



ST. CLAIR COUNTY HEALTH DEPARTMENT

Division of Environmental Health
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DRINKING WATER WELL DISINFECTION

This informational sheet is intended to describe the procedures employed when disinfecting a well using common household bleach (5.25% chlorination). Do not attempt any of these procedures with any other concentration or type of disinfectant.

Also, consideration should be given to the well construction, type of pump and internal well parts, corrosion of pump and internal parts, potential for electric shock, exposure to fumes and water quality concerns that may complicate the disinfection procedures. These considerations may require equipment and expert knowledge that only a qualified professional may possess.

Basic Chlorination Procedures

1. Determine the amount of bleach required to obtain a 500 parts per million (ppm) solution in the total volume of the well casing. Use household type bleach (laundry) which contains 5.25% sodium hypochlorite.

Cups of bleach required for an approximate
500 ppm Minimum Chlorine Concentration

| WELL DEPTH | DIAMETER OF CASING | | | | | |
|---------------|-------------------------------|------------|------------|------------|------------|---------|
| | 1-1/4" | 2" | 3" | 4" | 5" | 6" |
| 25' - 50' | 1/4 cup | 3/4 cup | 1-1/2 cups | 2-1/2 cups | 3-1/2 cups | 5 cups |
| 50' - 100' | 1/2 cup | 1-1/2 cups | 3 cups | 5 cups | 7 cups | 10 cups |
| 100' - 150' | 1 cup | 3 cups | 4 cups | 7 cups | 10 cups | 15 cups |
| 150'+ | Use 1/2 to 1 gallon of bleach | | | | | |

2. Dilute the above volume of bleach in 5 gallons of water. Also, set aside an additional 5 gallons of non-chlorinated water for step number 5.
3. Remove well cap and pour chlorine solution down the well. Allow solution to run down the inside wall of the outer casing. Before pouring solution, make sure any electrical connections are protected to avoid electrical shock.

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4. Connect a clean (preferably new) hose to the first available outlet on the distribution system (pressure tank preferably) and run hose back to the well casing. Run water to recirculate back to the well for 30 to 60 minutes.
5. Remove hose and pour the 5 gallons of clear water down the casing to rinse off any remaining chlorine. Replace the well cap securely.
6. Turn on faucets in the house (**one at a time**) and allow to run just until a bleach odor is detected. Do not forget outside faucets, bathrooms, laundry, etc.
7. Allow bleach solution to remain in the system for 12 to 24 hours (**DO NO USE THE WATER DURING THIS TIME**).
8. After to 12 to 24 hours has passed, turn on the faucets to flush the water lines and the well until the water is clear and no chlorine odor is detected. This may take several hours. **Flushing through the outside faucets first is recommended to avoid overloading the septic system.**

Construction Considerations

It is essential that the well construction details be known prior to attempting disinfection. The procedures as described above may generally be used on drilled wells with submersible pumps or double pipe deep-well jet installations. These procedures may also be used on dug wells; however, it should be emphasized that dug well chlorination will likely not be successful in permanently eliminating bacterial contamination.

Well types other than those specified above, including flowing wells, present special problems in well disinfection, necessitating some degree of disassembly of internal parts and/or plumbing. Chlorination of these wells should be performed only by a registered well driller, registered pump installer or a licensed master plumber.