

How Do I Disinfect My Well?

While Manitoba has an abundance of good quality water, private wells can become contaminated with bacteria. The risk for bacterial presence in well water is increased by factors or conditions such as:

- Groundwater sources which may be open to the surface because of shallowness and/or water permeable overlying soils such as sand and gravel. These include sources covered by less than six meters of glacial till, clay, clayey shale or other non-water-tight materials;
- Wells which are located in pits or depressions;
- Wells with unsealed casings, casings that do not extend at least 30 cm or more above the ground, or casings that are rusted out in spots;
- Wells near abandoned wells which have not been sealed;
- Wells within 30 meters of septic tanks or fields, barns, feed lots, sink holes, or quarries;
- Wells or groundwater sources affected by changes in environmental conditions such as floods or heavy rains, or an extended dry spell.

If any of these situations exist they should be corrected where possible.

As a general practice, well disinfection should be used to ensure the water is bacteriologically safe anytime a new well is installed, well or pump service is performed or bacteriological tests indicate a problem.

The following procedures describe two different methods for proper disinfection of the well and distribution system. If a properly sized storage tank is available, a full chlorination procedure is always recommended. If the properly sized storage tank is not available, a partial

chlorination of the well may be acceptable. Both chlorination procedures should be followed by bacteriological testing at least one week after the disinfection process.

Caution

- **If your well is a pit type, do not enter without following confined entry practices. For more information on confined entry practices contact Workplace Safety and Health at 945-3446.**
- **Be careful when handling chlorine/bleach and use proper safety procedures - wear protective eyewear, gloves, and clothing.**
- **Numerous chlorine products are now available with additives for various cleaning applications. These should not be used. Also, chlorine content may vary from product to product. All application rates used in this document are based on 5.25 percent available chlorine (regular household bleach). Check the product label to be sure.**

Full shock Chlorination

- Store enough water to last the household for 24 hours. Pump 1500-2500 litres of water into a clean container located near the head of the well. Use only containers that have been used to hold drinking water. Containers that have been used to hold petroleum products, pesticides or fertilizers should not be used.
- Pour ten litres of regular household bleach (5.25% sodium hypochlorite) into the container and an additional ten litres into the well.
- Rinse down the sides of the well casing with a garden hose for five to ten minutes. Make sure the hose is connected to the system being chlorinated. This procedure circulates the chlorine solution throughout the water system to ensure total disinfection.

- Let stand for one hour to allow the added chlorine to mix with the entire water column within the well.
- Siphon or pour the 1500-2500 litre mixture of water and chlorine into the well casing. (regulate the flow to prevent the well casing from overflowing)

To disinfect your household plumbing system, you can turn on each of your water taps until the chlorine smell is just detected and then turn them off. Water treatment equipment should be bypassed during this process. Shut power off to your water heater while carrying out a household disinfection process. Let the chlorine solution remain in the system for at least 12 hours, but preferably for 24 hours. After this period, pump all of the chlorine solution out of the well by attaching a garden hose and running the water to an area away from grass and shrubbery where the chlorine will do no damage. (Chlorine can kill fish and aquatic organisms so make certain that the chlorine does not enter any watercourse.)

- Do not dump the spent chlorine solution into your private septic system as it will kill bacteria essential for the proper operation of your septic tank and field.
- Pump until you can no longer detect the chlorine smell.
- Do not run water through your household system until well water is clear.
- Follow this procedure for your plumbing system by running each of the cold water taps.
- Drain down water heater, refill and turn power back on.
- Resample well for bacteriological contamination no sooner than one week after disinfection procedure.

Partial Chlorination

Determine the minimum amount of chlorine required (see below) needed to achieve effective disinfection of the well.

Table 1

Disinfection of Well Water with Regular Household Bleach (5.25% sodium hypochlorite)

Diameter of Well Casing	Chlorine bleach added per Meter	Chlorine bleach added per 3 Meters (10 feet)
2 inch (5 cm.)	10 ml	30 ml.
4 inch (10 cm.)	40 ml.	120 ml.
6 inch (15 cm.)	90 ml.	1/4 Litre
8 inch (20 cm.)	160 ml.	1/2 Litre
30 inch (75 cm.)	2 1/4 Litres	6 1/2 Litres
36 inch (90 cm.)	3 1/4 Litres	9 1/2 Litres

Remove the cap from the well and pour half of the determined amount of chlorine bleach into the well. Rinse down the sides of the well casing with a garden hose. Make sure the hose is connected to the system being chlorinated. Insert the running hose into the top of the well far enough to be sure that it will stay secure while disinfecting the plumbing system. Letting the hose run circulates the chlorine throughout the water column to ensure total disinfection.

To disinfect your household plumbing system, turn on each of your water taps until the chlorine smell is just detected and then turn them off. Water treatment equipment should be bypassed and, shut off power to your water heater while carrying out the disinfection process.

Once the household plumbing has been disinfected as described in the previous section, pour the remaining bleach into the well, again rinsing off the well casing with the hose. Allow the hose to run for an additional 10 to 15 minutes. Replace the cap on well and let the solution remain in the system for at least 12 hours, but preferably for 24 hours.

After this period, pump all of the chlorine solution out of the well by attaching a garden hose and running the water to an area away from grass and shrubbery where the chlorine will do no damage. (Chlorine can kill fish and aquatic organisms so make certain that the chlorine does not enter any watercourse.)

- Do not dump the spent chlorine solution into your private septic system as it will kill bacteria essential for the proper operation of your septic tank and field.
- Pump until you can no longer detect the chlorine smell.
- Do not run water through your household system until well water is clear.
- Follow this procedure for your plumbing system by running each of the cold water taps.
- Drain down water heater, refill and turn power back on.
- Retest well for bacteriological contamination no sooner than one week after disinfection procedure.

Drinking Water Fact Sheets

How Do I Know If My Well Water Is Safe from bacterial contamination?

How Do I Test My Well Water for bacterial contamination?

What Do I Do When a Boil Water Advisory is Issued?

How Do I Disinfect My Well?

Guidelines for Food Establishments During a Boil Water Advisory

Where can I get more information?

For further information on well water safety, please contact the nearest office of Manitoba Conservation or The Manitoba Water Services Board at the numbers listed on this fact sheet, or call Health Links at 788-8200 or toll-free 1-888-315-9257.

Manitoba Conservation

Winnipeg 204-945-0675
Fax 204-945-1211

Brandon 204-726-6064
Fax 204-726-6567

Viriden 204-748-2321
Fax 204-748-2388

Steinbach 204-346-6060
Fax 204-326-2472

Selkirk 204-785-5030
Fax 204-785-5024

Lac du Bonnet 204-345-1447
Fax 204-345-1415

Flin Flon 204-687-1625
Fax 204-687-1623

The Pas 204-627-8307
Fax 204-623-1773

Killarney 204-523-5285
Fax 204-523-4626

Dauphin 204-622-2030
Fax 204-622-2306

Swan River 204-734-3436
Fax 204-734-5151

Winkler 204-325-1750
Fax 204-325-1758

Portage
la Prairie 204-239-3188
Fax 204-239-3185

Thompson 204-677-6704
Fax 204-677-6652

The Manitoba Water Services Board

Brandon 204-726-6079
Fax 204-726-6290

Dauphin 204-622-2116
Fax 204-622-2298

Beausejour 204-268-6059
Fax 204-268-6060

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Information Compiled by the Drinking Water Coordinating Group