

8 Methods of sewage treatment

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Environmental Health Practitioner Manual: A resource manual for Environmental Health Practitioners working with Aboriginal and Torres Strait Islander Communities

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Every community should have a way of disposing of sewage so that people, animals and flies cannot touch it. This is called a **sewage system**.

There are different types of sewage systems which can be described as **on-site systems** and **sewage** or **effluent systems**.

An on-site system is one which treats the sewage in a septic tank so that most of the sewage becomes effluent and is disposed of in an area close to the house or buildings. An example of an on-site disposal system consists of a septic tank and leach drains.

A sewage or wastewater system disposes of the effluent from a community at a central place usually called a **sewage lagoon** or **effluent pond**. The sewage can be treated:

- in a septic tank at each building
- just before the lagoon in a large septic tank or macerator system, or
- in the lagoon itself

8.1 On-site disposal systems

All the liquid waste from the toilet, bathroom, laundry and sink goes into pipes which carry it to a **septic tank**. The effluent from the tank is then disposed of through effluent disposal drains often referred to as **leach** or **French drains**. Both of these methods of disposing of liquid waste are **on-site disposal systems**. They must be installed and maintained properly.

In these systems, the effluent is soaked into the surrounding soil. Some soils don't allow good soakage such as clay or similar soils; if there are any problems with this disposal system a local government EHO should be consulted to talk about the problem.

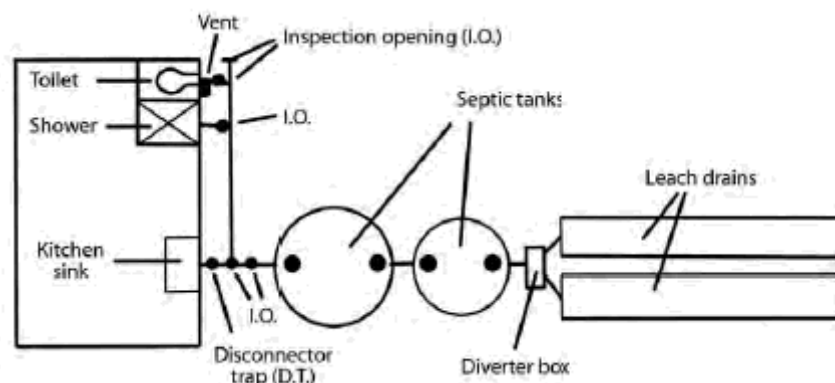


Fig. 2.30: Plan view (top) of an on-site sewage disposal system.

On-site disposal systems cannot be installed in all situations. For example, they cannot be installed:

- in areas that flood regularly
- in areas that have a high water table (that is, where the underground water is close to the surface)
- where the amount of wastewater to be disposed of is large
- near to drinking water supplies

8.2 Effluent (wastewater) disposal system

In this method the effluent from the community is carried by large pipes to the lagoon. These pipes serve all the houses and other buildings in the community. The sewage may be either be treated in septic tanks at the houses or buildings or at the lagoon. There are no leach or French drains.

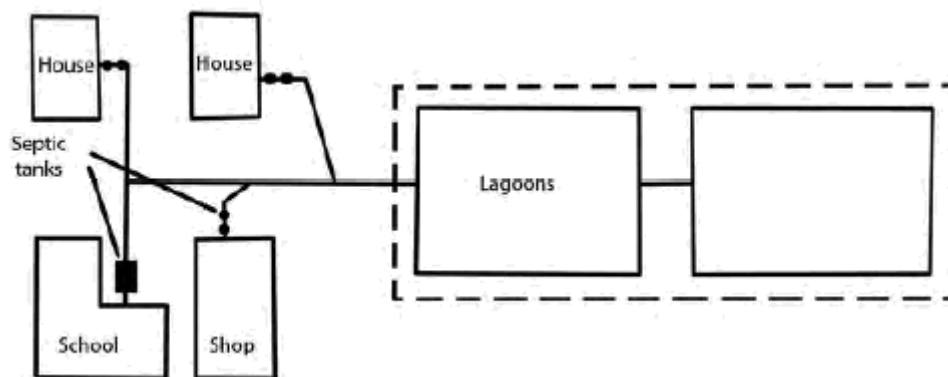


Fig. 2.31: Plan view of a wastewater disposal system.

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8.3 Full sewage system

All the sewage from the toilet, shower, laundry and other areas enters waste and sewer pipes directly and is pumped to a lagoon.

- There are three types of full sewage system:
- The sewage enters the lagoon without treatment
- The sewage goes through a series of cutting blades which help break up the solid matter before it enters the lagoon. These blades are called macerators.

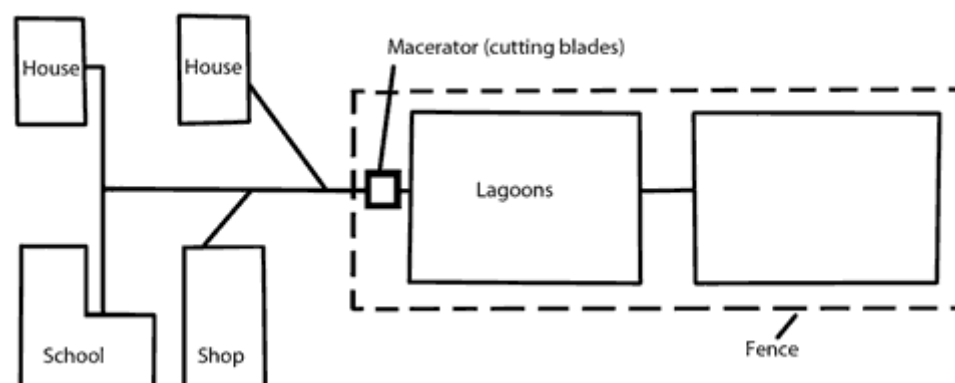


Fig. 2.32: Plan view of full sewage system and macerators.

- The sewage may be treated in a large septic tank just before it enters the lagoon.

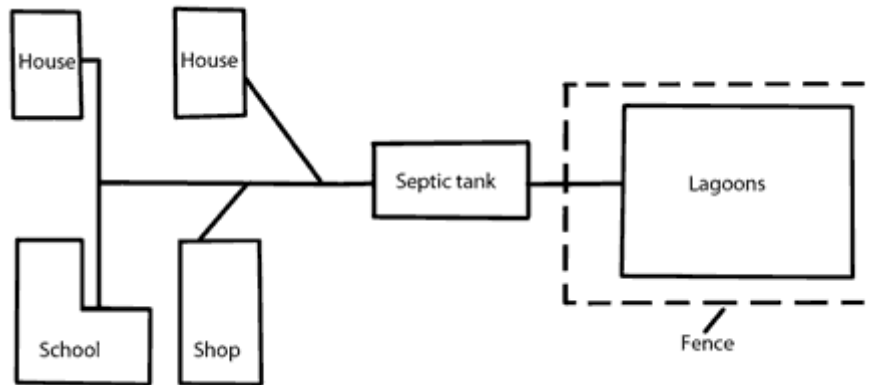


Fig. 2.33: Plan view of a full sewage system with a large septic tank.