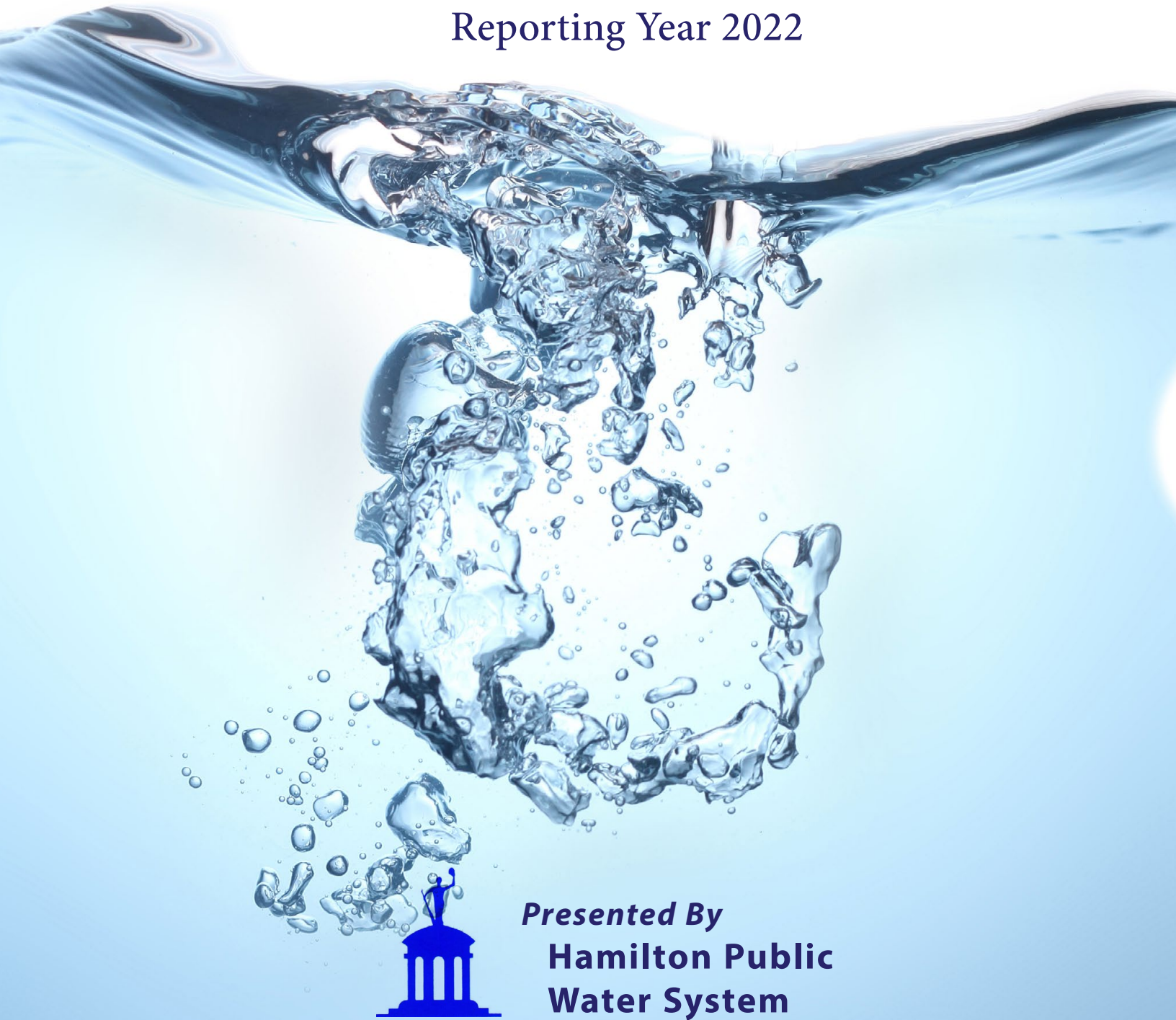
ANNUAL WATER QUALITY REPORT

Reporting Year 2022



Presented By

Hamilton Public Water System

PWS ID#: OH0904012

Our Mission Continues

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.

Water Treatment Process

The treatment process consists of a series of steps. First, raw water is drawn from our deep wells and sent to aerators, which allow the dissolved gas to release in the atmosphere and oxidize any soluble metals such as iron and manganese that are present. The water then goes to the solids contact clarifiers, where lime (calcium oxide, CaO) is added. Flocculation occurs in the center zone, where the lime slurry contacts the raw water. This flocculation zone is baffled and has a diameter of 21 feet.

Next, the water passes upward through a sludge blanket, where the agglomerated floc particles become heavier and fall to the bottom of the basin to form sludge. A large mixer circulates the water and sludge, maintaining the reaction. The heavy solids settle to the bottom, and the clear water rises to the top of the basins, where it is collected through a series of radial launders. At this point, the water flows to recarbonation basins, where carbon dioxide is added to adjust pH. After that, the water is filtered through layers of anthracite coal and silicate sand. As smaller suspended particles are removed, turbidity disappears, and clear water collects in the underdrain system and flows to the clearwell, where we add chlorine dioxide for disinfection and fluoride to prevent tooth decay in children. Finally, water is pumped out to our distribution system and storage reservoirs via large-capacity, high-service pumps.

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.

Source Water Assessment

Ohio EPA completed a study of Hamilton's North and South Wellfields sources of drinking water to determine susceptibility to contamination. According to this study, the aquifer that supplies water to Hamilton's wells has a high susceptibility to contamination. This determination is based on (1) the lack of a protective layer of clay; (2) the shallow depth of the aquifer; and (3) the presence of significant potential contaminant sources in the protection area.

The City of Hamilton meets 100 percent of customer drinking water needs with groundwater pumped from the Great Miami Buried Valley Aquifer. This sand-and-gravel aquifer was formed by glaciers covering Ohio as recently as 10,000 years ago. It serves as the primary source of drinking water for many communities in southwest Ohio. Hamilton pumps groundwater to the North and South Water Treatment Plants using large-capacity wells located in Hamilton and the City of Fairfield.

To help ensure groundwater quality, the city is a member of a comprehensive source water protection program called the Hamilton to New Baltimore Groundwater Consortium, which includes education, source control strategies, groundwater monitoring, and a contingency and emergency response plan. This program was developed in conjunction with the City of Fairfield, the City of Cincinnati, and other local groundwater producers. We are known nationally for our protective strategies, youth and adult education outreach, and raising awareness about protecting our water source.

For more information on the city's source water protection program, please contact the Groundwater Consortium manager, Tim McLelland, at (513) 785-2464 or visit gwconsortium.org.

Public Meetings

We encourage public interest and participation in our community's future. City council meetings are held the second and fourth Wednesday of the month, at 6:00 p.m., in Council Chambers, 345 High Street. The Public Utilities Commission meets generally the second Thursday of the month, at 1:15 p.m., in the conference room at the City Garage, 2210 South Erie Boulevard. The public is welcome.

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.

What type of container is best for storing water?

Consumer Reports has consistently advised that glass or BPA-free plastics such as polyethylene are the safest choices. To be on the safe side, do not use any container with markings on the recycle symbol showing 7PC (that's code for BPA). You could also consider using stainless steel or aluminum with BPA-free liners.

How much emergency water should I keep?

Typically, one gallon per person per day is recommended. For a family of four, that would be 12 gallons for three days. Humans can survive without food for one month but can only survive one week without water.

How long can I store drinking water?

The disinfectant in drinking water will eventually dissipate, even in a closed container. If that container housed bacteria prior to filling up with the tap water, the bacteria may continue to grow once the disinfectant has dissipated. Some experts believe that water can be stored up to six months before needing to be replaced. Refrigeration will help slow the bacterial growth.

How long does it take a water supplier to produce one glass of treated drinking water?

It can take up to 45 minutes to produce a single glass of drinking water.

How many community water systems are there in the U.S.?

About 53,000 public water systems across the United States process 34 billion gallons of water per day for home and commercial use. Eighty-five percent of the population is served by these systems.

Which household activity wastes the most water?

Most people would say the majority of water use comes from showering or washing dishes; however, toilet flushing is by far the largest single use of water in a home (accounting for 40 percent of total water use). Toilets use about 4 to 6 gallons per flush, so consider an ultra-low-flow (ULF) toilet, which requires only 1.5 gallons.

QUESTIONS? For more information about this report, or for any questions relating to your drinking water, please call John Bui, Manager of Water & Wastewater Operations, at (513) 785-7426.

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.

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.

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

REGULATED SUBSTANCES

				South Plant		North Plant		Distribution System (North & South Plants)			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Alpha Emitters (pCi/L)	2020	15	0	2.8 +/- 1.99	NA	0.162 +/- 1.24	NA	NA	NA	No	Erosion of natural deposits
Antimony (ppb)	2020	6	6	NA	NA	0.55	NA	NA	NA	No	Discharge from petroleum refineries; Fire retardants; Ceramics; Electronics; Solder
Barium (ppm)	2020	2	2	0.0657	NA	0.0314	NA	NA	NA	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Chlorine Dioxide (ppb)	2022	[800]	[800]	580	110–580	470	240–470	NA	NA	No	Water additive used to control microbes
Chlorite (ppm)	2022	1	0.8	0.66	0.24–0.71	0.64	ND–0.72	NA	NA	No	By-product of drinking water disinfection
Combined Radium (pCi/L)	2020	5	0	0.673 +/- 0.47	NA	0.152 +/- 0.297	NA	NA	NA	No	Erosion of natural deposits
Fluoride (ppm)	2022	4	4	0.95	0.25–1.16	0.89	0.38–1.08	NA	NA	No	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Nitrate (ppm)	2022	10	10	0.90	NA	0.31	NA	NA	NA	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

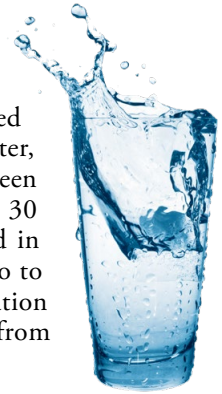
Tap water samples were collected for lead and copper analyses from sample sites throughout the community

				South Plant			North Plant			Distribution System (North & South Plants)				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	MCLG	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/TOTAL SITES	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/ TOTAL SITES	AMOUNT DETECTED (90TH %ILE)	RANGE LOW-HIGH	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2021	1.3	1.3	NA	NA	NA	NA	NA	NA	0.0200	ND–0.0467	0/30	No	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	2021	15	0	NA	NA	NA	NA	NA	NA	0.005	ND–1.0116	0/30	No	Lead service lines; Corrosion of household plumbing systems, including fittings and fixtures; Erosion of natural deposits

UNREGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	South Plant AMOUNT DETECTED	South Plant RANGE LOW-HIGH	North Plant AMOUNT DETECTED	North Plant RANGE LOW-HIGH	Distribution System (North & South Plants) AMOUNT DETECTED	Distribution System (North & South Plants) RANGE LOW-HIGH	TYPICAL SOURCE
Bromoform (ppb)	2022	NA	NA	NA	NA	0.60	NA	By-product of drinking water chlorination
Dibromoacetic Acid (ppb)	2022	NA	NA	NA	NA	1.7	NA	By-product of drinking water chlorination
Manganese (ppm)	2018	<0.0004	NA	0.0029	NA	NA	NA	Erosion of natural deposits; Certain manufacturing processes
Sulfate (ppm)	2020	NA	NA	NA	NA	55.6	NA	Naturally present in soil and rocks; Certain industrial processes, Sewage treatment; Landfills; Industrial waste sites

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 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.

Where Does My Water Come From?

The City of Hamilton meets 100 percent of customer drinking water needs with groundwater pumped from the Great Miami Buried Valley Aquifer. This sand-and-gravel aquifer was formed by glaciers covering Ohio as recently as 10,000 years ago and serves as the primary source of drinking water for many communities in southwest Ohio. Our water is pulled from about 210 feet below the surface. This groundwater has traveled for miles underground, naturally filtered by sand and gravel. The aquifer holds about 1.5 trillion gallons and is constantly being replenished from various sources.

Hamilton Water System pumps groundwater to the North and South Water Treatment Plants using large-capacity wells located in Hamilton and the City of Fairfield. The North Water Treatment Plant was constructed in 1935, and the South Water Treatment Plant was constructed in 1953; both draw from this underground water supply. Combined, our treatment facilities provided roughly 5.65 billion gallons of clean drinking water in 2022.

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).

TT (Treatment Technique): A required process intended to reduce the level of a contaminant in drinking water.