

Worksheet #5 – Wastewater & Septic Systems

Use this worksheet to determine whether household water is treated safely on your property.

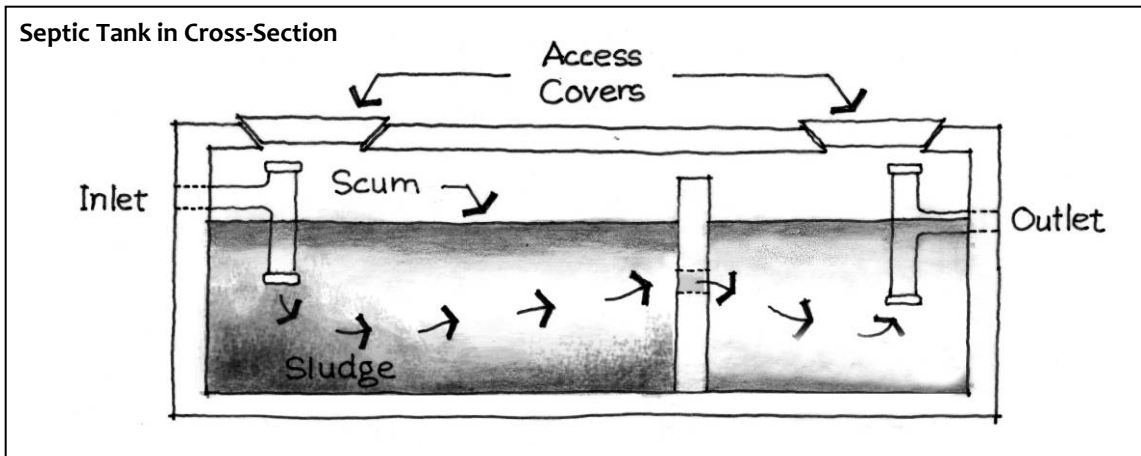
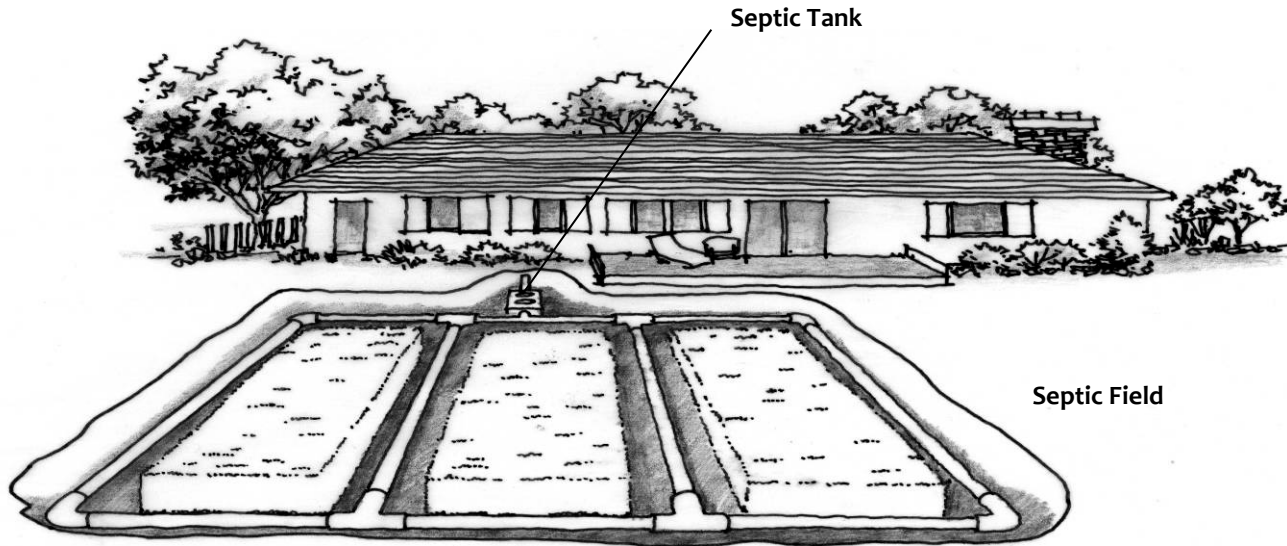
Why should you be concerned?

- In urban areas, household wastewater is treated at a treatment plant before it is discharged into a lake or river.
- In rural areas, people use a septic tank or similar system to treat household wastewater. All the water that flows down your drains ends up in your septic system. It must be able to safely handle all the wastewater to prevent contamination of ground and surface water.
- Household wastewater contains disease-causing bacteria and viruses, household chemicals, and excess nutrients. All of these contaminants can cause serious health problems.
- Household water should be tested regularly for total coliform and E. coli. If present, these bacteria indicate that the water is unsafe for drinking or food preparation. Your septic tank system could be one source of contamination.
- If your home treatment system has to handle too much wastewater, it will not be as effective and may cause premature failure. Increased use of water, through additional appliances or a second bathroom will increase the load on your septic system.
- Not only can septic system failure be highly inconvenient, it can also be very expensive. New regulations and higher standards may mean that the system should be replaced instead of repair or an upgrade.
- Facilities such as outhouses and chemical toilets can be effective and environmentally responsible. Contact your local Health Unit or municipality to learn more.

What can you do?

- 1.** Make sure your septic system is large enough to meet your needs. Look for ways to reduce the amount of wastewater that enters the septic system.
- 2.** Protect your health and the quality of your drinking water by disposing of contaminants properly.
- 3.** Keep your septic system in good repair. Pump the septic tank out regularly (every 3-5 years).
- 4.** Keep trees and shrubs out of your septic field.
- 5.** Consider renting a portable privy when hosting large gatherings.
- 6.** Keep kitchen grease and household chemicals from entering wastewater system.

A Simple Septic System



There are many different septic system designs on the market, suited to different soil types, different spaces and different budgets. The function, however remains generally the same: to remove harmful materials and contaminants from your household waste, returning pure water into the environment. To make this possible, careful and appropriate management and maintenance of your septic system are essential. This diagram shows a basic septic field (top) attached to the outlet pipe of a two-chamber septic tank (enlarged at bottom).

Wastewater & Septic Systems: How do you rate?

Rating	Best 4	Good 3	Fair 2	Poor 1	Your Rating
QUANTITY OF WASTEWATER					
1	Efficient Water Use affects Septic Function Conservative water use (less than 180 litres/40 gal. per person per day).*	Moderate water use (180-270 litres/40-60 gal. per person per day).*	High water use (271-360 litres/61-80 gal. per person per day).*	Very high water use (greater than 360 litres/80 gal. per person per day).*	<input type="checkbox"/>
2	Fixtures and Maintenance Water-conserving fixtures throughout house, AND fixtures are inspected regularly, AND leaks fixed immediately.	Some water-conserving fixtures throughout house, AND some fixtures are inspected regularly, AND some leaks are fixed immediately.	No water-conserving fixtures in house, OR fixtures are not inspected regularly. Problems are fixed when found, AND some leaks are fixed immediately.	No water-conserving Fixtures, OR leaks are not fixed immediately.	<input type="checkbox"/>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> tip Install faucet aerators and use low-flow shower heads. </div>					
QUALITY OF WASTEWATER					
3	Solid Waste No use of garbage disposal unit in kitchen sink.			Daily use of garbage disposal unit in kitchen sink.	<input type="checkbox"/>
4	Dissolved Waste Minimal use of environmentally friendly household detergents and cleaners (0.2 litres or 1 cup per week), AND no disposal of household solvents or cleaning agents into plumbing system.	Careful use of household detergents and cleaners (0.5 litres or 1 pint per week), AND minimal disposal of household solvents and cleaning agents into plumbing system.	Moderate use of household detergents and cleaners (1 litre or 1 quart per week), OR moderate disposal of household solvents and cleaning agents into plumbing system.	High use of household detergents and cleaners (4 litres or 1 gal. per week), OR frequent disposal of household solvents and cleaning agents into plumbing system.	<input type="checkbox"/>
<div style="border: 1px solid black; padding: 5px; width: fit-content;"> tip Using less water helps your septic field perform better. </div>					

* See Worksheet 4 to calculate your water use.

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
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QUALITY OF WASTEWATER *continued*

5	Water Softener Discharge	Water softener does not discharge to septic tank.	Water softener discharges to septic tank but the system is properly designed to accommodate discharge water.	Water softener discharges into septic tank not designed to accommodate discharge water.	<input type="checkbox"/>
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6	Grease and Oils	No disposal of household grease or oils into plumbing system, AND household wastes only.	Minimal disposal of household grease or oils into plumbing system and oil and grease wiped from cooking utensils before washing.	Moderate disposal of household grease or oils into plumbing system, OR no attempt to reduce disposal of grease and oil from household.	Frequent disposal of household grease or oils into plumbing system.	<input type="checkbox"/>
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WASTEWATER TREATMENT SYSTEM

7	Design and Construction	Has Building Permit or Certificate of Approval, AND system adequately sized, AND system installed by a licensed installer.	<p>tip If on clay soil, plant grass over the leaching bed. If on sand, plant beach grass or leave without a ground cover.</p> <p>Don't park or drive any vehicle or any heavy equipment on the leaching bed of your septic system.</p>	<p>tip All septic systems eventually need replacing, but with proper maintenance your system can last at least 15 years or longer.</p>	No Building Permit or Certificate of Approval, OR system not sized according to regulatory requirements, OR system not installed by a licensed installer.*	<input type="checkbox"/>
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* These conditions may violate provincial legislation or municipal by-laws.

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
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WASTEWATER TREATMENT SYSTEM *continued*

8	Knowledge of Septic System	Excellent knowledge of overall septic system size, location, and operation.	Good knowledge of overall septic system size, location, and operation.	Limited knowledge of overall septic system size, location, and operation.	No knowledge of overall septic system size, location, and operation.	<input type="checkbox"/>
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LOCATION OF WASTEWATER SYSTEM

9	Distance from Wastewater Treatment System to nearest Surface Water	Greater than 60 m (200 ft).	30 - 60 m (100 - 200 ft).	15-30 m (50-100 ft) for: • septic tank • leaching bed • holding tank • other treatment unit	Less than 15m (50 ft) for: • septic tank • leaching bed • holding tank • other treatment unit*	<input type="checkbox"/>
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10	Distance from Wastewater Treatment System to a Well	Greater than 90 m (300 ft).	For leaching bed or holding tank: • 24-90 m (76-300 ft) (drilled well) • 47-90 m (151-300 ft) (bored/dug well)	For leaching bed or holding tank: • 15-23 m (50-75 ft) (drilled well) • 30-46 m (100-150 ft) (bored/dug well)	For leaching bed or holding tank: • less than 15 m (50 ft) (drilled well) • less than 30 m (100 ft) (bored/dug well)	<input type="checkbox"/>
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tip

Always maintain as great a distance as you can between a potential contaminant source and wells or surface water.

For septic tank or other treatment unit:
• 15-23 m (50-75 ft) (drilled well)
• 15-46 m (50-150 ft) (bored/dug well)

For septic tank or other treatment unit:
• less than 15 m (50 ft) (all wells)*

*These conditions may violate provincial legislation or municipal by-laws.

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
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COLLECTION OF WASTEWATER

- 11 Source and Amount** All wastewater is collected for treatment,
- AND** there is no loss of wastewater that should be treated,
- AND** no clear water is collected and directed to the septic system,
- AND** no clear water enters the septic system by infiltration through joints, access ports, etc.

tip

Downspouts should be diverted away from sewage system disposal areas. An average size home will deposit 11 400 litres (3000 gallons) of water onto the ground after an 8 centimetre (3 inch) rain storm.

tip

To keep your septic system operating at peak performance, don't let unnecessary clear water enter the system. This means fixing leaks and conserving water.

Some wastewater does not reach septic system because of leaks,

OR some wastewater is diverted away from the septic system,*

OR clear water is getting into the septic system.

WASTEWATER TREATMENT SYSTEM

- 12 Subsurface Distribution of Wastewater** (septic or other treatment systems)
- Pressure or dosed distribution to leaching bed.
- Gravity-fed distribution to leaching bed.

Drainage directly into septic field, with no septic tank,

OR piped to anywhere but a septic or other approved treatment system.*

* These conditions may violate provincial legislation or municipal by-laws.

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
PRETREATMENT SYSTEM					
13 Septic Tank	Two compartment tank, AND septic tank checked every 3 years and pumped as required, AND good maintenance - baffles and tank checked, and no leaks.	Two compartment tank, AND septic tank checked every 4-5 years and pumped as required, AND some maintenance, and no leaks.	Single compartment tank, OR septic tank checked every 6-10 years and pumped as required, OR no maintenance, but no leaks.	Single compartment tank, OR seldom pumped out – last time more than 10 years ago, OR no maintenance, no checks, and leaks from tank.	<input type="checkbox"/>
14 Other Treatment System	Regular maintenance program followed, AND no mechanical failures, AND loaded at rate below design capacity.	Regular maintenance program followed, AND no mechanical failures, AND loaded at rate near design capacity.	Regular maintenance program not followed, OR occasional failures (once every 2 years).	No maintenance program, OR frequent system failure, OR system overloaded.	<input type="checkbox"/>
15 Holding Tank - no leaching bed connected	Capacity is higher than design requirements, AND tanks checked -no leaks, AND working alarm system.	Capacity meets design requirements, AND tanks checked -no leaks, AND working alarm system.	Loaded at design capacity, OR tanks not checked for leaks, OR alarm system not working.	Capacity does not meet recommended guidelines, OR leaks and overflow from tank, OR no alarm system.*	<input type="checkbox"/>

*These conditions may violate provincial legislation or municipal by-laws.

Topic	Best 4	Good 3	Fair 2	Poor 1	Your Rating
PRETREATMENT SYSTEM <i>continued</i>					
16 Leaching Bed Location and Vegetation	Located more than: • 5 m (16½ ft) from any building or structure. • 3 m (10 ft) from any property line.	Located: • 5 m (16½ ft) from any building or structure. • 3 m (10 ft) from any property line.	tip Keep trees or shrubs out of the septic leaching bed.	Located less than: • 5 m (16½ ft) from any building or structure. • 3 m (10 ft) from any property line.*	<input type="checkbox"/>
17 Leaching Bed Surface Water Drainage	Surface water drains away from leaching bed area.			Surface water drains onto leaching bed area.	<input type="checkbox"/>
18 Depth to Water Table or Bedrock from Trench Bottom	More than 1.8 m (6 ft).	0.9-1.8 m (3-6 ft).		Less than 0.9 m (3 ft).*	<input type="checkbox"/>
19 Leaching Bed Loading (visual inspection)	Soil always firm, AND no odours.	Ground is seldom wet, or spongy, AND no odours.	Ground is frequently wet, or spongy, OR odours noticed occasionally.	Ground is always wet or spongy, OR strong odours noticed frequently, OR pooling or bubbling of wastewater noticeable on surface.*	<input type="checkbox"/>
HAULED SEWAGE					
20 Disposal of Pumpage from Septic Tanks, other Treatment Systems, and Holding Tanks	Regulated, certified disposal by a licensed hauler.			Disposal is not done by a licensed hauler.*	<input type="checkbox"/>

* These conditions may violate provincial legislation or municipal by-laws.

Resources List

Wastewater and Septic Systems

For more information...

Ontario Ministry of Agriculture, Food and Rural Affairs

- Septic Smart, 1999 (with Ontario Soil and Crop Improvement Association) ontariosoilcrop.org

Factsheets/Leaflets:

- Care and Maintenance of a Rural Septic Tank System (order no. 93-081)

Ontario Ministry of Municipal Affairs and Housing

www.mah.gov.on.ca

- A Guide to Operating and Maintaining Your Septic System, 1999
- Septic Smart: New Ideas for Household Septic Systems on Difficult Sites, 1999
- *Ontario Building Code Part 8*

Ontario Rural Wastewater Centre

orwc.uoguelph.ca

Links to local qualified contractors and courses about septic systems

Ontario On-site Wastewater Association

oowa.org

Leaflet:

OOWA Septic Do's and Don't's Guide
A Guide to Operating & Maintaining Your Septic System
About Your House: Your Septic System
About Your House: Buying a House With a Well and a Septic System

Canada Mortgage and Housing Corporation

Factsheets/Leaflets:

Your Septic System Household Guide to Water Efficiency
oowa.org/resources/PDF/CMHCHomeOwnerSeptic.pdf

Ontario Publications

publications.serviceontario.ca

Septic Smart: Understanding Your Home's Septic System (pub no. AF139)

Septic Smart: Understanding your home's Septic System DVD (pub no. AF148)

Septic Smart: Advanced Treatment Systems - Alternatives to Conventional Septic Systems (pub no. AF 146)