



Annual Water Quality Report For Reporting Year 2023

Town of Amherst, Virginia

PWSID #5009050

Annual Report Introduction:

We are pleased to present this year's Annual Water Quality Report (Consumer Confidence Report) as required by the Safe Drinking Water Act (SDWA). This report is designed to provide details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. This report is a snapshot of last year's water quality. We are committed to providing you with information because informed customers are our best allies.

Please call me if you have any questions or want more information about your drinking water. I'd be happy to hear from you.

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Where Does My Water Come From?

The Town of Amherst's source water for its drinking water is the Buffalo River and its associated watershed. The Amherst County Watershed Protection Ordinance provides exceptional protection for the entire Graham Creek and Mill Creek watersheds. The protected parts of the Buffalo River watersheds lie above the town's water intake point. The Watershed Protection Ordinance aims to prevent and minimize pollution from drinking water sources. It is almost always better and cheaper to avoid water pollution than it is to have to treat polluted water to make it safe to drink.

The Robert E. Lee Soil and Water Conservation District works with Amherst County to conduct land use surveys of the drinking water watersheds. If activities that might pollute the water are identified, landowners may be contacted. Farmers who install agricultural conservation practices that protect drinking supplies at the source may be eligible for a local incentive grant. Amherst Tree Buffer Program: Landowners who sign up will receive free native hardwood trees and tree shelters that must be planted along local waterways. This program is funded through forestry grants and strives to protect water at the source.

Source Water Assessment:

The Office of Drinking Water performed a source water assessment in April 2003

Substances That Could Be In Drinking Water:

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 Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791). 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, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity: microbial contaminants, such as viruses and bacteria, that may 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 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 can also come from gas stations, urban stormwater runoff, and septic systems; and radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities. To ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of specific contaminants in water provided by public water

systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

What Special Precautions Should Be Taken:

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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 can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. EPA/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Water Drinking Hotline (800-426-4791).

Water Quality Data Table:

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of contaminants in water provided by public water systems. The table below lists all of the drinking water contaminants that we detected during the calendar year of this report. Although many more contaminants were tested, only those substances listed below were found in your water. All sources of drinking water contain some naturally occurring contaminants. At low levels, these substances are generally not harmful in our drinking water. Removing all contaminants would be extremely expensive, and in most cases, would not provide increased protection of public health. A few naturally occurring minerals may actually improve the taste of drinking water and have nutritional value at low levels. Unless otherwise noted, the data presented in this table is from testing done in the calendar year of the report. The EPA or the State requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. As such, some of our data, though representative, may be more than one year old. In this table you will find terms and abbreviations that might not be familiar to you. To help you better understand these terms, we have provided the definitions below the table.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Detect In Your Water	Range		Sample Date	Violation	Typical Source
				Low	High			
Inorganic Contaminants								
Barium (ppm)	2	2	.0165	NA	NA	2023	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Copper - source water (ppm)	NA		NA	NA	NA	2023	No	Corrosion of household plumbing systems; Erosion of natural deposits
Sodium (optional) (ppm)	NA		9.22	NA	NA	2023	No	Erosion of natural deposits; Leaching
Microbiological Contaminants								
Fecal Indicator - enterococci/coliphage (positive samples)	NA		0	NA	NA	2023	No	Naturally present in the environment
Contaminants	MCLG	AL	Your Water	Sample Date	# Samples Exceeding AL	Exceeds AL	Typical Source	
Inorganic Contaminants								
Copper - action level at consumer taps (ppm)	1.3	1.3	.155	2022	0	No	Corrosion of household plumbing systems; Erosion of natural deposits	
Lead - action level at consumer taps (ppb)	0	15	.65	2022	0	No	Corrosion of household plumbing systems; Erosion of natural deposits	

Undetected Contaminants

The following contaminants were monitored for, but not detected, in your water.

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Violation	Typical Source
1,1,1-Trichloroethane (ppb)	200	200	ND	No	Discharge from metal degreasing sites and other factories
1,1,2-Trichloroethane (ppb)	3	5	ND	No	Discharge from industrial chemical factories
1,1-Dichloroethylene (ppb)	7	7	ND	No	Discharge from industrial chemical factories
1,2,4-Trichlorobenzene (ppb)	70	70	ND	No	Discharge from textile-finishing factories
1,2-Dichloroethane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
1,2-Dichloropropane (ppb)	0	5	ND	No	Discharge from industrial chemical factories
Arsenic (ppb)	0	10	ND	No	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Benzene (ppb)	0	5	ND	No	Discharge from factories; Leaching from gas storage tanks and landfills
Beryllium (ppb)	4	4	ND	No	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
Cadmium (ppb)	5	5	ND	No	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; runoff from waste batteries and paints
Carbon Tetrachloride (ppb)	0	5	ND	No	Discharge from chemical plants and other industrial activities
Chlorobenzene (monochlorobenzene) (ppb)	100	100	ND	No	Discharge from chemical and agricultural chemical factories
Chromium (ppb)	100	100	ND	No	Discharge from steel and pulp mills; Erosion of natural deposits
Ethylbenzene (ppb)	700	700	ND	No	Discharge from petroleum refineries
Lead - source water (ppm)	NA		ND	No	Corrosion of household plumbing systems; Erosion of natural deposits
Mercury [Inorganic] (ppb)	2	2	ND	No	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Selenium (ppb)	50	50	ND	No	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Styrene (ppb)	100	100	ND	No	Discharge from rubber and plastic factories; Leaching from landfills
Tetrachloroethylene (ppb)	0	5	ND	No	Discharge from factories and dry cleaners
Toluene (ppm)	1	1	ND	No	Discharge from petroleum factories
Trichloroethylene (ppb)	0	5	ND	No	Discharge from metal degreasing sites and other factories
Vinyl Chloride (ppb)	0	2	ND	No	Leaching from PVC piping; Discharge from plastics factories
Xylenes (ppm)	10	10	ND	No	Discharge from petroleum factories; Discharge from chemical factories

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Violation	Typical Source
cis-1,2-Dichloroethylene (ppb)	70	70	ND	No	Discharge from industrial chemical factories
o-Dichlorobenzene (ppb)	600	600	ND	No	Discharge from industrial chemical factories
p-Dichlorobenzene (ppb)	75	75	ND	No	Discharge from industrial chemical factories
trans-1,2-Dichloroethylene (pb)	100	100	ND	No	Discharge from industrial chemical factories

Unit Descriptions	
Term	Definition
ppm	ppm: parts per million, or milligrams per liter (mg/L)
ppb	ppb: parts per billion, or micrograms per liter (µg/L)
NA	NA: not applicable
ND	ND: Not detected
NR	NR: Monitoring not required, but recommended.
positive samples	positive samples/yr: The number of positive samples taken that year

Important Drinking Water Definitions	
Term	Definition
MCLG	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.
MCL	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.
TT	TT: Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.
AL	AL: Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
Variances and Exemptions	Variances and Exemptions: State or EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	MRDLG: Maximum residual disinfection 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.
MRDL	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.

Important Drinking Water Definitions	
MNR	MNR: Monitored Not Regulated
MPL	MPL: State Assigned Maximum Permissible Level

Poly- and Perfluoroalkyl Substances (PFAS) Overview and Current Activities:

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 (PFOA) and perfluorooctanesulfonic acid (PFOS)—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.

Water utilities are “passive receivers” of PFAS. They do not produce or manufacture PFAS. Instead, these chemicals are present in source waters that are treated to produce drinking water.

Regulations for PFAS:

The Environmental Protection Agency (EPA) is responsible for setting regulatory limits under the federal Safe Drinking Water Act. Currently, there are no approved federal water quality regulations for any PFAS compounds.

The EPA has taken some recent steps toward possible future regulation of PFAS:

- In [February 2021](#), the EPA issued a final determination to regulate PFOA and PFAS in drinking water. The agency also proposed to require water utilities to monitor for 29 PFAS compounds in drinking water.
- In [April 2021](#), the EPA announced it would form an EPA Council on PFAS to develop a national strategy to protect public health and make recommendations regarding PFAS.
- In [October 2021](#), EPA announced the agency’s PFAS Strategic Roadmap, detailing the agency’s approach to addressing PFAS.
- In [June 2022](#), the US EPA announced lifetime health advisory levels (HALs) for four PFAS chemicals. Interim HALs were announced for PFOS and PFOA. Final HALs were announced for perfluorobutane sulfonate (PFBS), and Gen-X (a PFOA replacement chemical).
- In [August 2022](#), the US EPA announced a proposal to designate PFOS and PFOA as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA).
- In [March 2023](#), EPA announced proposed PFAS standards for 6 types of poly- and perfluoroalkyl Substances (PFAS). Fairfax Water will evaluate the ability of our existing treatment processes to meet EPA’s proposed regulations. [Click here](#) to view Fairfax Water’s statement on the proposed regulations.

EPA’s Proposed PFAS Standards:

On March 14, 2023, the EPA announced its proposed national drinking water standards for 6 types of PFAS including proposed Maximum Contaminant Levels (MCLs) for PFOA and PFOS. The proposed standard also includes establishing a hazard index for a combination of four other PFAS compounds: perfluorononanoic acid (PFNA), hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX Chemicals), perfluorohexane sulfonic acid (PFHxS), and perfluorobutane sulfonic acid (PFBS). The levels of the proposed standards are listed in the table below. For more information on EPA’s proposed standards, visit: <https://www.epa.gov/sdwa/and-polyfluoroalkyl-substances-pfas>.

The EPA will now take the next steps in the regulatory development process before the proposed standards are finalized. It is important to note that the proposed PFAS MCLs are not enforceable drinking water standards at this time.

Health Advisories for PFAS:

Unlike EPA regulations, EPA’s health advisories (HA) are non-enforceable and non-regulatory and provide technical information to state agencies and other public health officials. Results greater than the HA do not mean that there is an emergency, violation, or an immediate health concern for customers. EPA’s health advisory levels offer information that may be used to protect people from adverse health effects resulting from exposure throughout their lives to contaminants in drinking water.

In 2016, the EPA HA was 70 parts ppt for PFOA and PFOS combined. Since then, analytical methods have improved, and utilities are now able to test down to lower levels. In June of 2022, EPA issued final HAs for PFBS and HPFO-DA (or GenX) and interim HAs for PFOS and PFOA. The EPA states that these interim health advisories will remain in place until EPA establishes a National Primary Drinking Water Regulation. The new HAs are listed in the table below. For more information on these HAs, please visit: <https://www.epa.gov/sdwa/questions-and-answers-drinking-water-health-advisories-pfoa-pfos-genx-chemicals-and-pfbs#q9>.

In October of 2022 the Virginia Department of Health conducted Phase 2 PFAS Monitoring of which water from the Town of Amherst's public water source was sampled for PFAS contaminants. Below is a list of PFAS Compounds and results of that study. Of note would be the "U" of "J" after the result value. U means the compound was analyzed for, but not detected. The J references the estimated concentration above the adjusted method detection limit and below the adjusted reporting limit. In short current test methods found the contaminate as "Non-Detectable".

Parameters	Results	Units	PQL	MDL	DF	Prepared	Analyzed	
11Cl-PF3OUdS	0.42U	ng/L	1.9	0.42	1	10/18/22 00:05	10/20/22 07:36	763051-92-9
4:2 FTS	0.54U	ng/L	1.9	0.54	1	10/18/22 00:05	10/20/22 07:36	757124-72-4
6:2 FTS	3.4U	ng/L	3.7	3.4	1	10/18/22 00:05	10/20/22 07:36	27619-97-2
8:2 FTS	0.46U	ng/L	1.9	0.46	1	10/18/22 00:05	10/20/22 07:36	39108-34-4
9Cl-PF3ONS	0.48U	ng/L	1.9	0.48	1	10/18/22 00:05	10/20/22 07:36	756426-58-1
ADONA	0.41U	ng/L	1.9	0.41	1	10/18/22 00:05	10/20/22 07:36	919005-14-4
HFPO-DA	0.70U	ng/L	1.9	0.70	1	10/18/22 00:05	10/20/22 07:36	13252-13-6
NFDHA	0.28U	ng/L	1.9	0.28	1	10/18/22 00:05	10/20/22 07:36	1551772-58-
Perfluorobutanesulfonic acid	0.41U	ng/L	1.9	0.41	1	10/18/22 00:05	10/20/22 07:36	375-73-5
Perfluorodecanoic acid	0.30U	ng/L	1.9	0.30	1	10/18/22 00:05	10/20/22 07:36	335-76-2
Perfluorohexanoic acid	0.34J	ng/L	1.9	0.30	1	10/18/22 00:05	10/20/22 07:36	307-24-4
PFBA	1.0J	ng/L	1.9	0.59	1	10/18/22 00:05	10/20/22 07:36	375-22-4
PFEESA	0.34U	ng/L	1.9	0.34	1	10/18/22 00:05	10/20/22 07:36	113507-82-7
PFHpS	0.38U	ng/L	1.9	0.38	1	10/18/22 00:05	10/20/22 07:36	375-92-8
PFMBA	0.25U	ng/L	1.9	0.25	1	10/18/22 00:05	10/20/22 07:36	863090-89-5
PFMPA	0.32U	ng/L	1.9	0.32	1	10/18/22 00:05	10/20/22 07:36	377-73-1
PFPeA	0.30U	ng/L	1.9	0.30	1	10/18/22 00:05	10/20/22 07:36	2706-90-3
PFPeS	0.34U	ng/L	1.9	0.34	1	10/18/22 00:05	10/20/22 07:36	2706-91-4
Perfluorododecanoic acid	0.51U	ng/L	1.9	0.51	1	10/18/22 00:05	10/20/22 07:36	307-55-1
Perfluoroheptanoic acid	0.42U	ng/L	1.9	0.42	1	10/18/22 00:05	10/20/22 07:36	375-85-9
Perfluorohexanesulfonic acid	0.35U	ng/L	1.9	0.35	1	10/18/22 00:05	10/20/22 07:36	355-46-4
Perfluorononanoic acid	0.32U	ng/L	1.9	0.32	1	10/18/22 00:05	10/20/22 07:36	375-95-1
Perfluorooctanesulfonic acid	0.34U	ng/L	1.9	0.34	1	10/18/22 00:05	10/20/22 07:36	1763-23-1
Perfluorooctanoic acid	0.30U	ng/L	1.9	0.30	1	10/18/22 00:05	10/20/22 07:36	335-67-1
Perfluoroundecanoic acid	0.40U	ng/L	1.9	0.40	1	10/18/22 00:05	10/20/22 07:36	2058-94-8
11Cl-PF3OUdS	0.42U	ng/L	1.9	0.42	1	10/13/22 17:00	10/15/22 21:10	763051-92-9L2
4:2 FTS	0.54U	ng/L	1.9	0.54	1	10/13/22 17:00	10/15/22 21:10	757124-72-4L2
6:2 FTS	3.3U	ng/L	3.7	3.3	1	10/13/22 17:00	10/15/22 21:10	27619-97-2L2
8:2 FTS	0.46U	ng/L	1.9	0.46	1	10/13/22 17:00	10/15/22 21:10	39108-34-4L2
9Cl-PF3ONS	0.47U	ng/L	1.9	0.47	1	10/13/22 17:00	10/15/22 21:10	756426-58-1L2
ADONA	0.41U	ng/L	1.9	0.41	1	10/13/22 17:00	10/15/22 21:10	919005-14-4L2
HFPO-DA	0.70U	ng/L	1.9	0.70	1	10/13/22 17:00	10/15/22 21:10	13252-13-6L2
NFDHA	0.28U	ng/L	1.9	0.28	1	10/13/22 17:00	10/15/22 21:10	1551772-58-L2
Perfluorobutanesulfonic acid	0.41U	ng/L	1.9	0.41	1	10/13/22 17:00	10/15/22 21:10	375-73-5L2
Perfluorodecanoic acid	0.30U	ng/L	1.9	0.30	1	10/13/22 17:00	10/15/22 21:10	335-76-2L2
Perfluorohexanoic acid	0.30U	ng/L	1.9	0.30	1	10/13/22 17:00	10/15/22 21:10	307-24-4L2
PFBA	0.59U	ng/L	1.9	0.59	1	10/13/22 17:00	10/15/22 21:10	375-22-4L2
PFEESA	0.33U	ng/L	1.9	0.33	1	10/13/22 17:00	10/15/22 21:10	113507-82-7L2
PFHpS	0.38U	ng/L	1.9	0.38	1	10/13/22 17:00	10/15/22 21:10	375-92-8L2
PFMBA	0.25U	ng/L	1.9	0.25	1	10/13/22 17:00	10/15/22 21:10	863090-89-5L2
PFMPA	0.32U	ng/L	1.9	0.32	1	10/13/22 17:00	10/15/22 21:10	377-73-1L2
PFPeA	0.30U	ng/L	1.9	0.30	1	10/13/22 17:00	10/15/22 21:10	2706-90-3L2
PFPeS	0.33U	ng/L	1.9	0.33	1	10/13/22 17:00	10/15/22 21:10	2706-91-4L2
Perfluorododecanoic acid	0.51U	ng/L	1.9	0.51	1	10/13/22 17:00	10/15/22 21:10	307-55-1L2
Perfluoroheptanoic acid	0.42U	ng/L	1.9	0.42	1	10/13/22 17:00	10/15/22 21:10	375-85-9L2
Perfluorohexanesulfonic acid	0.35U	ng/L	1.9	0.35	1	10/13/22 17:00	10/15/22 21:10	355-46-4L2
Perfluorononanoic acid	0.32U	ng/L	1.9	0.32	1	10/13/22 17:00	10/15/22 21:10	375-95-1L2
Perfluorooctanesulfonic acid	0.33U	ng/L	1.9	0.33	1	10/13/22 17:00	10/15/22 21:10	1763-23-1L2
Perfluorooctanoic acid	0.30U	ng/L	1.9	0.30	1	10/13/22 17:00	10/15/22 21:10	335-67-1L2
Perfluoroundecanoic acid	0.40U	ng/L	1.9	0.40	1	10/13/22 17:00	10/15/22 21:10	2058-94-8L2

Water Conservation Tips

Did you know that the average U.S. household uses approximately 400 gallons of water per day or 100 gallons per person per day? Luckily, there are many low-cost and no-cost ways to conserve water. Small changes can make a big difference - try one today and soon it will become second nature.

- Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath.
- Shut off water while brushing your teeth, washing your hair and shaving and save up to 500 gallons a month.
- Use a water-efficient showerhead. They're inexpensive, easy to install, and can save you up to 750 gallons a month.
- Run your clothes washer and dishwasher only when they are full. You can save up to 1,000 gallons a month.
- Water plants only when necessary.
- Fix leaky toilets and faucets. Faucet washers are inexpensive and take only a few minutes to replace. To check your toilet for a leak, place a few drops of food coloring in the tank and wait. If it seeps into the toilet bowl without flushing, you have a leak. Fixing it or replacing it with a new, more efficient model can save up to 1,000 gallons a month.
- Adjust sprinklers so only your lawn is watered. Apply water only as fast as the soil can absorb it and during the cooler parts of the day to reduce evaporation.
- Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!
- Visit www.epa.gov/watersense for more information.

Additional Information for 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. Town of Amherst WTP is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.



