

ANNUAL WATER QUALITY REPORT

Reporting Year 2021



Presented By
City of Middletown

What We Do

We are committed to delivering drinking water of the highest quality to our community. This annual water quality report is designed to keep you well informed about the quality of your drinking water. We are pleased to inform you that your drinking water quality is excellent and meets or exceeds all state and federal guidelines for drinking water. We remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to provide safe drinking water to everyone in the community.

Source Water Protection

Protecting our water source is one important way the City of Middletown limits contaminants in our drinking water. The Ohio Environmental Protection Agency (OEPA) completed a study of the City of Middletown's source of drinking water to determine its susceptibility. According to this study, the aquifer (water-rich zone) that supplies water to the City of Middletown has a high susceptibility to contamination. This determination is based on the following:

- Lack of a protective layer of clay overlying the aquifer;
- Shallow depth (less than 15 feet below ground surface) of the aquifer;
- The presence of significant potential contaminant sources in the protection area; and
- Past detection of man-made contaminants in Middletown's aquifer.

The risk of future contamination is being minimized by implementing appropriate protective measures. The City of Middletown has developed and implemented a comprehensive Wellhead/Source Water Protection Plan to help prevent potential contamination from entering the aquifer. The protection plan contains an educational component, source control strategies, a contingency and emergency response plan, and groundwater monitoring strategies. More information about the source water assessment and what consumers can do to help protect the aquifer is available by calling (513) 425-1860 or (513) 425-7781.

Public Meetings

How do I participate in decisions concerning my drinking water? Public participation and comments are encouraged at regular meetings of City Council, which are held the 1st and 3rd Tuesdays of the month at 5:30 p.m. in the City Building's lower level Council Chambers. Please visit www.cityofmiddletown.org or call (513) 425-7864 for more information.

Source Water Description

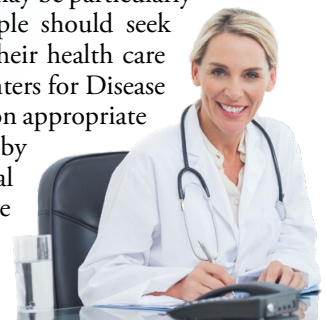
Your drinking water comes from the Great Miami Buried Valley Aquifer. Groundwater production wells produce up to 20 million gallons of drinking water per day. The untreated well water is pumped to the water treatment plant where it is softened using lime, disinfected with chlorine, and then filtered using dual-media water filters. Fluoride is also added to the water as a measure to prevent tooth decay. Middletown maintains established water supply connections with Warren County, Southwest Regional Water District, and the City of Monroe. These emergency connections are available to be used in extraordinary conditions such as drought, source failure, line breaks, fires, and other periods of unusually high water demand.

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When the well is dry, we
know the worth of water.

—Benjamin Franklin

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those 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>.



QUESTIONS? For more information about this report, or for any questions relating to your drinking water, please call Scott Belcher, Treatment Plant Manager, at (513) 425-7781.



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 2 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 <http://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.



BY THE NUMBERS

The number of Americans who receive water from a public water system.

300
MILLION

1
MILLION

The number of miles of drinking water distribution mains in the U.S.

The number of gallons of water produced daily by public water systems in the U.S.

34
BILLION

135
BILLION

The amount of money spent annually on maintaining the public water infrastructure in the U.S.

The number of active public water systems in the U.S.

151
THOUSAND

199
THOUSAND

The number of highly trained and licensed water professionals serving in the U.S.

The age in years of the world's oldest water, found in a mine at a depth of nearly two miles.

2
BILLION

Table Talk

Get the most out of the Testing Results data table with this simple suggestion. In less than a minute, you will know all there is to know about your water:

For each substance listed, compare the value in the Amount Detected column against the value in the MCL (or AL, SMCL) column. If the Amount Detected value is smaller, your water meets the health and safety standards set for the substance.

Other Table Information Worth Noting

Verify that there were no violations of the state and/or federal standards in the Violation column. If there was a violation, you will see a detailed description of the event in this report.

If there is an ND or a less-than symbol (<), that means that the substance was not detected (i.e., below the detectable limits of the testing equipment).

The Range column displays the lowest and highest sample readings. If there is an NA showing, that means only a single sample was taken to test for the substance (assuming there is a reported value in the Amount Detected column).

If there is sufficient evidence to indicate from where the substance originates, it will be listed under Typical Source.



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 that 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.

What Are PFAS?

Per- and polyfluoroalkyl substances (PFAS) are a group of manufactured chemicals used worldwide since the 1950s to make fluoropolymer coatings and products that resist heat, oil, stains, grease, and water. During production and use, PFAS can migrate into the soil, water, and air. Most PFAS do not break down; they remain in the environment, ultimately finding their way into drinking water. Because of their widespread use and their persistence in the environment, PFAS are found all over the world at low levels. Some PFAS can build up in people and animals with repeated exposure over time.

The most commonly studied PFAS are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). PFOA and PFOS have been phased out of production and use in the United States, but other countries may still manufacture and use them.

Some products that may contain PFAS include:

- Some grease-resistant paper, fast food containers/wrappers, microwave popcorn bags, pizza boxes
- Nonstick cookware
- Stain-resistant coatings used on carpets, upholstery, and other fabrics
- Water-resistant clothing
- Personal care products (shampoo, dental floss) and cosmetics (nail polish, eye makeup)
- Cleaning products
- Paints, varnishes, and sealants

Even though recent efforts to remove PFAS have reduced the likelihood of exposure, some products may still contain them. If you have questions or concerns about products you use in your home, contact the Consumer Product Safety Commission at (800) 638-2772. For a more detailed discussion on PFAS, please visit <https://www.atsdr.cdc.gov/pfas/index.html>.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. The water we deliver to consumers is required to meet specific health standards. Here, we show only 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 in water treatment is to remove contaminants and to keep all detections of substances in the water safely below their respective maximum allowed levels.

The State of Ohio does not require annual monitoring for substances whose concentrations do not change frequently. For these substances, the most recent sample data are included in this report, along with the year in which the sample was taken.

Due to our excellent record of compliance with State and Federal regulations for drinking water, Middletown has a current, unconditioned license to operate issued by Ohio EPA.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Antimony (ppb)	2020	6	6	1.7	NA	No	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics; Solder
Barium (ppm)	2020	2	2	0.0489	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	2021	[4]	[4]	0.727	0.67–0.78	No	Water additive used to control microbes
Fluoride (ppm)	2021	4	4	0.887	0.66–1.06	No	Erosion of natural deposits; Water additive that promotes strong teeth; Discharge from fertilizer and aluminum factories
Haloacetic Acids [HAAs]–Stage 1 (ppb)	2021	60	NA	6.5	5.5–6.5	No	By-product of drinking water disinfection
Nitrate (ppm)	2021	10	10	1.5	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
TTHMs [Total Trihalomethanes]–Stage 1 (ppb)	2021	80	NA	25.5	18.6–25.5	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)	2019	1.3	1.3	0.062	0.0019–0.0758	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2019	15	0	1.379	0.041–7.18	0/31	No	Lead services lines; Corrosion of household plumbing systems including fittings and fixtures; Erosion of natural deposits

OTHER REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Gross Alpha (pCi/L)	2017	3	NA	1.6	NA	No	Erosion of natural deposits
Radium 228 (pCi/L)	2017	1	NA	0.52	NA	No	Erosion of natural deposits

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 that, if exceeded, triggers treatment or other requirements that 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

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).