

Well Disinfection Procedures

The bacteriological quality of domestic water is determined by testing for coliform bacteria. Coliform organisms are indicators of contamination which may originate from human, animal or other sources. Total coliform-positive means a sample result in which the presence of total coliform has been demonstrated. Any presence of coliform bacteria in a sample has the potential to transmit disease. If contamination has been found, or is suspected, water from a safe source (bottled water, etc.) should be used for drinking. If bottled water is not an option, water may be boiled at a rapid boil for at least five minutes before use. If your well is contaminated, we suggest that you follow the disinfection procedures below:

1. Examine the top of your well:
 - a. Are there any openings into the well casing through which insects, rodents, reptiles or dirt can get into the well?
 - b. Is there a concrete slab at least twelve (12) inches square around the well casing? Is it in good shape?
 - c. Are there any openings or cracks around the casing or under the slab where water can run down the outside of the casing into the well?
2. Examine your storage tank (if you have one):
 - a. Is it covered and leak proof?
 - b. Are there any openings where insects, animals or dirt can get in?
 - c. Correct any problems you see with the storage tank.
3. If you have the type of storage tanks which can be opened, pour into the tank two (2) quarts of household bleach (Clorox, Purex, etc.) per 1,000 gallons. Then proceed with Step #5.
4. If you have the type of tank which cannot be opened, drain the tank. Then proceed with Step #5 below. If you have an extremely large storage tank, or a well that produces a very small volume of water, there may be alternatives. Call the number at the end of this document for further information.
5. Drain and flush the pressure tank to remove sediment.
6. Calculate how much Chlorine Bleach should be used, you want between 50 and 100 parts per million chlorine:
 - a. Determine the depth of the water in the well and the total depth of the well. Total depth minus the depth to the top of the water equals depth of water in the well. Calculate how much water is in the well using Chart A to determine how much water per foot the well holds. Most household wells in Mariposa County are 6 inch diameter.

Chart A

• Drilled Well/Pipe	
Diameter (inches)	Storage per foot of water (gal/ft)*
4"	0.653
5"	1.02
6"	1.47
7"	2.00
8"	2.61
9"	3.30
10"	4.08

Depending on how badly contaminated the water is, use between 1 pint and 1 quart for every 250 gallons of water in the well.

7. Remove the threaded inspection plug (if there is one) from the well cap or well seal (see diagram) atop the well casing. Insert a funnel and pour the calculated amount of household bleach into the well. **CAUTION: Do not use swimming pool chlorine. Do not use scented or thickened bleach solutions.**
8. (Optional but recommended) Attach a hose with an adjustable nozzle to a faucet nearest to the well. Turn on the faucet to hose down the interior of the casing, drop pipes and any wires or ropes. Run the water for at least fifteen (15) minutes, then turn off the water and replace the inspection plug.
9. After adding chlorine bleach, let it sit in the well for at least two (2) hours. The chlorine needs to mix thoroughly with the water before being pumped through the system. Do not run the water until the two (2) hours are up.
10. Starting with the faucet closest to the well, run the water until chlorine can be detected by smell or by use of a chlorine test kit. Continue with each outside faucet until chlorine is detected at all outside faucets. Then let the water run at each inside faucet until chlorine is detected. This will ensure that all pipes within the system will be disinfected in addition to the well.

It is very important that you run the bleach through each and every line that is connected to your system. Leaving even one (1) line out of the chlorination procedure may mean inadequate disinfection, which may result in having to repeat the chlorination and testing procedure again.

11. Avoid using the pump or water as much as possible for the next twelve (12) hours in order to allow time for the chlorine to kill the bacteria.
12. Flush all lines and tanks, and run the pump until the odor of bleach can no longer be detected. If you have a swimming pool test kit, you may wish to test your water for any remaining chlorine. Flushing should take place at the outside faucets first. It is important to avoid running large volumes of highly chlorinated water into an individual sewage disposal system (septic tank system). The highly chlorinated water that is flushed to the outside should not be run into ponds, streams, or onto lawns or into flower beds in order to avoid damaging plants, lawns and animals.
13. Forty-eight (48) hours after completing the above procedure, re-sample the system to make sure the system is free of bacteria.
14. If the re-sample indicates that coliform organisms are still present, call the Environmental Health Division for further instructions.

Need Help? Call the Environmental Health Division at 209-966-2220.

