid running taps unnecessarily;
   f) Install sub-soil drains to keep the absorption area as dry as possible;
2) Plant shallow rooting shrubs that are suited to wet soils around absorption trenches.
3) Grade the surface of the ground around the absorption trenches to allow surface water to drain away from the absorption area.

I have just moved into my new house and the toilet smells of sewer gas.

The water seal in the toilet bowl should prevent sewer gases entering the house. Make sure there is water in the toilet bowl after flushing, if not, contact your plumber for advice.

Can Septic Tank effluent or sullage water be discharged into the roadside drain or another person's property?

No. Each property owner must ensure that their wastewater is treated within their title boundaries, unless the wastewater is permitted to discharge into a TasWater sewer main or drainage easement on another land title.

Laundry detergents and how they affect absorption trenches.

Some laundry detergents contain high levels of sodium that damage the soil structure of some clay soils and reduce the length of time that absorption trenches will last. Generally, liquids have lower sodium concentrations than concentrates, and concentrates have less sodium than powders.

How do I get my Septic Tank pumped out?

Only approved Pumping Contractors can pump out septic tanks. A list is included in the Yellow Pages. Before contacting the Contractor make sure, you know where the septic tank is.

How do I locate my Septic Tank?

Council has records of recently constructed house plumbing plans. Many houses more than 25 years old have no plumbing plans. In these situations, the previous owner may be aware of the location, otherwise a Plumber may be able to assist you.

Septic tank pump chambers

Some septic tank systems require a pump chamber to pump wastewater to the absorption trench or to a sand mound/raised bed. The pump will be fitted with an automatic float switch and alarm.

If the alarm activates the wastewater level has exceeded the maximum operating level suggesting that the pump or the float switch is not working. Contact your plumber for advice.

Schedule of Maintenance

Permits for septic tank system issued since 1 January 2017 have operation and maintenance requirements specified with the permit.