

# PRIVATE WELL DISINFECTION & WATER SAMPLING

You do not want the water you drink, cook with and wash dishes in to be contaminated with microorganisms that can cause disease. Unsafe water can spread a number of diseases known as “waterborne” infections; typhoid, cholera and dysentery, to name a few. All of these illnesses are caused by microorganisms in the intestines of infected people and animals, which may not always appear to be sick. Water supplies can be contaminated when the feces (bodily wastes) from infected individuals are not properly disposed of, and instead seep into underground water or run-off into surface water supplies.

Unfortunately, disease producing microorganisms are difficult to detect in water samples. Fortunately, coliform bacteria are not hard to detect.

“Coliforms” are a group of microorganisms that do not cause disease, but which are found in the lower intestinal tract of human beings and other warm-blooded animals. Millions of coliforms are expelled each time a person or animal defecates. So when coliform organisms are found in a water sample, they indicate that feces may have contaminated the water and that immediate action should be taken to stop the contamination. When well water shows coliforms, disinfection procedures should be followed. If a doctor suggests that gastric cramps or chronic diarrhea may have been caused by contaminated water, well disinfection should be performed immediately and water samples should be submitted for analysis. In addition, recently constructed or recently repaired wells must be disinfected to prevent bacterial growth in the well and in the plumbing system. Well disinfection procedures are described later in the pamphlet.

Information about continuous disinfection equipment may be obtained from local well drillers and plumbing suppliers.

## TAKING WATER SAMPLES:

1. You must use a sample container provided by an approved laboratory.
2. You should find a proper location to take a sample, preferably an outside faucet that does not leak (avoid rubber hoses, fire hydrants, dirty areas and areas behind bushes).
3. Open the sample area faucet to full flow for three minutes to clear the line. Turn off the faucet.
4. Sterilize the sample site by using a hand held propane torch or a bleach water mixed solution. (About 50% Bleach)
5. Exercise care in handling samples! Samples are extremely easy to contaminate. Do not touch the inside of the container and do not rinse it. Fill the container to the line without splashing, and then seal it.
6. Complete the submission form, which may be obtained along with a test container from Eastex Environmental Laboratory. Private owners will complete only the following items: for the “Public Water System Name” item, write “private”. Fill in the county name and your name and mailing address in the area designated as “Send Sample Results To:” Provide date and time of sampling. For the “System Type” item, indicate “individual”. Include phone number for contacting the client if the sample is positive.
7. Payment must be accompanied with sample submission.

8. Samples should be prepared properly for shipment. Leaking samples cannot be accepted for analysis. A sample must arrive at the laboratory within 30 hours from the time the sample was collected. Samples may be mailed or delivered to lab or other specified location.
9. Results will be forwarded to you after completion of the tests. The most important part of the results will be the indication of “coliform organisms found” or “coliform organisms not found”. A “not found” report indicates that coliform organisms are absent, and means the water is considered bacteriologically safe to drink at the time of sampling. A positive or “coliform found” report indicates that coliform organisms are present and the water may be unsafe. If repeated bacteriological testing reveals the possibility of contamination via a “coliform found” result, then well disinfection is recommended. When a laboratory analysis report indicates “unsuitable for analysis,” it means the laboratory was unable to conduct a valid test to draw a conclusion.
10. When a laboratory analysis report shows the presence of coliform organisms, use the following procedure for well disinfection.

**First-** Locate the wellhead and remove an access plug or bolt so that the area within the well casing is exposed.

**Second-** Using a funnel, pour in an appropriate amount of liquid chlorine bleach (Clorox, Purex, etc.) See chlorine bleach dosage below.

**Chlorine Bleach Dosage Table for Well Disinfection**

Well Depth	Gallons of Bleach
<100 ft.	1/2 - 1 gallon
100-200 ft.	1 - 1 1/2 gallon
200-300 ft.	2 gallons
300 and above	2 1/2 gallons or more

*These dosages are approximate. Greater amounts are recommended for excessively cloudy water or hand-dug wells.*

**Third-**Using the nearest faucet and a garden hose allow water to run through the funnel into the well for two or three hours. This will circulate the chlorinated well water and improve the germ-killing action by allowing all fittings and equipment in the well to be exposed to the chlorine solution.

**Fourth-**After the well water has circulated for awhile, the garden hose and funnel may be removed and the access plug replaced. The disinfection process should be extended throughout the entire plumbing system.

**Fifth-**To disinfect the remainder of the plumbing system, turn on the next available faucet and allow it to run until the bleach odor can be detected, then turn it off. Repeat this step throughout the plumbing system at each faucet. Then allow the chlorinated water to remain in the plumbing system overnight, or for 24 hours if possible. During this time, the water should not be used.

**Sixth-**After disinfection the well and plumbing system, flush all faucets until the bleach odor disappears and the water is clear of any debris or color. Flush outside faucets first-you do not want to flood the septic system.

**Seventh-**Then, submit another bacteriological sample to determine if the disinfection process was successful.

Keep in mind that a single disinfection may not be sufficient because certain well systems, particularly shallow wells, hand-dug wells, wells in fissured areas and old wells, are more vulnerable to contamination. Water from these types of well systems should be checked by periodically submitting samples for bacteriological analysis.

*The collection and disinfection procedures outlined here should not be considered a guarantee. These procedures were not developed by Eastex Environmental Laboratory, Inc.*