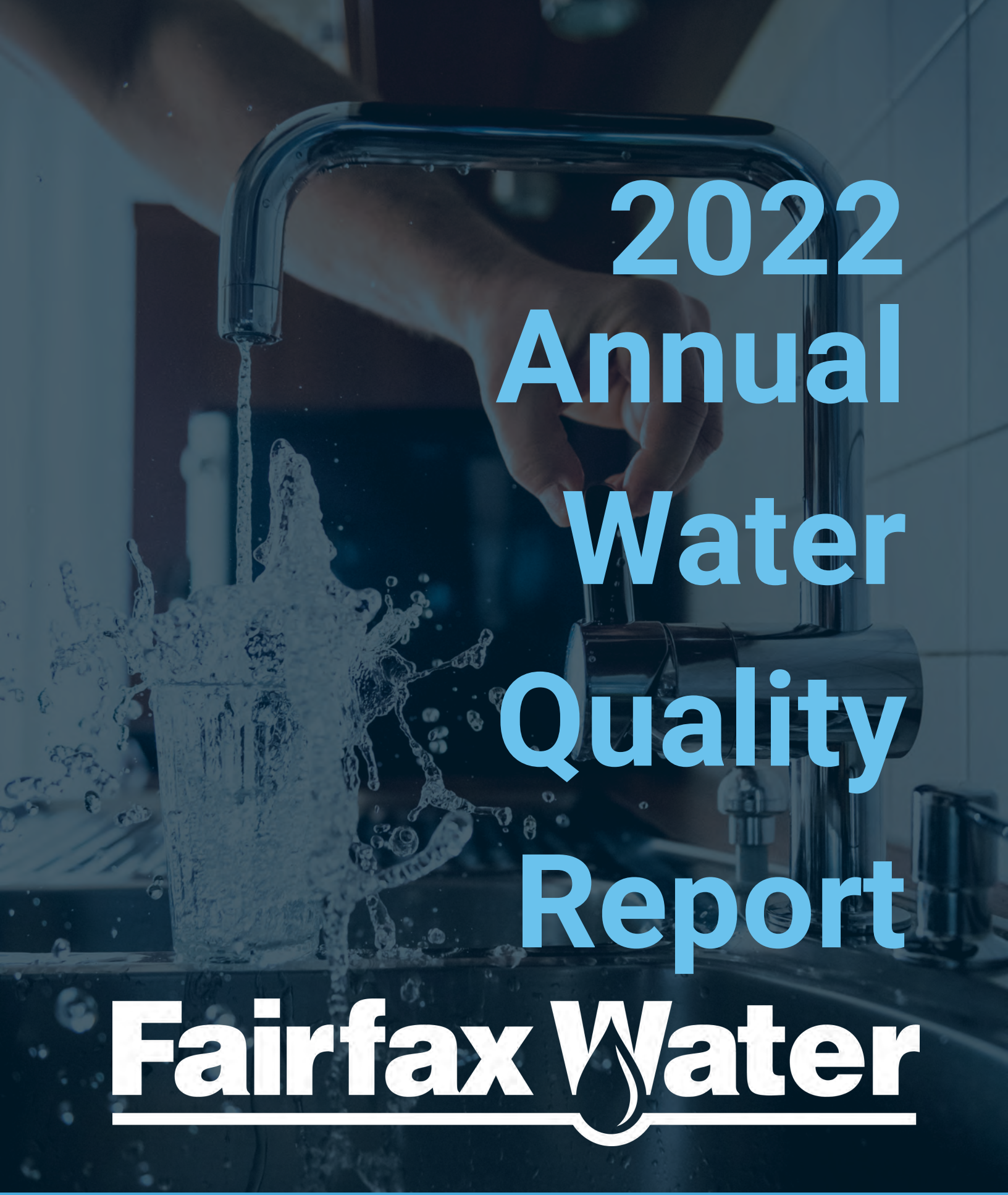


2022 Annual Water Quality Report

Fairfax Water

Table of Contents

Your Water Quality at a Glance

What is the quality of your drinking water in Fairfax County?
Good news—the quality of your water is excellent! Analysis shows that the water meets or surpasses all State and Federal regulations.

What is in this report?
This report contains data from our water quality analyses completed in 2021. We prepare this annual report to meet Environmental Protection Agency (EPA) requirements under the Safe Drinking Water Act.

How can I learn more about my water?
Continue reading this report to view the data and learn about source water, water treatment, and more.

Board Meeting Information

Fairfax Water's Board typically meets the first and third Thursday of each month at 6:00 p.m. in the Bill G. Evans Boardroom of the Fairfax Water offices at 8570 Executive Park Avenue in Fairfax. Notices of public hearings and other opportunities for public participation are posted in the lobby and on the website at fairfaxwater.org. If you plan to attend a meeting or need more information, contact Fairfax Water at 703-698-5600 (TTY 711), to confirm the date and time for the meeting.

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시는 친구와 상의하십시오.

Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.

El informe contiene información importante sobre la calidad del agua en su comunidad. Tradúzcalo o hable con alguién que lo entienda bien.

This report contains very 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.

Letter From the Chairman

June 2022

My fellow Fairfax Water customers,

Once again, I'm pleased to inform you that the quality of your water is excellent and surpasses both State and Federal regulations. Your water quality continues to be outstanding year after year, thanks to our dedicated team of professionals at Fairfax Water. This commitment to quality and reliability has been a part of Fairfax Water's legacy since its creation 65 years ago.

In addition to celebrating the utility's 65th anniversary later this year, we are also celebrating the 40th anniversary of our James J. Corbalis Jr. Water Treatment Plant in Herndon. It is one of two drinking water treatment plants owned and operated by Fairfax Water and is the largest drinking water treatment plant in Virginia. The plant was designed to expand and evolve as the region grew and demand for water increased. Over the years, the plant's capacity has expanded from 50 million gallons per day to 225 million gallons per day.

As we celebrate these milestones, I am grateful for the incredible service of our dedicated staff. So much has changed since 1957, but our dedication to providing high-quality water to our customers has remained constant. In 2022, we will provide water to more than 2 million friends, families, and businesses in the area.

The Board and I are proud of this accomplishment, and I hope you, our customers, feel the same way.

Philip W. Allin
Chairman of the Board
Fairfax Water

Letter From the General Manager

June 2022

Dear Fairfax Water customers,

Our mission is to provide our customers with reliable and abundant water of exceptional quality at a reasonable price. As you will see in this report, your water quality is excellent. It is important to note that water of exceptional quality starts at the source. In our case, the sources are the Potomac River and the Occoquan Reservoir. We are very fortunate to have these two high-quality sources and protecting them as drinking water supplies is vitally important.

Source water protection is the first step in a multi-barrier approach to producing safe drinking water. There are many benefits to source water protection, including public health protection and ecosystem improvements. Ultimately, a consistent supply of high-quality source water is safer, as well as easier and more cost-effective, for water utilities to treat.

In this report, you will find additional information about source water protection and water quality data. I encourage you to learn more about source water protection and ways to preserve the high-quality of our drinking water sources. Any step, big or small, will help to protect these supplies for future generations.

Thank you for the opportunity to provide high-quality drinking water to you and your loved ones. We understand and appreciate how vital water is to the community, and we remain committed to this task.

Jamie Bain Hedges, P.E.
General Manager
Fairfax Water

Understanding Your Water Quality

How is our water quality?

Your water quality is excellent. As a Fairfax Water customer, you drink water that consistently surpasses all federal and state standards. Of the 214 compounds tested, very few were found in our drinking water. Those found were in negligible amounts that were well below the EPA's maximum contaminant levels.

How is our water tested and by whom?

Fairfax Water's state-certified Water Quality Laboratory performs or manages the testing required by federal and state regulations. In addition to regulatory testing, many other analyses are performed to monitor the quality of Fairfax Water's raw water sources, water within the treatment process, and water within the distribution system. Water undergoing the treatment process is continuously monitored for pH, turbidity, coagulation efficiency, and disinfectant residuals using technologically advanced online monitoring systems. Chlorine, pH, and temperature testing are also performed at sample sites throughout the system using portable instrumentation. The results for much of the 2021 testing are included in the tables on pages 15-26 of this report. For additional analytical reports, visit fairfaxwater.org or call 703-698-5600 (TTY 711).

How is my water treated?

Fairfax Water provides water that is treated at four treatment plants. The James J. Corbalis Jr. and the Frederick P. Griffith Jr. treatment plants are owned and operated by Fairfax Water. The Dalecarlia and McMillan treatment plants, part of the Washington Aqueduct, are owned and operated by the U.S. Army Corps of Engineers. Fairfax Water's treatment plants use advanced technologies and practices in drinking water treatment, which is the process of cleaning raw water to make it safe for you to drink. When untreated water enters the treatment plant, coagulants are added to cause small particles to adhere to one another, become heavy, and settle in a sedimentation basin.

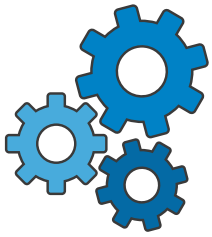
The water is then filtered through carbon and sand to remove any remaining fine particles. It is disinfected with chlorine to kill harmful bacteria and viruses. A corrosion inhibitor is added to help prevent leaching of lead and copper that might be in household plumbing. Fluoride is added to protect teeth. Powdered activated carbon and potassium permanganate may also be added to the treatment process to remove taste and odor-causing compounds. In addition to these treatment steps, the Corbalis and Griffith plants use ozone to further reduce odors and organic material.

The Water Treatment Process

Throughout this report, you will find many references to water in different stages of the treatment process.

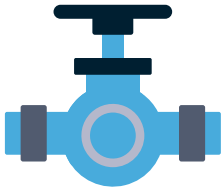
Raw Water Source

Water in its natural state that feeds into our treatment plants.



Process

Water at various points during the treatment process.



Finished Water

Water leaving the treatment plant for distribution or storage.

Distribution

Treated water piped from our facilities to your home or business.

Finding Your Water Quality

This water quality report provides information for all customers whose drinking water is provided by Fairfax Water. Our raw water comes from two sources and is treated at four treatment plants. You can use the map shown here to determine where your water comes from and what water quality data applies to your drinking water.

Note the color of the map in the area where you live. Use this color coding throughout the report to identify the information that relates to your drinking water. If you are still uncertain which service area is yours, or if you have additional questions, visit fairfaxwater.org or call 703-698-5800, TTY 711.

Customers in this service area receive water from the Potomac River that is treated at the Dalecarlia and McMillan water treatment plants, part of the Washington Aqueduct system, which are owned and operated by the U.S. Army Corps of Engineers. See report on page 19.

Customers in this service area receive water from the Potomac River that is treated at the Dalecarlia Water Treatment Plant, part of the Washington Aqueduct system, which is owned and operated by the U.S. Army Corps of Engineers. See report on page 23.

Customers in this service area receive water from the Potomac River and Occoquan Reservoir that is treated at the James J. Corbalis Jr. or Frederick P. Griffith Jr. treatment plants, which are owned and operated by Fairfax Water. See report on page 15.

This report covers contaminants as required by the U.S. Environmental Protection Agency. For information on additional measurements, please refer to the “additional data” links on each of the service area pages.

Information About Source (Raw) Water

Sources of Drinking Water

The sources of all drinking water, both tap water and bottled water, include rivers, lakes, streams, ponds, reservoirs, springs, and groundwater. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material. It can also pick up substances resulting from the presence of animals or from human activity. Contaminants that could be present in source water include:

- Microbial contaminants, such as viruses and bacteria which can come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or can result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which can come from a variety of sources, such as agriculture or residential uses and urban stormwater runoff.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production and also come from gas stations, urban stormwater runoff, septic systems, and decaying plants.
- Radioactive contaminants that can be naturally occurring or can be the result of oil and gas production or mining activities.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at 800-426-4791, TTY 711. The EPA has also completed a source water assessment that can be found at bit.ly/3dAYMFH.

Sources of *Your* Water

Fairfax Water draws raw water from two primary sources: the Potomac River and the Occoquan Reservoir, which is fed by the Occoquan River. The Corbalis, Dalecarlia, and McMillan treatment plants treat water from the Potomac River. The Griffith Treatment Plant treats water from the Occoquan Reservoir. The four facilities that treat your water feed an interconnected distribution system.

Why Is Source Water Protection Important?

Water utilities rely on sustainable sources of water that can be treated to provide reliable, high-quality drinking water. Source water protection is the first of several barriers to ensuring safe drinking water. Source water protection provides many benefits, including public health protection and ecosystem improvements. It involves identifying potential threats to drinking water, assessing the risk associated with those threats, and establishing proactive measures that can help address them.

Effective source water protection utilizes practices that can eliminate, reduce, or control contaminant levels. The list below represents some of the available options.

- Encourage land-use planning and zoning approaches that protect water quality, such as open space and overlay districts.
- Encourage implementation of environmental site design practices, such as rain gardens, green infrastructure, low-impact development, and environmentally friendly landscaping.
- Limit use of lawn fertilizers and pesticides, and avoid application near source water areas, streams, and impervious surfaces. Determine the amount of fertilizer needed for soil so the appropriate amount is applied and excess does not run off.
- Properly dispose of
  - Household chemicals, including lawn care and vehicle cleaning chemicals.
  - Petroleum products.
  - Pet waste.
  - Unused or expired chemicals and pharmaceuticals.
- Report pollution events, such as oil or chemical spills, that could impact the drinking water supply. Speedy reporting of a spill can greatly reduce the impact on drinking water. To report a suspected spill on the Potomac River or Occoquan Reservoir, contact:
  - Virginia Department of Emergency Management
    - VA Emergency Operations Center – Report a spill 24 hours
    - Phone: 800-468-8892
  - Virginia Department of Environmental Quality
    - Business hours: 703-583-3800
    - After hours: 800-468-8892

Fairfax Water's Source Water Protection Efforts

Fairfax Water participates in various regional efforts focused on source water protection, including the Occoquan Watershed Monitoring Program, the Potomac River Drinking Water Source Protection Partnership, and others. We also support local source water protection efforts through our Water Supply Stakeholder Grant Program. Since 2000, we've awarded over $780,000 through this grant program. Visit **fairfaxwater.org/water-supply** to learn more about Fairfax Water's source water and protection efforts.

Source Water Assessment

Under the provisions of the federal Safe Drinking Water Act, states are required to develop comprehensive source water assessment programs that meet the following requirements:

- Identify watersheds that supply public tap water.
- Provide an inventory of contaminants present in the watershed.
- Assess susceptibility to contamination in the watershed.

Source water assessments for the watersheds are conducted by the Virginia Department of Health. The assessment consists of maps of the evaluated watershed area, an inventory of known land-use activities, and documentation of any known source water contamination within the last five years. Fairfax Water's source water assessment report is available by visiting our website at **fairfaxwater.org/swap** or by calling Fairfax Water at 703-698-5600, TTY 711.

Be a Source Water Hero! Scan the QR code to learn more about how you can protect drinking water sources.

Facts About Per- and Polyfluoroalkyl Substances (PFAS)

PFAS are a group of over 6,000 man-made chemicals that have been manufactured and used in home consumer products such as carpets, clothing, food packaging, and cookware since the 1940s. Two of these compounds—perfluorooctanoic acid and perfluorooctanesulfonic acid —have been the most extensively produced and studied, and there is evidence that exposure to elevated levels of PFAS can lead to adverse health outcomes in humans.

Reducing Your Exposure to PFAS

- Support efforts to protect drinking water sources and keep PFAS out of water supplies.
- Read ingredient lists and choose products without PTFE or per- and polyfluoro-.
- Look for coats, hats, and boots labeled "water-resistant." They're less likely to have PFAS than waterproof products.
- Steer clear of ordering food in grease-resistant wrappers or containers.
- Avoid carpets and upholstery treated to be stain, or water-resistant; decline stain treatment.
- Ask manufacturers if their products contain PFAS. These chemicals are often not listed.

To learn more and view Fairfax Water's most recent PFAS results, visit **fairfaxwater.org/water-quality/facts-about-pfas** or scan the QR code to the right.

Reducing Exposure to Lead

Fairfax Water's distribution system does not contain lead pipe because we have made an extensive effort to identify and replace any lead service connections in the older areas of our system. Depending on when it was constructed, your home's plumbing could contain lead. The level of lead in water can increase when the water stands in contact with lead-based plumbing. Keep reading for important information about safe lead levels and how to reduce your exposure to lead.

Fairfax Water's Sources

The EPA has established an action level for lead in water of 15 parts per billion (ppb). When lead testing is performed as required by the EPA, 90% of the samples must contain less than 15 ppb. This is usually referred to as the 90th percentile results being less than 15 ppb.

The action level was not designed to measure health risks from water represented by individual samples. Rather, it is a statistical trigger value that, if exceeded, could require more treatment, public education, and possibly lead service line replacement where such lines exist. Fairfax Water does not have any lead service lines in its system.

Fairfax Water has been testing for lead in accordance with the EPA's Lead and Copper Rule since 1992 and has regularly tested below the action level established in the rule. The next EPA-required monitoring will be conducted in 2023 for the legacy service area and Falls Church service area.

What Can I Do in My Home to Reduce Exposure to Lead?

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. Fairfax Water is responsible for providing high-quality drinking water but cannot control the materials used in plumbing components in home construction.

If you are concerned about lead in your water, following these tips can help minimize the potential for lead exposure:

- Use only fresh, cold water for cooking and making baby formula.
- When your water has been sitting for several hours, flush your tap for 30 seconds to two minutes until the water becomes colder or until it reaches a steady temperature before using the water for drinking or cooking.
- Do not boil water to remove lead. Boiling water will not reduce lead.
- Some people choose to install a filter in their home. If you choose a water filter, follow these three rules:
  - Choose a filter designed for the specific filtration desired (chlorine, lead, *Cryptosporidium*, etc.).
  - Make sure the filter is approved by NSF International (nsf.org).
  - Maintain the filter as directed.
- Test your water for lead. For information about lead level testing, call the Fairfax Water Customer Service Department at 703-698-5800, TTY 711.
- Regularly clean your faucet aerator. This removes particles from your household plumbing that could contain lead.
- Consider buying low-lead fixtures. Look for fixtures with the lowest lead content. Visit nsf.org to learn more.

For More Information

In addition to the tips above, information about lead in drinking water, testing methods, and steps you can take to minimize exposure can be found at **epa.gov/safewater/lead** or by calling the Safe Drinking Water Hotline at 800-426-4791, TTY 711.

Understanding Water Quality Test Results

To ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in the water provided by waterworks. The U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water that must provide the same protection for public health.

In general, drinking water standards are regulated by a maximum contaminant level (MCL) or a treatment technique (TT). For parameters with an MCL, the utility must sample at the required frequency, and results must be below the MCL. Depending on the parameter, the MCL could apply to individual results, an average of all results in a calendar year, or an average of all results in a calendar year for a specific site.

For parameters with a TT, the utility must sample at the required frequency and is required to take action (such as a change in treatment) if specified conditions are not met. Specified conditions vary per regulation. For instance, the TT for turbidity requires action to be taken if the percentage of filtered water turbidity results that are less than 0.3 nephelometric turbidity units falls below 95%. If this were to occur, the utility must perform corrective action until the specified conditions are met.

In the water quality test results on pages 15 - 26 and elsewhere in this report, you may find terms and abbreviations you are not familiar with. On the next page is a quick reference guide to help you better understand unfamiliar terms and abbreviations.

Important Information From the EPA

Drinking Water and People With Weakened Immune Systems

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer who are undergoing chemotherapy, those who have undergone organ transplants, those with HIV/AIDS or other immune system disorders; some elderly; and infants can be particularly at risk from infections. If you are in one of these at-risk groups, you should seek advice about drinking water from your health care provider.

The EPA and the Centers for Disease Control guidelines on appropriate means to lessen the risk of infection from *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at 800-426-4791.

Key Terminology and Abbreviations

90th percentile – Represents the highest value found out of 90% of the samples taken in a representative group. If the 90th percentile is greater than the action level, it will trigger a treatment or additional requirements that a water system must follow.

AL or action level – The concentration of a contaminant that, if exceeded, requires a water system to carry out an additional treatment or other action.

LRAA or locational running annual average – An ongoing annual average calculation of data at one specific location; not based on an individual result.

MCL or 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 or 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 or maximum residual disinfectant level – The highest level of a disinfectant allowed in drinking water.

MRDLG or maximum residual disinfectant level goal – The level of a disinfectant in drinking water below which there is no known or expected risk to health.

NA or not applicable – Does not apply to this subject or in this scenario.

ND or non-detect – A level at which there is an inability to detect an analyte because it is indistinguishable from the background signal.

NTU or nephelometric turbidity unit – A measure of cloudiness or haziness of water.

pCi/L or picocuries per liter – A radioactivity concentration unit.

ppb or parts per billion – One ppb corresponds to one penny in $10,000,000.

ppm or parts per million – One ppm corresponds to one penny in $10,000.

QRAA or quarterly running annual average – An ongoing annual average calculation of data from the most recent four quarters.

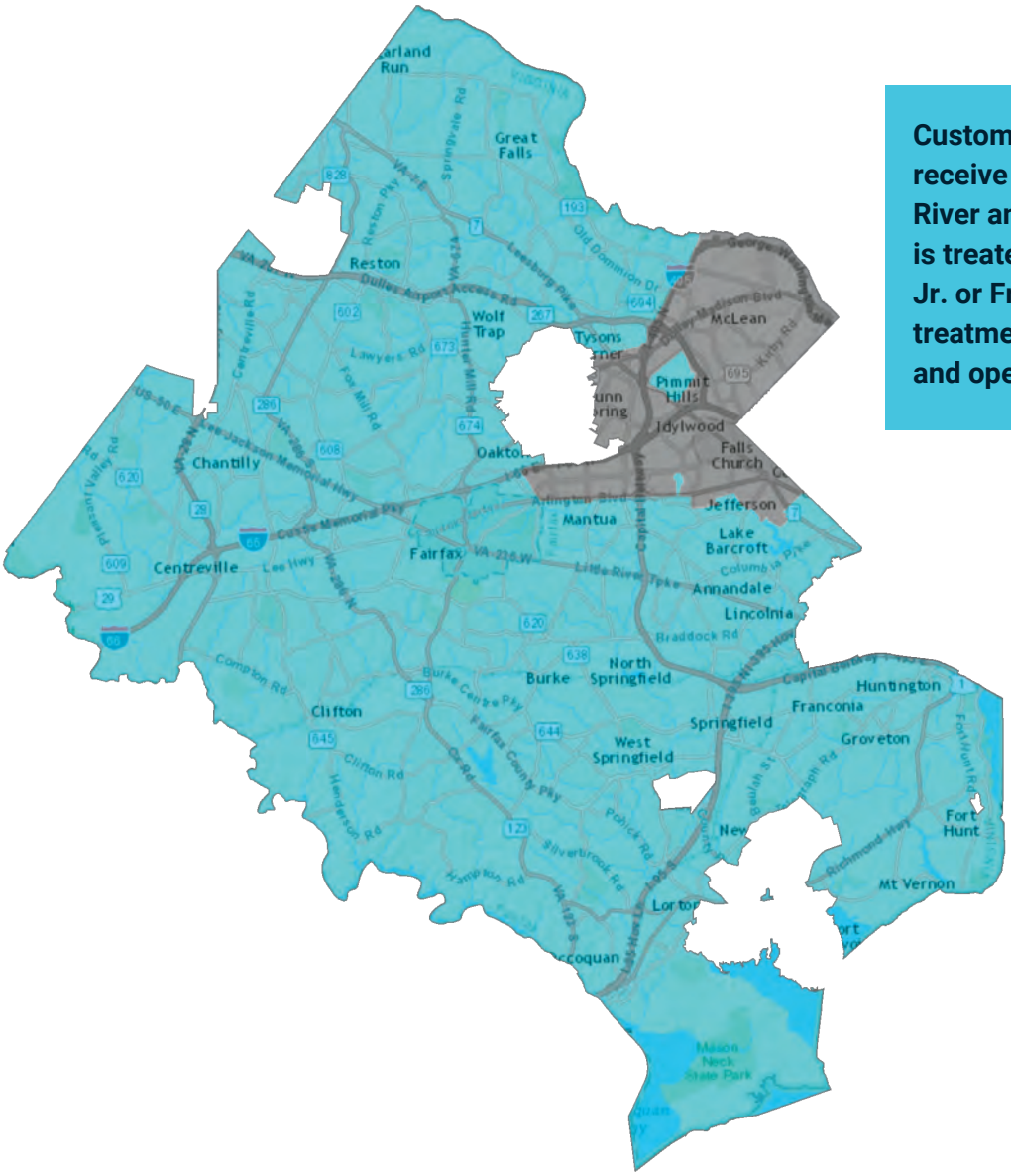
TT or treatment technique – A required process intended to reduce the level of a contaminant in drinking water.

2021 Water Quality Tables

Fairfax Water Customers in the Legacy and City of Fairfax Service Areas

The Water Quality Laboratory at Fairfax Water monitors for more than 214 different parameters, from alkalinity to zinc! Some of the monitoring is required for regulatory purposes, some for process and emerging technology, and even more for customer information. In 2021, data points were gathered from 8,091 samples of water for 214 parameters. The tables on pages 16-18 show the results of the monitoring that is required by State and Federal regulations. The monitoring was conducted for the Griffith and Corbalis water treatment plants between Jan. 1 and Dec. 31, 2021, unless otherwise noted.

Visit the Fairfax Water website at **fairfaxwater.org/water-quality** for more water quality information and to view additional data.



Customers in this service area receive water from the Potomac River and Occoquan Reservoir that is treated at the James J. Corbalis Jr. or Frederick P. Griffith Jr. treatment plants, which are owned and operated by Fairfax Water.

Summary of Finished Water Characteristics

Component	Ideal Goal (EPA MCLG*)	Highest Level Allowed (EPA MCL*)	Range (Individual Results)	Violation	Common Sources in Drinking Water
Barium (ppm)	2	2	ND - 0.046	No	Discharge of drilling wastes; discharge from metal refineries; erosion from natural deposits
Beta/photon emitters[1, 2] (pCi/L)	0	50	ND - 4.78	No	Decay of natural and man-made deposits
Radium 226/228 [1, 2] (pCi/L)	0	5	ND - 0.19	No	Decay of natural and man-made deposits
Fluoride (ppm)	4	4	0.6 - 0.8	No	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrite [as Nitrogen] (ppm)	1	1	ND - 0.012	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrate [as Nitrogen] (ppm)	10	10	0.52 - 1.78	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Sodium (ppm)	§	§	10.6 - 44.2	No	Erosion of natural deposits; Runoff from road deicing chemicals; Discharge from industrial sources; Wastewater treatment plant effluent
Uranium[1, 2] (ppb)	0	30	ND - 0.09	No	Erosion of natural deposits

*Unless otherwise specified, MCLG and MCL applies to an individual result.

1 Results for Beta/photon emitters, Radium 226/228, and Uranium were below the minimum detection limits prescribed in the EPA Consumer Confidence Rule as stated in 40 CFR 141.151 (d) and are not required for CCR reporting; however, Fairfax Water follows laboratory convention for reporting radiological sample results to the laboratory detection limit.

2 As granted by the State, Fairfax Water is on reduced monitoring for these parameters based upon historical results. The results above are taken from the most recent monitoring period in 2019.

§ There are no regulatory State or Federal limits established for this parameter.

Component	Treatment Technique (TT) [3]	Range (Monthly Ratio QRAA)	Violation	Common Sources in Drinking Water
Total Organic Carbon	Monthly ratio QRAA > 1	1.2 - 1.6	No	Naturally present in the environment

Total Organic Carbon (TOC) has no health effects, however it provides a medium for the formation of disinfection by-products. These by-products include trihalomethanes and haloacetic acids.

3 Compliance is based upon a Quarterly Running Annual Average (QRAA) of the monthly ratios of actual Total Organic Carbon removal between the source water and the treated water in a calendar year (not based on an individual result).

Summary of Finished Water Characteristics

Turbidity (NTU)	**Highest Level Allowed (EPA MCL*)**	**Highest Individual Result for Year**	**Violation**	**Common Source in Drinking Water**
	1	0.21	No	Soil runoff
	Treatment Technique (TT)	**Lowest Monthly % of Samples Meeting ≤0.3 NTU Limit**	**Violation**	**Common Source in Drinking Water**
	Turbidity of filtered water must be ≤0.3 NTU in 95% or more samples	100%	No	Soil runoff

Turbidity levels are measured during the treatment process after the water has been filtered, but before disinfection.

*Unless otherwise specified, MCL applies to an individual result.

E. coli	**Ideal Goal (EPA MCLG)***	**Highest Level Allowed (EPA MCL)**	**# of Positive *E. coli* samples this year**	**Violation**	**Assessment Required[4]**	**Common Source in Drinking Water**
	0	Repeat sample is *E. coli* positive OR Routine sample is *E. coli* positive followed by Repeat sample that is Total Coliform positive OR System fails to take all required repeat samples following *E. coli* positive routine sample OR System fails to analyze for *E. coli* when any repeat sample tested positive for Total Coliform	Routine = 0 Repeat = 0	No	No	Human and animal fecal waste

4 If an *E. coli* MCL violation occurs, an assessment to determine the cause would be performed and corrective action taken.

*Unless otherwise specified, MCLG and MCL apply to an individual result.

Summary of Finished Water Characteristics

Metals	Action Level §	90th Percentile Result §	Number of Sites Above Action Level §	Violation	Common Source in Drinking Water
Copper (ppm)[5]	1.3	0.094	0	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)[5]	15	1.00	1	No	Corrosion of household plumbing systems; erosion of natural deposits

§ Refer to definitions for full description of terms

5 As granted by the State, Fairfax Water is on reduced monitoring for these parameters based upon historical results. The results above are taken from the most recent monitoring period in 2020.

Disinfection By-products	Ideal Goal (EPA MCLG *)	Highest Level Allowed (EPA MCL*)[6]	Highest LRAA for all sites	Range (Individual Results)	Violation	Common Source in Drinking Water
Total Trihalomethanes (ppb)	0	LRAA = 80	53.3	4.1 - 110.2	No	By-product of drinking water disinfection
Haloacetic Acids (5) (ppb)	0	LRAA = 60	35.5	1.3 - 73.6	No	By-product of drinking water disinfection

*Unless otherwise specified, MCLG and MCL applies to an individual result.

6 Compliance is based upon site-specific Locational Running Annual Averages (LRAAs) (not based upon an individual result).

Total Chlorine (ppm)	Ideal Goal (EPA MRDLG*)	Highest Level Allowed (EPA MRDL*)[7]	Highest QRAA	Range (Individual Results)	Violation	Common Source in Drinking Water
	4	QRAA = 4.0	2.9	1 - 3.9	No	Water additive used to control microbes

*Unless otherwise specified, MRDLG and MRDL applies to an individual result.

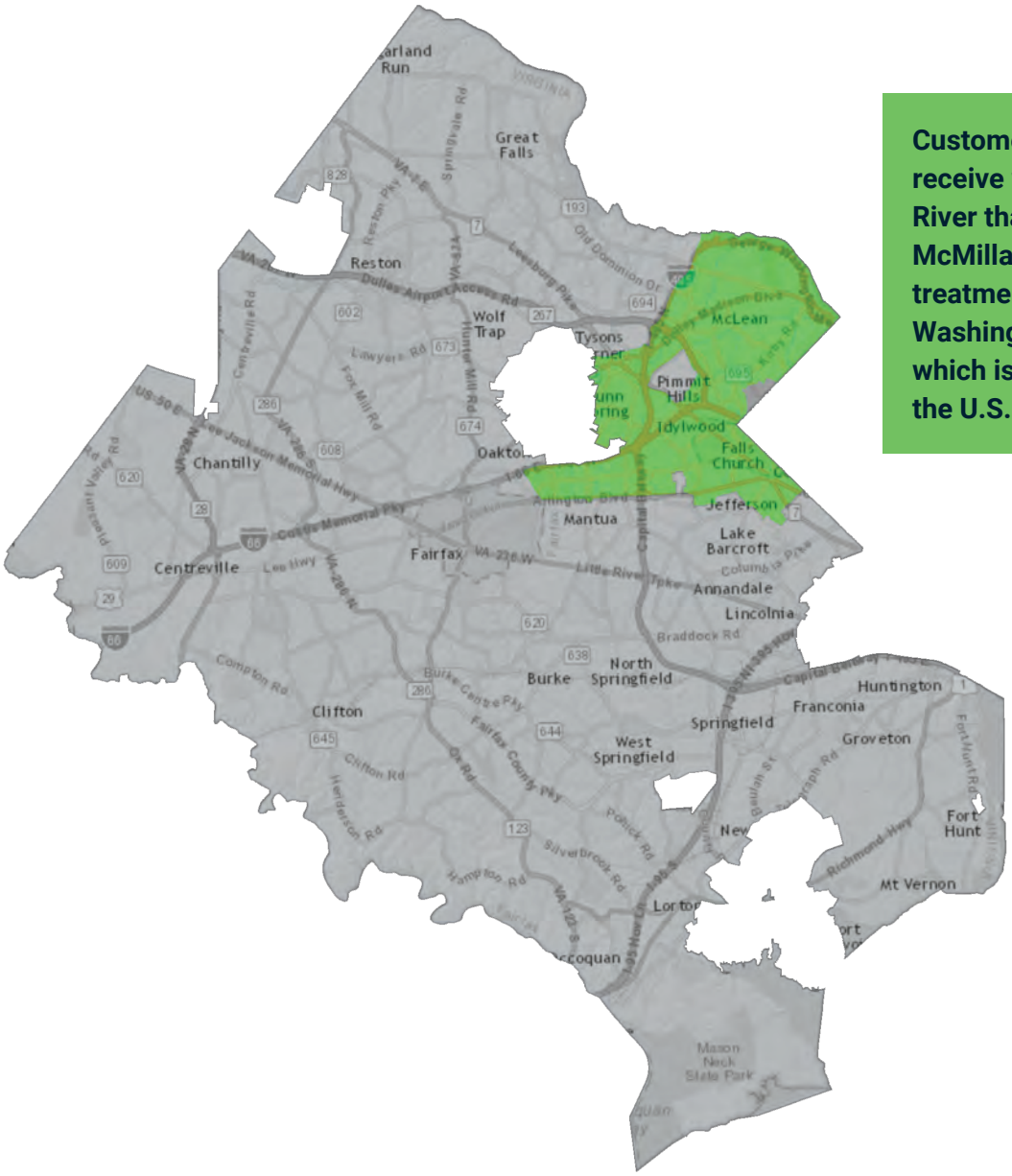
7 Compliance is based upon a Quarterly Running Annual Average (QRAA) of all the regulatory chlorine results in a calendar year (not based on an individual result).

2021 Water Quality Tables

Fairfax Water Customers in the City of Falls Church Service Area

Even though you are a Fairfax Water customer, your water is supplied by the Washington Aqueduct Division of the U.S. Army Corps of Engineers. The tables on pages 20-22 show the results of the monitoring that is performed by the Washington Aqueduct and Fairfax Water as required by State and Federal regulations. Unless otherwise noted, the monitoring was conducted between Jan. 1 and Dec. 31, 2021.

Visit **bit.ly/3znZ3dh** for more information about your water quality.



Customers in this service area receive water from the Potomac River that is treated at the McMillan and Dalecarlia water treatment plants, part of the Washington Aqueduct system, which is owned and operated by the U.S. Army Corps of Engineers.

Summary of Finished Water Characteristics

Component	Ideal Goal (EPA MCLG*)	Highest Level Allowed (EPA MCL*)	Range (Individual Results)	Violation	Common Sources in Drinking Water
Arsenic (ppb)	0	10	ND - 0.4	No	Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes
Atrazine (ppb)	3	3	ND - 0.2	No	Runoff from herbicide used on row crops
Barium (ppm)	2	2	0.03 - 0.04	No	Discharge of drilling wastes; discharge from metal refineries; erosion from natural deposits
Beta/photon emitters[1, 2] (pCi/L)	0	50	ND - 4	No	Decay of natural and man-made deposits
Dalapon (ppb)	200	200	ND - 1.0	No	Runoff from herbicide used on rights of way
Di(2-ethylhexyl) phthalate (ppb)	0	6	ND - 1.0	No	Discharge from industrial chemical factories
Fluoride (ppm)	4	4	0.5 - 0.8	No	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Gross Alpha Particles[2] (pCi/L)	0	15	ND - 7.0	No	Decay of natural and man-made deposits
Nitrate [as Nitrogen] (ppm)	10	10	0.3 - 2.0	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Radium 226/228 [2] (pCi/L)	0	5	ND - 4	No	Decay of natural and man-made deposits
Simazine (ppb)	4	4	ND - 0.1	No	Herbicide runoff
Sodium (ppm)	§	§	15 - 67	§	Erosion of natural deposits; Runoff from road deicing chemicals; Discharge from industrial sources; Wastewater treatment plant effluent
2,4-D (ppb)	70	70	ND - 0.2	No	Runoff from herbicide used on row crops

*Unless otherwise specified, MCLG and MCL applies to an individual result.

1 Results for Beta/photon emitters were below the minimum detection limits prescribed in the EPA Consumer Confidence Rule as stated in 40 CFR 141.151 (d) and are not required for CCR reporting; however, Fairfax Water follows laboratory convention for reporting radiological sample results to the laboratory detection limit.

2 As granted by the EPA Region III, the Washington Aqueduct is on reduced monitoring for these parameters based upon historical results. The results above are taken from the most recent monitoring period in 2020.

§ There are no regulatory State or Federal limits established for this parameter.

Summary of Finished Water Characteristics

Component	Treatment Technique (TT)[3]	Range (Monthly Ratio QRAA)	Violation	Common Sources in Drinking Water
Total Organic Carbon	Monthly ratio QRAA > 1	1.2 - 1.3	No	Naturally present in the environment

Total Organic Carbon (TOC) has no health effects, however it provides a medium for the formation of disinfection by-products.

These by-products include trihalomethanes and haloacetic acids.

3 Compliance is based upon a Quarterly Running Annual Average (QRAA) of the monthly ratios of actual Total Organic Carbon removal between the source water and the treated water in a calendar year (not based on an individual result).

Turbidity (NTU)	**Highest Level Allowed (EPA MCL*)**	**Highest Individual Result for Year**	**Violation**	**Common Source in Drinking Water**
	1	0.09	No	Soil runoff
	Treatment Technique (TT)	**Lowest Monthly % of Samples Meeting ≤0.3 NTU Limit**	**Violation**	**Common Source in Drinking Water**
	Turbidity of filtered water must be ≤0.3 NTU in 95% or more samples	100%	No	Soil runoff

Turbidity levels are measured during the treatment process after the water has been filtered, but before disinfection.

*Unless otherwise specified, MCL applies to an individual result.

	Ideal Goal (EPA MCLG)*	Highest Level Allowed (EPA MCL)	# of Positive *E. coli* samples this year	Violation	Assessment Required[4]	Common Source in Drinking Water
E. coli	0	Repeat sample is *E. coli* positive OR Routine sample is *E. coli* positive followed by Repeat sample that is Total Coliform positive OR System fails to take all required repeat samples following *E. coli* positive routine sample OR System fails to analyze for *E. coli* when any repeat sample tested positive for Total Coliform	Routine = 0 Repeat = 0	No	No	Human and animal fecal waste

4 If an *E. coli* MCL violation occurs, an assessment to determine the cause would be performed and corrective action taken.

*Unless otherwise specified, MCLG and MCL apply to an individual result.

Summary of Finished Water Characteristics

Metals	Action Level §	90th Percentile Result §	Number of Sites Above Action Level §	Violation	Common Source in Drinking Water
Copper (ppm)[5]	1.3	0.094	0	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb)[5]	15	1.00	1	No	Corrosion of household plumbing systems; erosion of natural deposits

§ Refer to definitions for full description of terms

5 As granted by the State, Fairfax Water is on reduced monitoring for these parameters based upon historical results. The results above are taken from the most recent monitoring period in 2020.

Disinfection By-products	Ideal Goal (EPA MCLG *)	Highest Level Allowed (EPA MCL*)[6]	Highest LRAA for all sites	Range (Individual Results)	Violation	Common Source in Drinking Water
Total Trihalomethanes (ppb)	0	LRAA = 80	53.3	4.1 - 110.2	No	By-product of drinking water disinfection
Haloacetic Acids (5) (ppb)	0	LRAA = 60	35.5	1.3 - 73.6	No	By-product of drinking water disinfection

*Unless otherwise specified, MCLG and MCL applies to an individual result.

6 Compliance is based upon site-specific Locational Running Annual Averages (LRAAs) (not based upon an individual result).

Total Chlorine (ppm)	Ideal Goal (EPA MRDLG *)	Highest Level Allowed (EPA MRDL*)[7]	Highest QRAA	Range (Individual Results)	Violation	Common Source in Drinking Water
	4	QRAA = 4.0	2.9	1.0 - 3.9	No	Water additive used to control microbes

*Unless otherwise specified, MRDLG and MRDL applies to an individual result.

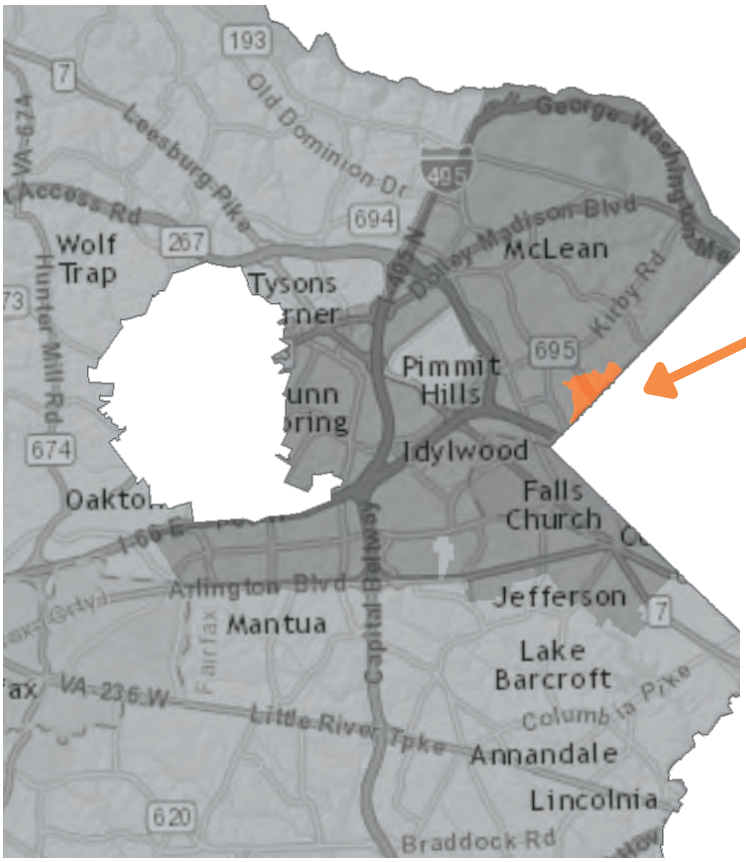
7 Compliance is based upon a Quarterly Running Annual Average (QRAA) of all the regulatory chlorine results in a calendar year (not based on an individual result).

2021 Water Quality Tables

Fairfax Water Customers in the Arlington Special Service Area

Even though you are a Fairfax Water customer, your water is supplied by the Washington Aqueduct Division of the U.S. Army Corps of Engineers. The tables on pages 24-26 show the results of the monitoring that is performed by the Washington Aqueduct and Fairfax Water as required by State and Federal regulations. Unless otherwise noted, the monitoring was conducted between Jan. 1 and Oct. 31, 2021. As of Nov. 1, 2021, the area that was designated as the Arlington Special System was added to the City of Falls Church Service Area.

Visit **bit.ly/3znZ3dh** for more information about your water quality.



Customers in this service area receive water from the Potomac River that is treated at the Dalecarlia Water Treatment Plant, part of the Washington Aqueduct system, which is owned and operated by the U.S. Army Corps of Engineers.

Summary of Finished Water Characteristics

Component	Ideal Goal (EPA MCLG*)	Highest Level Allowed (EPA MCL*)	Range (Individual Results)	Violation	Common Sources in Drinking Water
Arsenic (ppb)	0	10	ND - 0.4	No	Erosion of natural deposits; runoff from orchards; runoff from glass & electronics production wastes
Atrazine (ppb)	3	3	ND - 0.2	No	Runoff from herbicide used on row crops
Barium (ppm)	2	2	0.03 - 0.045	No	Discharge of drilling wastes; discharge from metal refineries; erosion from natural deposits
Beta/photon emitters[1, 2] (pCi/L)	0	50	ND - 4	No	Decay of natural and man-made deposits
Fluoride (ppm)	4	4	0.5 - 0.8	No	Water additive which promotes strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories
Gross Alpha Particles[2] (pCi/L)	0	15	ND - 7.0	No	Decay of natural and man-made deposits
Nitrate [as Nitrogen] (ppm)	10	10	0.3 - 2.0	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Radium 226/228[2] (pCi/L)	0	5	ND - 4	No	Decay of natural and man-made deposits
Simazine (ppb)	4	4	ND - 0.1	No	Herbicide runoff
Sodium (ppm)	§	§	15 - 67	§	Erosion of natural deposits; Runoff from road deicing chemicals; Discharge from industrial sources; Wastewater treatment plant effluent
2,4-D (ppb)	70	70	ND - 0.2	No	Runoff from herbicide used on row crops

*Unless otherwise specified, MCLG and MCL applies to an individual result.

1 Results for Beta/photon emitters were below the minimum detection limits prescribed in the EPA Consumer Confidence Rule as stated in 40 CFR 141.151 (d) and are not required for CCR reporting; however, Fairfax Water follows laboratory convention for reporting radiological sample results to the laboratory detection limit.

2 As granted by EPA Region III, the Washington Aqueduct is on reduced monitoring for these parameters based upon historical results. The results above are taken from the most recent monitoring period in 2020.

§ There are no regulatory State or Federal limits established for this parameter.

Summary of Finished Water Characteristics

Component	Treatment Technique (TT) [3]	Range (Monthly Ratio QRAA)	Violation	Common Sources in Drinking Water
Total Organic Carbon	Monthly ratio QRAA > 1	1.2 - 1.3	No	Naturally present in the environment

Total Organic Carbon (TOC) has no health effects, however it provides a medium for the formation of disinfection by-products.

These by-products include trihalomethanes and haloacetic acids.

3 Compliance is based upon a Quarterly Running Annual Average (QRAA) of the monthly ratios of actual Total Organic Carbon removal between the source water and the treated water in a calendar year (not based on an individual result).

	Highest Level Allowed (EPA MCL*)	Highest Individual Result for Year	Violation	Common Source in Drinking Water
Turbidity (NTU)	1 NTU	0.05	No	Soil runoff
	Treatment Technique (TT)	**Lowest Monthly % of Samples Meeting ≤0.3 NTU Limit**	**Violation**	**Common Source in Drinking Water**
	Turbidity of filtered water must be ≤0.3 NTU in 95% or more samples	100%	No	Soil runoff

Turbidity levels are measured during the treatment process after the water has been filtered, but before disinfection.

*Unless otherwise specified, MCL applies to an individual result.

Metals	Action Level §	90th Percentile Result §	Number of Sites Above Action Level §	Violation	Common Source in Drinking Water
Copper (ppm)	1.3	0.064	0	No	Corrosion of household plumbing systems; erosion of natural deposits
Lead (ppb) [4]	15	0.74	0	No	Corrosion of household plumbing systems; erosion of natural deposits

§ Refer to definitions for full description of terms

	Ideal Goal (EPA MCLG)*	Highest Level Allowed (EPA MCL)	# of Positive *E. coli* samples this year	Violation	Assessment Required [5]	Common Source in Drinking Water
E. coli	0	Repeat sample is *E. coli* positive OR Routine sample is *E. coli* positive followed by Repeat sample that is Total Coliform positive OR System fails to take all required repeat samples following *E. coli* positive routine sample OR System fails to analyze for *E. coli* when any repeat sample tested positive for Total Coliform	Routine = 0 Repeat = 0	No	No	Human and animal fecal waste

5 If an *E. coli* MCL violation occurs, an assessment to determine the cause would be performed and corrective action taken.

*Unless otherwise specified, MCLG and MCL applies to an individual result.

Disinfection By-products [6]	Ideal Goal (EPA MCLG *)	Highest Level Allowed (EPA MCL*)[7]	Highest LRAA for all sites	Range (Individual Results)	Violation	Common Source in Drinking Water
Total Trihalomethanes (ppb)	0	LRAA = 80	51.3	29.6 - 64.1	No	By-product of drinking water disinfection
Haloacetic Acids (5) (ppb)	0	LRAA = 60	37.1	17.9 - 46.1	No	By-product of drinking water disinfection

*Unless otherwise specified, MCLG and MCL applies to an individual result.

6 Monitoring was performed over all four quarters in 2021.

7 Compliance is based upon site-specific Locational Running Annual Averages (LRAAs) (not based upon an individual result).

	Ideal Goal (EPA MCLG)*	Highest Level Allowed (EPA MCL) [8]	Highest QRAA	Range (Individual Results)	Violation	Common Source in Drinking Water
Total Chlorine (ppm)	4	QRAA = 4	2.7	2.1 - 3.1	No	Water additive used to control microbes

*Unless otherwise specified, MRDLG and MRDL applies to an individual result.

8 Compliance is based upon a Quarterly Running Annual Average (QRAA) of all the regulatory chlorine results in a calendar year (not based on an individual result).

2021 *Cryptosporidium* Monitoring Statement

Cryptosporidium is a microbial pathogen sometimes found in surface water throughout the United States. Although filtration removes *Cryptosporidium*, the most commonly used filtration methods cannot guarantee 100% removal. Fairfax Water consistently maintains its filtration process in accordance with regulatory guidelines to maximize removal efficiency. Our monitoring indicates the occasional presence of these organisms in the source water. Current test methods do not allow us to determine whether the organisms are dead or if they are capable of causing disease.

Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested in order to cause disease. It may be spread through means other than drinking water, such as other people, animals, water, swimming pools, fresh food, soils, and any surface that has not been sanitized after exposure to feces.

Fairfax Water has completed monitoring the Potomac River and Occoquan Reservoir for compliance with Round 2 of the EPA Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR Round 2). The EPA created this rule to provide for increased protection against microbial pathogens, such as *Cryptosporidium*, in public water systems that use surface water sources. Fairfax Water's LT2ESWTR Round 2 monitoring program began in April 2015 and involved the collection of one sample from water treatment plant sources each month for a period of two years. Monitoring for compliance with the LT2ESWTR Round 2 was completed in March 2017.

Under the LT2ESWTR Round 2, the average *Cryptosporidium* concentration determines whether additional treatment measures are needed. A mean *Cryptosporidium* concentration of 0.075 oocysts/Liter triggers additional water treatment measures. Fairfax Water's raw water *Cryptosporidium* concentrations were below this threshold. Results for LT2ESWTR Round 2 monitoring for the period of 2015-2017 are as follows:

Legacy and City of Fairfax Service Areas

Source (Before Treatment)	Mean *Cryptosporidium* Concentration (Oocysts/Liter)	Final Bin Assignment Under LT2ESWTR Round 2
Potomac River	**0.000**	**Bin 1 (No additional Treatment Needed)**
Occoquan River	**0.007**	**Bin 1 (No additional Treatment Needed)**

The City of Falls Church Legacy and Arlington Special Service Areas

Cryptosporidium was monitored in the source water monthly in 2021 from January to December. *Cryptosporidium* oocysts were not detected in any of the samples collected at the intake. Based upon the system-specific requirements, no additional treatment measures were required at the Washington Aqueduct water treatment plants.

Be Winter Salt Smart!

What's the problem?

In the winter, salt keeps us safe while we are on the move, but it also leads to higher levels of salt in the region's drinking water supply, including the Potomac River and Occoquan Reservoir. Learn more and be winter salt smart!

What is winter salt?

Winter salt is rock salt (sodium chloride) or ice melt (a blend of sodium chloride, magnesium chloride, and other salt). These materials are used in the winter to prevent icing of sidewalks, parking lots, and roadways.

What are the benefits of winter salt use?

- Causes fewer incidents of slip and fall injuries.
- Reduces number of vehicle crashes.
- Enables businesses, government, and social services to operate with minimal interruption.

What are the downsides of its use?

- Salt on impervious surfaces (sidewalks, parking lots, roads, etc.) is eventually washed into storm drains, creeks, and rivers. This results in higher concentrations of salt in the region's drinking water sources: the Potomac River and Occoquan Reservoir.
- Salt causes corrosion to vehicles and infrastructure (roads, bridges, sidewalks, parking lots).
- Salt increases the salinity in streams and groundwater, impacting freshwater fish and other aquatic life.

Why is increased salt in the drinking water supply a problem?

- Salt cannot be removed via traditional drinking water and wastewater treatment processes.
- It is corrosive to plumbing.
- It has potential health impacts for those on low-sodium diets.

What can I do to help?

- **Shovel early**. Remove snow from pavements before it turns to ice. Use salt only after snow has been cleared and only in areas needed for safety.
- **Use less salt.** More salt does not mean more melting. A 12-ounce coffee mug of salt should be enough for a 20-foot driveway or about 10 sidewalk squares.
- **Spread evenly**. Try not to distribute in clumps.
- **Watch the temps**. When it is colder than 15 degrees Fahrenheit, do not apply winter salt. It will not work. In those cases, consider building traction with alternatives like sand or native bird seed.

To learn more , visit
fairfaxwater.org/winter-salt
or scan the QR code to the right.

Fairfax Water

Check Out Our *Updated* Customer Portal!

Visit fwcustomer.org or scan the QR code to jump to the portal!

Fairfax Water's self-service Customer Portal is a web-based platform that provides a convenient, single access point to your account information to use at any time on your desktop or mobile device via fwcustomer.org or our mobile app. Once registered, you can conduct transactions (such as making payments, viewing your bills, checking quarterly usage, and sending online messages) at your convenience.

We are pleased to announce that we have recently updated our Customer Portal to add more features for our customer's convivence. These new features are:

- Automated Start and Stop Service – this allows customers to start or stop service online.
- Scheduled Bank Payments allows customers to schedule a payment in the future.
- Guest User Access allows account holders to give access to their portal account to a third party.
- Tenant Authorization Form – Landlords can complete the Tenant Authorization Form on the Customer Portal.
- Swimming Pool Adjustment Form – Registered customers can now complete the Pool Adjustment form on the Customer Portal.
- Hydrant Customer Access – Our hydrant customers can now use the Customer Portal to access account information.

Not registered? Visit fwcustomer.org to register today!

Available on the App Store

ANDROID APP ON Google play

Fairfax Water

Contact Us

Customer Service:
703-698-5800 (TTY 711)

All other departments:
703-698-5600 (TTY 711)

After hours / emergencies:
703-698-5613 (TTY 711)

Website: www.fairfaxwater.org

Mailing Address:
Fairfax Water
8570 Executive Park Avenue
Fairfax, VA 22031

If you have comments or suggestions about this report, please contact us at pr@fairfaxwater.org or 703-698-5600 (TTY 711).