



ANNUAL WATER QUALITY REPORT

Reporting Year 2022

Presented By
City of Chillicothe

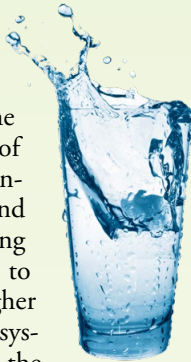


Introduction

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2022. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users. Please remember that we are always available should you ever have any questions or concerns about your water.

Source Water Assessment

A source water assessment has been completed for our system. The purpose of the assessment is to determine the susceptibility of each drinking water source to potential contaminant sources. The report includes background information and a relative susceptibility rating of higher, moderate, or lower. It is important to understand that a susceptibility rating of higher does not imply poor water quality, only the system's potential to become contaminated within the assessment area.



According to this study, the aquifer that supplies water to the City of Chillicothe has a high susceptibility to contamination. This determination is based on the following:

- lack of protective layer of clay overlying the aquifer
- shallow depth (less than 20 feet below ground surface) of the aquifer
- presence of numerous significant potential contaminant sources in the protection area

This does not mean the wellfield will become contaminated, only that conditions exist that could impact the groundwater source. More information about the source water assessment and what consumers can do to help protect the aquifer is available by calling (740) 773-3388. The source water assessment was completed in 2003, updated in May 2019, and revised in September 2022. If you would like a copy of our assessment report, please feel free to contact our office during regular business hours at (740) 773-3388.

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from seven deep wells. We utilize a lime softening process to remove hardness and CO₂ to adjust the water pH after softening. Chlorine is added as a disinfectant. The water is filtered and delivered to a 500,000-gallon clearwell at the plant for proper disinfection detention time.

Chlorine (a disinfectant), fluoride (to prevent tooth decay), and orthophosphate (a corrosion inhibitor to protect distribution system piping) are carefully monitored and fed at the lower range of Ohio EPA requirements. The finished water is then pumped to sanitized reservoirs and water towers and into your home or business.

Information on the Internet



The U.S. EPA (<https://goo.gl/TFAMKc>) and CDC (www.cdc.gov) websites provide a substantial amount of information on many issues relating to water resources, water conservation and public health. The Ohio EPA website (<https://epa.ohio.gov>) provides complete and current information on water issues in Ohio, including valuable information about our watershed.

Important Health Information



Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or <http://water.epa.gov/drink/hotline>.

Substances That Could Be in Water

To ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals, in some cases radioactive material, and substances resulting from the presence of animals or from human activity. Substances that may be present in source water include:

Microbial Contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, or wildlife;

Inorganic Contaminants, such as salts and metals, which can be naturally occurring or may result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming;

Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;

Organic Chemical Contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production and may also come from gas stations, urban stormwater runoff, and septic systems;

Radioactive Contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Lead in Home Plumbing

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. We are responsible for providing high-quality drinking water, but we cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. A list of laboratories certified in the State of Ohio to test for lead may be found at www.epa.ohio.gov/ddagw or by calling (614) 644-2752. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline at (800) 426-4791 or at www.epa.gov/safewater/lead.

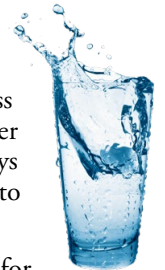
Where Does My Water Come From?

The City of Chillicothe receives its drinking water from seven deep wells located in Yoctangee Park, in close proximity to the water treatment facility. The aquifer in which the wells are located is part of the Scioto Buried River Valley Aquifer. In 2022 Chillicothe had an unconditioned license to operate our water system.

The City of Chillicothe also has emergency connections with Ross County Water Company and the Chillicothe Correctional Institute. The City of Chillicothe did not use any water from these connections in 2022.

Water Conservation Tips

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is not hard to conserve water. Here are a few tips:



- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.

Public Meetings

Regular meetings of the City of Chillicothe Council are held on the second and fourth Monday of each month, at which time a public participation session is scheduled. Council meetings are advertised and reported in the Chillicothe Gazette.

QUESTIONS? The Chillicothe Water Treatment Plant is a division of the Chillicothe Utilities Department, directed by Brad Long, and is part of the administration overseen by Mayor Luke M. Feeney. Both Mayor Feeney, (740) 774-1185, and Mr. Long, (740) 773-1932, encourage and welcome comments and input with regard to our water system.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

Note that we have a current, unconditioned license to operate our water system.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Barium (ppm)	2022	2	2	0.017	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2022	[4]	[4]	1.159	1.09–1.22	No	Water additive used to control microbes
Fluoride (ppm)	2022	4	4	1.0	0.89–1.13	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids (ppb)	2022	60	NA	6.2	<6.0–6.2	No	By-product of drinking water disinfection
Nitrate (ppm)	2022	10	10	0.2	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Radium 228 (pCi/L)	2019	5	NA	1.0 +/-0.5	NA	No	Erosion of natural deposits
TTHMs [total trihalomethanes] (ppb)	2022	80	0	34.6	30.2–34.6	No	By-product of drinking water disinfection

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2022	1.3	1.3	0.018	<0.010–0.14	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2022	15	0	ND	<2.0–39	1/30 ¹	No	Lead service lines; corrosion of household plumbing systems, including fittings and fixtures; erosion of natural deposits

¹Lead was detected above the AL in one sample (39 ppb) at LC 226.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

AL (Action Level): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

MCL (Maximum Contaminant Level): The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

MCLG (Maximum Contaminant Level Goal): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

MRDL (Maximum Residual Disinfectant Level): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

pCi/L (picocuries per liter): A measure of radioactivity.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

Benefits of Chlorination

Disinfection, a chemical process used to control disease-causing microorganisms by killing or inactivating them, is unquestionably the most important step in drinking water treatment. By far, the most common method of disinfection in North America is chlorination.

Before communities began routinely treating drinking water with chlorine (starting with Chicago and Jersey City in 1908), cholera, typhoid fever, dysentery, and hepatitis A killed thousands of U.S. residents annually. Drinking water chlorination and filtration have helped to virtually eliminate these diseases in the U.S. Significant strides in public health are directly linked to the adoption of drinking water chlorination. In fact, the filtration of drinking water and the use of chlorine are probably the most significant public health advancements in human history.

How chlorination works:

- **Potent germicide reduction** of many disease-causing microorganisms in drinking water to almost immeasurable levels.
- **Taste and odor reduction** of many disagreeable tastes and odors from foul-smelling algae secretions, sulfides, and decaying vegetation.
- **Biological growth elimination** of slime bacteria, molds, and algae that commonly grow in water supply reservoirs, on the walls of water mains, and in storage tanks.
- **Chemical removal** of hydrogen sulfide (which has a rotten egg odor), ammonia, and other nitrogenous compounds that have unpleasant tastes and hinder disinfection. It also helps to remove iron and manganese from raw water.



BY THE NUMBERS

The number of Olympic-sized swimming pools it would take to fill up all of Earth's water.

800
TRILLION

1

The average cost in cents for about 5 gallons of water supplied to a home in the U.S.

The percent of Earth's water that is salty or otherwise undrinkable, or locked away and unavailable in ice caps and glaciers.

99

50

The average daily number of gallons of total home water use for each person in the U.S.

The percent of Earth's surface that is covered by water.

71

330
MILLION

The amount of water on Earth in cubic miles.

The percent of the human brain that contains water.

75