

Shock Chlorinating Your Well

Shock chlorination is a maintenance practice that helps keep bacteria build-up in check.

When should I shock chlorinate my well?

- Immediately after installing a new well.
- Whenever repair work is done on your well, pump or distribution system.
- Following contamination by flood water or any change in water clarity, colour or taste.
- When lab tests show *coliform bacteria* in your well water.
- Every year, to prevent biofouling.

Can I shock chlorinate my well myself?

You can shock chlorinate your own well or you can hire a licensed water well driller to do the procedure.

Coliform bacteria

The presence of total coliform bacteria may indicate your well is contaminated. It is important to **test your well water** for this bacteria **twice a year**. Pick up water sample bottles and instructions from your local Community Health Centre (Public Health Unit). The instructions explain how to properly collect the sample and transport it back to the Health Unit.

Biofouling

If you notice a build-up of slime inside your toilet tank, staining of fixtures and laundry, bad taste and a rotten-egg smell, or if your well is producing less water, you may have a condition called *biofouling*. Although harmless to humans, iron or sulphate reducing bacteria can build up in your well causing *biofouling* that may lead to plugging or permanent damage to well equipment.

Preparation checklist:

- Find out the diameter, depth and non-pumping water level of your well. This information is on your drilling report. Get a copy of your drilling report from your water well driller or by downloading it from the *Alberta Water Well Information Database* at <http://esrd.alberta.ca/water/reports-data/alberta-water-well-information-database/>. You will need your legal land description.
- Store enough water for 8–48 hours of farm and family use.
- If you have water treatment equipment (iron filter, water softener, etc.) ask your supplier if it needs to be disconnected or bypassed before you chlorinate.
- Prepare the chlorine solution outside in a well-ventilated space; wear goggles and gloves to protect yourself. **Chlorine is corrosive and can be deadly. Never mix chlorine with other chemicals, including ammonia.**

Materials checklist:

- A tank for clean water. Do not use a tank that has contained chemicals or non-potable water.
- Clean garden hose.
- Clean water (twice the volume of water in your well).
- Chlorine bleach (household, unscented, no additives).



Beware! Chlorine can be corrosive to submersible pump motors, metal casings and piping. Do not put chlorine into your well unless it is mixed in solution with water. Do not exceed recommended chlorine concentrations, and use extreme caution when chlorinating older wells and distribution systems. If in doubt, contact a licensed water well driller.



Dangerous vapours can accumulate in well pits, pump houses and crawl spaces, making the procedure hazardous. **Contact a licensed water well driller prior to chlorinating.** They will have the right equipment and experience to do the job safely.



Shock chlorination may not be effective on older wells or wells that have not had regular preventative maintenance. These wells may need to be inspected and cleaned by a licensed water well driller.



WORKING WELL

Clean water.
Well protected.



Shock Chlorination Procedure*

Step 1:

Calculate the feet of water in your well by subtracting the non-pumping water level from the total well depth.

$$\boxed{} - \boxed{} = \boxed{}$$

Total well depth (ft) Non-pumping water level (ft) Feet of water in your well (ft)

Step 2:

Use Table 1 to calculate the amount of water you need (based on casing diameter).

$$\boxed{} \times \boxed{} = \boxed{}$$

Feet of water in your well (from Step 1) Water needed per foot (Table 1) (gal or L) Volume of water for procedure (gal or L)

Place this volume of water into a clean tank.

Step 3:

Use Table 1 to calculate the amount of chlorine bleach you need (based on casing diameter).

$$\boxed{} \times \boxed{} = \boxed{}$$

Feet of water in your well (from Step 1) Chlorine needed per foot (Table 1) (L) Volume of chlorine bleach for procedure (L)

Add chlorine to the water in the tank. Use only the right amount. More is not better, and might corrode your equipment!

Table 1

Well Casing Diameter		Vol. of water needed / foot of water in your well		Vol. of chlorine bleach (5.25%) needed / foot of water in your well ¹
inches	mm	Imperial gallons (1gal)	litres (L)	litres (L)
4	100	1	5 L	.02
6	150	2.5	11 L	.04
8	200	4	19 L	.07

¹ Chart values based on creating a 200 ppm chlorine solution

Step 4:

Siphon the chlorine solution into your well using a clean garden hose.

Step 5:

Open all hydrants and faucets, including washing machines, dishwashers and taps. Flush all toilets and re-fill the hot water tank. Run water until you can smell chlorine at each outlet, or until there is a slippery feel to the water.

Step 6:

Shut off the taps and leave the chlorine solution in the well and distribution system for 8 to 48 hours. The longer the contact time the better the results.

Step 7:

To avoid damaging your septic system, open an **outside faucet** and run water until the chlorine smell disappears. Make sure to direct the water away from sensitive plants or landscaping.

Do not over-pump your well. If your well is low-yielding flush it slowly. If sediment appears in the water, reduce the pumping rate.

Step 8:

Run hot and cold taps inside the house to flush the hot water tank and distribution system. The trace of chlorine remaining in the system will not harm your septic tank.

Step 9:

Backwash and regenerate any water treatment equipment according to supplier recommendations.

* This procedure is for regular preventative maintenance on 4"-8" diameter drilled wells. For larger diameter wells, a modified procedure is available through the Ag-Info Centre.



After shock chlorinating a well containing coliform bacteria, wait one week and submit a water sample to make sure the water is safe to use. If you still have a problem with coliform bacteria or biofouling, get professional help from a health inspector, water specialist or licensed water well driller.

FOR MORE INFORMATION:

Working Well

www.workingwell.alberta.ca

Water Wells That Last

A comprehensive water well management guide

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/wwg404](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/wwg404)

[http://www1.agric.gov.ab.ca/\\$department/deptdocs.nsf/all/wwg404](http://www1.agric.gov.ab.ca/$department/deptdocs.nsf/all/wwg404)

Alberta Water Well Drilling Association

For a list of licensed water well drillers in your area, visit the Association's website at www.awwda.com

CONTACT US:

General Questions?

Alberta Environment and Parks Information Centre
Phone: 310-3773 toll free

Technical Questions?

Ag-Info Centre
Phone: 310-FARM (3276) toll free