

MACON COUNTY CODE ENFORCEMENT
1830 Lakeside Drive
Franklin, NC 28734
Phone: 828 349-2489/349-2490 Fax: 828 349-4136

The Macon County Public Health Center Laboratory tests samples of private drinking water for the presence of coliform bacteria and E. coli (Escherichia coli) bacteria. If the laboratory report on your drinking water indicates the presence of bacteria (Coliform Found or E. coli Found), it is recommended that the sources of contamination be eliminated and your water source be disinfected. Water contaminated with E. coli bacteria should not be used for drinking or cooking unless it is boiled for at least one minute or disinfected by other means.

Coliforms are a group of bacteria produced in, and hosted by, feces, soil, water, vegetation, and other matter. Within this group of total coliforms, there are fecal coliforms which are produced in warm-blooded animal intestinal tracts. Total coliforms, and particularly fecal coliforms, serve as indicators of possible pollution and potentially harmful organisms

E. coli (Escherichia coli) is a type of bacteria almost constantly present in the intestines of humans and other animals. Under certain conditions, E. coli can cause infections and illness.

Almost all surface waters contain some bacteria. Ground water is generally free of bacteria and should not need disinfecting unless it is directly contaminated by a waste source or an improperly constructed well. Surface water can get into wells as a result of leaky well covers, defective well-casing seals, or infiltration through side walls of dug wells. Contamination may also be introduced during the process of constructing or repairing a well.

The immediate remedy for bacteria contamination is to disinfect the water supply. Disinfection is only a temporary remedy; the most important consideration is to find and eliminate the source of the contamination.

Chlorination is the oldest method of continuous disinfection for water supplies. Disinfection by chlorination has been studied extensively, and there is a great body of experience upon which to draw. Chlorination is the standard by which other disinfection procedures are judged.

When chlorine is added to water several things occur. Almost immediately, it will oxidize inorganic materials, such as dissolved iron and manganese, and convert them to insoluble forms. Chlorine will also react with any organic matter present, usually breaking it down into more simple substances. Reactions with organic matter are much slower, and much longer contact between the organic matter and chlorine is necessary for the reactions to be completed. Finally, chlorine will kill bacteria.

The amount of chlorine consumed in these reactions is known as the "chlorine demand" of a water supply. The amount of chlorine remaining in the water after the chlorine demand is satisfied is known as the "free chlorine residual." Only if a chlorine residual is found in the water after adequate contact time is there assurance that disinfection has been completed.

Chlorine has its limitations. Its solutions are only moderately stable, organic matter as well as iron and manganese consume chlorine, high chlorine concentrations have objectionable tastes and odors, and even low chlorine concentrations react with some organic compounds to produce very strong, unpleasant tastes and odors. Chlorine use can also form trihalomethanes. Yet, in spite of these factors, chlorination is widely used on small private water systems.

Chlorine Sources: Many forms of chlorine are available, including ordinary laundry bleach. Laundry bleach normally contains five and one-fourth percent available chlorine, but the label should be checked for the percentage of chlorine and to see if cleaning agents have been added. Bleach with cleaning agents should NOT be used for disinfecting water supplies. Stronger solutions that contain 12 to 17 percent chlorine are also available. Normally used for swimming pool disinfection, they are also suitable for water treatment. Finally, there are powders and tablets. Dry chlorine sources range from 25 to 75 percent available chlorine. Dry chlorine sources are usually put into solutions prior to use, but tablets may be used directly for some applications.

Should you have any questions about these procedures or about your water system, you may contact the Macon County Public Health Center. Office hours are 8:00 a.m. to 5:00 p.m. Monday through Friday. To speak with an Environmental Health Specialist, please call between 8:00-9:00 a.m.