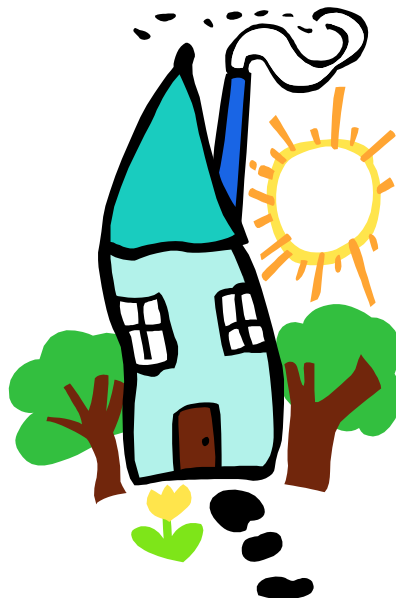




GISBORNE
DISTRICT COUNCIL

Building Section

What is a Septic Tank?



THE WASTEWATER SYSTEM

The main objective of a septic tank system is the safe and effective disposal of wastewater in a manner that prevents transmission of disease, odour, contamination of ground water or surface water or have adverse affects on the environment.

A Wastewater System may include:-

Sanitary plumbing fixtures connected to drain pipes that enable sewage and sullage waste to be conveyed to the septic tank.

- A distribution system, pump, siphon, or gravity.
- An effluent disposal system, trenches, beds, or dripper lines.
- Treatment tanks, passive or aerated.

Sewage and sullage wastes enter the septic tank where settlement of solid matter occurs. Anaerobic bacteria then partly breakdown this solid matter within the tank. It must be kept in mind at all times that your septic tank system requires this bacteria to operate effectively. These organisms live and breed in your septic tank, disposing of any sort of chemical (paint, disinfectant, petrol, flammable liquid, bleaches etc.) down your drains or toilets, can harm the life balance required for these organisms to do their job. Termination of these organisms would result in your septic tank failing to work.

The heavier solid matter falls to the bottom and forms sludge, whilst the fats and other lighter matter float to the surface and form a scum.

Three distinct zones exist within a septic tank; the scum zone, the settling zone, and the sludge zone (figure 1):

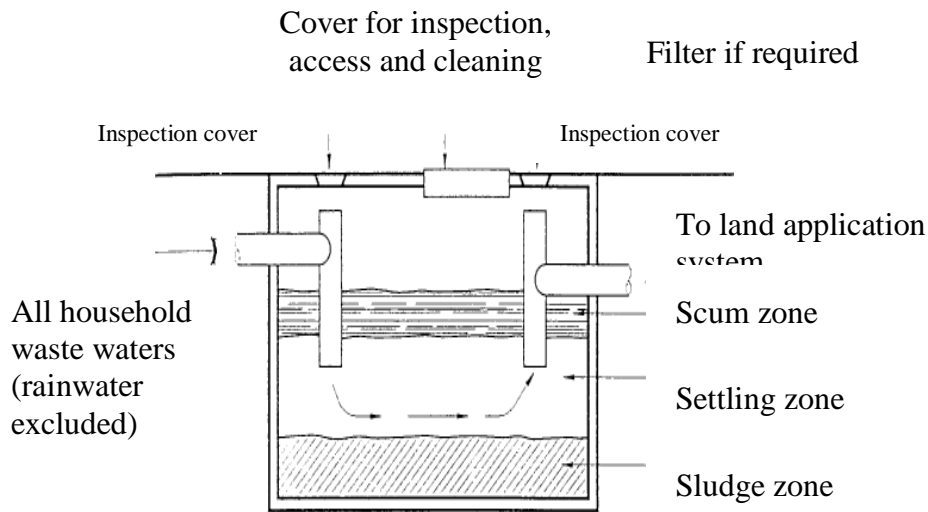


FIGURE 1 THE SEPTIC TANK

Effluent is the liquid discharged from the wastewater treatment unit. An effluent disposal system usually consists of a series of underground pipes a gravel bed referred to as effluent line, these are used evenly dispose of the effluent waste discharged from the wastewater-treatment unit (see figure 2)

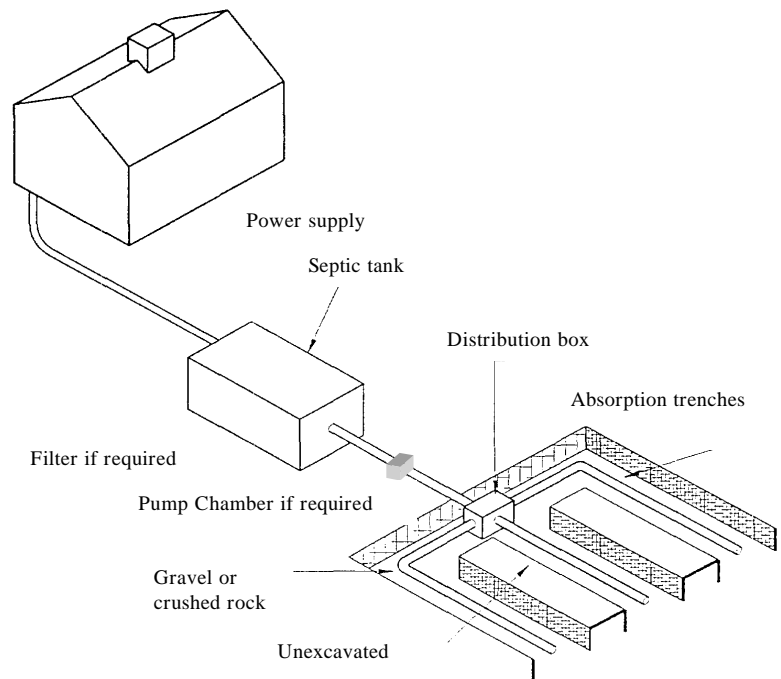


FIGURE 2:- SEPTIC TANK AND EFFLUENT TRENCHES

OPERATION & MAINTENANCE REQUIREMENTS



1. **Thou shalt not** pour greases, fats and oils, down any drain!
2. **Thou shalt not** attach a garbage disposal to your sink for ridding thyself of meat bones, coffee grounds or other foods that are difficult to biodegrade!
3. **Thou shalt not** dispose of any paints or household chemicals in the drain (yea verily, thou shalt use disinfectants in small amounts)!
4. **Thou shalt not** dispose of any paints or household chemicals in the drain (yea verily, thou shalt use disinfectants in small amounts)!
5. **Thou shalt not** dispose of any automobile fluids down any drain, be it gas, oil, transmission or break fluid, grease, or antifreeze!
6. **Thou shalt not** kill the beneficial bacteria in your septic system by rinsing pesticides, herbicides, or other toxins down the drain.
7. **Thou shalt not** let water run while washing dishes and thawing frozen foods and shall consider limiting flushes.
8. **Thou shalt not** run half loads in the dishwasher or washing machine and shall stagger wash loads (none on the Sabbath and the six on Mondays)!
9. **Thou shalt not** use chemicals to 'start up' or 'clean up' your system, yea, they could harm the septic tank, drain field, or groundwater.
10. **Thou shalt not** attach 'clean water' sources such as footing or sump pumps to the septic system.

Advice on Maintenance

The primary wastewater-treatment unit (septic tank) will need to:

- a) be desludged regularly i.e. every three to five years or when scum and sludge occupy 2/3 of the volume of the tank (or first stage of a two-stage system);
- b) be protected from vehicles;
- c) have any grease trap cleaned out regularly;
- d) keep the vent and/or access cover of the septic tank exposed;
- e) have any outlet filter inspected and cleaned.

Advice on Operating Problems

Problems can occur with systems which have not been maintained and where absorption areas have become blocked or clogged. The warning signs are obvious:

- a) Absorption field is wet or soggy with wastewater ponding on the surface of the ground.
- b) There is a smell of "sewage" near the septic tank or absorption area.
- c) The drains and toilets run slowly.
- d) The grease trap is full or blocked.

Consequences of Failure

A failed septic tank and land application system is a serious health and environmental hazard and can lead to:

- a) Spread of infectious disease
- b) Breeding of mosquitoes and attraction of flies and rodents
- c) Nuisance and unpleasantness
- d) Pollution and infection of waterways, beaches, streams and shellfish beds.
- e) Contamination of bores, wells and groundwater
- f) Alteration of local ecology

PLEASE NOTE: Installing a new, or replacing a failed system **will require a building consent and a site assessment.** The site assessment is to be carried out by an approved assessor, who will design a system or identify the work required to rectify the failure. Alternatively a recognised wastewater engineer can design a suitable system. This design must be based on a site assessment.

WASTE WATER TREATMENT AND DISPOSAL APPROVED ASSESSORS

The Gisborne District Council has now approved a number of individuals for undertaking assessment and design work for wastewater treatment and disposal systems within this district.

These assessors evaluate the soil type, percolation (or soakage) rate and then use a set of standard tables that consider variables such as potential number of bedrooms and water supply, to design a system that will suit your dwelling and provide environmental protection.

In general, any rural drainage work for which a building consent is required (that involves the installation of a septic tank or effluent disposal system or similar) will require some degree of site evaluation and design prior to a building consent being issued.

Details of this work (i.e. an accurate to scale site plan and details of the system type, sizes and layout) must accompany building consent applications and will only be accepted where it has been undertaken by one of those persons listed below, or a recognised wastewater engineer.

Andrew Appleby LDE PO Box 671, Gisborne	Phone Mobile Fax	(06) 8673035 027 4989 636 (06) 8673037
Gary Thompson Thompson Drainage 81 Innes street, Gisborne	Phone Mobile Email	(06) 867 4902 027 445 9720 thompsondrainage@xtra.co.nz
John Taylor Terry Taylor Drainage 89 Customhouse Street, Gisborne	Phone Fax	(06) 868 5383 (06) 868 5386
Ian Donaldson Donaldson Plumbing 73 Carnarvon Street, Gisborne	Phone Mobile	(06) 863 3688 027 435 921
Alan Hall 8 Ferry Road RD 1, Gisborne	Phone Mobile Fax	(06) 862 5597 (06) 862 5598
Carl Horne 834 Gladstone Road, Gisborne	Phone Mobile	(06) 8681543 021 903 061

The use of trade, firm, individual or corporation named on this page is for the information and convenience of the reader. Such use does not constitute an official endorsement or approval by the Gisborne District Council of any product or service:
1. that they provide; or 2. to the exclusion of others that may be suitable.

When completed and paid for this assessment belongs to you. You may use it to get quotes from a number of drainlayers and are in no way obligated to use the drainlayer who carried out the assessment.

COSTS

Installation and Maintenance

The costs involved in installing a septic tank can vary, from anything between \$5,000 for a small basic system to around \$20,000 for a more complex system (2006 costs). Transport costs to sites remote from Gisborne could add significantly to these costs.

The cost of cleaning your tank can also vary, mainly depending on where you live; this is due to contractors charging for their mileage to and from your property.

For an average septic tank on the Poverty Bay flats you would expect to pay around a \$150 dollars to have it cleaned (costs in 2006).

Systems that have been installed in the last few years may incorporate a filter on the outlet from the second tank or chamber. These filters must be regularly cleaned or the filter will clog and cause backups in the tank.

Systems that incorporate a pump, Aerated Home Treatment Plants, or Low Pressure Dosed Effluent systems have ongoing power costs. An AWTs requires regular 6 monthly maintenance or it will cease to operate effectively. This maintenance is at the homeowners cost.

Comparing costs with a Gisborne City Residence.

All single residential properties within Gisborne city that are connected to the main sewer line pay approximately \$250 per annum (2006 costs), this is on top of the original connection costs, which can vary depending on the distance between the house and the main sewer line, if you multiply these costs over the lifespan of your Septic Tank they would be comparable.

For further information

please contact the

**GISBORNE DISTRICT COUNCIL
Building Control Section**

on

(06) 867 2049