



## HOUSING & ENVIRONMENT

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# DISINFECTING YOUR WELL WATER: SHOCK CHLORINATION

A standard treatment for sanitizing your well water is shock chlorination. Listed below are guidelines for using this treatment safely and effectively.

### WHAT IS SHOCK CHLORINATION?

Shock chlorination is the process by which wells are sanitized with chlorine. Shock chlorination is the most widely recommended means of treating bacterial contamination in home water systems such as wells, springs, and cisterns.

### WHEN SHOULD SHOCK CHLORINATION BE USED?

Shock chlorination is recommended following any construction, installation, maintenance, or repair of wells and other water systems. Shock chlorination is essential if there has been flooding or other obvious means of contamination in your area. It is NOT a recommended method for treating recurring bacteria problems.

### WHAT PRECAUTIONS SHOULD BE TAKEN PRIOR TO SHOCK CHLORINATION?

Make sure that everyone in your home is warned not to use the water during the treatment process. Arranging for an alternative source of drinking water is a necessity, especially if the solution is in the system overnight. Special care should be taken to ensure that children and older adults do not consume tap water during the treatment process.

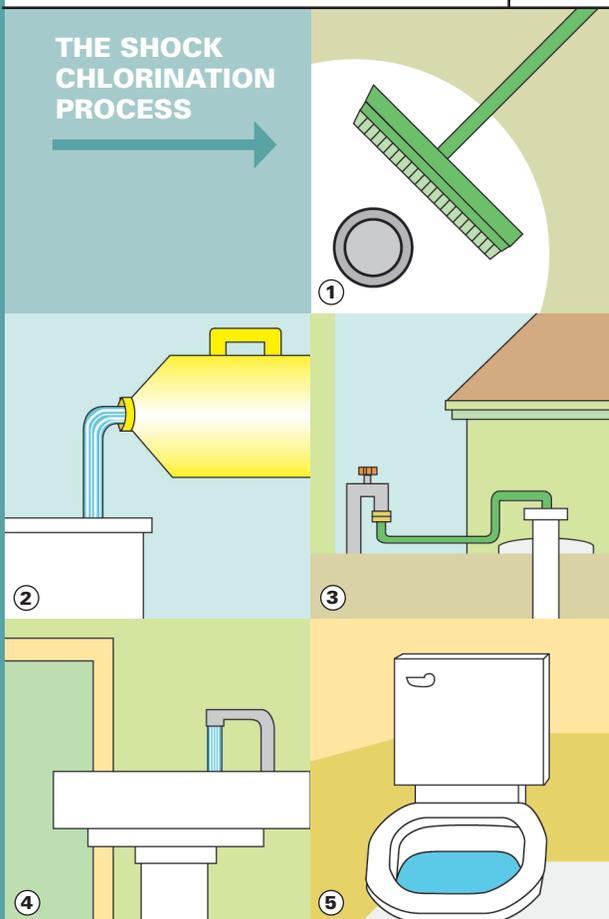
### WHAT KIND OF CHLORINE SHOULD BE USED?

Regular household chlorine bleach found in supermarkets and supply stores is suitable for this process. Use only the plain (and generally least expensive) kind of bleach; do NOT buy fresh scent, lemon, or other scented chlorine products.

### THE SHOCK CHLORINATION PROCESS

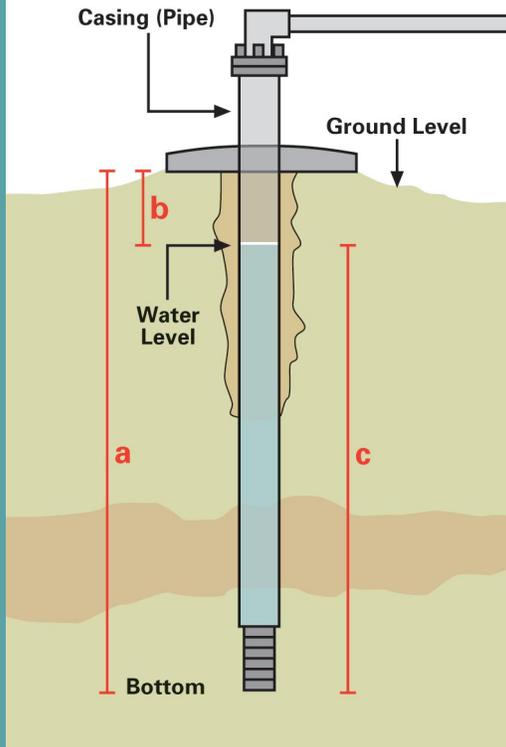
- 1. CLEAN:** Remove all loose or foreign debris from the wellhouse, spring house, or storage tank. Then scrub accessible interior surface with strong chlorine solution (1/2 gallon chlorine bleach per 5 gallons clean water).
- 2. CALCULATE & POUR:** Pour 3 pints of chlorine bleach per 100 gallons of water into your well. To determine the amount of standing water in the well, use the guidelines on the reverse side of this publication.
- 3. MIX:** Hook a clean garden hose to the outdoor faucet nearest the well and place the end of the hose inside the well. Turning the water on, let it run until you smell chlorine coming out of the hose.
- 4. CIRCULATE:** Allow solution to circulate until a strong chlorine odor is detected from all taps in the house.
- 5. FLUSH:** Flush toilets, then allow water to stand in the system for at least 8 hours (preferably 12-24 hours).
- 6. FINISH:** Rid the system of remaining chlorine by turning on outside faucets letting them run until chlorine smell dissipates. Finally, run the indoor faucets until water is clear and smell is gone. Do not run all this chlorinated water into your septic system or allow it to drain into a stream, pond, or lake.

#### THE SHOCK CHLORINATION PROCESS



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## DETERMINING THE AMOUNT OF CHLORINE TO MIX WITH YOUR WELL WATER

When using basic laundry bleach, 3 pints should be added for every 100 gallons of water in the well. To determine the amount of standing water in your well, you will first need to know the depth of your well measured from the bottom to ground level (look at "a" in the diagram on the left). If you do not have this information, call your driller and ask for your well log information. A driller can also measure your well if your well log is unavailable. Once you know the well diameter, depth of your well, and depth to the bottom, follow the steps below.

1. First, determine the distance from the bottom of the well to the water level. To find this information, measure the distance from the ground level to the water level (distance "b" in the diagram). Subtract "b" from the well depth "a" to find the total depth of the water:  $a - b = c$ .
2. Next, determine your well's storage per foot of water. This number is based upon the diameter of your well. Generally, there are two types of wells, drilled and bored. The inside diameter of the casing (well pipe) of a drilled well is typically from 4 to 8 inches. Bored wells are larger, ranging from 24 to 36 inches. Refer to the following table to determine your well's storage per foot of water.

| DRILLED WELL/PIPE |                                    | BORED WELL        |                                    |
|-------------------|------------------------------------|-------------------|------------------------------------|
| diameter (inches) | Storage per foot of water (gal/ft) | diameter (inches) | Storage per foot of water (gal/ft) |
| 4"                | 0.653                              | 24"               | 23.5                               |
| 6"                | 1.47                               | 36"               | 52.9                               |
| 8"                | 2.61                               |                   |                                    |

**Example:** A drilled well with a 6" diameter has a storage per foot of water capacity of 1.47 gal/ft. If your well has an unlisted diameter, or if you use a cistern or reservoir, you will need to contact your local extension service for more information or refer to the source publications.

3. Next, multiply your total depth of water "c" times your storage per foot of water "s." For this example we will assume that "c" is 204 ft. The product will be the volume of water in your well:  $204 \times 1.47 = 300$  gal.
4. Now pour 3 pints of bleach into your well for every 100 gallons of water and add 3 extra pints to treat the household plumbing such as the pressure tank, hot water heater, and pipes. If the volume of water in your well is 300 gallons, you will add 9 pints of bleach to treat the well and 3 extra pints for the plumbing for a total of 12 pints or 1.5 gallons:

$$\frac{300 + 100 \times 3}{100} = 12 \text{ pts.} = 1.5 \text{ gal.}$$

### Sources:

"Shock Chlorination of Home Wells, Springs and Cisterns," Cooperative Extension Service, The University of Georgia.

"Shock Chlorination of Domestic Water Supplies," Cooperative Extension Service, University of Nebraska-Lincoln.

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