

# Total Coliform Bacteria, E. coli & PRIVATE WELLS

## What are total coliform bacteria and E. coli?

Total coliform bacteria are a group of microorganisms found in soil and surface water. Total coliform bacteria water tests look at all coliform bacteria in water. This includes fecal coliform bacteria, which are a group of bacteria found in the intestines and feces of animals and humans.

E. coli or Escherichia coli is a type of fecal coliform bacteria. There are many strains of E. coli.

## How does coliform bacteria and E. coli get in my private well water?

Rain may wash coliform bacteria or E. coli from soil on the surface to groundwater. Coliform bacteria or E. coli can also enter your water if your private well is poorly constructed, cracked or unsealed.

## How can coliform bacteria or E. coli affect my health?

Most coliform bacteria and E. coli strains will not make you sick. The presence of some types of coliform bacteria in the water signal the presence of feces or sewage waste. Feces and sewage wastes are usually the source of the disease-causing organisms.

Total coliform bacteria and E. coli water tests are used as indicators for the presence of disease-causing organisms. The following are some disease-causing organisms or pathogens that could be present in your water:

- Bacteria that cause diarrhea and vomiting,
- Protozoa that cause dysentery,
- Viruses that cause polio and hepatitis, and
- Helminths, such as roundworms and tapeworms, that cause chronic diarrhea.



## When should I be concerned about coliform bacteria or E. coli?

You should be concerned if coliform bacteria or E. coli are present in your well water.

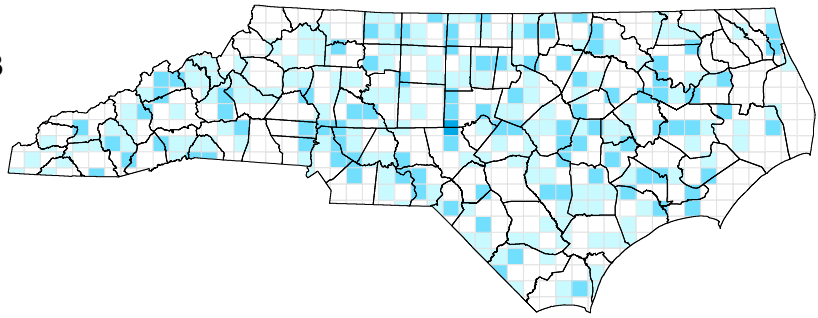
The **NC Department of Environmental Quality** developed a groundwater standard of **1 colony of coliform bacteria in 100 milliliters of water (colonies/mL)**. Ground water standards are developed to protect public health. This standard was developed in 2013.

The **US Environmental Protection Agency** requires follow up testing and treatment when **coliform bacteria or E. coli** is found in any public water supply system across the country. Public drinking water guidance are based on public health protection and cost of treatment/testing at large utilities. These rules were established in 1989 and updated in 2014.

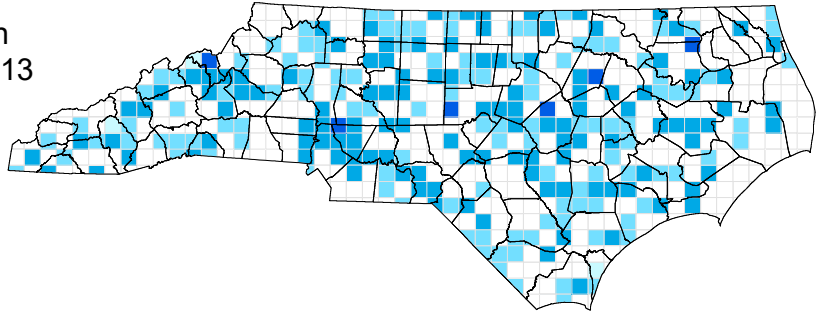
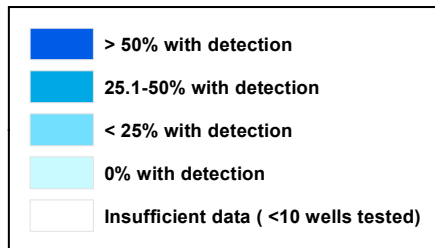
## How do I test for total coliform bacteria or E. coli in my private well?

Use a certified lab to test your well water for coliform bacteria and E. coli every year. Contact the private well program at your county health department to assist you with getting your water tested. Pricing of testing varies from county to county.

## Percent of Private Wells Tested With Detection of E. coli, 2011-2013



## Percent of Private Wells Tested With Detection of Total Coliform, 2011-2013



### What if total coliform bacteria or E. coli levels are present?

Shock chlorination is a method to remove bacteria contamination in private wells. If contamination persists you can install a treatment system to reduce the levels of bacteria in your private well. Treatment systems that reduce the level of bacteria in your well water include:

- Ultraviolet (UV) filtration treatment system

You can also reduce your exposure by using bottled water or connecting to public water supply, if possible.

### Where are total coliform bacteria and E. coli found in NC?

Coliform bacteria are detected throughout NC. **About 26%** of wells sampled for microbial contamination in NC from 2011 to 2013 tested positive for coliform bacteria. Yet, there are several areas in NC with at least 50% of wells with coliform bacteria present. See map for areas with high coliform bacteria detections.

E. coli is detected throughout NC. **About 2%** of wells sampled for microbial contamination in NC from 2011 to 2013 tested positive for E. coli. Yet, there are several areas in NC with at least 25% of wells with E. coli present. See map for areas with high E. coli detections.

### Where can I find more information about total coliform bacteria, E. coli and my well?

Visit the NC Division of Public Health's Private Well and Health Program website: <http://epi.publichealth.nc.gov/oe/programs/wellwater.html>.

There you can find:

- Contacts for your county private well program
- Total coliform bacteria or E. coli in well water maps
- A guide for selecting a treatment system
- Other private well resources

You can also call the Private Well and Health Program at 919-707-5900.

### Where did this information come from?

**Centers for Disease Control and Prevention:** [www.cdc.gov/healthywater/drinking/private/wells/disease/e\\_coli.html](http://www.cdc.gov/healthywater/drinking/private/wells/disease/e_coli.html)

**Environmental Protection Agency:** <https://safewater.zendesk.com/hc/en-us/sections/203309158-E-coli-O157-H7>

**National Sanitation Foundation:** [www.nsf.org/consumer-resources/water-quality/water-filters-testing-treatment/contaminant-reduction-claims-guide](http://www.nsf.org/consumer-resources/water-quality/water-filters-testing-treatment/contaminant-reduction-claims-guide)

