

Maintenance and Operation of Sewage Disposal Systems

When are sewage disposal (or 'sewerage') systems used?

Any home or other building that is not connected to a municipal or city sewage system needs a method for getting rid of human wastes. Some people, usually in rural settings or camps, use an outhouse or privy. However, all buildings with indoor plumbing need to have a sewage disposal system that is properly designed and filed with the local public health authority.

A typical sewage disposal system has two basic parts:

- A septic tank, or a treatment plant and;
- A dispersal area - usually a series of underground pipes that evenly distribute the partially treated liquid into the ground for final treatment.

How does a septic tank or treatment plant work?

Septic tank: A septic tank is a watertight, underground container for receiving, treating, and settling human wastes. The solids settle to the bottom of the tank and become sludge, while oils and other light material float to the surface, forming a scum layer. Within the tank, anaerobic bacteria (bacteria that do not need oxygen) break down the solid wastes. When the septic tank is working properly, these bacteria can reduce the solids by 50 to 60 per cent. The liquid between the sludge on the bottom of the tank and the scum on the top flows out of the tank into the dispersal area, where further treatment occurs within the soil, until the liquid effluent is harmless and inert. The sludge and surface oils remaining in the septic tank need to be pumped out regularly. An authorized person who is a septic system pump-out contractor can do this maintenance.

Treatment Plant: A typical treatment plant uses air (oxygen) to help break down and treat the wastes. In some cases, the wastes are treated in a septic tank before flowing into the treatment plant.

A treatment plant treats liquid wastes to a higher quality, so it is cleaner and safer before it enters the dispersal area than the discharge from a regular septic tank. The net result for the homeowner is a smaller dispersal area.

Can a sewage disposal system be installed anywhere?

Every owner who wants to construct a new septic system, or alter or repair an existing one, must do so according to the Health Act and the new Sewerage System Regulation that came into force on May 31, 2005. For more information see the following website:

www.health.gov.bc.ca/protect/lup_regulation.html.

An owner must now retain the services of an authorized person who may be a professional engineer or a registered onsite wastewater practitioner (ROWP). There are four categories of ROWPs: planner, installer, maintenance provider and private inspector. A person may be registered in more than one category to provide services in that area. The authorized person assesses both the owner's needs and the lot's capability for sewage treatment and dispersal, then plans or designs a septic system that meets those needs. Once the plan is filed with the health authority, an authorized person installs the system according to the plan.

When the installation is complete, the authorized person (planner) certifies that the system was installed according to the design and provides a maintenance plan and as-constructed drawing of the system components to the owner and the health authority.

How is the sewage disposal system maintained and serviced?

Once the septic system is working, it is the homeowner's responsibility to ensure that the maintenance plan is followed. If you do not maintain your sewage disposal system properly,

this can result in the premature failure of your system, and you will need to pay for costly repairs or replacement of your disposal system.

It is important to have an accurate drawing that shows the location of all parts of your septic system so you can find them. For septic systems constructed under the Sewerage System Regulation, this as-constructed drawing will be provided by your authorized person (planner).

All septic systems, and especially treatment plants, need ongoing, proper operation and maintenance. An owner of a treatment system should contact a local service agent who is an authorized person and has experience with your specific treatment plant and model, to set up an annual service contract.

Septic tanks should be inspected every year, and they usually need servicing every two to three years, depending on the number of people using the system and the volume of daily sewage flow.

Here are a few things to keep in mind for servicing a septic tank:

- Use an authorized person for maintenance.
- Remove sludge in the spring rather than in the fall. This prevents leaving undigested solids in the tank during the cold winter months.
- Do not scrub a septic tank clean. A small amount of sludge should be left to renew bacterial activity.

How can possible problems be prevented?

Sewage disposal systems can be damaged in a number of different ways, although most of these can be prevented.

- If your system was constructed after May 30, 2005, then follow your maintenance plan.
- Do not let any vehicles, including snowmobiles drive or park on any part of the disposal system.
- Do not flush paints, solvents or any kind of toxic chemicals down the toilet.
- Do not plant large trees or shrubs nearby because the roots may affect the disposal field.
- Do not allow roof or perimeter drains, or any surface water, to discharge on or near the sewage disposal system.

- Do not overload the system with too much water. For example, a running toilet or dripping faucet, or by watering on or near the disposal area.
- Do not flush cigarette butts, filters, sanitary napkins, newspaper, disposable diapers, condoms, facial tissue (e.g. Kleenex®), paper towels, hair, metal or metal items, coffee grounds, tea leaves, fats or grease. These can all plug a septic tank or a drain field.
- Do not install a garbage disposal.
- Establish a water conservation strategy for the house.
- In areas where frost penetration is a problem, insulate the main pipe and disposal area with a generous layer of straw during winter months. Insulate the tank and pipe connection from the house as well.
- Do not leave the system not working for long periods during cold winter months.
- Use snow fences to promote maximum insulation from snow cover.
- If water pools up on a disposal area, seek advice from your environmental health officer and authorized person.
- Do not allow large livestock to graze on the disposal field.

If you have questions about how sewage systems work, or about local requirements, contact your local environmental health officer.

For more BC HealthFile topics visit www.bchealthguide.org/healthfiles/index.stm, or visit your local public health unit.

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- In BC, call toll-free 1-866-215-4700
- Deaf and hearing-impaired, call 1-866-889-4700
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