Collecting a Sample for a Bacteria Test on Your Water

The bacteria tests that may be run at this lab focus on coliform bacteria. Coliform bacteria are a group of bacteria that are present in the environment. They are commonly found in human and animal waste. However, there are some types of coliform organisms that are naturally occurring in soil and surface water. Coliforms are considered to be "indicator organisms" in that if they are present there is potential for disease causing bacteria to be present. They indicate that a pathway exists between the water supply and the surrounding area which can allow disease causing bacteria to enter into the water supply. This contamination can result from failing home septic systems or from animal manure runoff. *Escherichia coli (E. coli)* is a specific type of coliform bacteria that is present in the intestinal tract of humans and animals. Its presence in drinking water strongly indicates that human or animal waste is present in the water.

Please remember that the bacteriological status of a well can change at any time. Changing ground conditions such as the Freeze/Thaw cycle or excessive precipitation may cause the well to become contaminated. Therefore, it is recommended that water wells be tested at least once per year, preferably during the spring once the Freeze/Thaw cycle has occurred.

To take a sample of water for a <u>Total Coliform Test</u>:

1. Identify a water tap source to sample from. This could be a faucet (**aerators/screens may harbor bacteria and must be removed**), a small valve or a petcock. Hoses, drinking water fountains and swivel-jointed faucets or those with visible leaks at joints are NOT good water tap sources and should be avoided.
2. Place all carbon filters, sediment filters and water softeners on bypass to test the actual water source.
3. Next, sanitize the nozzle of the tap from which you want to sample by preparing the following solution. Obtain a 5.25% chlorine (Bleach) or sodium hypochlorite solution- DO NOT use scented bleach. Make a solution by thoroughly mixing 1 tablespoon of bleach in ½ gallon of water. You may choose to use a solution stronger than 5.25% bleach, but be aware that it may cause discoloration of your tap. After preparing the solution, follow these steps for sanitation:
    a. Flush water through the tap for 1 minute, then stop the water flow.
    b. Apply the sanitizing solution either with a spray bottle to saturate the tap opening, or by placing the tap opening into a plastic bag 1/3 filled with

the sanitizing solution and squeezing the bag several times to force the solution to flush the tap opening. In either case, wait at least 2 minutes before proceeding to take the sample. If you are sampling multiple taps with the plastic bag method, you must use a new bag and fresh sanitizing solution for each tap.

c. Flush the tap again with the valve all the way open, this time for 3-5 minutes. This will allow the water that comes from the main source to be present in your lines for collection. After 3-5 minutes, reduce the flow so there will be little or no splashing during sample collection.

4. When you remove the cap from the sample bottle to take the sample, hold the exterior of the cap between two fingers and the bottom of the bottle in your other hand to **be sure you do not touch the inside of the cap or the mouth of the bottle during sampling**. This avoids possible contamination from your hands. There may be a pill or powder in the sample bottle – this chemical is present to neutralize any chlorine that may be present in the sample.
5. Carefully fill the bottle just to the 100 ml line indicated near the top. The sample must contain at least 100ml for the test to be run. Do not over fill the bottle and allow water to flow down the sides as contamination may occur.
6. Immediately cap the sample bottle tightly and turn off the flow of water. Record the time, date and location of sampling on the paperwork provided by the Lab. Deliver the sample with paperwork to the Lab for analysis. Samples need to arrive at the lab within 24 hours of the sample being taken to allow the lab time to analyze the sample within the mandated 30 hour timeframe.

If there is any question as to whether a sample or bottle has become contaminated during collection, the sample and bottle must be discarded and a new sample needs to be collected in a new sample bottle.

Information taken from the *Laboratory Manual for the Microbiological Analysis of Public Drinking Water* published by the Ohio EPA, 2001.