

ANNUAL WATER QUALITY REPORT 2023
CITY OF MANASSAS PARK
PWSID-6687100

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City of Manassas Park 2023 Water Quality Report

OUR COMMITMENT TO QUALITY

We are pleased to present the 2023 Water Quality Report. This edition covers all testing completed from January 1, 2023, to December 31, 2023. Once again, Manassas Park's drinking water met or exceeded all federal water quality regulatory limits. As always, we are committed to delivering the highest quality drinking water. To that end, we remain vigilant in meeting the challenges of improving the City's water quality, availability, and delivery system assets to serve the citizens of Manassas Park now and into the future. For more information about this report or any other water quality concerns, please contact the Manassas Park Department of Public Works:

Telephone: 703-393-0881

Email:

public.works@manassasparkva.gov



LEAD IN DRINKING WATER

Lead is an element that occurs naturally in our environment. Consequently, our water supply is expected to contain small, undetectable amounts of lead. If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. A dose that would have little effect on an adult can have a significant effect on a child. On average, it is estimated that lead in drinking water contributes between 10% and 20% of the total lead exposure in young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. The City of Manassas Park provides drinking water at an optimum pH and mineral content level to help prevent corrosion in your home's pipes.

The City of Manassas Park is responsible for providing high quality drinking water but cannot control the variety of materials used in plumbing components.

The EPA estimates that more than 40 million U.S. residents use water that can contain lead in excess of the EPA's action level of 15 ppb. 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. Use only water from the cold-water tap for drinking, cooking and for making baby formula. Hot water is likely to contain higher levels of lead.

If you are concerned about lead in your water, you may wish to have your water tested. 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 go to the EPA website - www.epa.gov/safewater/lead



Water Sources - Where Does My Water Come From?

The city is divided into two zones: a high-pressure zone and a low-pressure zone. Hydraulic grade lines define these zones. The low-pressure zone serves all areas west of Route 28 and the high-pressure zone serves all areas east of Route 28.

The high-pressure zone is supplied with surface water drawn from the Potomac River, treated at Fairfax Water's Northern Treatment Facility, The James J. Corbalis Plant and purchased from the **Prince William County Service Authority (PWCSA)**.

The low-pressure zone is supplied with surface water drawn from Lake Manassas, a 790+ acre impoundment on Broad Run located in Western Prince William County that holds 5.3 billion gallons of water at full capacity. Water from Lake Manassas is treated at the **City of Manassas Water Treatment Plant** and purchased from the City of Manassas.

For more information regarding these watersheds, go to the U.S. Environmental Protection Agency (EPA) website at www.epa.gov/waterdata/how-my-waterway

Under provisions of the Safe Drinking Water Act, states are required to develop comprehensive Source Water Assessment Programs that provide the following information:

- Identification of watershed that supplies public tap water
- An inventory of contaminants present in the watershed
- An assessment of watershed susceptibility to contamination

The Virginia Department of Health (VDH) conducted a Source Water Assessment of the Lake Manassas Reservoir and the Potomac River in 2020. Both watersheds were determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. This determination is consistent with the state's finding of other surface waters throughout the Commonwealth of Virginia. VDH assessment reports consist of maps that illustrate source water assessment areas, an inventory of known land use activities and documentation of any known source water contamination within the five year study period.

You may access these individual water quality reports as follows:

City of Manassas: (Lake Manassas) www.manassascity.org, or contact Katelyn Geiger, Water Department Compliance Officer at (703) 257-8477 or email kgeiger@ci.manassas.va.us

Prince William County Service Authority (PWCSA), Fairfax Water fcwa.org or call (703) 698-5600.

This report contains important information about your drinking water. Please translate it or speak with someone who understands it. If you are a landlord, please share a copy of this report with your tenants.

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SUBSTANCES THAT MIGHT BE IN DRINKING WATER

Drinking water, including bottled water, may be reasonably expected to contain small amounts of some contaminants. However, the presence of contaminants does not necessarily indicate that the water presents a public health risk. The City of Manassas Park's water supply meets or exceeds all U.S. Environmental Protection Agency and Virginia Department of Health safety standards. This 'Annual Water Quality Report,' required by the Safe Drinking Water Act informs you about where your water comes from, includes continuous test results that attest to quality and provides additional information about our water system. 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 (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. The Water Quality Data Table on page 3 of this report lists all drinking water contaminants that were detected. None of these contaminants exceeded the prescribed drinking water standards.

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, and can pick up 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 that may come from wastewater treatment plants, septic systems, agricultural livestock operations and wildlife.

Inorganic Contaminants: such as salts and metals, which can be naturally occurring or may result from urban storm water 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 storm water 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 storm water runoff and septic systems.

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

SPECIAL HEALTH INFORMATION

Some people may be more vulnerable than the general population to contaminants in drinking water. Immuno-compromised persons, such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons with HIV/AIDS or other immune system disorders, and some elderly and infants can be at risk from infections. These people should seek advice from their health care providers about drinking water. The EPA and the Centers for Disease Control (CDC) issue guidelines on appropriate measures to reduce the risk of infection by cryptosporidium and other microbial contaminants. Call the EPA Safe Drinking Water hotline at **1-800-426-4791** for more information.

HYDRANT FLUSHING - SPRING CLEANING FOR OUR WATER SYSTEM

In an effort to ensure safe, high quality drinking water for our residents, the City of Manassas Park performs hydrant flushing exercises that clean and disinfect the interior of our water distribution system.

Hydrant flushing is the process of opening specific fire hydrants throughout the city, allowing a rapid flow of water to surge through the water distribution mains. This increased flow produces a scouring effect that helps to remove sediment from within the distribution system.

DISINFECTION TREATMENT

The City coordinates hydrant flushing activity with a change in the disinfection treatment process implemented by our water source providers, the City of Manassas and the Prince William County Service Authority (Fairfax Water - James J. Corbalis Treatment Plant). During this time, the type of chlorine used is changed from chloramine to free chlorine, a more aggressive treatment. This temporary change prevents bacteria from developing resistance to the regular disinfection treatment process. Chloramines and free chlorine are both safe and effective.

Some customers may notice a slight increase in the smell of chlorine, while others may not notice any changes at all, as taste/odor sensitivity levels are unique to each individual.

The Virginia Department of Health publishes guidelines on the minimum and maximum concentrations for disinfectants in drinking water. Our source providers maintain the water quality within those guidelines. As a result, the water provided to the City of Manassas Park is safe for people and animals to drink, for cooking and bathing and for all other common household uses.

For water usage specific to such purposes as kidney dialysis, aquarium usage, or for businesses requiring highly processed water, precautions must be taken to remove or neutralize chloramines and chlorine.



For additional information on drinking water standards, please go to www.vdh.virginia.gov or you may contact the City of Manassas Park Department of Public Works at (703) 393-0881 with additional questions about your drinking water.

During the past year, hundreds of water samples have been tested to determine the presence of any radioactive, biological, inorganic, volatile organic, or synthetic organic contaminants. The table below shows only those contaminants that were detected in the water. The state requires us to monitor certain substances less than once per year because the concentration of these substances does not change frequently. In these cases, the most recent sample data are included along with the year in which the sample was taken. **There were no microbiological detections in 2023.**

Disinfection & Disinfection By-Products	Unit of Measure	MCL [MRDL]	MCLG [MRDLG]	LEVEL DETECTED	RANGE LOW - HIGH	VIOLATION	TYPICAL SOURCE
Chlorine	ppm	[4]	[4]	1.99	0.41 - 3.4	No	Water additive used to control microbes
Haloacetic Acids [HAA]	ppb	60	N/A	27	9-27	No	By-product of drinking water disinfection
THMs [Total Trihalomethanes]	ppb	80	N/A	46	13 - 46	No	By-product of drinking water chlorination.

Contaminants	Unit of Measure	MCL [MRDL]	MCLG [MRDLG]	AMOUNT DETECTED	RANGE LOW - HIGH	VIOLATION	TYPICAL SOURCE
Barium	ppm	2	2	0.030	ND - 0.030	No	Discharge of drilling wastes, metal refineries; erosion from natural deposits
Fluoride	ppm	4	4	0.70	0.50 - 0.70	No	Water additive which promotes strong teeth
Nitrate [as Nitrogen]	ppm	10	10	1.60	ND - 1.60	No	Runoff from fertilizer use;

ND - Non-detect, below detection level ppm = parts per million ppb = parts per billion pCi/L = picocuries per liter

Contaminant information provided by the City of Manassas Water Treatment Facility and the PWCSA (Fairfax Water—James J. Corbalis Water Treatment Plant)

Non-Regulated Contaminants	MCL	Level Detected (ppm)	TYPICAL SOURCE
Sodium	N/A	18.5	Naturally occurring, road salts, water softeners

Total Organic Carbon	MCL (MRDL)	MCLG (MRDLG)	Violation	Typical Source
	TT ¹ (ratio ²)	N/A	NO	Naturally present in the environment

Total Organic Carbon has no health effects. However, it provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes and haloacetic acids. Compliance with the treatment technique reduces the formation of these disinfection byproducts.

¹ TT - Treatment Technique

² Ratio of actual Total Organic Carbon removal versus required Total Organic Carbon removal between source and treated waters.

Total Organic Carbon information provided by the City of Manassas Water Treatment Plant and the PWCSA (Fairfax Water— James J. Corbalis Water Treatment Plant)

Turbidity	MCL	MCLG	Highest Single Measurement	Lowest Monthly % Samples meeting Treatment Turbidity Limit	TYPICAL SOURCE
	TT ¹ (NTU ²)	N/A	0.2080	100%	Soil run-off

Turbidity levels are measured during the treatment process after water has been filtered, but before disinfection. The turbidity level of filtered water shall be less than or equal to 0.3 NTU in at least 95% of the measurements taken each month and shall at no time exceed 1 NTU.

¹ TT - Treatment Technique

² NTU = Nephelometric Turbidity Unit n/a = not applicable

Turbidity information provided by the City of Manassas Water Treatment Plant and the PWCSA (Fairfax Water— James J. Corbalis Water Treatment Plant)

Lead and Copper	Unit of Measure	Action Level	MCLG	90th Percentile	Sites Above Action Level	Violation	TYPICAL SOURCE
Copper	ppm	1.3	1.3	0.125	0	No	Corrosion of household plumbing systems
Lead	ppb	15	0	< 2.5	0	No	Corrosion of household plumbing systems including fittings and fixtures.

Lead and Copper: Tap water samples were collected from 30 sample sites throughout the community in 2021. The next round of Lead and Copper testing will be Performed in 2024.

No microbiological detections occurred in 2023.

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Table Definitions

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.

NRL: No regulatory limit

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

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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).

Removal Ratio: A ratio between percentage of a substance actually removed to the percentage of the substance required to be removed.

Reporting Limit: The smallest concentration of a chemical that can be reported by a laboratory.

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

Turbidity: A measure of the clarity of the water, measured in Nephelometric Turbidity Units (NTU). Turbidity has no health effects, however it can interfere with disinfection while providing a medium for microbial growth.

QRAA: Quarterly Running Annual Average

UNREGULATED CONTAMINANT MONITORING RULE 5

(UCMR5)

Poly-and Perfluoroalkyl Substances (PFAS)

PFAS are a group of man-made chemicals manufactured and used in home and consumer products, such as carpets, clothing, food packaging, and cookware, since the 1940s. These “forever chemicals” have characteristics that make them useful in products such as nonstick cookware, waterproof clothing, firefighting foam, carpet, cleaning products, and other items with grease/oil/water-resistant properties as well as in some manufacturing processes. Exposure to PFAS occurs mostly through contact with consumer products and food. Drinking water contaminated with PFAS can be a significant portion of a person’s total PFAS exposure. Exposure to PFAS over a long time, and during certain critical life stages, such as pregnancy and in developing infants, may lead to negative health effects.

PFAS can enter the environment from multiple sources, and because they tend to break down very slowly in the environment, they can end up in the water sources that many communities rely on for drinking water. Reducing PFAS in drinking water helps to reduce PFAS health risks. Due to years of use, PFAS are everywhere in the environment. Industrial sites might release PFAS into the water or air. The use of household products containing PFAS may release PFAS when those products are thrown away or washed down the drain (www.epa.gov/pfas).

The Safe Drinking Water Act (SDWA) requires that every five years the EPA issue a list of unregulated contaminants to be monitored by public water systems. Unregulated contaminants are those for which the Environmental Protection Agency (EPA) has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is necessary. The Fifth Unregulated Contaminant Monitoring Rule (UCMR 5) was published on December 27, 2021. UCMR 5 requires sample collection for 29 per- and polyfluoroalkyl substances (PFAS) and lithium between 2023 and 2025 using analytical methods developed by the EPA and consensus organizations. The City of Manassas Park began the required sample collection and analysis in June, 2023 and completed the process in March, 2024. The results of the 2023-2024 UCMR5 testing are shown in the table below:

UNREGULATED PERFLUORINATED COMPOUNDS

Contaminant	Year Sampled	Unit	Amount Detected	Range Detected
Perfluoropentanoic acid (PFPeA)*	2024	ppb	0.0045	ND - 0.0045
Perfluorohexanoic acid (PFHxA)*	2024	ppb	0.0035	ND - 0.0035

For more information about PFAS, please go to <https://www.epa.gov/pfas> or call the Manassas Park Department of Public Works at 703-393-0881 or email public.works@manassasparkva.gov



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Water Conservation

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water but can also save you money by reducing your water bill. Here are a few suggestions to help you conserve water and save money:

Conservation measures you can use inside your home include:

- Fix leaking faucets, pipes, toilets
- Replace old fixtures; install water-saving devices in faucets, toilets, and appliances
- Wash only full loads of laundry
- Do not use the toilet for trash disposal
- Take shorter showers

You can conserve outdoors as well:

- Water the lawn and garden in the early morning or evening
- Use mulch around plants and shrubs
- Repair leaks in faucets and hoses

Information on other ways that you can help conserve water can be found at:
<https://www.epa.gov/watersense/start-saving>



Are You Flushing Money Down the Toilet?

Toilets are the number one source of water leaks inside the home, so this is the best place to begin leak detection. Because a toilet leak can waste up to 200+ gallons of water (and \$\$\$) per day, it is important to regularly test your toilets and quickly repair any leaks.

To determine if a toilet is leaking, place a few drops of colored liquid such as food coloring, fruit punch, cola or brewed coffee in the toilet *tank* and allow it to remain over a 20/30 - minute test period. Do not flush or use the toilet during the test. If the color begins to appear in the toilet *bowl* at any time during the test period, then you have a leak that needs to be repaired.

If you discover a toilet leak, make sure the lift (flapper) chain is free of kinks and that you don't have any mineral buildup around your valves that might prevent them from sealing properly. You can also use the adjustment screw on the overflow pipe to lower the water level in the tank and keep it from flowing into the overflow pipe. Most overflow pipes have a line on the pipe that indicates where the water level needs to be.

If the flapper valve or plunger ball isn't properly sealing at the bottom of the toilet, you will also have leaks.

Repair supplies are available at your local hardware store and big box retailers.

Cross Connection Control

Cross-connections are unprotected connections between a potable water system and any source or system containing untreated water or a substance that may be considered unsafe.

Over the last several years, the American Water Works Association has documented hundreds of incidents nationwide involving cross-connections that resulted in back-flow of contaminants into potable water supplies. Examples include illness caused by pesticides, antifreeze, metals, paint solvents and acid entering the water supply.

You might not think of your home as having hazards that could affect the municipal water supply; however, a common garden hose submerged in a swimming pool or water bucket creates a cross-connection. If a water main break occurs or if a nearby fire hydrant is in use, water pressure drops, and the potential exists for a suction (backflow) event to occur. This means that water in your kiddie pool or carwash bucket could be drawn back into the water system.

Once there, the contaminated water could spread quickly to thousands of people. This is a serious concern of all water utilities. We can treat water, but we need to continue to protect it once it leaves the treatment plant and flows through the distribution system.

In order to prevent contaminants from being drawn into our potable water supply through an undesirable reversal of flow in our distribution system, the Manassas Park Cross Connection Control Plan requires the installation of devices between the potable water supply and the source of potential contamination. All homes and businesses should have backflow protection. For additional information, please go to our website at www.manassasparkva.gov, under "Government"/Codes and Ordinances", Chapter 7, Article III.

For more information about this report, please contact:

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