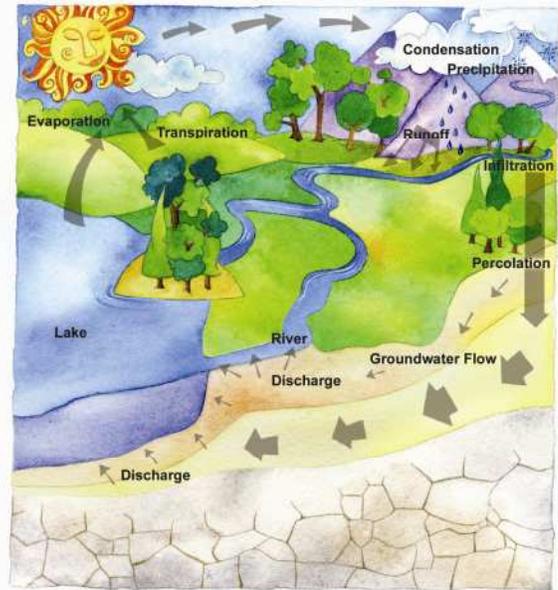


## Test your Well Water - by Mary Jane Conboy Executive Director Well Wise Resource Centre

Water that is completely pure doesn't exist for very long in nature. Water carries some of almost everything it touches. While falling as precipitation, water picks up gases, ions and dust particles from the atmosphere. When water reaches the earth it flows over or through plant materials and surface layers of soil and rock, dissolving minerals.

Groundwater is generally a clean, safe, sustainable source of water. In some areas impurities may be present that impact the quality and safety of the water. Impurities may cause a change in color, odor or smell or may be undetectable without testing. In most cases, when contamination is detected it is often a result of poor well location, poor well construction, lack of maintenance or poor management.

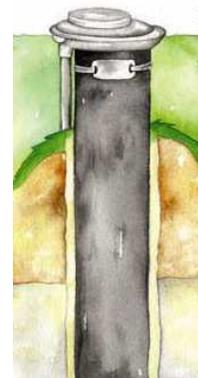
Well owners need to monitor water quality regularly and keep track of any changes that occur over time. It is important to test your water for bacteria and also to test for other common chemical impurities found in well water.



### What should I test for?

Shallow wells that tap into sand and gravel water supplies are more vulnerable to contaminants that come from surface activities. The water quality and quantity can change over time and can be impacted by nearby land uses. Bacteria, nitrate and sodium are the most common impurities that come from human activities at the land surface that can impact well water. Other contaminants from surface activities that have been detected less frequently include pesticides and Volatile Organic compounds.

Properly constructed deeper drilled wells are usually more isolated from surface contaminants but should still be monitored regularly to pick up any changes that could indicate a problem at the well. For deep bedrock wells, the water supply can have higher levels of dissolved minerals. Some natural impurities that have been observed in well water sampled in local areas in Ontario are hardness ( $\text{CaCO}_3$ ) Iron, Manganese, Sulphur, Fluoride, Boron, Uranium, and Arsenic. Well water should be tested for metals and minerals to determine what is in the water naturally. Water testing can also help inform you if you are considering water treatment. It is best to know what concentrations of the different minerals you are dealing with prior to attempting to treat the problem.



Some impurities are picked up by water as it passes through household plumbing. The presence of these impurities may indicate corrosion of the pipes or another component of the distribution system. This is more of a concern if water is acidic. Some water treatment by-products may impact the corrosion of pipes. Keep an eye on the pH of your water and test for lead, cadmium and zinc.

In general, tests of well water have to be very specific. It is not possible to do one water test or test one well and determine what is in other wells in that area. A neighbouring well may not be tapping into the same water bearing layer or there may be specific things at the well head that influence the water quality.

Ontario's groundwater is monitored through the Provincial Groundwater Monitoring Network (PGMN). Conservation authorities across the province monitor over 400 wells for impurities. Municipal water supplies also test routinely for a broad range of impurities. Large cities test over 26 000 times per year for bacteria! Private wells are the responsibility of the well owner and it is up to you to test your water regularly and for more than just the complimentary bacterial test.

### Recommendations for Well Water Testing:



Bacteria and nitrate are the most common health related contaminants in well water in Ontario. Well owners should test for bacteria using the complimentary test offered through health units. Bacteria should be tested three times a year targeting times after a heavy rainfall or snowmelt. The Metals and Minerals package is a good general chemistry package that tests for nitrate and other common impurities. It is especially important to test for these types of impurities if you have a well that taps into bedrock or is a spring source, to determine if there are naturally occurring elements that are of concern in your water supply. Comprehensive water testing can be done by contacting an accredited lab directly also.

For more information on water testing and impurities in well water—visit [www.wellwise.ca](http://www.wellwise.ca) We can help you determine the most appropriate test package for your water supply. We can also help you understand where the impurities may be coming from and help you determine your best course of action you can take to improve your situation.

*The Well Wise Resource Centre is a non-profit organization dedicated to helping provide technical support and programs and services for well owners across Ontario. Images courtesy of Well Wise Resource Centre.*