

INTERPRETING THE HEALTH DEPARTMENT'S WELL WATER REPORT WHEN COLIFORMS ARE FOUND

Coliforms are a type of bacteria. There are huge numbers of them and dozens of different species. Some of them can be harmful. Most of them are not. They can exist in soil, decaying leaves, or in animal stool. Those that exist in animal stool have the potential for causing illness in humans.

When the health department cultures well water and reports that there are coliforms in the water sample, they do not indicate where the coliform is coming from. Since it's possible that the coliforms are originating from animal stool, they do a second, more specific test, for a type of coliform that frequently lives in animal stool which can cause serious human illness. That bacteria is known as E. coli.

Not all E. coli, however, causes serious human illness so that even if the health department reports that there are coliforms and that the culture for E. coli is positive it still does not mean that the contamination can cause disease. Most of the health department reports that show that coliforms are present (Noted on the report as "P") will show that E.coli is absent (noted on the report as "A").

In a study I did in my office, we found that in Alachua County, 30% of well owners had coliform contamination (P) in their well water, but, of those, only 7% had E. coli (P) in the culture.

When the well owner's report shows that E. coli are present (P), the well owner should pay particular attention to treating the well water immediately. The health department will usually call the well owner in those cases since, it's my belief, they must report this finding to the state health department.

When the E. coli culture is made, the health department does not provide the well owner with information about what kind of E. coli is present, if it is found, since they do not culture it for the dozens of different E. coli species that exist in nature—nor is the culture carried out for any other type of bacteria, virus, or parasite that can exist in water that may not be a coliform.

The health department cannot tell if there is a little or a lot of contamination because that kind of information is not gained from the type testing that they perform.

When the well owner gets a report from the health department that the water contains coliforms it always mean that somewhere from the water in the aquifer to the kitchen sink there has been a point of contamination. That contamination can occur in the casing of the well that extends into the aquifer, in the piping that runs from the well to the residence or even in the faucet at the sink. It could even be coming from a defective water filter that well owners frequently put in the line between the aquifer and their sink.

Since the well owner does not know what kind of a coliform, or what kind of E. coli, or where in the piping from the aquifer to the tip of the sink there has been a contamination, it's recommended that the whole system be treated with bleach which is known as "shocking the well." By adding bleach all points from the well to the sink are treated. A set of instructions explaining how to "shock the well" can be obtained from the country health department.

The well owner is then advised after treating the well with bleach to repeat the culture of the sample to make sure that the well water no longer contains contamination and to avoid drinking the water until treatment has been completed and a negative report has been obtained. Showering is still permissible, as long as the water is not swallowed.

I recommend that all well owners sample their wells for contamination at least once a year.

PROCEDURE FOR SANITATION OF PRIVATE WATER SYSTEM

NOTE: The following procedure applies to an average three bedroom single family dwelling. It may require repetition if a significant amount of sediment is agitated during the initial treatment. This procedure is intended to reflect the provisions of Chapter 54E-8.007 (5) (b), Corrective Actions, of the Florida Administrative Code, which addresses the procedure to be taken in order to remediate bacterial contamination of a private well. This section stated, "Interrupt service and maintain a 50mg/L solution of free available chlorine to a 4.0mg/L prior to service being restored." In the absence of chlorine testing equipment, use the following guidelines:

1. Mix 2 (two) gallons of household bleach with approximately the same amount of water in a plastic container. **AVOID INHALING FUMES.**
2. Turn off pump switch.
3. Remove cap or plug at top of well casing and pour the bleach and water mixture in the well using a plastic funnel or similar device.
4. Replace well cap or plug, ensuring that it is airtight.
5. Start pump.
6. Turn on the faucet/spigot closest to the well and let the water run until you can smell chlorine, then shut the faucet/spigot off. Repeat this procedure at each faucet/spigot outside and inside the house (including showers/tubs), working from the well to the furthest faucet/spigot. Flush all toilets once.
7. Allow the chlorine mixture to remain in the system for a minimum of 4 (four) hours. We recommend that the solution be left in the system over night.
8. After the minimum 4 (four) hours have elapsed, open all the faucets/spigots (one at a time) and allow them to run until odor had dissipated.
9. Use this system for 3-5 days then collect another sample from the same location(s) as was tested previously, even if one of the samples was satisfactory.