



Microbiological Standards for Private Water Systems in Ohio

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Private water systems provide drinking water in rural or suburban areas and include water wells, rainwater cisterns, springs, hauled water storage tanks, and ponds used for drinking water. Private water systems are regulated under Ohio Administrative Code (OAC) Chapter 3701-28 through Ohio's local health districts. A private water system:

- Provides water to homes in rural and suburban areas that are not connected to public water systems;
- Is used for drinking water and other potable and domestic purposes;
- Serves water to small businesses, churches, etc. to fewer than 25 people less than 60 days out of the year;
- Have less than 15 service connections.

Larger water supply systems are regulated by Ohio EPA.

Why are microbiological water samples required?

All new private water systems are required to have a water sample collected by a local health district and analyzed for *E. coli* and the number of coliform bacteria to help ensure bacterial drinking water safety. Water samples may also be collected and analyzed for bacteria as part of a real estate evaluation, routine monitoring, or just out of curiosity.

Total Coliform are a bacterial group used to evaluate the condition or cleanliness of a water well, or used to determine if a disinfection system is working properly.

E. coli bacteria are used as an indicator of the sanitary condition of a water supply.

Microbiological water samples are reported as colony forming units (CFUs) or the equivalent most probable number (MPN) of colonies.

What are the microbiological standards for private water systems?

A health based standard has been established which is NO detection of *E. coli*, enterococci or coliphages (indicators of virus) for all types of private water systems. Nearly all water samples are analyzed for *E. coli* because the test is inexpensive and results are available in 24 hours.

There are two different standards for total coliform depending on the type of private water system being used, how the system is constructed, and whether disinfection is required on that system. Private water systems that use continuous disinfection are also required to meet a total coliform negative standard to ensure the disinfection equipment is working properly. Most newly constructed or altered water wells are required to meet a coliform count standard.

What are the microbiological standards for wells with 25 feet of casing or greater?

For private water wells with 25 feet of casing or greater, lab results for a 100 ml water sample shall have:

- Four (4) or fewer total coliform CFUs reported as MPN
- No detection of *E. coli* (less than 1 MPN or CFU)

Low levels of coliforms can occur naturally in ground water and will not make healthy people sick. Levels of coliform over four (4) colonies can indicate poor well construction or cleaning, or issues related to aging of the well such as the presence of holes in the well casing.

What are the microbiological standards for private water systems that use continuous disinfection or receive water from a hauled source?

Private water systems using continuous disinfection such as shallow wells, rainwater cisterns, springs, or ponds, or for hauled water storage tanks that receive water from a public water supply, the lab results for a 100 ml water sample shall have:

- No detection of any total coliform colony forming units (CFUs) or less than 1 most probable number (MPN).
- No detection of *E. coli* (less than one CFU or MPN)

The absence of total coliform and *E. coli* in a water sample is a good indicator that a disinfection system is functioning properly.

To learn more information about Total & Fecal Coliform Bacteria and E. coli click on the hyperlinked text or go to the Ohio Department of Health web page at <http://www.odh.ohio.gov>. Select "H" in the maroon-colored A-Z Index, select "Health Assessment Section," select "Health Assessment Section Fact Sheets" and then select from the list of fact sheets.

Where can you get more information?

Ohio Department of Health
Bureau of Environmental Health
Residential Water and Sewage Program
35 East Chestnut St. (7th floor)
Columbus, Ohio 43215
Phone: (614) 644-7558
BEH@odh.ohio.gov
www.odh.ohio.gov

Directory of local health districts in Ohio:

<http://www.odh.ohio.gov/localhealthdistricts/lhddirectory.aspx>

More information on private water systems can be found at:

<http://www.odh.ohio.gov/en/odhprograms/eh/water/PrivateWaterSystems/main.aspx>