

# WATER QUALITY REPORT

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Carter's Grove  
System 6153082

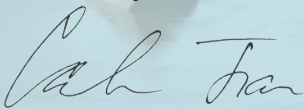
# A MESSAGE FROM THE GENERAL MANAGER

At the Prince William County Service Authority, we take great pride in our roles as public stewards and environmental leaders. We have an intricate, well-maintained water delivery and sewer collection system and exceptional water reclamation processes to ensure that the full cycle of our water—from source to tap—protects the environment, public health and the well-being of our customers.

In 2023, we are celebrating our 40th year of providing an essential service to residents, businesses and visitors in Prince William County. Over those 40 years, both the Service Authority and the community have changed and grown. For example, Prince William County's population was just over 162,000 in 1983; today it is about half a million and one of the most diverse communities in the nation. In 1983, Service Authority had fewer than 25,000 customer accounts; today we serve more than 96,000 accounts.

What has not changed during the past 40 years is that our customers can depend on the quality of their water and the reliability of our service. When our customers turn on the faucet, they don't have to think twice because we remain committed to providing clean, safe and dependable water—24/7, 365 days a year.

Sincerely,



Calvin D. Farr, Jr., P.E.  
General Manager/CEO





## THE SOURCE OF YOUR DRINKING WATER

Your water is withdrawn from the Occoquan Reservoir, which is protected and monitored by Fairfax Water in addition to federal, state and local authorities. Your drinking water undergoes advanced treatment processes at Fairfax Water's Frederick P. Griffith, Jr. Water Treatment Plant.

The Occoquan Reservoir supplies an average 15 million gallons of water a day to Service Authority customers in eastern Prince William County. The 2,100-acre lake also serves as a recreational area that welcomes small boats and fishing.

Fairfax Water has the ability to direct treated water from the Potomac River to eastern areas of Fairfax and Prince William counties, increasing overall system reliability during natural disasters or other emergencies. The Service Authority routinely tests the quality of the water at multiple points throughout the distribution system.



# SOURCE WATER ASSESSMENT SUMMARY

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** the watersheds that supply public tap water.

**Provide** a list of contaminants present in the watershed.

**Assess** susceptibility to contamination in the watershed.

Fairfax Water conducted the source water assessment for the Occoquan Reservoir. 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.

Based on the criteria developed by the state, the Occoquan Reservoir was determined to be highly susceptible to contamination. This determination is consistent with the state's findings of other surface waters (rivers, lakes and streams) throughout the Commonwealth of Virginia.

The Service Authority is committed to protecting its drinking water sources. If you observe illegal dumping of waste motor oil and other potential contaminants, report it immediately to our Regulatory Affairs Office (contact information below). Please keep the safety of your water supply in mind when applying fertilizer, herbicides and pesticides to your lawn or when disposing of chemicals. For more information about the sources of your water or a copy of the Source Water Assessment, contact the Regulatory Affairs Office at (703) 331-4162 or [water\\_quality@pwcsa.org](mailto:water_quality@pwcsa.org).

The Service Authority also administers Designated Hydrant Withdrawal and Cross-Connection Control programs to protect the water distribution system from contamination. The Service Authority closely supervises its infrastructure and operations in order to provide reliable water service to its customers throughout Prince William County.

# CRYPTOSPORIDIUM INFORMATION

Cryptosporidium is a microbial pathogen sometimes found in surface waters throughout the United States. The Service Authority purchases water from Fairfax Water and the City of Manassas, which consistently maintain their filtration processes in accordance with regulatory guidelines to maximize removal efficiency and reduce any risk of infection by this organism.

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, small children and the elderly are at greater risk of developing a life-threatening illness. The Service Authority encourages immunocompromised individuals to consult their doctor regarding appropriate precautions to avoid infection.

Cryptosporidium infections 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.

The Environmental Protection Agency (EPA) created the Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR) to increase protection against microbial pathogens, such as Cryptosporidium. Under that rule, the average Cryptosporidium concentration that determines whether additional treatment measures are needed is 0.075 oocysts per liter.

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.

**Cryptosporidium concentrations were below the EPA action level of 0.075 oocysts per liter.**

## SPECIAL PRECAUTIONS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons, such as people with cancer undergoing chemotherapy, individuals who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, senior citizens and infants can be particularly at risk from infections. These individuals should seek advice about drinking water from their health care providers. EPA guidelines about reducing the risk of infection by microbial contaminants can be obtained by calling the EPA Safe Drinking Water Hotline at (800) 426-4791.

## LEAD IN DRINKING WATER

Elevated levels of lead can cause serious health problems, especially for children. Lead enters the drinking water supply primarily from materials and components associated with service lines and home plumbing. The EPA cannot require property owners to replace lead service lines or lead pipes on their property line with a direct connection to the drinking water supply system. The EPA can only require property owners to test their drinking water but cannot control the variety of materials used in premise plumbing.

When water has been sitting in pipes for several hours, you can minimize lead by flushing the water for 30 seconds to two minutes before using water for drinking or cooking. You can also have your water tested.

Information on lead in drinking water, testing methods and steps you can take to reduce lead in your water is available from the EPA Safe Drinking Water Hotline at (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).





pregnant women and young children. Lead in drinking water comes from pipes and premise plumbing, which is all plumbing located within the home. The Service Authority is responsible for providing high-quality plumbing components.

the potential for lead exposure by flushing your tap with cold water. If you are concerned about lead in your water, you may wish to

take to minimize exposure is available from the EPA Safe Drinking



# CONTAMINANTS THAT MAY BE PRESENT IN SOURCE WATER

The sources of tap water include rivers, lakes, streams, ponds, reservoirs, through the ground, it dissolves naturally occurring minerals and, in some from the presence of animal or human activity.


Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.

Pesticides and which may co variety of sour as agriculture storm water ru residential use

Organic chemical contaminants, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations public water systems. Please note that drinking water may contain small amounts that do not necessarily indicate a health risk. More information about contaminants and p Water Hotline at (800) 426-4791.





springs and wells. As water travels over the surface of the land or cases, radioactive material, and can pick up substances resulting

and herbicides, come from a sources such as, urban runoff and es.

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

s that limit the amounts of certain contaminants in water provided by units of some contaminants. The presence of these contaminants does not potential health effects can be obtained by calling the EPA Safe Drinking

# REGULATED SUBSTANCES: CARTER’S GROVE SYSTEM (61

SUBSTANCE (UNITS)	MCLG	MCL	AVERAGE	MINIMUM
Barium (ppm)	2	2	0.034	0.032
Beta Photon Emitters (pCi/L) Data obtained in 2019	0	50	2.63	2.63
Fluoride (ppm)	4	4	0.70	0.63
Nitrate [as Nitrogen] (ppm)	10	10	1.22	0.50
Nitrite [as Nitrogen] (ppm)	1	1	ND	ND
SUBSTANCE (UNITS)	MRDLG	MRDL	HIGHEST QUARTERLY RUNNING ANNUAL AVERAGE	MINIMUM
Chlorine (ppm)	4	4	1.5	0.7
SUBSTANCE (UNITS)	MCLG	MCL	YEAR SAMPLED	AMOUNT DETECTED
Haloacetic Acids [HAAs] (ppb)	N/A	60	2022	8.00
Total Trihalomethanes [TTHMs] (ppb)	N/A	80	2022	21.3
SUBSTANCE (UNITS)	MCLG	AL	90TH PERCENTILE RESULT	SITES ABOVE AL
Copper (ppm)	1.3	1.3	0.054	0
Lead (ppb)	0	15	0.398	0
Lead and copper samples were collected in 2022. Lead and copper testing is conducted every 3 years in accordance with the Virginia Waterworks Regulations.				
SUBSTANCE (UNITS)	MCLG	MCL	QUARTERLY RUNNING ANNUAL AVERAGE RATIO	MINIMUM
Total Organic Carbon (removal ratio)	N/A	TT	1.5	1.3
Total Organic Carbon has no health effects. However, it provides a medium for the formation of disinfection byproducts such as trihalomethanes and haloacetic acids. Compliance with the treatment technique reduces the formation of disinfection byproducts.				
SUBSTANCE (UNITS)	MCLG	MCL	HIGHEST SINGLE MEASUREMENT	
Turbidity (NTU)	N/A	TT	0.35	
Nephelometric Turbidity Units (NTU) must be less than or equal to 0.3 in at least 95% of the samples in any month and must never exceed 1.0.				

# UNREGULATED SUBSTANCES: CARTER’S GROVE SYSTEM

SUBSTANCE (UNITS)	MCLG	MCL	AVERAGE	MINIMUM
Sodium (ppm)	N/A	N/A	37.2	26.7

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MAXIMUM	VIOLATION	TYPICAL SOURCE
0.038	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
2.63	No	Decay of natural and manmade deposits.
0.76	No	Added to drinking water to promote strong teeth; erosion of natural deposits; discharge from fertilizer and aluminum factories.
1.85	No	Runoff of fertilizers; leaching of septic tanks or sewage; erosion of natural deposits.
0.010	No	Fertilizer runoff; leaching of septic tanks or sewage; erosion of natural deposits.
MAXIMUM	VIOLATION	TYPICAL SOURCE
1.9	No	Disinfectant added to drinking water to control bacteria and microbes.
RANGE LOW-HIGH OR MAXIMUM	VIOLATION	TYPICAL SOURCE
10.0	No	Byproduct of drinking water disinfection.
18.2	No	Byproduct of drinking water disinfection.
MAXIMUM	VIOLATION	TYPICAL SOURCE
0.10	No	Corrosion of household plumbing.
5.0	No	Corrosion of household plumbing.
MAXIMUM	VIOLATION	TYPICAL SOURCE
1.5	No	Naturally present in the environment.
The Quarterly Running Annual Average (QRAA) is the monthly ratio of actual Total Organic Carbon removal versus required Total Organic Carbon removal between source water and treated water. The QRAA must be greater than or equal to 1.0 to meet Virginia Department of Health regulatory requirements.		
LOWEST MONTHLY % SAMPLES MEETING THE TREATMENT TECHNIQUE TURBIDITY LIMIT	VIOLATION	TYPICAL SOURCE
100%	No	Erosion of cleared and excavated land.

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**Microbiological Testing: No E. coli was detected in the water system during calendar year 2022.**

MAXIMUM	VIOLATION	TYPICAL SOURCE
64.2	No	Runoff of road deicing chemicals; erosion of natural deposits.

\* All abbreviations defined in the Glossary on Page 12.



# FACTS ABOUT POLY-AND PERFLUOROALKYL SUBSTANCES (PFAS)

Perfluoroalkyl and polyfluoroalkyl substances (PFAS) are a class of more than 6,000 man-made chemicals used in manufacturing a wide variety of industrial and household products designed to resist heat, water, oil and stains. Commonly used products manufactured with PFAS include non-stick cookware, food packaging, personal care products and water-resistant apparel.

EPA is proposing a National Primary Drinking Water Regulation (NPDWR) to establish legally enforceable levels, called Maximum Contaminant Levels (MCLs), for six PFAS in drinking water: PFOA and PFOS as individual contaminants, and PFHxS, PFNA, PFBS, and HFPO-DA (commonly referred to as GenX Chemicals) as a PFAS mixture. EPA is also proposing health-based, non-enforceable Maximum Contaminant Level Goals (MCLGs) for these six PFAS.

In May 2021, the Prince William County Service Authority voluntarily participated in a Virginia Department of Health (VDH) study to analyze for PFAS in water samples collected from the distribution systems of the 17 largest water utilities in the state. The Service Authority collected samples and sent them to an independent laboratory selected by VDH for testing. The test results are shown in the table below.

			EAST SYSTEM POINT OF ENTRY
COMPOUND	PROPOSED MCLG	PROPOSED MCL (ENFORCEABLE LEVELS)	FAIRFAX WATER
PFOA	Zero	4.0 parts per trillion (ppt)	5.5
PFOS	Zero	4.0 ppt	4.1
PFNA			
PFHxS	1.0 (unitless)  HAZARD INDEX		<1
PFBS			
HFPO-DA (referred to as GenX Chemicals)			

Hazard Index: The Hazard Index is a long-established tool that EPA regularly uses to understand health risk from chemical mixtures.

The Service Authority is monitoring further guidance from the EPA and VDH and we will take necessary actions to meet future federal and state drinking water regulations for PFAS.

To learn more and view the Service Authority’s most recent PFAS results, visit [www.pwcsa.org/pfas-drinking-water-faq](http://www.pwcsa.org/pfas-drinking-water-faq).

**90th Percentile Result:** Result from a set of lead and copper samples that is used to determine if the water system will be required to implement additional actions. Action is only required should the 90th Percentile sample be higher than the Action Level listed for either copper or lead.

**Action Level (AL):** The concentration of a contaminant that, if exceeded, triggers treatment or other requirements by the water supplier.

**Maximum Contaminant Level Goal (MCLG):** 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.

**Maximum Contaminant Level (MCL):** 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.

**Maximum Residual Disinfectant Level Goal (MRDLG):** 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.

**Maximum Residual Disinfectant Level (MRDL):** 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. Compliance with the MRDL is based on the highest Quarterly Running Annual Average.

**N/A:** Not applicable.

**ND:** Not detected at testing limit.

**Nephelometric Turbidity Units (NTU):** Measurement of the cloudiness of water.

**Picocuries Per Liter (pCi/L):** Measurement of radioactivity.

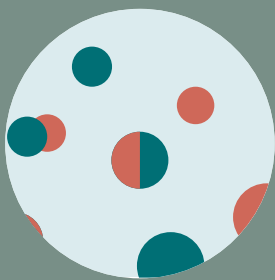
**Parts Per Billion (ppb):** One part substance per billion parts of water (or micrograms per liter).

**Parts Per Million (ppm):** One part substance per million parts of water (or milligrams per liter).

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

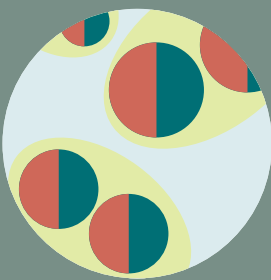
# WATER TREATMENT PROCESS

Before your drinking water reaches your tap, it goes through a six-step treatment process that ensures it is clean. In addition, Service Authority continually monitors the quality of the water provided to you.



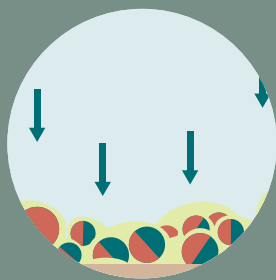
## COAGULATION

After water is withdrawn from the river or lake, a substance is added to cause particles to bind to each other in liquid.



## FLOCCULATION

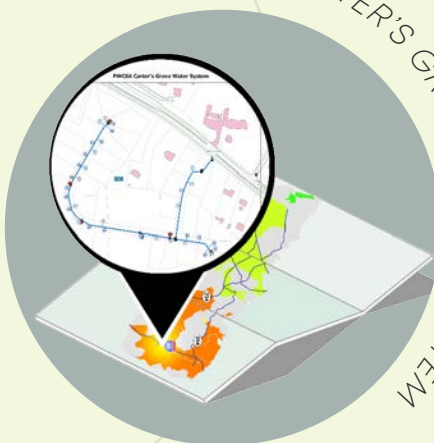
Particles in the water clump together and form clusters called flocs.



## SEDIMENTATION

The clusters sink as they get bigger and heavier.

LEARN MORE  
ABOUT YOUR  
WATER



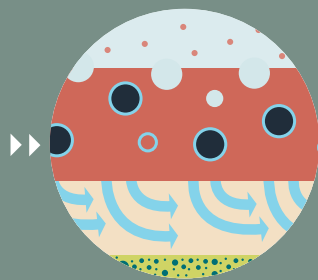
CARTER'S GROVE WATER SYSTEM





### **OZONATION**

Ozone is bubbled into the water as a primary disinfectant to destroy bacteria and other microorganisms and improve taste.



### **FILTRATION**

The water is filtered using granular activated carbon to remove any remaining particles.



### **CHLORINATION**

Chlorine is added as a secondary disinfectant to ensure the water stays fresh all the way to the tap.

For more information about your drinking water, please contact the Service Authority's Regulatory Affairs Office at (703) 331-4162 or at [water\\_quality@pwcsa.org](mailto:water_quality@pwcsa.org).

The Service Authority's Board of Directors meets on the second Thursday of each month in the Board Room of the Raymond Spittle Building, 4 County Complex Court in Woodbridge, Virginia. The date, time and agenda for each upcoming Board Meeting is available at [www.pwcsa.org](http://www.pwcsa.org). For more information, please call (703) 335-7900.

*Este informe contiene información muy importante sobre su agua potable. Para ver este reporte en español, visite el sitio web en [www.pwcsa.org/water-quality/calidad-de-agua](http://www.pwcsa.org/water-quality/calidad-de-agua).*



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