Fact Sheet 6

Common disposal methods for wastewater treatment systems

(secondary treatment systems)

NILLUMBIK
THE GREEN WEDGE SHIRE

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.

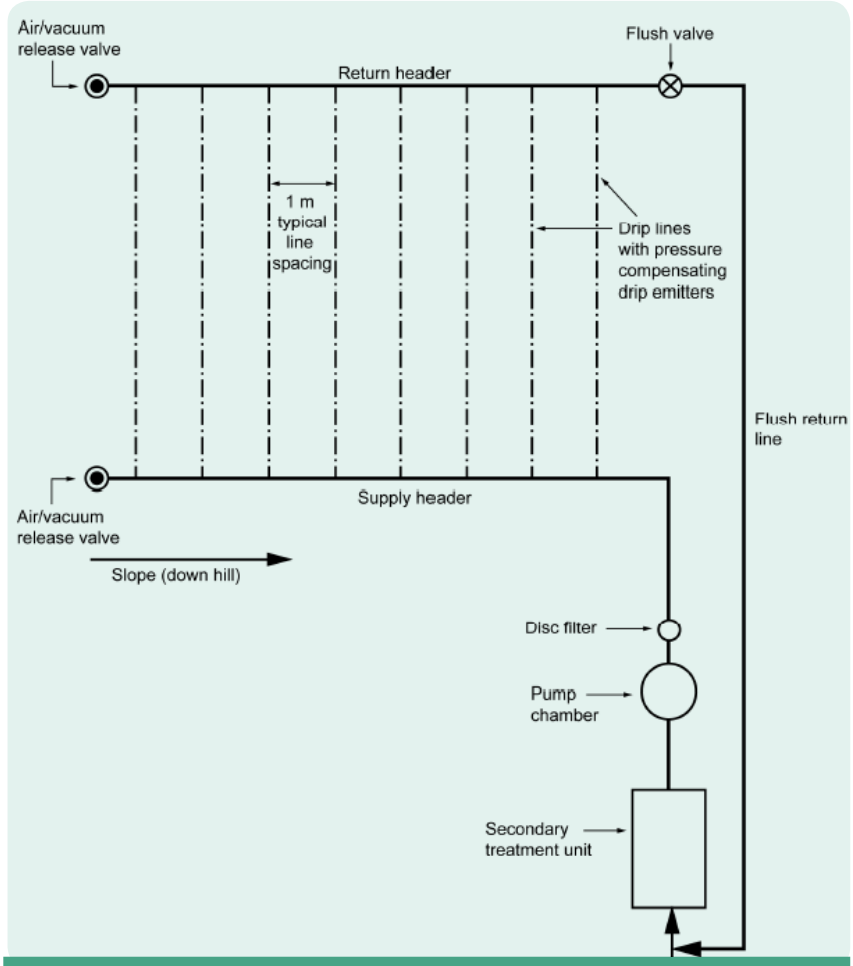
There are 10 fact sheets about onsite wastewater systems:

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

This fact sheet is about disposal methods for effluent from secondary treatment systems (AWTS or septic tanks combined with a sand filter). For information about the entire septic system, it is recommended that this fact sheet be read in conjunction with Fact Sheets 1, 2 and 3 (depending on treatment system).

Pressure Compensated Subsurface Irrigation (PCSS)

Known as subsurface irrigation, PCSS is suitable for AWTS and septic tanks with a sand filter. PCSS is a closed network of small diameter irrigation pipes fitted with low flow drippers buried just below the surface of the ground (150-200mm). The system is pressurised to allow for an even disposal of the effluent across the disposal field. These systems are growing in popularity, but require ongoing servicing and maintenance to function correctly.



Pressure Compensated Sub-Surface Irrigation

Components and design features of PCSS system

There are many components that make up a PCSS system, including:

Mesh/disc filter

An inline filter that removes suspended particles from the wastewater before entering the irrigation network.

Drip line with low flow emitters

Specialised irrigation line fitted with low flow emitters (drippers) that, under pressure, disperse the wastewater at a measured rate.

Vacuum breaker/air inlet valve

This valve acts to overcome air pressure differences within the pipe network during the different phases of pump operation. Primarily it prevents soil from being drawn into the drip lines at times of negative pressure.

Flush valve

This valve allows for any accumulated particles and bacterial biofilms to be flushed out of the pipe, preventing clogging. These can be automated or manual.

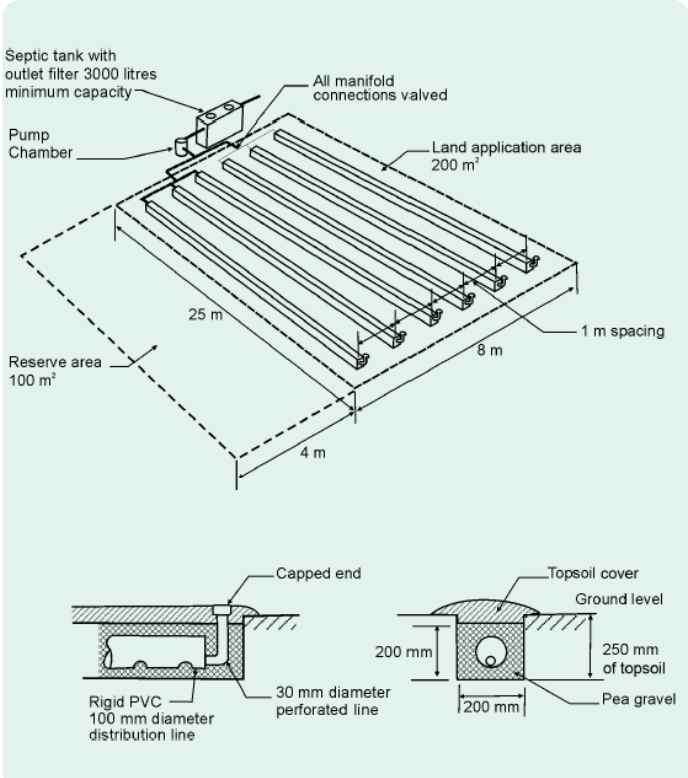
Plant root protection

Plant roots can clog up the drip lines so protect these lines with physical root barriers or trifluralin (or similar). Check with the distributor or system installer whether the drip line is fitted with a root barrier.

Low pressure effluent disposal systems (LPED)

LPED systems discharge the effluent from an AWTS (or a septic tank with a sand filter) into a series of shallow aggregate filled trenches. These trenches are made up of lengths of pressure line perforated with squirt holes at regular intervals which are laid into larger distribution pipes made from slotted PVC. The ends of the perforated drainage pipes are capped.

These systems are pressurised but not pressure compensated. Instead they have the effluent dosed into the drainage pipes in a way that allows the effluent to spread out along the whole length of each line preventing spot loading at each perforation. This type of irrigation system distributes the effluent in the upper layer of the soil where aerobic bacteria and shallow rooted plants are abundant. This helps with nutrient breakdown, moisture uptake and evaporation.



Low pressure effluent disposal systems

Simple steps to healthy irrigation systems

Servicing of your AWTS is mandatory and must be carried out by a qualified servicing agent every three months. Servicing agents should include the following during a service:

- Water sample sent to a NATA approved laboratory to verify treated effluent is to the 20/30 secondary standard or better.
- Flushing: irrigation systems should be flushed to remove sediment that has accumulated in the drainage pipes.
- Rotation: this step only applies to systems with multiple irrigation fields and no automatic rotation device. Manually rotating the use of irrigation fields will allow the fields to rest and prevent saturation from overuse.
- Filter replacement: ensure the filter (disc or mesh) continues to adequately protect the irrigation system and ensure it is regularly cleaned or replaced when showing signs of wear.

For information

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

- Soil maintenance: if the soil around the irrigation field is beginning to crust or tunnel apply gypsum to the area
- Dripper head replacement: dripper heads in older surface irrigation systems can become damaged or broken and will need to be replaced as soon as possible. They must only be replaced with heads that release drips. Spray emitters can release aerosols that suspend in the air increasing the potential for people coming in direct contact with the wastewater.
- Ensure inspection pits, flush valves and vacuum breakers are installed at ground level to enable easy access if maintenance is required.

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