

WATER WELL DISINFECTION PROCEDURE

INFORMATION FROM THE: AMERICAN GROUND WATER TRUST, 50 PLEASANT STREET, SUITE 2, CONCORD, NH 03301-4073

This is a general description only; state and county codes may vary.
Dry granulated chlorine can be dangerous and is NOT recommended for home owner use

- 1) [Use common household bleach](#) as the chlorine source for disinfection.
[Bleach products usually contain 5 to 6 percent chlorine. For the disinfection procedure to be effective, the pH (acidity) of the well water should be between 6 to 7.5. If it is not in this range, then a well treatment professional experienced in disinfection of high pH water should be consulted to adjust the pH and maintain it in the correct range during the disinfection process.]
- 2) Find the total [depth of water](#) in the well.
[For example - If the well is drilled to 200 feet and the water level is 50 feet down from the top, then there is a 150 feet depth of water in the well]
- 3) Determine [how many gallons of water are stored in the vertical column](#) of the well. Once you know depth you can work out the gallons. (See Table 1 for specific Water Volumes)

Well diameter	gallons per foot of well	gallons in 100 feet
4-inch	0.65	65
6-inch	1.47	147
8-inch	2.61	261

[NOTE - disinfection is not feasible for large-diameter dug wells]

- 4) [Work out how much bleach will be needed](#): For every 50 gallons of water in the well use one quart of laundry bleach - (4 quarts in a gallon).
Do not use excessive amounts of bleach - more is **not** more effective.

[In most cases, one gallon of bleach will disinfect 200 gallons of well water at a chlorine concentration between 200 to 300 ppm (parts per million)]

[NOTE - Bleach loses strength in its container over time, Check the “sell by date” and use bleach that is less than three months old. Use unscented bleach to avoid adding unneeded chemicals to the water (It is usually less expensive too)]

- 5) For best results the [bleach should be combined with water before adding it to the well](#).

[By reducing the concentration there is less chance of corrosion of the cables and pipes in the well. The greater volume of water helps get the chlorine mixed in the well column.]

[NOTE - Do not mix chlorine solutions with other cleaning products, including ammonia, because toxic gases will be created.

- 6) [Make the Chlorine-Water Mixture](#) by filling a five gallon bucket with water and adding about one quart of bleach. Pour the mixture into the well and repeat until the right amount of bleach has been added to the well (see #4 above).

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(Continued)

- 7) [Remove the well cap and pour the mixture](#) directly down inside the well casing.
[NOTE] - Wear rubber gloves and safety glasses to protect skin and eyes from splashes. Spills contacting the body should be rinsed immediately and thoroughly with fresh water.]
- 8) [Recirculate the water in the well](#) by running water with a hose back into the well for 30 minutes.
[This will help draw the Chlorine-Water Mixture down the well and will wash the “dry” portion of the well casing or drilled hole above the water table more thoroughly.]
- 9) To [disinfect the household plumbing](#) first turn off the electric or gas supply to the hot water heater. Turn on all the faucets, shower heads, clothes washers, dish washers and outside faucets, etc. until there is a chlorine smell at each location.
[NOTE] - If you have water conditioning equipment check the owners manual to see if it is sensitive to chlorination. All equipment in the water system should be disinfected because it may serve as a safe haven from which the bacteria may reinfect the system.]
- 10) [Leave the Chlorine-Water Mixture in the plumbing](#) system and well for 12 to 24 hours before removing the chlorinated water.
[NOTE] - During the disinfection process, the well water should not be used for consumption, so make plans for essential water needs before you begin the disinfection process!]
- 11) [Remove the chlorinated water](#) from the well by running the pump and leading a hose from outside faucets to a safe area.
[Don't put the chlorine solution into a septic system or in a creek or pond where it may kill fish. Flowers and vegetables may be affected by chlorinated water.]
- 12) [When the chlorine odor has gone the well flushing is complete.](#)
[If you have difficulty smelling the chlorine odor a swimming pool chlorine test kit can indicate whether or not there is chlorine remaining in the well water.]
- 13) Once the chlorine has been removed from the well water, the [indoor plumbing may be flushed](#) out to the septic or sewer system to remove the chlorinated water.
[Re-energize the hot water heater. The water supply should now be bacteria free.]
- 14) Wait about 5 to 10 days before [resampling](#) the water supply [and testing](#) for bacteria.
[If bacteria are still present, repeat the process. It may take several treatments to remove long-established bacteria colonies. If the problem persists, contact a professional familiar with microbiological contamination in wells.]
- 15) Repeat testing in three months to confirm treatment success, and then [test annually](#).

Table 1

Water Volumes in Various Diameter Wells

[*Volume of Laundry Bleach Required for Shock Chlorination (in quarts)]

(Subtract the Static Water Level from the Total Well Depth to get "Feet of Water in Well")

Feet of Water in Well	4-inch Diameter Well Gallons of water in Well		6-inch Diameter Well Gallons of water in Well		8-inch Diameter Well Gallons of water in Well	
10	7		15		26	
20	13		29		52	1 Quart Bleach*
30	20		44	1 Quart Bleach*	78	
40	26		59		104	2
50	33		74		131	
60	39		88		157	3
70	46		103	2	183	
80	52	1 Quart Bleach*	118		209	4
90	59		132		235	
100	65		147	3	261	5
110	72		162		287	
120	78		176		313	6
130	85		191		339	7
140	91		206	4	365	
150	98	2	221		392	8
160	104		235		418	
170	111		250	5	444	9
180	117		265		470	
190	124		279		496	10
200	130		294	6	522	
210	137		309		548	11
220	143		323		574	
230	150	3	338		600	12
240	156		353	7	626	
250	163		368		653	13
260	169		382		679	
270	176		397	8	705	14
280	182		412		731	
290	189		426		757	15
300	195		441		783	
310	202	4	456	9	809	
320	208		470		835	
330	215		485		861	16
340	221		500	10	887	
350	228		515		914	17
360	234		529		940	
370	241		544	11	966	
380	247		559		992	18
390	254	5	573		1018	
400	260		588		1044	19