2022 Annual WATER QUALITY REPORT

BERKLEY / EBB TIDE BEACH
PWS ID: VA4193120

QUALITY. ONE MORE WAY WE KEEP LIFE FLOWING.
What is a Consumer Confidence Report (CCR)

Once again, we proudly present our Annual Water Quality Report, also referred to as a Consumer Confidence Report (CCR). CCRs let consumers know what contaminants, if any, were detected in their drinking water as well as related potential health effects. CCRs also include details about where your water comes from and how it is treated. Additionally, they educate customers on what it takes to deliver safe drinking water and highlight the need to protect drinking water sources.

We are committed to delivering high quality drinking water service. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, environmental compliance, sustainability and community education while continuing to serve the needs of all our water users.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it at 1-800-452-6863.

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien al 1-800-452-6863.

Ntawm no yob ib co lus qhia tseem ceeb heev txog koy cov dej seb huv npaum li cas. Yog tias koy xav tau kev pab txhais cov lus qhia no, thov hu rau peb ntawm 1-800-452-6863.

これはあなたの水質の非常に重要な情報を含む。もし必要なら、この情報を翻訳したり、1-800-452-6863に連絡してお尋ねください。

आपके पानी की गुणवत्ता के बारे में यह महत्वपूर्ण सूचना है। यदि इस सूचना के अनुसार आपको सहायता की जरूरत है, तो कृपया 1-800-452-6863 पर कॉल करें।

Это очень важная информация о качестве Вашей воды. Если Вам требуется перевод этой информации, позвоните нам по телефону 1-800-452-6863.

Ito ay isang napakahalagang impormasyon tungkol sa kalidad ng iyong tubig. Kung iyong kailangan ng tulong sa pagsalin ng impormasyon na ito, mangyaring tumawag sa amin sa 1-800-452-6863.

Đây là thông tin rất quan trọng về chất lượng nước của quý vị. Nếu quý vị cần thông dịch thông tin này, xin gọi chúng tôi theo số 1-800-452-6863.
A message from Virginia American Water’s President

Dear Virginia American Water Customer,

At Virginia American Water, providing safe, reliable water service is the primary focus of our dedicated team of experts.

Our water is regularly tested and monitored to confirm compliance with state and federal guidelines. In fact, our water quality professionals and treatment plant operators perform thousands of tests annually for about 100 regulated contaminants. Each Spring, we publish those results from the entire year prior in this annual water quality report.

You may not know that we have been providing drinking water service to the Commonwealth of Virginia for over 100 years. Our job is to provide quality water service not only today, but well into the future. This requires significant investment in our water infrastructure and in 2022 alone, Virginia American Water invested more than $45 million in water system improvements.

From meeting and surpassing state and federal drinking water standards or investing millions each year to upgrade our infrastructure, our employees are dedicated to serving you.

We’re proud of our strong drinking water quality record and we thank you for allowing us the privilege to serve as your local water service provider.

Sincerely,

Barry L. Suits, P.E.
President
Virginia American Water

ATTENTION: Landlords and Apartment Owners
Please share a copy of this notice with your tenants. It includes important information about their drinking water quality.
Just as Virginia American Water is investing in research and testing, we also understand the importance of investing in the infrastructure that provides high-quality water service to you. Last year alone, we invested more than $45 million to improve our water treatment and pipeline systems. In fact, American Water performs over one million tests annually for about 100 regulated contaminants, nationwide.

EVERY STEP OF THE WAY.
We monitor and test your water at multiple points throughout our process of drawing it from its source, treating it to meet drinking water standards, and distributing it through our pipeline systems. American Water performs over one million tests annually for about 100 regulated contaminants, nationwide.

EXPERTISE. RECOGNIZED AT THE HIGHEST LEVEL.
American Water is an expert in water quality testing, compliance and treatment and has established industry-leading water testing facilities. Our dedicated team of scientists and researchers are committed to finding solutions for water quality challenges and implementing new technologies. We are recognized as an industry leader in water quality and work cooperatively with the EPA so that drinking water standards and new regulations produce benefits for customers and public water suppliers. American Water has earned awards from the EPA's Partnership for Safe Water as well as awards for superior water quality from state regulators, industry organizations, individual communities, and government and environmental agencies.

WATER QUALITY. DOWN TO A SCIENCE.
We also have access to American Water’s Central Laboratory in Belleville, Illinois, which conducts sophisticated drinking water testing and analysis. Here, American Water scientists refine testing procedures, innovate new methods, and look for ways to detect potentially new contaminants—even before regulations are in place.

MAINTAINING QUALITY FOR FUTURE GENERATIONS.
Just as Virginia American Water is investing in research and testing, we also understand the importance of investing in the infrastructure that provides high-quality water service to you. Last year alone, we invested more than $45 million to improve our water treatment and pipeline systems.
WHERE YOUR WATER COMES FROM

The source of your drinking water is groundwater. The system has 3 wells that draw water from the Potomac aquifer. The only treatment provided is chlorination. This provides disinfection and prevents bacteriological growth in the distribution system.

As a first step toward protection of our sources of drinking water, the Virginia Department of Health (VDH) evaluated the susceptibility of Virginia’s water supplies to contamination. Contamination sources and pathways were reviewed using maps, known & observed activities, water quality data and information about the water source. Using criteria developed by the State in its EPA-approved Source Water Assessment Programs (SWAP), it was determined that, on a relative basis our wells are of low susceptibility to contamination.

Your current water quality is described in the rest of this report. A copy of the source water assessment report is available by contacting J. Fidler at the phone number or address given elsewhere in this drinking water quality report. Learn more about local waterways at https://mywaterway.epa.gov/

QUICK FACTS ABOUT THE BERKLEY EBB TIDE BEACH SYSTEM

Communities served:
Berkley/ Ebb Tide Beach

Water source:
3 groundwater wells

Average amount of water supplied to customers on a daily basis:
25,380 gallons per day

Disinfection treatment:
Groundwater supplies are disinfected with chlorine to maintain water quality in the distribution system.
What are the **Sources of Contaminants**?

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

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 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, aquifers and/or 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, and can pick up substances resulting from the presence of animals or from human activity.

<table>
<thead>
<tr>
<th>CONTAMINANTS THAT MAY BE PRESENT IN SOURCE WATER INCLUDE:</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Microbial Contaminants</strong></td>
</tr>
<tr>
<td>such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.</td>
</tr>
<tr>
<td><strong>Inorganic Contaminants</strong></td>
</tr>
<tr>
<td>such as salts and metals, which can be naturally occurring or may result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.</td>
</tr>
<tr>
<td><strong>Pesticides and Herbicides</strong></td>
</tr>
<tr>
<td>which may come from a variety of sources, such as agriculture, urban storm water runoff, and residential uses.</td>
</tr>
<tr>
<td><strong>Organic Chemical Contaminants</strong></td>
</tr>
<tr>
<td>including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and may also, come from gas stations, urban storm water runoff, and septic systems.</td>
</tr>
<tr>
<td><strong>Radioactive Contaminants</strong></td>
</tr>
<tr>
<td>which can be naturally occurring or may be the result of oil and gas production and mining activities.</td>
</tr>
</tbody>
</table>

**SPECIAL HEALTH INFORMATION**

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 health care providers. EPA/Centers for Disease Control and Prevention (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).
Protecting Your Drinking Water Supply

Protecting drinking water at its source is an important part of the process to treat and deliver high quality water. It takes a community effort to protect our shared water resources. This includes utilities, businesses, residents, government agencies and organizations. Everyone who lives, works, and plays in the area has a role and stake in clean water supplies.

WHAT CAN YOU DO?

Quality drinking water starts upstream. Everyone can help maintain and improve drinking water supplies through the following actions:

• Properly dispose of pharmaceuticals, household chemicals, oils and paints. Materials can impact water ways if poured down the drain, flushed down the toilet, or dumped on the ground.
• Check for leaks from automobiles and heating fuel tanks. Clean up any spills using an absorbent material like cat litter. Sweep up the material and put it in a sealed bag. Check with the local refuse facility for proper disposal.
• Clean up after your pets and limit the use of fertilizers and pesticides.
• Take part in watershed activities.

Report any spills, illegal dumping or suspicious activity to VDEQ Pollution Response Program (PREP) here: (804) 527-5020 or at https://portal.deq.virginia.gov/prep/Report/Create

WHAT ARE WE DOING?

Our priority is to provide reliable, quality drinking water service for customers. The source of supply is an important part of that mission. We work to understand and reduce potential risks to your drinking water supply.

Here are a few of the efforts underway to protect our shared water resources:

Community Involvement: We have a proactive public outreach program to help spread the word and get people involved. This includes school education, contests, and other community activities.

Environmental Grant Program: Each year, we fund projects that improve water resources in our local communities.

FOR MORE INFORMATION
To learn more about your water supply and local activities, visit us online at https://www.amwater.com/vaaw/ or contact the regional Source Water Protection Lead, Kelly Ryan, at 1-800-452-6863.
CHECK YOUR PLUMBING AND SERVICE LINE
If you live in an older home, consider having a licensed plumber check your plumbing for lead. If your service line is made of lead, and you’re planning to replace it, be sure to contact us at 1-800-452-6863.

MINIMIZING YOUR POTENTIAL EXPOSURE
You cannot see, smell or taste lead, and boiling water will not remove lead. Here are steps you can take to reduce your potential exposure if lead exists in your home plumbing.

1. **Flush your taps.** The longer the water lies dormant in your home’s plumbing, the more lead it might contain. If the water in your faucet has gone unused for more than six hours, flush the tap with cold water for 30 seconds to two minutes before drinking or using it to cook. To conserve water, catch the running water and use it to water your plants.

2. **Use cold water for drinking and cooking.** Hot water has the potential to contain more lead than cold water. If hot water is needed for cooking, heat cold water on the stove or in the microwave.

3. **Routinely remove and clean all faucet aerators.**

4. **Look for the “Lead Free” label** when replacing or installing plumbing fixtures.

5. **Follow manufacturer’s instructions for replacing water filters** in household appliances, such as refrigerators and ice makers, as well as home water treatment units and pitchers. Look for NSF 53 certified filters.

6. **Flush after plumbing changes.** Changes to your service line, meter, or interior plumbing may result in sediment, possibly containing lead, in your water supply. Remove the strainers from each faucet and run the water for 3 to 5 minutes.

The most common source of lead in tap water is from the customer’s plumbing and their service line.

The utility-owned water mains are not made of lead; however, the water service line that carries the water from the water main in the street to your home could be. Homeowners’ service lines may be made of lead, copper, galvanized steel or plastic. You can assess your service line material where it enters your home, typically in your basement, crawl space or garage, near the inlet valve.

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. American Water 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.

**UTILITY-OWNED VS. CUSTOMER-OWNED PORTION OF THE SERVICE LINE**

Water Main

- **Gooseneck**
- **Curb Stop**

Water Service Line

- **Owned by Utility**
- **Owned by Customer**

Please note: This diagram is a generic representation. Variations may apply.
Determining Your Service Line Material

Homeowners’ service lines are most commonly made of lead, copper, galvanized steel or plastic. Homes built before 1930 are more likely to have lead plumbing systems.

There are different ways that you can determine if you have a lead service line.

- You can access your service line material where it enters your home, typically in your basement, crawl space or garage, near the inlet valve and identify the pipe material using the chart on the right.
- A licensed and insured plumber can inspect your pipes and plumbing.
- Lead test kits can be purchased at local hardware and home improvement stores. These kits are used to test paint, but can also be used to test pipe – not the water inside. Look for an EPA recognized kit. Wash your hands after inspecting plumbing and pipes.

Types of Pipe

<table>
<thead>
<tr>
<th>Type</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Galvanized</td>
<td>A dull, silver-gray color. Use a magnet - strong magnets will typically cling to galvanized pipes.</td>
</tr>
<tr>
<td>Copper</td>
<td>The color of a copper penny.</td>
</tr>
<tr>
<td>Plastic</td>
<td>Usually white, rigid pipe that is jointed to water supply piping with a clamp. Note: It can be other colors, including blue and black.</td>
</tr>
<tr>
<td>Lead</td>
<td>A dull, silver-gray color that is easily scratched with a coin. Use a magnet - strong magnets will not cling to lead pipes.</td>
</tr>
</tbody>
</table>

Your Service Line Material

Please note if your service lines contain lead, it does not mean you cannot use water as you normally do. Virginia American Water regularly tests for lead in drinking water and our water meets state and federal water quality regulations, including those set for lead.

For more information on lead in drinking water, please visit [https://www.amwater.com/vaaw/Water-Quality/lead-and-drinking-water](https://www.amwater.com/vaaw/Water-Quality/lead-and-drinking-water).
This is an alert about fluoride in your drinking water and a cosmetic dental problem that might affect children under nine years of age. At low levels, fluoride can help prevent cavities, but children drinking water containing more than 2 milligrams per liter (mg/L) of fluoride may develop cosmetic discoloration of their permanent teeth (dental fluorosis). The drinking water provided by your community water system has a fluoride concentration of 1.99 mg/L.

Dental fluorosis in its moderate or severe forms may result in a brown staining and or pitting of their permanent teeth. This problem occurs only in developing teeth, before they erupt from the gums. Children under nine should be provided with alternative sources of drinking water or water that has been treated to remove the fluoride to avoid the possibility of staining and pitting of their permanent teeth. You may also want to contact your dentist about proper use by young children of fluoride-containing products. Older children and adults may safely drink the water.

Drinking water containing more than 4 mg/L of fluoride (the U.S. Environmental Protection Agency’s drinking water standard) can increase your risk of developing bone disease. Your drinking water does not contain more than 4 mg/L of fluoride, but we’re required to notify you when we discover that the fluoride levels in your drinking water exceed 2 mg/L because of this cosmetic dental problem.

Some home water treatment units are also available to remove fluoride from drinking water. To learn more about available home water treatment units, you may call NSF International at 1-877-8-NSF-HELP.

FLUORIDE
Fluoride is a naturally occurring substance. It can be present in drinking water from two sources:

1. **By nature** when groundwater comes into contact with fluoride-containing minerals naturally present in the earth; or
2. **By a water purveyor** through addition of fluoride to the water they are providing in the distribution system.

The Berkley/Ebb Tide Beach System has naturally-occurring fluoride in the groundwater. The naturally-occurring fluoride levels in the Berkley Ebb Tide Beach groundwater sources are consistent year-round.

If you have any questions on fluoride, please call Virginia American Water’s Customer Service Center at 800-452-6863.
SODIUM

Sodium was detected in your drinking water. There is presently no established standard for sodium in drinking water. Drinking water does not play a significant role in sodium exposure for most individuals. Those that are under treatment for sodium-sensitive hypertension should consult with their health care provider regarding sodium levels in their drinking water supply and the advisability of using an alternative water source or point-of-use treatment to reduce the sodium. For individuals on a very low sodium diet (500mg/day), the EPA recommends that drinking water sodium not exceed 20 mg/L.
WATER QUALITY STATEMENT
We are pleased to report that during calendar year 2022, the results of testing of your drinking water complied with all state and federal drinking water requirements.

For your information, we have compiled a list in the table below showing the testing of your drinking water during 2022. The Virginia Department of Health allows us to monitor for some contaminants less than once per year because the concentration of the contaminants does not change frequently. Some of our data, though representative, are more than one year old.

OTHER INFORMATION
This CCR was prepared by K. Ryan, Water Quality Supervisor. If you have questions about this report, you want additional information about your drinking water, or want to know how to participate in local activities that may help protect the quality of your drinking water, please contact: J. Fidler, Superintendent of Operations, Virginia American Water, Eastern District 621 Oldhams Road, PO BOX 1150, Warsaw, VA 22572, telephone 800-452-6863, email: john.fidler@amwater.com or K. Ryan, Water Quality Supervisor, email: kelly.ryan@amwater.com
Definition of Terms

These are terms that may appear in your report.

**Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, that a water system must follow.

**Level 1 Assessment:** A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**Level 2 Assessment:** A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**LRAA:** Locational Running Annual Average

**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. See also Secondary Maximum Contaminant Level (SMCL).

**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 Residual Disinfectant Level (MRDL):** The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

**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.

**MFL:** Million fibers per liter.

**micromhos per centimeter (μmhos/cm):** A measure of electrical conductance.

**NA:** Not applicable

**ND:** Not detected

**Nephelometric Turbidity Units (NTU):** Measurement of the clarity, or turbidity, of the water.

**pH:** A measurement of acidity, 7.0 being neutral.

**picocuries per liter (pCi/L):** Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).

**parts per billion (ppb):** One part substance per billion parts water, or micrograms per liter.

**parts per million (ppm):** One part substance per million parts water, or milligrams per liter.

**parts per trillion (ppt):** One part substance per trillion parts water, or nanograms per liter.

**Secondary Maximum Contaminant Level (SMCL):** Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

**TON:** Threshold Odor Number

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

**%:** Percent

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**MEASUREMENTS**

**Parts Per Million**

- 1 drop in a 10 gallon fish tank

**Parts Per Billion**

- 1 drop in a 10,000 gallon swimming pool

**Parts Per Trillion**

- 1 drop in 35 junior size Olympic pools
Water Quality Results

Virginia American Water conducts extensive monitoring to determine if your water meets all water quality standards. The detections of our monitoring are reported in the following tables. While most monitoring was conducted in 2022, certain substances are monitored less than once per year because the levels do not change frequently. For help with interpreting the tables below, see the "Definition of Terms" on the previous page. Some unregulated substances are measured, but maximum contaminant levels have not been established by the government. These contaminants are shown for your information.

**NOTE:** Regulated contaminants not listed in this table were not found in the treated water supply.

### LEAD AND COPPER MONITORING PROGRAM - At least 10 tap water samples collected at customers’ taps every three years

<table>
<thead>
<tr>
<th>Substance (with units)</th>
<th>Year Sampled</th>
<th>Compliance Achieved</th>
<th>MCLG</th>
<th>Action Level (AL)</th>
<th>90th Percentile</th>
<th>No. of Homes Sampled</th>
<th>Homes Above Action Level</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (ppb)</td>
<td>2021</td>
<td>Yes</td>
<td>0</td>
<td>15</td>
<td>&lt;1.0</td>
<td>10</td>
<td>0</td>
<td>Corrosion of household plumbing systems.</td>
</tr>
<tr>
<td>Copper (ppm)</td>
<td>2021</td>
<td>Yes</td>
<td>1.3</td>
<td>1.3</td>
<td>0.189</td>
<td>10</td>
<td>0</td>
<td>Corrosion of household plumbing systems.</td>
</tr>
</tbody>
</table>

### REVISED TOTAL COLIFORM RULE - At least 2 samples collected each month in the distribution system

<table>
<thead>
<tr>
<th>Substance</th>
<th>Year Sampled</th>
<th>Compliance Achieved</th>
<th>MCLG</th>
<th>MCL</th>
<th>Total No. of Positive Samples</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Coliform (^1)</td>
<td>2022</td>
<td>Yes</td>
<td>0</td>
<td>MCL = No more than 1 positive monthly sample</td>
<td>2 (^3)</td>
<td>Naturally present in the environment.</td>
</tr>
<tr>
<td>E. Coli (^2)</td>
<td>2022</td>
<td>Yes</td>
<td>0</td>
<td>TT = No confirmed samples</td>
<td>0</td>
<td>Human and animal fecal waste.</td>
</tr>
</tbody>
</table>

NOTE: Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. We are reporting the highest number of positive samples in any month.

1. The Treatment Technique for Total Coliforms requires that if the maximum number of total coliform positive samples are exceeded a system assessment must be conducted, any sanitary defects identified, and corrective actions completed. Additional Level 1 Assessments or Level 2 Assessments are required depending on the circumstances.

2. The Treatment Technique for E. Coli requires that for any total coliform positive routine sample with one or more total coliform positive check samples and an E. coli positive result for any of the samples a Level 2 Assessment must be conducted, any sanitary defects identified, and corrective actions completed. The E. Coli MCL is exceeded if routine and repeat samples are total coliform-positive and either is E. coli-positive, or the system fails to take repeat samples following an E. coli-positive routine sample, or the system fails to analyze total coliform-positive repeat samples for E. coli.

3. In August 2022, a routine bacteriological sample tested positive for total coliform; the required repeat samples were collected and the routine site again tested positive. This triggered a level 1 assessment to be conducted. It was determined through additional sampling and the level 1 assessment that the tap that the routine sample was being collected at was contaminated. No other samples collected came back positive for coliform.
### DISINFECTION BYPRODUCTS - Collected in the Distribution System

<table>
<thead>
<tr>
<th>Substance (with units)</th>
<th>Year Sampled</th>
<th>Compliance Achieved</th>
<th>MCLG</th>
<th>MCL</th>
<th>Highest LRAA</th>
<th>Range Detected</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Trihalomethanes (TTHMs) (ppb)</td>
<td>2022</td>
<td>Yes</td>
<td>NA</td>
<td>80</td>
<td>8.9</td>
<td>NA</td>
<td>By-product of drinking water disinfection.</td>
</tr>
<tr>
<td>Haloacetic Acids (HAAs) (ppb)</td>
<td>2022</td>
<td>Yes</td>
<td>NA</td>
<td>60</td>
<td>4.2</td>
<td>NA</td>
<td>By-product of drinking water disinfection.</td>
</tr>
</tbody>
</table>

NOTE: Compliance is based on the running annual average at each location (LRAA). The Highest LRAA reflects the highest average at any location and the Range Detected reflects all samples used to calculate the running annual average.

### DISINFECTANTS - Collected in the Distribution System

<table>
<thead>
<tr>
<th>Substance (with units)</th>
<th>Year Sampled</th>
<th>Compliance Achieved</th>
<th>MRDLG</th>
<th>MRDL</th>
<th>Average Chlorine Residual</th>
<th>Range Detected</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution System Chlorine Residual (ppm)</td>
<td>2022</td>
<td>Yes</td>
<td>4</td>
<td>4</td>
<td>1.21</td>
<td>0.71 to 1.80</td>
<td>Water additive used to control microbes.</td>
</tr>
</tbody>
</table>

### REGULATED SUBSTANCES - Collected at the Water Storage Tank

<table>
<thead>
<tr>
<th>Substance (with units)</th>
<th>Year Sampled</th>
<th>Compliance Achieved</th>
<th>MCL</th>
<th>MCL/SMCL</th>
<th>Highest Compliance Result</th>
<th>Range Detected</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arsenic (ppb)</td>
<td>2020</td>
<td>Yes</td>
<td>0</td>
<td>10</td>
<td>1.0</td>
<td>ND to 1.0</td>
<td>Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes</td>
</tr>
<tr>
<td>Fluoride (ppm)</td>
<td>2020</td>
<td>Yes</td>
<td>4</td>
<td>4</td>
<td>1.99</td>
<td>1.70 to 1.99</td>
<td>Erosion of natural deposits; Discharge from fertilizer and aluminum factories</td>
</tr>
<tr>
<td>Xylene (ppm)</td>
<td>2022</td>
<td>Yes</td>
<td>10</td>
<td>10</td>
<td>0.003</td>
<td>ND to 0.003</td>
<td>Discharge from petroleum refineries; discharge from chemical refineries</td>
</tr>
<tr>
<td>Radium 226 (pCi/L)</td>
<td>2017-2021</td>
<td>Yes</td>
<td>0</td>
<td>5</td>
<td>0.6</td>
<td>&lt;0.6 to 0.6</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Gross Alpha (pCi/L)</td>
<td>2017-2021</td>
<td>Yes</td>
<td>0</td>
<td>15</td>
<td>0.6</td>
<td>&lt;0.4 to 0.6</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Gross Beta (pCi/L)</td>
<td>2017-2021</td>
<td>Yes</td>
<td>0</td>
<td>50</td>
<td>6.4</td>
<td>4.6 to 6.4</td>
<td>Decay of natural and synthetic deposits</td>
</tr>
</tbody>
</table>
## OTHER SUBSTANCES OF INTEREST - Collected at the Water Storage Tank

<table>
<thead>
<tr>
<th>Substance (with units)</th>
<th>Year Sampled</th>
<th>Compliance Achieved</th>
<th>MCLG</th>
<th>MCL/SMCL</th>
<th>Highest Compliance Result</th>
<th>Range Detected</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Calcium (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>3</td>
<td>ND to 3</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Boron (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.698</td>
<td>0.648 to 0.698</td>
<td>Naturally occurring</td>
</tr>
<tr>
<td>Magnesium (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>2</td>
<td>ND to 2</td>
<td>Naturally occurring</td>
</tr>
<tr>
<td>Potassium (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>8</td>
<td>5 to 8</td>
<td>Naturally occurring</td>
</tr>
<tr>
<td>Aluminum (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.01</td>
<td>ND to 0.01</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Selenium (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>0.005</td>
<td>ND to 0.005</td>
<td>Naturally occurring</td>
</tr>
<tr>
<td>Sodium(^1) (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>125.8</td>
<td>108.6 to 125.8</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Chloride(^2) (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>250</td>
<td>6.5</td>
<td>3.6 to 6.5</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>Sulfate(^2) (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>250</td>
<td>9.0</td>
<td>8.2 to 9.0</td>
<td>Erosion of natural deposits</td>
</tr>
<tr>
<td>pH</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>8.24</td>
<td>8.07 to 8.24</td>
<td>Measure of the acid / base properties of water</td>
</tr>
<tr>
<td>Total Alkalinity (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>255</td>
<td>215 to 255</td>
<td>Ability of water to neutralize acid and bases and maintain a stable pH</td>
</tr>
<tr>
<td>Total Hardness (ppm)</td>
<td>2020</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>15</td>
<td>4 to 15</td>
<td>Natural calcium / magnesium content in the water</td>
</tr>
</tbody>
</table>

1. For healthy individuals, the sodium intake from water is not important because a much greater intake of sodium takes place from salt in the diet. However, sodium levels above the recommended upper limit may be of concern to individuals on a sodium restricted diet.
2. Substances with Secondary MCLs do not have MCLGs; these limits are primarily established to address aesthetic concerns.
UNREGULATED CONTAMINANT MONITORING
Unregulated contaminants are those for which the EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist the EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is necessary. Every five years, the EPA issues a new list of no more than 30 unregulated contaminants to be monitored.

### ADDITIONAL WATER QUALITY PARAMETERS OF INTEREST – In the distribution system

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Year Sampled</th>
<th>Average Result</th>
<th>Range Detected</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bromochloroacetic Acid</td>
<td>ppb</td>
<td>2022</td>
<td>1.3</td>
<td>NA</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Bromodichloromethane</td>
<td>ppb</td>
<td>2022</td>
<td>2.5</td>
<td>NA</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Chloroform</td>
<td>ppb</td>
<td>2023</td>
<td>5.3</td>
<td>NA</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Dibromochloromethane</td>
<td>ppb</td>
<td>2022</td>
<td>1.1</td>
<td>NA</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Dichloroacetic Acid</td>
<td>ppb</td>
<td>2022</td>
<td>2.6</td>
<td>NA</td>
<td>By-product of drinking water disinfection</td>
</tr>
<tr>
<td>Trichloroacetic Acid</td>
<td>ppb</td>
<td>2022</td>
<td>1.6</td>
<td>NA</td>
<td>By-product of drinking water disinfection</td>
</tr>
</tbody>
</table>

**PER- AND POLYFLUOROALKYL SUBSTANCES**
Per- and polyfluoroalkyl substances (PFAS) are manufactured chemicals used in many household products including nonstick cookware (e.g., Teflon™, stain repellants (e.g., Scotchgard™), and waterproofing (e.g., GORE-TEX™). They are also used in industrial applications such as in firefighting foams and electronics production. There are thousands of PFAS chemicals, and they persist in the environment. Two well-known PFAS chemicals are perfluorooctanoic acid (PFOA) and perfluorooctane sulfonic acid (PFOS). These were phased out of production in the United States and replaced by hexafluoropropylene oxide-dimer acid (commonly known as GenX), perfluorobutane sulfonic acid (PFBS) and others.

Virginia American Water has performed voluntary sampling to better understand the occurrence of certain PFAS in drinking water sources. This sampling allows us to understand how our water compares against the non-enforceable Health Advisory Level set by U.S. EPA. Sampling also allows Virginia American Water to be better prepared as U.S. EPA or Virginia Department of Health develop drinking water standards for PFOA and PFOS.

The science and regulation of PFAS and other contaminants is always evolving, and Virginia American Water strives to be a leader in research and development. PFAS contamination is one of the most rapidly changing areas in the drinking water field. We have invested in our own independent research, as well as engaging with other experts in the field to understand PFAS occurrence in the environment. We are also actively assessing treatment technologies that can effectively remove PFAS from drinking water, because we believe that investment in research is critically important to addressing this issue.

### UNREGULATED PERFLUORINATED COMPOUNDS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Units</th>
<th>Average Result</th>
<th>Range Detected</th>
<th>Typical Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Perfluorooctanoic Acid (PFOA)</td>
<td>ppt</td>
<td>ND</td>
<td>NA</td>
<td>Manufactured chemical(s); used in household goods for stain, grease, heat and water resistance</td>
</tr>
<tr>
<td>Perfluorooctanesulfonic Acid (PFOS)</td>
<td>ppt</td>
<td>ND</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>Perfluorobutane sulfonic acid (PFBS)</td>
<td>ppt</td>
<td>ND</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>
About Us

Virginia American Water, a subsidiary of American Water, is the largest investor-owned water utility in the state, providing high-quality and reliable water and/or wastewater services to approximately 325,000 people. For more information, visit virginiaamwater.com and follow us on Twitter, Facebook and YouTube.

With a history dating back to 1886, American Water (NYSE:AWK) is the largest and most geographically diverse U.S. publicly traded water and wastewater utility company. The company employs more than 6,400 dedicated professionals who provide regulated and regulated-like drinking water and wastewater services to more than 14 million people in 24 states. American Water provides safe, clean, affordable and reliable water services to our customers to help keep their lives flowing.

Virginia American Water Facts at a Glance

- **Communities Served**: 25 communities including Alexandria, Dale City, Hopewell, and in and around Virginia’s Northern Neck
- **People Served**: Approximately 325,000 people
- **Employees**: Approx. 134
- **Treatment Facilities**: One surface water treatment plant and 36 active groundwater sources (average daily delivery including surface water, groundwater and purchased water is 75 million gallons per day (MGD))
- **Miles of Pipeline**: 1,039 miles of water pipe
- **Storage and Transmission**: 61 water storage facilities; 44 water pumping stations
- **Source of Supply**: 51% surface water, 1% groundwater, 48% purchased water
WATER INFORMATION SOURCES

Virginia American Water
www.virginiaamwater.com

Virginia Department of Health:
www.vdh.virginia.gov

Virginia Department of Environmental Quality:
www.deq.virginia.gov

United States Environmental Protection Agency (USEPA):
www.epa.gov/safewater

Safe Drinking Water Hotline: 800-426-4791

Centers for Disease Control and Prevention: www.cdc.gov

American Water Works Association: www.awwa.org

Water Quality Association: www.wqa.org

National Library of Medicine/National Institute of Health:

This report contains important information about your drinking water. Translate it, or speak with someone who understands it at 1-800-452-6863.

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Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien al 1-800-452-6863.

Ntawm no yog ib co lus qhia tseeb heev txog koj cov dej seb huv npaum li cas. Yog tias koj xav tau kev pthais cov lus qhia no, thov hu rau peb ntawm 1-800-452-6863.

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これはあなたの水質の重要な情報です。誰かが翻訳できる場合、または1-800-452-6863に誰かが理解している人におかわりください。

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