

SAMPLING WATER FOR BACTERIA

Individuals may have their drinking water tested for bacteria in order to determine whether the water is suitable for drinking. Water authorities, which supply the public, are required by law to have a number of samples tested each month; individuals served by public lines may be assured that their water is safe to drink. However, those who rely on individual wells or treatment systems should consider testing their water periodically to assure drinking safety.

Bacteria which cause diseases such as cholera, dysentery, and, typhoid fever are spread by water which has been contaminated by infected people and animals. These diseases are intestinal, and testing water for fecal contamination can prevent their spread. Testing is fairly difficult, but there are non-disease causing germs that live naturally in the intestines of warm-blooded animals, which can be easily detected. These are called the *coliform* group bacteria.

Millions of these are expelled each time a person or animal defecates, so when coliform organisms are found in water, it is a good indication of contamination from body wastes. Action should be taken at one to find the source of contamination.

Analysis of these are expelled each time a person or animal defecates, so when coliform organisms are found in water, it is a good indication of contamination from body wastes. Action should be taken at one to find the source of contamination.

Analysis of water must be performed according to strict regulations established by the Environmental Protection Agency and may be performed only by laboratories certified for the procedures involved.

WATER IS ANALYZED IN THIS LABORATORY AT THE FOLLOWING TIMES ONLY:

Monday- Thursday

8:00am- 4:00pm

(Exceptions may be made, but customer must call and request.)

Note: Samples must be brought into the laboratory no later than 4:00pm

Lab phone: (432) 681-7618

The Midland Health Department Laboratory is a division of the health department of the City of Midland and is certified by the Department of State Health Services to test public drinking water. The staff members of the lab are also certified individually to perform water bacteriology testing.

Please remember that the Water Bacteriology test will not tell you anything about chemicals or radiation that may be present in your water – it only gives you an indication of the bacteriology quality of the sample being tested.

In order to submit your water sample for testing, you need to obtain the following items from the Health Department Laboratory:

1. A sterile collection container from either this laboratory or the Texas Department of Health or its subsidiary agencies. **NO OTHER SAMPLE CONTAINERS WILL BE ACCEPTED.**
2. A form G- 19 “ Water Bacteriology” for each sample submitted.

Note: There is a \$12.00 charge per sample to be paid when sample is submitted.

COLLECTING THE WATER SAMPLE:

You should find a proper location to take a sample, preferably an outside faucet that does not leak (avoid rubber houses, fire hydrants, dirty areas, and areas behind bushes.)

Avoid sampling on extremely windy days when it is raining.

When you are ready to collect your sample:

1. Run water for 2- 3 min. to clear line.
2. Turn off water and flame the faucet by immersing the head of the faucet on a cup of alcohol, removing the cup and lighting the alcohol- soaked faucet with a match. The alcohol should burn off with a blue colorless flame. Repeat is necessary.
3. Turn on faucet again and run in a slow, steady stream for 1- 2 min.
4. Carefully open the sample container without touching the inside of either the bottle or the lid. You might contaminate it this way.
5. Fill the container to the indicated line. **DO NOT RINSE OUT THE CONTAINER,** as it contains a stabilizing chemical which must remain in contact with the water until tested.
6. Recap the container.
7. Fill out the form G-19 completely.
8. Attach & fill our label to specimen container assuring that container matched the G- 19 form.
9. Transport sample to the laboratory as quickly as possible and keep cool during transport.

10. If mailing samples, they must be prepared properly. Leaking samples will not be accepted for analysis. Samples should be shipped with a coolant pack or ice. Seal paperwork separately to avoid moisture.

It is important to remember that samples that will be more than 30 hours old at time of testing will not be analyzed due to possibly erratic bacterial growth; this is an EPA regulation and the lab may make no exceptions.

If the report indicates “unsuitable for analysis”, it means that the laboratory was unable to conduct a valid test to draw a conclusion. The reason why the sample was unsuitable should be listed.

RECOMMENDED PROCEDURE FOR SANITIZING A WELL

1. If the well water is being used for drinking, set aside enough water for about one day in advance for sanitizing the well.
2. Locate the wellhead and assure that the well is equipped with a sanitary seal. (See the diagram on the final page). It is necessary for the well to be sealed and the entire system to be closed to the air during this process. Systems with open storage tanks in line are not sanitizable.
3. To sanitize the well mix one gallon of household bleach (Clorox, Purox, etc with an available chlorine content of 5.25%) with one gallon of water in a pail. (This is sufficient to shock treat 100 gallons of well water). Pour this solution into the well using a funnel in such a manner that the solution runs down the casing walls. DO NOT POUR UNDILUTED BLEACH DOWN YOUR WELL.

A Dosage Table is below:

Chlorine Bleach Dosage Table for Well Disinfections

Well Depth	Amount of Bleach
Less than 100 ft.	1 quart
100 to 200 ft.	½ gallon
200 to 300 ft.	3 quarts
300 and greater	1 gallon or more

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

NOTE: More bleach solution may be required if the system is extensive in a plumbing sense; Or if the system has been unused for a length of time; Or if the well has previously tested to be grossly contaminated.

4. Using the nearest faucet and garden hose, allow water to run through the funnel and back into the cell for a few hours. This will circulate the chlorinated well water and improve the germ killing action by allowing all fittings and equipment in well to be exposed to the chlorine solution.
5. Remove the hose and funnel and replace the access plug.
6. Following the plumbing diagram, open one faucet at a time, starting at the well and moving down line. Open all outlets, indoors and out. Shut off each faucet as soon as the chlorine odor is detected.
7. Allow the sanitizing solution to stay in the system overnight as a minimum, 24 hours if possible. During this time, the water should not be used for drinking and cooking.
8. After the solution has set in system for at least eight hours, open the outside faucet nearest the storage tank and allow the water to run until the chlorine odor is no longer detected and the water is clear of any debris or color. Then move up line opening one faucet at a time, outdoors first, then indoors so as not to flood the septic system.

CAUTION: The sequence given above is very important if you have a septic tank, because running all the sanitizing solution through the house into the septic system can destroy the organisms that make the septic system function

9. Use water normally for at least three days and then collect another sample for water bacteriology, if desired.
10. Steps 1-9 may have to be repeated if a sample collected after sanitation continues to show bacteria present. Be aware that a single disinfection may not be sufficient because certain well systems, particularly shallow wells, wells in fissured areas, and old wells are more vulnerable to contamination. These wells should be tested on a regular basis for bacterial contamination. You may decide on a frequency that suits your needs, once a year or twice a year, etc.