PRIVATE WELLS: A GUIDE FOR RESIDENTS

Based on NS Environment & Climate Change Guidance

The Only Way to Know if Well Water is Safe is to Test It

Water that looks, tastes, and smells normal can still contain bacteria or naturally occurring chemicals.

WHEN TO TEST

1 EVERY YEAR

Test for Bacteria

- E. coli
- Total Coliform Bacteria

2 EVERY 5 YEARS

Test for Chemicals

- Arsenic, Uranium, Manganese
- Lead, Nitrate/Nitrite, Sodium

3 WHEN THINGS CHANGE

Test if You Notice

- Colour, taste or smell changes
- Cloudy water or new staining
- After flooding or well repairs

WHAT YOU'RE TESTING FOR

BACTERIA

What it is:
Harmful microorganisms like E. coli that cause illness.

Can you tell?
No — water looks, smells and tastes completely normal.

If found:
Boil water for 1 full minute or use bottled water immediately.

CHEMICALS

What it is:
Naturally occurring substances like arsenic, uranium, and manganese from NS bedrock.

Can you tell?
No — only detectable through laboratory testing.

If found:
Switch to bottled water while you wait. Retest to confirm, then consult a water treatment professional.

WHAT TO DO IF PROBLEMS ARE FOUND

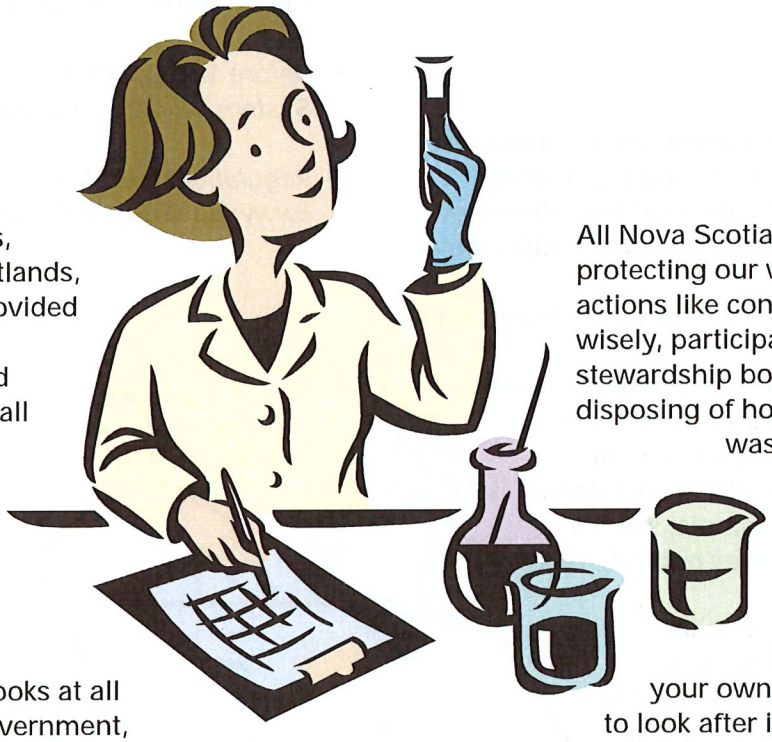
1. **Bacteria found:**
   Boil water for at least 1 full minute, or switch to bottled water immediately.
2. **Retest first:**
   Confirm results before taking any major or costly action.
3. **Get the well checked:**
   Have it inspected for structural damage or cracks.
4. **Install treatment:**
   UV, reverse osmosis, or activated carbon filters are available.

KEY TAKEAWAYS

- Test for bacteria every year and chemicals every five years.
- Testing helps identify and address water quality concerns.
- Natural minerals in NS groundwater do not mean contamination from an external source.
- Treatment options exist for most water quality problems.
- Private wells are the responsibility of the property owner, including regular testing, maintenance, and any required treatment.

Sources: NS Environment & Climate Change — Private Wells: A Complete Guide to Protecting Your Family's Water (March2026)
The Drop on Water (March 2026) | Full guides & Lab list: novascotia.ca/nse/water/privatewells.asp
Accredited Labs: novascotia.ca/nse/water/waterlabs.asp
Health Canada Guidelines: canada.ca/en/health-canada/services/environmental-workplace-health/water-quality.html

Taking Care of your Water Supply



Our provincial lakes, rivers, streams, groundwater, wetlands, and coastal water have provided and continue to provide economic, recreational and environmental benefits to all Nova Scotians.

All Nova Scotians have a role to play in managing our water resources for future generations.

Watershed management looks at all stakeholders, including government, landowners, and water users that collectively manage water resources on a geographic basis. It recognises that water flowing downstream creates linkages between land based activities and water resource impacts.

All Nova Scotians have a role to play in protecting our water resources. Simple actions like conserving water, using it wisely, participating on water stewardship boards, and properly disposing of household hazardous wastes help protect water supplies.

Most Nova Scotians not on municipal water supplies have their own private well. If you have your own well, follow these steps to look after it:

- Minimize the likelihood of contamination, by ensuring your well is properly located, constructed and maintained.
- Locate your well uphill from any potential source of pollution.
- For drilled wells, use an approved watertight, vermin-proof cap and check the cap regularly to ensure that it is securely in place and undamaged.
- For dug wells, ensure that all joints and connections in the well casing are not leaking and that vents are shielded and screened.
- Direct surface water away from the well so that it does not collect or pond near the well.
- If you find any defects, or notice any change in quality, have the problem investigated by a certified person.

Why do we need to protect our water supplies?

Protection of water resources is necessary to ensure current and future water uses are met. Access to clean drinking water is essential to good health. We need clean drinking water!

Who is responsible for testing water supplies?

Public drinking water supply owners are required by law to regularly test the water they are supplying to their customers.

Private drinking water supplies do not have mandatory testing. Nova Scotia drinking water is safer today than ever, but the only way to know for sure is to have it tested regularly! Homeowners are responsible for protecting and testing their water supply.

To have your water tested:

- Determine what type of test you want done: a test for chemical quality, bacterial quality, or both?
- Choose a lab or contact your local Department of Environment and Labour for a list of certified water test labs.
- Ask the lab what they charge for the tests and what packages are available.
- Obtain appropriate water sample bottles from the laboratory (bottles differ for different tests); some labs require prepayment.
- Collect the water sample (for instructions on how to take a water sample, see the *Before You Construct a Well* booklet; pages 21-22).
- Keep the water sample cool and transport it to the lab as soon as possible. The laboratory will provide you with a copy of the test results.

Additional Information

For more information or assistance, please visit your local Nova Scotia Department of Environment and Labour office or browse our website <www.gov.ns.ca/enla/>.

Additional information can be found at these websites:

- *Before You Construct a Water Well* <www.gov.ns.ca/enla/rmep/h2o.htm>
- *Before You Construct an On-site Sewage Disposal System* <www.gov.ns.ca/enla/emc/qpersons>
- *Regulations and Acts* <www.gov/ns.ca/enla/pubs/legislat.htm>

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Disinfection of Water Wells by Chlorination

Disinfection of Water Wells by Chlorination

Chlorination, or "shock chlorination", is the process of flushing your well and water system with a chlorine solution to kill bacteria and other microorganisms. Disinfection by chlorination is usually recommended if a water sample from the well has tested positive for bacteria. It is an effective method to eliminate a "one-time" case of bacterial contamination; however, if there is an on-going problem related to faulty well construction or contaminated groundwater, disinfection is only a temporary fix and the problem should be investigated and corrected at the source.

How do I disinfect my well?

It may take up to 24 hours to complete the disinfection process. Before you begin, make sure you store enough water to meet your household needs during this period. If you have a water softener or other treatment units, check with your treatment dealer whether disinfection could adversely affect the unit or not.

Step 1. Mix the amount of liquid bleach shown in Table 1-1 for your well in 10 to 20 litres (2 to 5 gallons) of water. Use common, unscented household bleach that does not contain detergent or other additives such as fabric-guard. Chlorine can be dangerous if not used properly. Always follow the directions on the label for safe storage, handling and use.

Step 2. Remove the well cap and pour the mixed chlorine solution into the well. If the well is buried with the old type of well seal top, either expose the top of the well, remove the well seal and pour the solution directly into the well, or pour the solution through a clean funnel into the air vent or siphon through the vent (flush the air line with clean water after chlorination).

Step 3. Open one faucet in the system and let the water run until the chlorine odour is detected. Turn this faucet off. Repeat at each faucet in the system in turn, one at a time, until all faucets have been completed (include inside and outside faucets, cold and hot water, dishwashers, toilets, baths, showers, sinks, etc.).

Step 4. If possible, connect a garden hose to a nearby tap and place the other end in the well. Turn on the tap and allow the water to circulate for about one hour to ensure that the chlorine is thoroughly mixed in the well. During this process, add additional chlorine solution if the chlorine odour is not strong. Note that although recirculation is desirable if possible, it may not be appropriate in wells with screens, gravel packs, heavy iron buildup, soft or caving zones, and other less common conditions. If you have any concerns, contact your local Department of Environment and Labour Office or a certified contractor for information.

Step 5. Seal the top of the well and let the system sit idle for about 12 hours, preferably overnight. Do not leave chlorine for more than 24 hours as it may affect some pump parts.

Step 6. After this time, flush the system by discharging the chlorinated water through an outside tap until the chlorine odour has completely disappeared. Pump at a low rate, in the order of 10 litres per minute (2 gallons per minute) or less. This procedure may take several hours, or longer. IF you have a low yield well, you may have to allow the well to recover between pumping periods. During the flushing process, do not discharge the chlorinated water to a natural water body (such as streams or lakes, etc.) or to areas where it can harm desired vegetation (e.g., vegetable gardens, landscaped areas, etc.). Do not discharge this water into the on-site sewage disposal system.

Sampling after Disinfection

After disinfection, sample the water for total coliform and E. coli bacteria to confirm that the water is safe to drink. Wait about 5 days after disinfection before sampling. While waiting for the results, any water for human consumption should be boiled (rolling boil) for at least 1 minute, or use an alternative source.

IF the sample result indicates that both coliform bacteria and E. coli are absent, confirm that disinfection has been effective by 2 additional samples, one in the next 2 to 4 weeks, another after 3 to 4 months. To check the safety of your water over the long term, continue to monitor bacterial quality at least twice a year, or more often if you suspect any changes in your water quality.

IF the sample result indicates either coliform bacteria and/or E. coli present, it is recommended that the well owner seek advice from the Department of Environment and Labour or a certified professional. In the meantime, continue to use boiled water or an alternative source for human consumption activities.

Final Notes

You may experience some temporary inconveniences as a result of the disinfection process such as dirty or discoloured water, staining, or sedimentation problems. However, the water should clear with time. In some cases, a few days may be necessary. Do not use the water for aquariums or pets during this time. Check with your physician about other uses of the water, such as bathing, if you have allergies or other medical concerns.

Please note that under some conditions, such as biofilm buildup in a well, more than one disinfection may be required.

If you have any questions about disinfecting your well, or wish to have a certified person do the work for you, please contact your local Department of the Environment and Labour Office for information, or check the certified contractor list at:
www.gov.ns.ca/nse/water

TABLE 1-1

Depth of water in well		Amount of unscented household bleach[1]	
		Drilled Well	Dug Well
metres	feet	Casing Diameter 15 cm (6 inches)[2]	Casing Diameter 92 cm (36 inches)[2]
1	3	40 mL	1.5 L
3	10	120 mL	4.5 L
5	15	200 mL	7.5 L
10	30	400 mL	15.0 L
30	100	1.2 L	
50	150	2.0 L	
100	300	4.0 L	

Notes:

1 Assumes liquid bleach with approximately 5.2% hypochlorite. This will produce about 100 mg/L of chlorine solution when mixed with the water in the well.

2 For wells with other casing diameters, contact your local Department of Environment and Labour Office

Example Calculation for a Drilled Well:

Measurements:

- Well diameter = 150 mm (6 in)
- Well depth = 60 m (200 ft)
- Depth to water from surface = 10 m (30 ft)

Calculations:

- Depth of water in well = 60 - 10 = 50 m or depth of water in well = 200 - 30 = 170 ft
- From Table 1-1, required volume of bleach to get 100 mg/L solution is about 2 litres

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FACT SHEET

Instructions for Using Water in the Home During a Boil Water Advisory

During an advisory, it is essential that all water to be used for the following activities be boiled:

- drinking;
- preparing infant formulas;
- preparing juices and ice cubes;
- washing fruits and vegetables;
- cooking; or
- dental hygiene.

Holding water at a rolling boil for at least 1 minute will inactivate all waterborne pathogenic micro-organisms. Water can be boiled either in a pot or kettle on a stove, an electric kettle without an automatic shut-off or in a microwave oven. If water is boiled in a microwave, it is advisable to include a glass rod or wooden or plastic stir stick in the container to provide nucleation sites for bubble formation and energy diffusion. This will prevent the formation of superheated water.

Under most circumstances it is not necessary to boil water used for other household purposes. Adults, adolescents and older children may shower, bathe or wash using tap water but should avoid swallowing the water. Toddlers and infants should be sponge bathed. In non-outbreak situations, dishes and laundry may be washed in tap water, either by hand or by machine.

In the event of a waterborne outbreak as declared by the MOH, it may be necessary to take additional precautions. In this situation, hands should be washed in a dilute solution of household bleach and water (1 mL or 20 drops per litre of water). This is particularly important before preparing or eating meals, and after using the toilet, changing diapers, and handling animals. The solution should be allowed to stand 10 minutes before use. If dishes are hand washed they should be washed and rinsed in hot tap water, soaked in a dilute solution of household bleach (20 mL of bleach in 10 litres of water) for one minute and air dried. Alternatively, dishwashers with a hot water cycle will disinfect dishes.

Additional instructions for businesses, institutions, manufacturing plants or health care facilities that may have special requirements when a boil water advisory is in effect are included in the *Guidelines for Monitoring Public Drinking Water Supplies.* The guidelines are available at http://www.gov.ns.ca/nse/water/docs/Guidelines_for_Monitoring_Public_Drinking_Water_Supplies.pdf or contact the local Department of Environment.