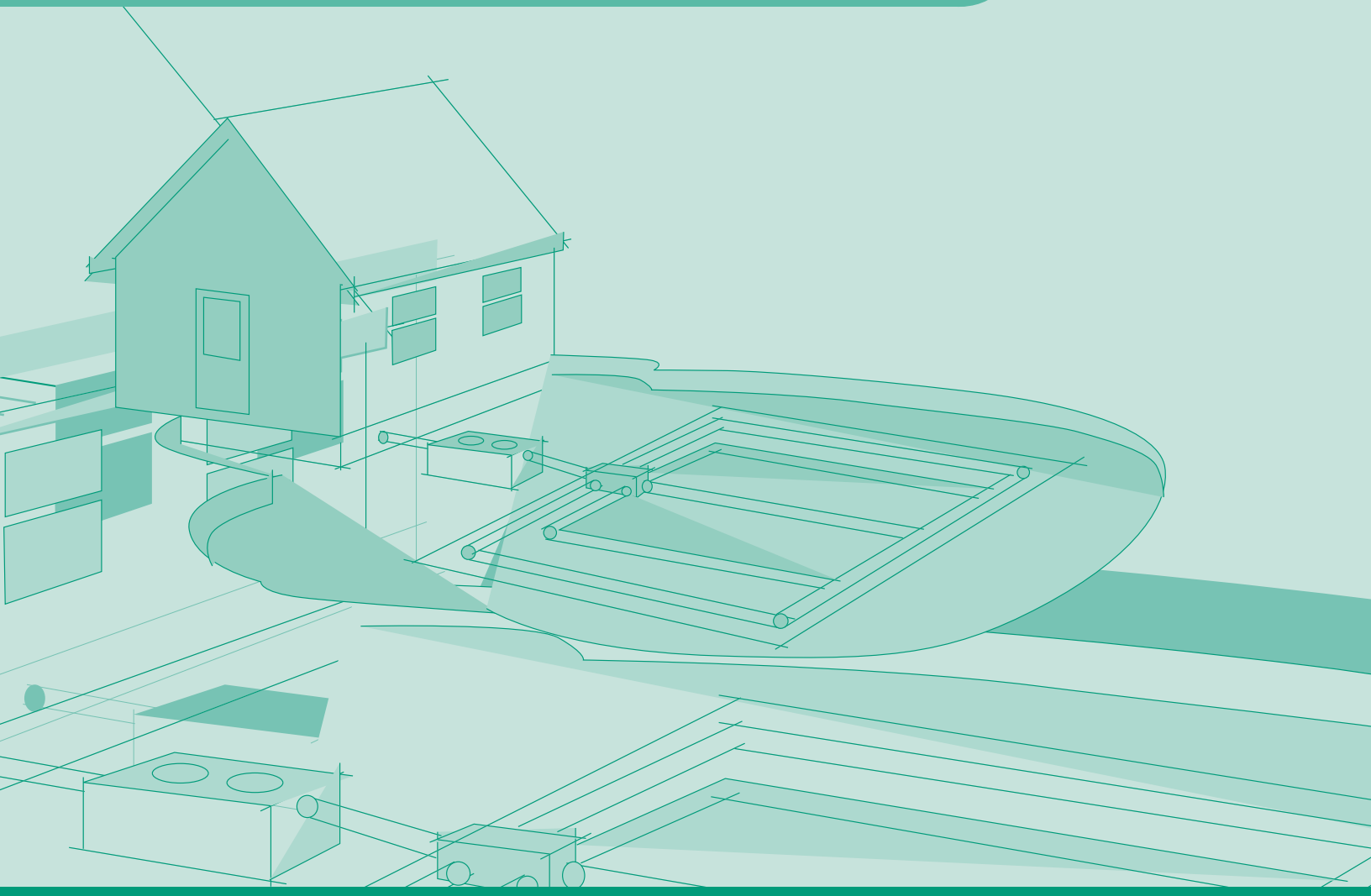
Homeowner's Manual for Onsite Wastewater Management Systems

A guide to the installation, use and care of your onsite wastewater management system



Protecting & Managing our Future

Manitoba
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1.0 INTRODUCTION

THE purpose of this manual is to inform homeowners and cottagers about onsite wastewater management systems (OWMS). It provides descriptions of wastewater characteristics and the various OWMS commonly used throughout rural Manitoba. It also includes important tips on how to operate and maintain these systems.

All OWMS have limitations, even when constructed in accordance with regulatory requirements. Quality designs and installations will not guarantee a trouble-free system. Proper operation and maintenance are equally critical in providing an efficient system that will last many years. Malfunctioning systems not only create a considerable inconvenience and expense for homeowners, but can lead to illegal discharge of wastewater into the environment. Wastewater contains many elements that may be harmful and may pose a threat to public health and the environment when not properly managed.

Specific sections of the Onsite Wastewater Management Systems Regulation (**found at http://web2.gov.mb.ca/laws/regs/pdf/e125-083.03.pdf**) are highlighted throughout this manual. However, you may wish to consult with the local environment officer when planning your OWMS to ensure you are aware of other pertinent regulatory requirements. It is also advisable to check with municipalities and provincial parks for additional requirements, if applicable.

Homeowners should employ a certified installer for onsite wastewater management systems. An installers certification can be verified on the list of certified installers at **http://www.gov.mb.ca/conser vation/regoperations/wastewater.** Certified installers must have an identification card from Manitoba Conservation.

NOTE
The role of environment officers is to provide general information on regulations, and to assess OWMS proposals for compliance with them. Environment officers do not design systems. Design is the responsibility of homeowners who should use a certified installer or environmental consultant.

2.0 DEFINITIONS

EVAPOTRANSPIRATION
the loss of water by evaporation from soil and transpiration from plants

GRADED STONE
durable, insoluble, decay-resistant, and washed rock or stone ranging in diameter from one to 7.6 centimetres (0.4 to three inches)

GREYWATER
liquid waste from a dwelling or other building produced by bathing, laundering, food preparation or from drainage associated with these sources - it specifically excludes sewage and septage

GREYWATER PIT
an excavation filled with graded stone and covered with topsoil for greywater disposal

INSTALLER
a person responsible for the installation, repair or modification of an onsite wastewater management system, who is certified by Manitoba Conservation

LOW WATER USE CLOSET
a toilet that uses less than five litres (one gallon) of water for each flush

ONSITE WASTEWATER MANAGEMENT SYSTEM
all or part of a treatment system, holding system or management system for sewage, wastewater, greywater, wastewater effluent or septage, including, but not limited to:

- an aerobic treatment unit
- a composting toilet system
- a disposal field
- a greywater pit
- a holding tank
- a septic tank
- a sewage ejector

SEPTAGE
solid material or liquid removed during periodic maintenance of a septic tank or an aerobic treatment unit

SEWAGE
fecal or urinary waste and other human body and toilet waste and may include water

SEWAGE HAULER
any person who removes or transports solid or liquid material from an onsite wastewater management system or privy, must be registered with Manitoba Conservation

WASTEWATER
either greywater or sewage or both

WASTEWATER EFFLUENT
wastewater after it has undergone at least one form of physical, chemical or biological treatment

3.0
CHARACTERISTICS OF WASTEWATER

Domestic wastewater contains many contaminants that may pose a threat to human health and the environment if not properly managed.

NITROGEN

- Nitrogen from human/animal waste and fertilizers can cause health and environmental problems.
- Excess concentrations of nitrates, formed by the conversion of nitrogen to ammonia to nitrates, can cause blue baby syndrome in infants where groundwater is used for a drinking water supply.
- Blue baby syndrome is when a lack of oxygen in the blood results in a bluish skin discoloration in infants. It can be caused by ingesting water contaminated with nitrates.
- Ammonia, one form of nitrogen, is toxic to fish.

PHOSPHORUS

- Phosphorus is present in human waste and detergents.
- Phosphorus can cause excessive plant growth (including algae) in ditches, streams, rivers and lakes.
- It is critical to limit the amount of phosphorus discharged into fresh water bodies.

OTHER CHEMICALS

- Household chemicals (cleaners, solvents, perfumes, dyes, medications, preservatives, hair care products, food additives) discharged into sewage systems are a groundwater contamination concern because the ability of soil to treat these chemicals is unknown.
- Excessive use of these chemicals may kill the bacteria that are needed for your system to operate properly.

PATHOGENS

- Pathogens are bacteria, viruses or parasites that cause disease, found in domestic sewage.
- Detecting pathogens in wastewater is difficult. Therefore other organisms such as coliform bacteria and E.coli bacteria, which indicate the presence of pathogenic micro-organisms, are measured.
- 100 millilitres (about 1/2 cup) of septic tank effluent contains between one thousand and one million fecal coliform bacteria and about the same number of viruses.
- To reduce the risks posed by pathogens, wastewater must be properly managed.

ORGANIC COMPOUNDS

- Domestic wastewater contains organic matter that can pollute water bodies and groundwater.
- While bacteria can consume organic matter, it reduces the level of dissolved oxygen in water, killing fish and other aquatic life.
- Oxygen depletion can clog onsite absorption systems and cause them to fail.
- The biological oxygen demand (BOD_5) test is a measure of the oxygen-depleting strength of wastewater.
- Excess BOD will cause sliming in disposal fields, reducing the infiltration capacity of the soil.

TOTAL SUSPENDED SOLIDS

- The total suspended solids (TSS) in wastewater represent the amount of solid matter removable by filtration.
- TSS is another diagnostic measure used to define wastewater quality.
- TSS will clog equipment and soil, affecting the efficiency of the treatment of wastewater effluent.

4.0
COMMON TYPES OF WASTEWATER MANAGEMENT SYSTEMS

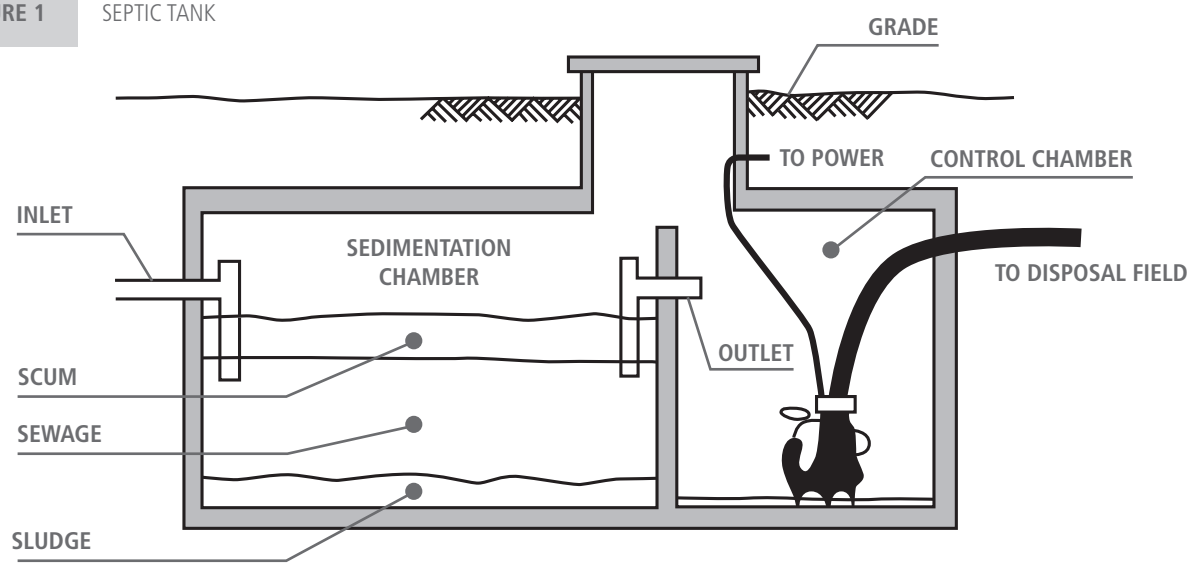
In Manitoba there are several systems currently available for proper onsite management of domestic wastewater:

- septic tank and disposal field (trench and total area)
- holding tank
- septic tank and sewage ejector
- package treatment plant or aerobic treatment tank
- pit, vault and pail privy
- greywater (sullage) pit

The type of system that is most suited to your needs depends on the onsite conditions of your property, the location of your property (ex. remote sites) and wastewater flows. A thorough evaluation of your onsite conditions is crucial in selecting a system that is efficient and cost-effective.

The most common system in Manitoba is a **septic tank/disposal field** system.

FIGURE 1 SEPTIC TANK



4.1
SEPTIC TANKS

A septic tank is a large container made of concrete, fibreglass, polyethylene or other approved material that receives wastewater from the plumbing drains of homes. Septic tanks must be watertight and corrosion-resistant. Pre-fabricated septic tanks must bear a Canadian Standards Association (CSA) stamp.

A septic tank is normally made up of two chambers: the sedimentation chamber and the control chamber (Figure 1). The **sedimentation chamber** is designed to hold at least 24 hours of wastewater flow, with additional storage capacity for sludge. It is in this chamber that solids settle out and break down into liquids, gases and sludge. This is an important process since the accumulation of solids would soon fill the tank if they were not broken down. In addition to the settling of solids, grease and soap scum rise to form an airtight scum layer in the sedimentation chamber. The formation of the scum layer is important to maintain an oxygen-free environment in which bacteria digest the sludge.

As wastewater effluent enters the sedimentation chamber, a corresponding amount of liquid overflows into the smaller chamber of the septic tank called the **control chamber**. When the contents of the control chamber reach a pre-determined volume, the contents are rapidly discharged or pumped through a watertight pipe to the treatment area (usually a disposal field). The rapid and intermittent discharge of liquid provides:

- a more even distribution of the wastewater effluent throughout the treatment area
- an important rest period between discharges to allow the treatment area to aerate
- protection against freezing

NOTE
Sludge and scum must be regularly removed from septic tanks by a registered sewage hauler. Sludge accumulates at a rate of about 0.06 cubic metres (two cubic feet) per person per year.

THE SEPTIC TANK MUST BE SET BACK AT LEAST:

1 metre (3.25 feet)
from a building

3 metres (10 feet)
from any property boundary

8 metres (26 feet)
from any well

15 metres (50 feet)
from a watercourse
(excluding a ditch)

8 metres (26 feet)
from a cut or embankment

3 metres (10 feet)
from a swimming pool

3 metres (10 feet)
from a cistern (water holding tank)

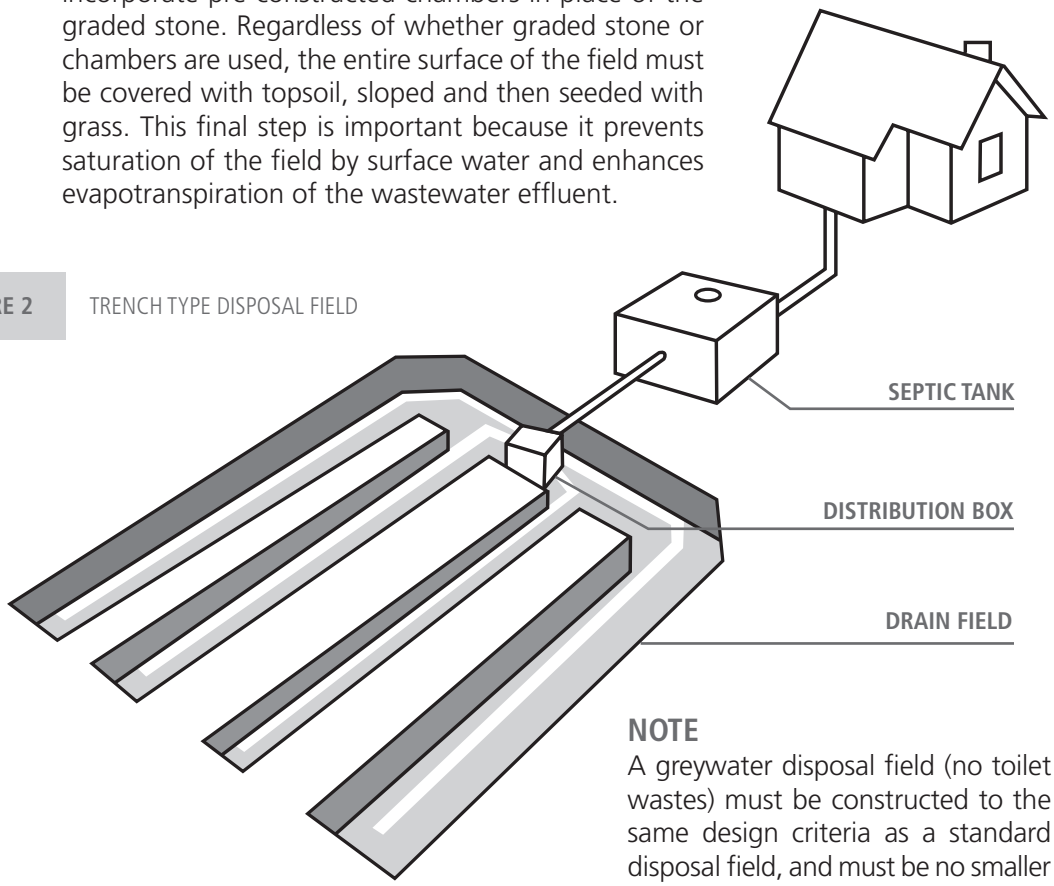
4.2
DISPOSAL FIELDS

The disposal field manages the wastewater effluent that is discharged from the septic tank. The effluent is naturally treated as it percolates through the soil. The two most common types of disposal fields are the **trench type** field and **total area type** field. Although typical installations are described below, modifications are sometimes made to satisfy site-specific requirements and needs.

TRENCH TYPE

The trench type of disposal field (Figure 2) is constructed of trenches with a maximum depth of one metre (3.25 feet) and a trench width of 60 centimetres to one metre (two to 3.25 feet). The excavation is then filled with graded stone to a level of at least 30 centimetres (one foot). A perforated pipe is laid out in the trenches and covered by 10 to 15 centimetres (four to six inches) of graded stone. The surface is covered with a layer of approved material (ex. geotextile fabric) to prevent soil clogging. Trench type disposal field designs may incorporate pre-constructed chambers in place of the graded stone. Regardless of whether graded stone or chambers are used, the entire surface of the field must be covered with topsoil, sloped and then seeded with grass. This final step is important because it prevents saturation of the field by surface water and enhances evapotranspiration of the wastewater effluent.

FIGURE 2 TRENCH TYPE DISPOSAL FIELD



NOTE

A greywater disposal field (no toilet wastes) must be constructed to the same design criteria as a standard disposal field, and must be no smaller than 75 percent of the size required for a standard disposal field.

TOTAL AREA TYPE

The total area type of disposal field (Figure 3) is constructed by digging a shallow excavation to a maximum depth of one metre (3.25 feet). The excavation is filled with at least 60 centimetres (two feet) of graded stone to, or above, the level of the surrounding grade. Perforated pipe is laid out from a central distribution box in an evenly spaced pattern.

As with the trench type field, the perforated pipes in the total area field are covered with another 10 to 15 centimetres (four to six inches) of graded stone and a layer of geotextile fabric or other approved material. Finally, the entire surface of the disposal field is covered with topsoil, sloped and seeded with grass.

The size (area) and type of field are determined by the onsite soil conditions and the number of bedrooms in your dwelling. **For sites not suitable for conventional disposal fields, other onsite wastewater management systems must be considered.**

DISPOSAL FIELDS MUST BE SET BACK AT LEAST:

6 metres (20 feet)
from a dwelling without a basement

11 metres (36 feet)
from a dwelling with a basement

30 metres (100 feet)
from a watercourse (excluding a ditch)

15 metres (50 feet)
from a cut or embankment

8 metres (26 feet)
from a swimming pool

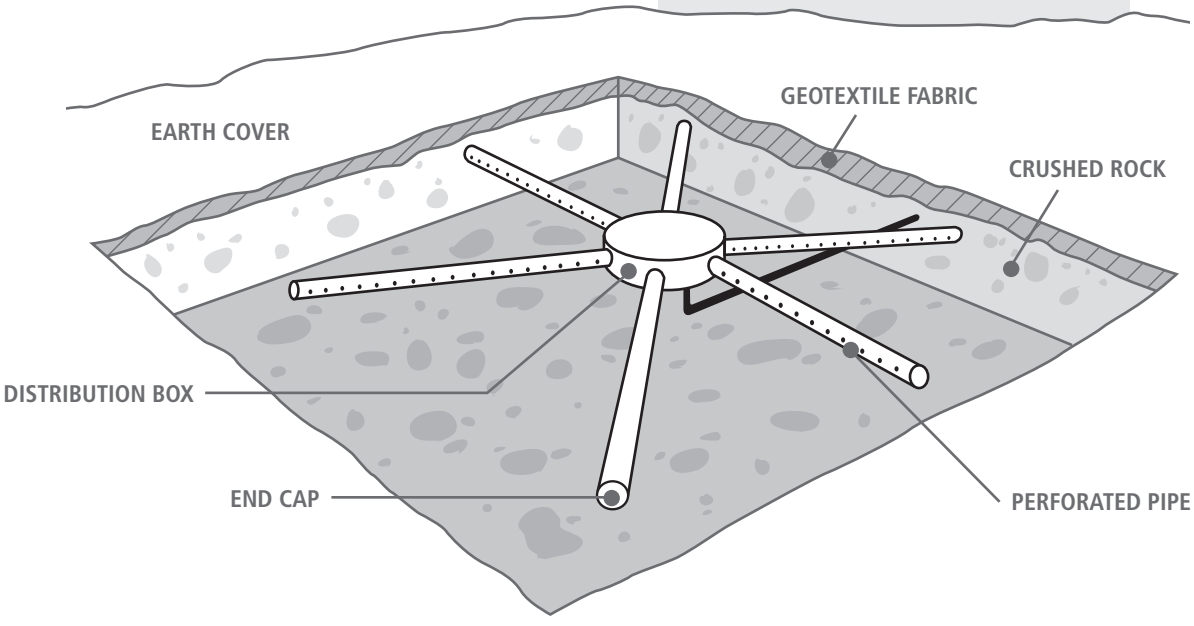
8 metres (26 feet)
from water service pipes

15 metres (50 feet)
from a well (drilled and cased to a minimum of 6m below ground)

30 metres (100 feet)
from other wells and springs

8 metres (26 feet)
from any property boundary

FIGURE 3 TOTAL AREA TYPE DISPOSAL FIELD



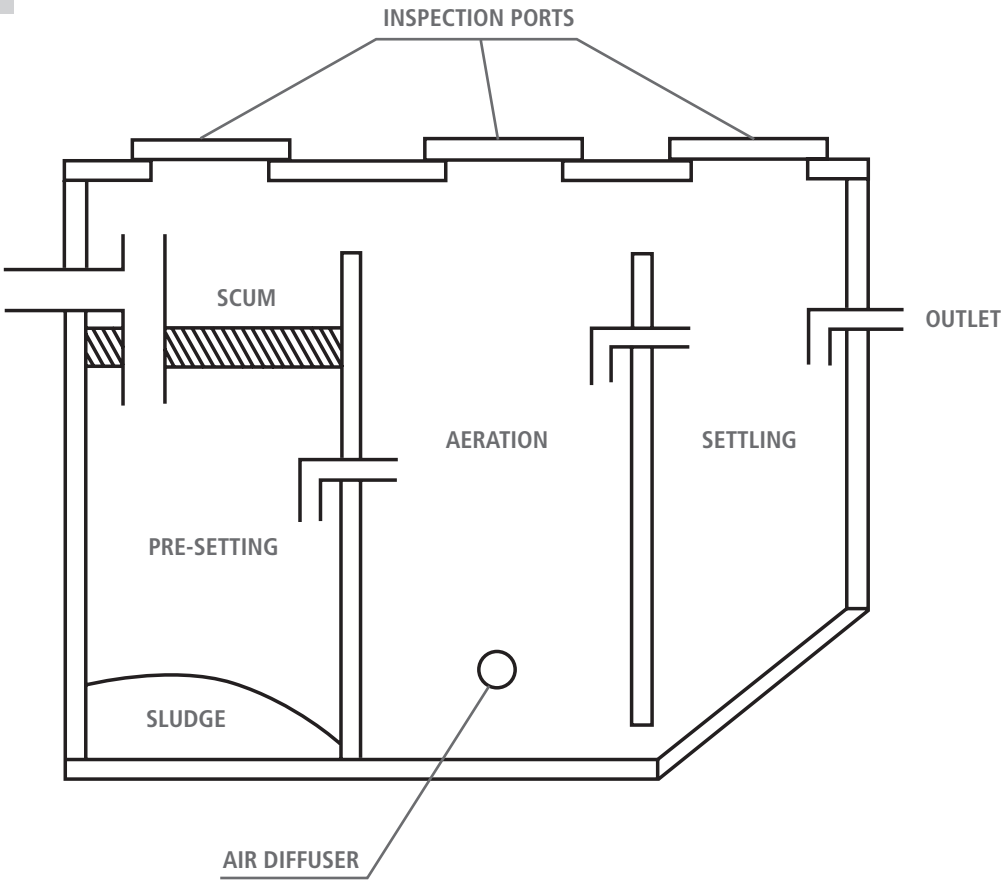
4.3
AEROBIC TANKS AND PACKAGE TREATMENT PLANTS

Aerobic tanks are similar in construction to septic tanks, but the treatment process is quite different. They are also typically more expensive but they release a purer effluent. In an aerobic tank, air is mixed into the wastewater to promote the growth of oxygen-using aerobic bacteria. A stirring agitator or an air compressor is used to supply oxygen to the aerobic bacteria.

The wastewater feeds the bacteria, which then breaks down complex organic compounds in to simpler, inoffensive ones. The effluent is released into a disposal field for further treatment. The sludge must be pumped out of the tank regularly by a registered sewage hauler.

Semi-annual monitoring must be performed by an authorized package treatment plant operator and an annual effluent test done by an accredited testing agency must be submitted to Manitoba Conservation.

FIGURE 4 AEROBIC TANK



4.4
HOLDING TANKS

Holding tanks are commonly used for wastewater collection in cottage country or in areas where disposal fields are not permitted. Holding tanks are normally single compartment tanks that need to be regularly pumped out by a registered sewage hauler.

A holding tank must be constructed of concrete, fibreglass, polyethylene or other approved material and must bear a Canadian Standards Association (CSA) stamp. The minimum total capacity for sewage holding tanks in Manitoba is 4,500 litres (1000 gallons). If all the water closets installed in a building are low water use closets, the holding tank may have a minimum total capacity of 3,400 litres (750 gallons).

Holding tanks must be installed using the same minimum setback distance requirements as septic tanks (see page 6) but should also be located where they can be readily accessed by a sewage pump-out truck. A holding tank cannot be installed in areas where pump-out service is not available, or where facilities for final disposal of the wastewater are not provided.

4.5
SEWAGE EJECTORS SYSTEMS

The sewage ejector system consists of a septic tank and pump, an underground pipe extending to the discharge area, and an aboveground discharge point. In this system, the wastewater effluent is sprayed onto the ground surface at the discharge point, where it percolates into the surrounding soil. Some evaporation of the effluent will also take place, although the amount varies with outside temperature.

Although not mandatory, it is recommended that a gravel bed be installed around the discharge point to minimize erosion, pooling of effluent and odours. The area surrounding the discharge point should also be fenced to keep out children, pets and livestock.

NOTE
A sewage ejector system should only be considered for rural, unpopulated areas that are not subject to development.

THE DISCHARGE POINT OF A SEWAGE EJECTOR MUST BE SET BACK AT LEAST:

60 metres (200 feet)
from any occupied building

60 metres (200 feet)
from any watercourse (including a ditch)

60 metres (200 feet)
from a cut or embankment

60 metres (200 feet)
from a market garden

60 metres (200 feet)
from a well

60 metres (200 feet)
from a property boundary

460 metres (1500 feet)
from the boundary of a city, town, village or hamlet

A SEWAGE EJECTOR SYSTEM CAN ONLY BE INSTALLED:

on properties that are at least four hectares (10 acres) in area

for single family dwellings

in locations where the wastewater effluent will not run off the property

4.6
PRIVIES (OUTDOOR TOILETS)

Privies are normally installed in remote areas or where regular sewage hauling services are not readily available. The Onsite Wastewater Management Systems Regulation recognizes three types:

PIT PRIVIES
waste collected in a hole in the ground

VAULT PRIVIES
waste collected in a small sealed tank, or vault, and pumped out by a registered sewage hauler for final disposal at a treatment facility

PAIL PRIVIES
waste collected in a small pail that must be emptied on a regular basis

4.7
GREYWATER (SULLAGE) PITS

A greywater pit is simply a covered hole in the ground filled with stone. It is used to collect and disperse small volumes of greywater. **Greywater pits are only permitted where a building is not serviced by water under pressure.**

5.0
ALTERNATIVE ONSITE WASTEWATER MANAGEMENT SYSTEMS

There are several alternative (non-conventional) onsite wastewater management systems that are not described by the current regulation. They include composting, filtration through peat or sand beds and aeration tanks. If you are considering such a system, you should contact your local environment officer to learn more about specific requirements.

A PIT PRIVY MUST BE SET BACK AT LEAST:

6 metres (20 feet)
from any habitable building

15 metres (50 feet)
from a drilled well cased to a depth of no less than 6 metres (20 feet)

30 metres (100 feet)
from other wells and springs

30 metres (100 feet)
from the normal high-water level of a watercourse

3 metres (10 feet)
from any property boundary

1 metre (3.25 feet)
from the bottom of the pit to the bedrock or normal high water table

VAULT AND PAIL PRIVIES MUST BE SET BACK AT LEAST:

6 metres (20 feet)
from any habitable building

8 metres (26 feet)
from a well

15 metres (50 feet)
from the normal high-water level of a watercourse

3 metres (10 feet)
from any property boundary

6.0 REGISTERING AND INSTALLING YOUR SYSTEM

6.1 PLANNING AND SITE EVALUATION

A thorough site evaluation provides the information that is needed to select the most suitable treatment system among a broad range of design options. Site evaluation helps the owner and installer determine whether the size of a property and the onsite conditions are suitable for the type of system being considered. As part of the site evaluation, the homeowner and/or installer should:

- consider placement of the wastewater management system in relation to legal descriptions, property easements and caveats, distances to neighbouring properties, improvements and zoning requirements, setback distances, physical characteristics of the property including vegetation, topography, and soils and other factors
- select the appropriate depth of the system, with accurate soil descriptions noting water table or bedrock depth or other limiting factors
- evaluate soil conditions through soil sample analyses and/or percolation tests

6.2 SOIL TYPES

Soil testing is required to determine whether a disposal field is permitted on your land, and if so, what type and size it needs to be. Before approving a registration for an onsite wastewater management system Manitoba Conservation requires a soil analysis to be completed (particle size analysis ASTM D422-63(2002)). A soil analysis will provide information on the soil composition. Environment officers may request other test methods that could include percolation test, test pits, etc. This will help officers assess detailed soil composition for an onsite wastewater management system.

6.3 SOIL ANALYSIS AND/OR PERCOLATION TEST

Soil analysis and/or percolation tests show the ability of the soil to accept the wastewater. Disposal fields rely both on evapotranspiration and percolation to work. There are a number of people you can contact to perform a soil analysis and/or percolation test, including the installers in your region and various engineering consultants.

To install a traditional subsurface total area field, the soil analysis application rate must be between 0.6 imperial gallons per day per square foot (IGPD/SF) and 0.26 IGPD/SF (29.35 litres per day per square metre (LD/M^2) and 12.72 LD/M^2) or a percolation rate between 11 minutes/inch and 60 minutes/inch (4.3 minutes/centimetre and 23.6 minutes/centimetre).

To install a traditional trench style field, the soil analysis application rate must be between 0.6 IGPD/SF and 0.18 IGPD/SF (29.35 LD/M^2 and 8.8 LD/M^2) or a percolation rate between 11 minutes/inch and 80 minutes/inch (4.3 minutes/centimetre and 31.5 minutes/centimetre).

If the soil analysis application rate or the percolation rate is greater or less than these ranges, alternative options will need to be investigated.

For alternative systems contact your OWMS installer or environment officer. For more information on soil analysis and percolation tests contact your environment officer.

6.4 REGISTRATION

Onsite wastewater management systems must be registered before **construction, modification or replacement**. To register your system, you must complete and submit an application to register to your local environment officer. A site plan, indicating the location of the system and the distances to buildings, property boundaries, wells and watercourses, must accompany the application. Forms and site-plan templates are available at the offices listed on the back cover. A **registration fee** must also be paid in full at the time of registration. The fee varies with the type of system registered, and is indicated on the application (A sample application can be found at **www.gov.mb.ca/conservation/regoperations/wastewater/pdf/application_installers.pdf).**

THE FOLLOWING SYSTEMS ARE EXEMPT FROM THE REGISTRATION REQUIREMENT AND ASSOCIATED FEES:

- patent closets
- chemical closets
- composting toilets
- privies (outhouses)
- other systems as approved by a director of Manitoba Conservation

NOTE

The completed application to register and accompanying site plan, with appropriate fee, must be presented by the homeowner or installer at a Manitoba Conservation office. Incomplete forms and site plans will be returned to the applicant, for corrections or completion.

6.5
AUTHORIZATION TO COVER

When your system is registered, the information will be reviewed by an environment officer or onsite wastewater inspector to ensure regulatory compliance. If the proposed system is acceptable, the environment officer will provide the installer with authorization to proceed.

You, or your installer, must notify the local environment officer when construction is to begin so that a time for inspection can be arranged before the system is covered. You should provide the environment officer with at least **48 hours notice** to make sure there are no delays in completing your installation.

When you have authorization to cover your unit, a copy of the application to register will be returned to you. This copy and the site plan should be kept and passed on to future owners/users as proof of registration.

NOTE
It is illegal to proceed with an installation or modification of an onsite wastewater management system without authorization from an environment officer or a director of Manitoba Conservation.

6.6
SENSITIVE AREAS

Schedule H of the Onsite Wastewater Management Systems Regulation designates certain lands as sensitive areas. On these lands, no one is permitted to construct, install or modify an onsite wastewater management system, or have, use or permit the use of a disposal field or sewage ejector system, except where approved by an environment officer or a director of Manitoba Conservation. To find out if you are in a sensitive area, contact your local environment officer.

7.0 OPERATING AND MAINTAINING YOUR SYSTEM

7.1 SEPTIC TANK MAINTENANCE

- Sludge and scum should be removed from your septic tank every one to three years, depending on the amount of wastewater that is generated from your home. Sludge accumulates at a rate of about 0.06 cubic metres (two cubic feet) per person per year. An excessive accumulation of sludge in the septic tank may cause solids to overflow into the tank's discharge chamber and into the disposal field, resulting in clogging of the disposal field.

- The sludge layer should not be any higher than one-third the depth of your tank. You should consult with your sewage hauler, or be present when the sludge is being pumped from your tank, to determine if your maintenance schedule is adequate.

- If you have just installed a septic tank for a **new home**, it should be pumped out within one year following startup. Wastewater from new homes may contain small amounts of paints, stains or other materials that can inhibit the growth of the bacteria that are needed to break down the solids in your tank.

- Septic tanks (and holding tanks) that receive small volumes of wastewater, such as those that service **seasonal cottages**, should not be pumped completely dry at the end of the season. Leave about one foot (30 centimetres) of liquid in the tank to allow the bacterial action to continue. This will generate heat and minimize the risk of freezing and subsequent damage to your tank.

- If a pump is used to discharge wastewater effluent from your septic tank to the treatment area, you may want to consider installing a filter to protect and prolong the life span of the pump and/or field.

- Do not dispose of fuels, grease, paints, thinners, pesticides, cigarettes, condoms, paper towels, diapers, sanitary napkins, tampons or other items that do not readily decompose into a septic tank. A septic tank can only handle biodegradable waste.

NOTE

Check your local yellow pages under Septic Tanks for a registered sewage hauler near you or find a list at **www.gov.mb.ca/conservation/regoperations/wastewater/pdf/haulers_list_2005.pdf**. Only registered sewage haulers can remove liquid or solid material from an onsite wastewater management system or privy.

NEVER
ENTER YOUR SEPTIC TANK OR HOLDING TANK FOR ANY REASON:

Toxic gases such as hydrogen sulfide are often present and may be life-threatening.

7.2
DISPOSAL FIELD MAINTENANCE

- Manage your water use wisely. Conserving water and staggering your water use will put less stress on your disposal field.
- Inspect your field regularly for pooling or other signs that it may be failing.
- Direct run-off from drains, spouts, sump pumps, driveways etc. away from the disposal field area.
- Insulate the disposal field with a layer of straw during winter months at least 30 centimetres (one foot) thick.
- Avoid any activities that may compact the soil in the disposal field area. Nothing heavier than a riding lawn mower should be allowed on the field. If you are building a new home, rope off the future site of your field to prevent soil compaction from vehicles and construction equipment.
- Plant trees and shrubs at a safe distance from the disposal field area. Roots will seek out the moisture and nutrients within the disposal field, and possibly damage the system.
- Grass should be grown over the disposal field area since it encourages evapotranspiration of the effluent.

7.3
WHY ONSITE WASTEWATER MANAGEMENT SYSTEMS FAIL

INADEQUATE DESIGN
- system is inadequately sized
- poor onsite soil conditions – soil percolation rates are too fast or slow for the type of system
- uneven distribution of wastewater into the disposal field – pipes and/or distribution box are not installed properly

HIGH FLOW AND ORGANIC LOADING
- high wastewater flows from occupants, appliances, hot tubs etc.
- leaking plumbing fixtures
- garbage disposals produce high strength effluent, causing thickening of the biomat or anaerobic (absence of air) conditions in the treatment system
- sump pump water is not wastewater and should not be discharged to the field because it will cause premature field saturation

INADEQUATE MAINTENANCE
- failure to pump septic tank periodically
- failure to maintain distribution chambers
- failure to service or maintain pumps when they are part of the system
- excessive use of household chemicals

PHYSICAL DAMAGE TO SYSTEM
- tree roots
- collapse of tanks, pipes or distribution boxes
- compaction of soils
- corrosion of metals and concrete

LANDSCAPE POSITION
- surface and groundwater seeping into septic or holding tank and pump chamber
- high groundwater table
- poor drainage of water from the site

7.4
TROUBLE SHOOTING GUIDE

TROUBLE SIGNS	POSSIBLE CAUSES	RECOMMENDED ACTION
SEWAGE BACK-UP INTO BUILDING *Serious health risk - avoid contact with sewage effluent*	• roots clogging pipes • frozen pipes • plumbing blockages • excessive water use • pump failure • field saturation	• reduce water use (check for leaking taps or running toilets) • consult a professional installer to inspect your system and clean septic tank if required
SEWAGE SURFACING IN YARD *Serious health risk - avoid contact with sewage effluent*	• excess water use • system blockages • improper system elevations • system is undersized • pump/controls failure • field saturation	• reduce water use • consult a professional installer and fence off area until problem is resolved
SEWAGE ODOUR IN BUILDING *Toxic gases can cause discomfort and illness*	• sewage back-up into house • roof vent is blocked • improper plumbing • sewage surfacing in yard	• check and clear roof vent • consult a plumber • consult a professional installer to check pump and clean septic tank if required
SEWAGE ODOUR OUTSIDE *Major nuisance but not a serious health risk*	• sewage surfacing in yard • tank manhole cover partially or fully open • malfunctioning disposal field	• replace and secure manhole • consult a professional installer to repair or replace disposal field
CONTAMINATED SURFACE OR GROUNDWATER *Serious health risk - ingesting contaminated water can lead to serious illness including dysentery and hepatitis*	• sewage discharge to surface • sewage leaching into groundwater • broken sewage pipe • improper water well construction • inadequate distance between disposal field and water source • inadequate vertical separation between disposal field and groundwater table • contamination from an off-site source	• eliminate improper discharge of sewage • repair broken pipes • repair or relocate water well • if an off-site source is suspected, contact your local environment officer
PUMP ALARM ACTIVATED *Sewage may back-up into house, solids may enter disposal field*	• electrical breaker tripped • pump is unplugged • controls malfunctioning • pump failure	• check breaker/electrical plugs • consult a professional to inspect controls and alarm, and possibly to replace pump
FREEZING OF DISTRIBUTION LINES OR DISPOSAL FIELD *System may be inoperable*	• lack of use • low flow rate • foot or vehicle traffic over piping/ disposal field • pump undersized • improper construction of system • inadequate insulating cover (ex. snow, straw etc.) over field in winter months	• run water into system • increase water use and frequency of pump cycle • fence out traffic • increase pump size • apply snow fencing or straw on disposal field in winter months • have a professional check construction and pump out septic tank regularly until system is operable

7.5
SYSTEM MAINTENANCE RECORD

Routine inspections and maintenance of your onsite wastewater management system are essential. Poor maintenance or neglect may lead to failure of your OWMS.

INSTALLER'S NAME:

PHONE NUMBER:

DATE OF INSTALLATION:

REGISTRATION NUMBER:

DATE	MAINTENANCE COMPLETED	SERVICE PROVIDER

- The sludge and scum should be removed from your tank approximately every **one to three years** by a registered sewage hauler, but frequency will depend on usage. Check the sludge level in your septic tank annually to determine what frequency of clean out is best for your household. Unless absolutely necessary, avoid cleaning the tank during winter months.
- If you are having problems with your system, see the **Troubleshooting** section of this document to help determine what services you may need.
- Attach the site plan for your OWMS to your maintenance record so that all components of your system will be easily located for inspection, maintenance or repair.
- It is highly recommended that this maintenance record be maintained and passed on to future owners/users of the onsite wastewater management system. The registration number provides proof of registration pursuant to the Onsite Wastewater Management Systems Regulation.

8.0
REDUCING YOUR INDOOR WATER USE

There are a number of good reasons why we should all reduce our indoor water use. In addition to protecting our water sources and delaying the need to expand municipal water and wastewater treatment facilities, water conservation will prolong the life of your onsite wastewater management system.

KITCHEN AND LAUNDRY

- Install a water saving nine litres (2.38 gallons)/minute aerator on the kitchen tap.
- Rinse dishes in a stoppered sink or basin, not with running water.
- Wash vegetables in a basin or stoppered sink and then quickly rinse using running water.
- Keep drinking water in the fridge. Wash the container and change the water every few days.
- Thaw food in the fridge rather than under a running tap. This conserves both energy and water.
- Compost organic wastes instead of using a sink garbage disposal.
- Buy a low water use dishwasher to save on energy, water and detergent costs.
- Wash only full loads of laundry and dishes.
- Front loading washing machines use less water than top-loading washers do. If unavailable, choose a clothes washer with a suds saver, and water saving cycle.

GENERAL WATER USE

- Do not discharge water softener backwash water into the disposal system. The additional water may over tax the system.
- Use water treatment or softening systems only if required. If possible, only use softened water for bathing and cleaning – use unsoftened water for cooking, drinking and watering plants.
- Ensure a water softener regenerates only when the resin is exhausted.
- Turn the water system off if you will be away for more than a few days.
- Insulate hot water tank and pipes to reduce the need to run water until it is hot. Install a heat trap on the pipe above your water heater to save energy and water.
- Know the location of sink, toilet and main shut off valves in case a pipe or water heater bursts, or so you can turn off your water when you are away.
- If your water pipes tend to freeze, do not let the tap run continuously. This wastes water, and overloads sewer systems. Instead, install heat tape or connect a pump-back reservoir system (discuss options with your plumber, electrician or call Manitoba Conservation).

BATHROOM

- Replace toilets that flush 13 to 26 litres (3.43 to 6.87 gallons) of water with six litres (1.59 gallons) or dual flush toilets, cutting water use by half or more. See **www.cwwa.ca** for toilet performance ratings. In the meantime, reduce water per flush in toilets by up to 35 percent by installing early closure devices (don't use bricks as they break down and pieces interfere with the flapper seal).
- Don't use the toilet to dispose of trash.
- A partially filled tub uses less water than a long shower; a short shower uses less than a full tub.
- Replace your 20 litre/minute (5.28 gallon/minute) showerhead with a low-flow 9.5 litre/minute (2.51 gallon/minute) showerhead. You'll use less than half the water.
- Make it a habit to be finished your shower in less than five minutes.
- Install a water conserving 3.5 litre/minute (0.92 gallon/minute) aerator on your bathroom tap.
- When shaving, rinse the razor in a cup or a partially filled sink instead of letting the tap run.
- Brush teeth using a glass of water to rinse.

LEAKS

- A leak of one drop per second wastes 10,000 litres (2,641.72 gallons) of water per year. A toilet that runs after a flush can waste 200,000 litres (52,834.41 gallons) of water per year.
- Fixing a hot water leak will save energy and water.
- Conduct a leak check at least twice a year on water use fixtures and appliances, including outside hose connections. Replace worn washers, O-rings and faulty fixtures.

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Pour obtenir une version française de ce document, veuillez communiquer avec le bureau mentionné ci-dessus.

www.gov.mb.ca/conservation/regoperations/wastewater/index.html

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