

# Fact Sheet 5

## Common disposal methods for septic tank systems

(primary treatment systems)

There are around 6000 properties within the Shire of Nillumbik that are not connected to mains sewerage. These properties are serviced by an onsite wastewater disposal system (septic tank system). Wastewater if not properly managed can impact on public health and the environment.

There are 10 fact sheets about onsite wastewater systems:

1. Conventional septic tanks
2. Aerated wastewater treatment plants
3. Sand filters
4. Split system
5. Common disposal methods for primary treatment
6. Common disposal methods for secondary treatment
7. Purchasing a dwelling in Nillumbik
8. Greywater reuse
9. Indigenous plants and grasses for transpiration
10. Decommissioning your domestic wastewater system

A septic tank system is known as primary treatment system. Wastewater treated to primary quality is only suitable for disposal below ground via soil absorption trenches, mounds and evapo-transpiration beds or trenches. This fact sheet provides information about these disposal methods. For information about the entire septic system, we suggest that this fact sheet be read in conjunction with Fact Sheets 1, 2 and 3 (depending on treatment system).

### Evapotranspiration/absorption trenches (ETA trenches)

Suitable for septic tanks, septic tanks with sand filters, AWTS's and other secondary treatment systems. Evapotranspiration/absorption trenches (ETA trenches) are the most common onsite wastewater disposal method. Their design has varied over time but their primary function has remained the same.

The trench design involves the use of slotted PVC piping or arch drains to disperse the effluent along the length of the trench bed. Trenches are typically 300-400mm deep with a minimum of 150 mm of top soil covering the top of the trench with the rest of the trench surrounded by aggregate.

The length of the trench is based

on the amount of wastewater potentially generated in the dwelling and the rate the water can be assimilated by soil, plants and evaporation.

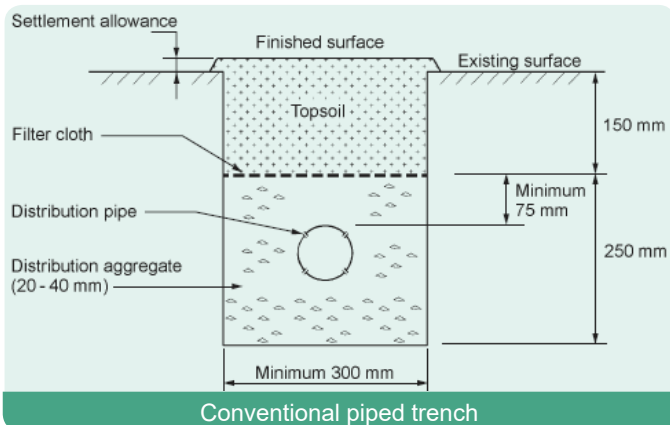
See page 2 for diagrams of trench types.

### Evapotranspiration/absorption beds (ETS beds)

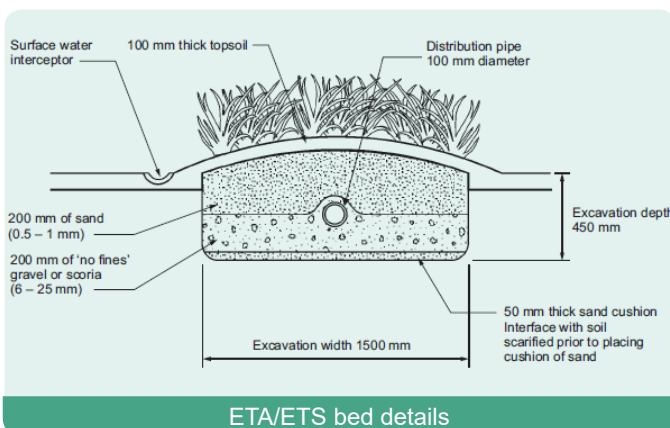
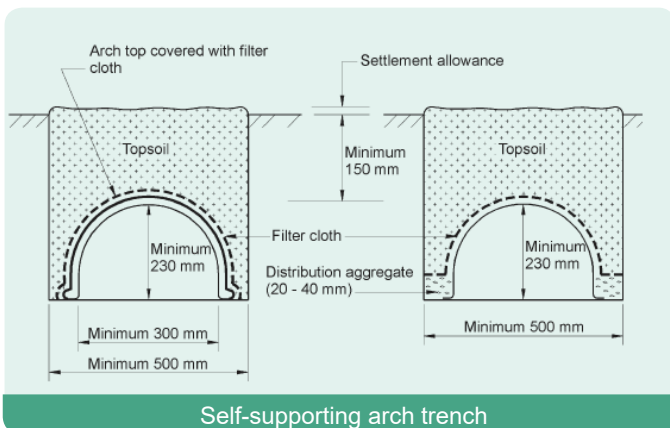
Suitable for septic tanks and septic tanks with sand filters.

ETA beds are useful effluent disposal options for properties with shallow soils or areas of high water tables. The beds are essentially designed to be large sponges of sand and gravel, sealed off from the surrounding soil. They have an inbuilt water storage capacity and a surface planted with shallow rooted perennial plants to maximise the evaporation and transpiration processes.

The effluent is fed or pumped into a network of pipes which rely on the capillary action of water to spread through the bed. A critical design consideration for these types of beds is that they are located in a position which maximises solar heat and wind movement. See page 2 for diagram of ETA/ETS bed details.



Note: LPED lines can be used to replace distribution pipes when dose loading effluent into trenches.



## Wick trench and bed system

Suitable for septic tanks, septic tanks with sand filters and all other secondary treatment systems.

Wick trenches are a recent design for subsurface wastewater disposal and may be helpful for small blocks with limited space or where the soil has poor absorption (e.g. heavy clay soils).

This trench type is a combination of an absorption trench and an adjacent evapo-transpiration bed. The evapo-transpiration bed is usually the space between trenches. The system of trenches and beds are underlain and joined, by a layer of geotextile fabric. The geotextile fabric acts as a 'wick' to continuously draw liquid upwards from the trench into the bed.

This design provides a greater surface area for transpiration and evaporation to occur. Given the width of these trenches steep sloping sites may require special designs.

See page 3 for diagram of wick trench and bed system.

## Mound systems

Suitable for septic tanks and septic tanks with sand filters. Mounds are normally used on flat allotments that have site or soil restrictions. They are particularly useful if there is a high water table or a lot of rock. The site is roughed up, or ploughed, for the mound to be constructed directly onto the surface of the ground.

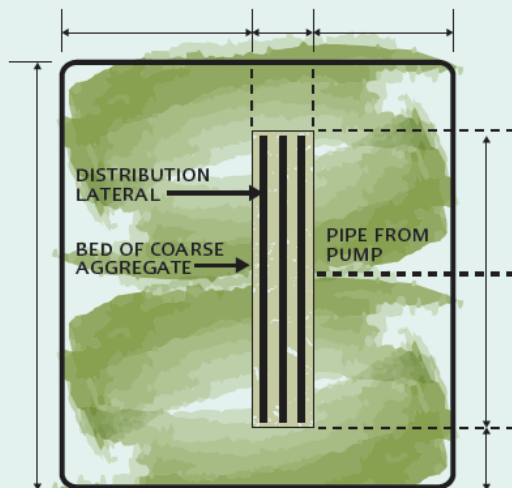
The mound is mostly sand, with the wastewater effluent pressure dosed into a bed of coarse aggregate to maximise dispersion into the sand for treatment. The effluent discharges from the sand directly onto the underlying soil while also utilising wind exposure to evaporate and transpire wastewater.

See page 3 for diagram of mound systems.

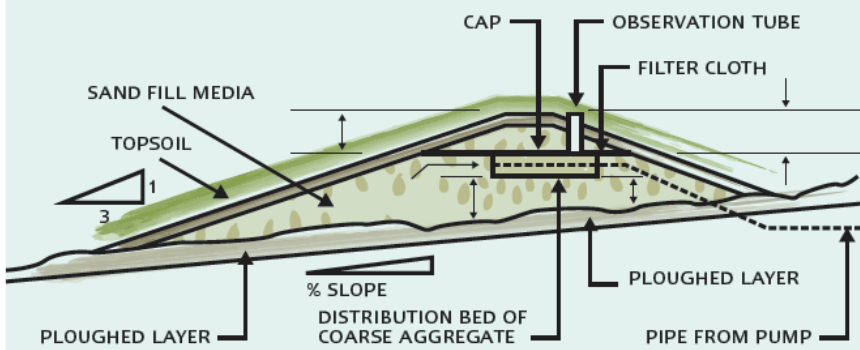


## Mound system

PLAN VIEW OF MOUND SYSTEM



CROSS SECTION VIEW OF MOUND ON SLOPING LAND



**ease Note:** effluent needs to be pumped to the mound.

De-sludging (pump out) of the septic tank should occur every three to five years depending on use.

Regular mowing and trimming of the vegetation should take place within the disposal field to maximise nutrient up take and exposure to the sun. If soil in the area has a tendency to crust, an application of gypsum will help repair it. Gypsum can also be applied to the bottom of new trench systems to reduce solid dispersion and maximise soil structure.

Ensure all distribution pits, inspection points or observation tubes associated with the individual disposal methods are accessible and located at ground level.

Install a diversion drain upslope from the disposal field to avoid surface water pooling.

## Helpful tips for the disposal of primary treated effluent

Ensure vehicles do not drive over these systems as they can compact and damage the field resulting in costly repairs.

Cattle and other livestock should be fenced off from the disposal area.

Disposal areas are not allowed to be encroached upon or built over with: paving, driveways, patios, fences, building extensions, sheds, children's playgrounds and portable above ground swimming pools

It is important to use environmentally safe household products. Avoid anti-bacterial surface sprays, bleaches and prewash soakers. Products that are considered safe to use include citrus based products, vinegar, environmentally friendly or biodegradable products and scented toilet blocks, without antibacterial agents.

## For information

For information on onsite wastewater systems contact Environmental Health on 9433 3340.