



Get Acquainted with Your Well

If you live in a rural area, chances are your family's daily water supply comes from a well on your property. If you haven't already, get acquainted with your well. It's the first step in doing everything you can to protect the quality of your well water and the groundwater we all share.

We will explore types of wells, their maintenance and well water supplies, and how each can affect the quality of your well water.

What have you done for your well, lately? As a well owner, and someone who wants to ensure the water your family is drinking is safe, you need to:

- properly maintain your well to prevent it from being damaged, cracked or contaminated
- understand where your water comes from, and be aware of risks
- have your water tested regularly
- be "well" informed

Your well and your well's water are your responsibility You have a legal responsibility for the condition of all wells on your property, under the authority of Ontario Water Well Regulation. A watertight well keeps contaminants out of your well water... and out of the groundwater your well draws from. Your well taps directly into a groundwater source. Groundwater is a shared resource we all rely on. Contamination from one well can put people at risk far beyond your property. A properly maintained well and water testing help protect the groundwater that supplies your well water. Shortcuts risk future costly repairs and health hazards to family and neighbours.

What type of well do you have? There are different types of wells. Like most homeowners, you probably didn't or won't become directly involved in the construction of your well. But you should know what type of well you have because its design, construction and maintenance have a direct effect on the quality and quantity of water you draw from it. Here's the take-home message, regardless of well type: water, and nothing but water, should enter your well, and it should only enter your well from the bottom. The sides and top of your well should be watertight – free of leaks and seepage. No contaminant or foreign material should ever have access to your well, anywhere! Otherwise, these could harm the water your family draws from it and the groundwater it draws from. When it comes to wells, think watertight!

Plug and seal any old, unused well. If you have an old well on your property that won't be used again, plug and seal it properly as soon as possible. This is important to protect the aquifer below from surface contamination and to prevent serious accidents to humans, livestock and wildlife.

Each well and its surroundings are unique. Contact a licensed well contractor for the proper method of "abandoning" your old well. Never use an old well as a garbage dump – especially for hazardous materials. That old well taps into tomorrow's drinking water. If you have a well that you're not using now, but might use in the future, you must maintain it like any other working well.

Do you know where your well water comes from? Some water sources are at greater risk than others. Your water well reaches down into an aquifer, which is a layer of rock or soil that holds and transmits large amounts of water. Just as well types and conditions can pose levels of risk that you should manage, so do different sources of water. For example, in some cases, the protective soil above an aquifer is very shallow– less than 3 metres or 10 feet deep. This leaves the water in the aquifer vulnerable to contaminated runoff from above.



Is your water supply “highly vulnerable”? The most common types of vulnerable water supplies are:

- below-grade wells, including well pits and buried wells, where the top of the well casing is below ground level, are highly vulnerable to contamination from natural gas build-up, vermin and the surface water that can collect and drain into them
- cisterns, which are reservoirs used to collect and store water, pose risks because they contain surface water and otherwise untreated water Tip : Never use an old well as a cistern, as contaminants from rain water or tile drains will eventually reach groundwater.
- groundwater springs, where the water table meets the earth’s surface, may easily be exposed to contaminants from human activities nearby, and the water may only have been in the ground for a short time
- surface water trench systems, also known as shore wells, pose risks to human health if water is untreated (e.g., from rivers or lakes, or from structures that indirectly collect surface water) Tip : All untreated surface water is unfit for human consumption. If you think your water supply may be “highly vulnerable”, don’t use it, if at all possible. Try to find alternatives. If you can’t, make sure you test your water, treat it and consider relocating your well.

A rule-of-thumb for assessing the risk of problems with well water quality:

The deeper the well... The longer it takes surface water to enter the well... The lower the risk of contamination. The risk of contamination also decreases the farther away the well is from potential sources of contamination.

What’s going on around your well – on your property and beyond? Now that you’ve gone underground to think about your well and the water it draws from, it’s time to look around above ground.

- How close is your well to potential sources of contamination? Your well water can become contaminated at different locations – around your well, away from your well on your property, or in a well off your property that is uphill of your well.
- Is your well upslope or downslope? Whenever a well is located at a lower ground level than the surrounding area, the water in your well is exposed to runoff and potential contamination from septic beds, livestock yards, ponds and streams, etc. Be careful of practices on your property and aware of practices on higher ground off your property that may affect the quality of water recharging your well.
- Does surface water pool around your well? This is not a good sign. If surface water around or near the well can gain direct entry into the well and aquifer, this puts your water supply at risk. It may also mean your well isn’t properly sealed.



Contamination checklist

- Look around to see if any of these contamination sources are in the vicinity of your well:
- bacteria from malfunctioning septic systems
- livestock manure
- fuel from leaking storage tanks or spills
- chemical pesticides and fertilizers that are improperly stored or applied
- household hazardous wastes, such as paints and solvents, that are improperly stored or disposed of
- road salt runoff
- animal feces (from pets or wildlife).

Contaminants that reach your aquifer may show up in your well water, sooner or later. The shortest pathway for a contaminant (including surface water) to your well is direct entry through the well casing, or by leaking down the outside of an improperly sealed well casing. Every well owner should put their water to the test! Even if none of the conditions just described apply to you, and even if your water is clear and clean, have your well water tested. It's the only sure way of knowing that the water you and your family are drinking is safe. Testing for bacteria in well water is offered as a service to owners and users of private wells by the Ontario Ministry of Health and Long-Term Care. Sample bottles for testing are available from offices and the public laboratory.

Well Safety Checklist

- Outside Your Well
 - Know exactly where your well is located.
 - Keep potential contamination sources and activities away from your well.
 - Mound up the ground around the well casing. The ground should slope away from your well.
 - Make sure that your well's casing extends at least 40 cm (16 in.) above the mounded earth.
 - Keep a permanent grass buffer at least 3 metres (10 ft.) around the well.
 - Watch for ground settling around the outside of the well casing. This suggests that surface water could be accessing your well.
 - Plug and seal any well that is no longer in use or no longer properly maintained.
- Inside Your Well
 - Make sure that a commercially manufactured well cap or sanitary seal is securely in place. Inspect the cover or sanitary seal for cracks and holes.
 - Inspect inside the well once every year. Early spring after snowmelt is a good time.
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- Also:
 - look and listen for signs of surface water seeping or running freely into the well – look for seepage through cracks or stains below joints on the inside of the well casing – remove any debris floating in the well and prevent any more debris from entering it. – compare your well's construction to diagrams showing proper techniques.
 - Disinfect the well and plumbing with chlorine solution after doing any work inside the well, or on pumping equipment (see the Disinfection Instruction Sheet).
 - Check the condition of well vents. Look for flaws such as cracks or weakness in the vent tubing. Make sure that the fine-mesh screen is in place.

(Information adapted from Ministry of Ontario Information Sheets)