

# 2019

## Consumer Confidence Report



## Hanover Suburban Water System Service Area

### *Water Testing Results*

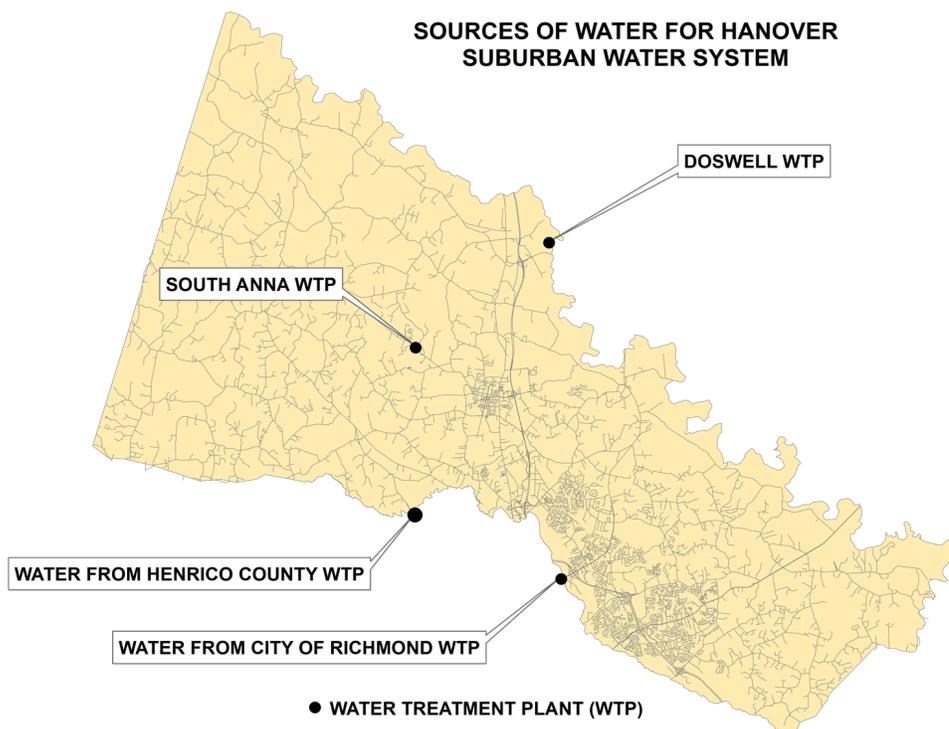


DEPARTMENT OF  
PUBLIC UTILITIES

*Reliably Providing Life's Little Comforts*



## SOURCES OF WATER FOR HANOVER SUBURBAN WATER SYSTEM



## Water Quality Meets Regulatory Mark

Hanover County's Department of Public Utilities is committed to providing its customers with a safe and reliable supply of high-quality drinking water. The quality of our drinking water is verified through regular testing using sophisticated equipment and advanced procedures. The annual Consumer Confidence Report, required by the Safe Drinking Water Act (SDWA), explains where your water comes from, what our test results show about its quality, and contains other useful information concerning the water Public Utilities provides. In an effort to be more environmentally and financially responsible, we are making the annual Consumer Confidence Report available in a digital format via our website at [www.hanovercounty.gov](http://www.hanovercounty.gov). Customers that want a paper copy can obtain one by calling Customer Service at (804) 365-6024 or by stopping by our office during normal business hours. Customer Service can also be contacted with any questions or comments about this report or your service.

### Where Does My Water Come From?

Hanover County's Department of Public Utilities provides water to its customers from a variety of sources and locations. The Suburban Water System is supplied by two surface water sources: the James River via the City of Richmond Water Treatment Plant and the Henrico County Water Treatment Plant, and the North Anna River via the Doswell Water Treatment Plant. (The South Anna Water Treatment Plant, located west of Ashland, is currently not in use.)

### Meeting the Challenge

The County provides service to approximately 21,585 water customers and 21,019 wastewater customers. Public Utilities is a self-supporting enterprise whereby the operations and capital expenditures are funded with revenues generated from customer user fees and one-time capacity fees paid at the time of connection. The Hanover Suburban Water System serves approximately 21,281 water customers with a peak daily use of approximately 12.0 million gallons. In addition to the water sources mentioned above, the Hanover Suburban Water System includes seven water pumping stations and eight storage facilities. The water transmission and distribution system has approximately 441 miles of waterline ranging in size from 2 to 30 inches in diameter.

### The Water Treatment Process

The treatment processes at the Doswell, Richmond and Henrico Water Treatment Plants consist of four steps. First, coagulants are added causing small particles in the water to adhere to one another and grow in size. Next, flocculation causes these small particles to grow even larger, after which the water passes to a settling basin where the large, heavy particles settle to the bottom for removal. In the third step, water is filtered to remove fine particles not removed in the settling process. Finally, the water is disinfected with chloramines and fluoride is added to help protect teeth.

## ***Additional Health Information***

Drinking water, including bottled water, may reasonably be expected to contain 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, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and radioactive materials and can pick up substances resulting from the presence of animals or human activity. Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, storm water runoff, and residential uses.
- Organic chemical contaminants, including synthetic and volatile organics, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production, and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. FDA regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-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 persons, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* are available from the Safe Drinking Water Hotline (800) 426-4791.

## ***Source Water Assessment***

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 Program, it was determined that, on a relative basis, the Doswell Water Treatment Plant, Henrico Water Treatment Plant, and Richmond Water Treatment Plant sources are of high susceptibility to contamination. This does not mean that your drinking water is currently unsafe. Your current water quality is described in the rest of this report. A copy of the source water assessment report is available by contacting Customer Service at (804) 365-6024.

## ***Detected Contaminants***

The table located on the following page shows the results of our water quality analyses for the 2019 calendar year. The Environmental Protection Agency requires Hanover County to routinely monitor a wide range of drinking water contaminants. Every regulated contaminant that was detected in the water, even in trace amounts, is listed. Some contaminants are not tested annually since their levels generally do not change over time. The table contains the name of each substance, the highest level allowed by regulation (MCL), the ideal goals for public health (MCLG), the maximum amount detected with footnoted sources (Detected Level), the range of values that were detected (Range), typical sources of such contamination (Major Sources), and a key to units of measurement.

## **National Primary Drinking Water Regulation Compliance**

Please contact us at (804) 365-6024 or visit our website at [www.hanovercounty.gov](http://www.hanovercounty.gov) with any questions you might have about Hanover County Department of Public Utilities or your water quality.



# Hanover Suburban Water System –Water Quality Table

## Regulated Contaminants

### Inorganic Contaminants

Contaminant	Date Tested	Unit	Action Level (AL)	MCLG	90 <sup>th</sup> Percentile	Individual Samples Above AL	Major Sources	Violation
Copper	2019	ppm	1.3	1.3	0.1 <sup>1</sup>	None <sup>2</sup>	Corrosion of household plumbing systems.	NO
Lead	2019	ppb	15	0	ND <sup>1</sup>	None <sup>2</sup>	Corrosion of household plumbing systems.	NO
Contaminant	Date Tested	Unit	MCL	MCLG	Detected Level	Range	Major Sources	Violation
Barium	2019	ppm	2	2	0.04 <sup>6</sup>	(0.02-0.04) <sup>7</sup>	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	NO
Chloramines	2019	ppm	MRDL = 4 As Cl <sub>2</sub>	MRDG = 4 As Cl <sub>2</sub>	3.1 <sup>5</sup>	(0.4 – 4.4) <sup>7</sup>	Water additive used to control microbes	NO
Fluoride	2019	ppm	4	4	0.73 <sup>6</sup>	(0.6 – 0.7) <sup>7</sup>	Erosion of natural deposits; Water additive for strong teeth.	NO
Nitrate+Nitrite as N	2019	ppm	10	10	0.3 <sup>6</sup>	(ND - 0.3) <sup>7</sup>	Runoff from fertilizer use; Leaching from septic tanks; Erosion of natural deposits.	NO

### Microbiological Contaminants

Total Organic Carbon (TOC)	2019	RR	TT	N/A	1.1 <sup>3</sup>	(1.0 to 2.6) <sup>3</sup>	Naturally present in the environment	NO
Turbidity	2019	NTU	TT=1 NTU MAX	N/A	0.86 <sup>4</sup>	N/A	Soil runoff	NO
			TT, < or = 0.3 NTU (95% of the time)		100% <sup>4</sup>			

### Radioactive Contaminants

### Volatile Organic Contaminants

TTHMs (Total Trihalomethanes)	2019	ppb	80	N/A	63 <sup>5</sup>	(15 - 111) <sup>7</sup>	By-product from drinking water chlorination.	NO
HAA5s (Haloacetic Acids)	2019	ppb	60	N/A	46 <sup>5</sup>	(9 - 79) <sup>7</sup>	By-product from drinking water chlorination.	NO

## Definitions

**AL** = Action Level - the concentration of a contaminant which if exceeded, triggers treatment or other requirements which a water system owner must follow

**MCL** = Maximum Contaminant Level

**MCLG** = Maximum Contaminant Level Goal

**MRL** = Minimum Reporting Level

**MRDL** = Maximum Residual Disinfectant Level

**MRDLG** = Maximum Residual Disinfectant Level Goal

**MFL** = Million Fibers per Liter

**RR** = Removal Ratio – A ratio between the percentage of TOC actually removed to the percentage of TOC required to be removed

**TT** = Treatment Technique – A required process intended to reduce the level of a contaminant in drinking water.

**ppm** = parts per million, or milligrams per liter (mg/l)

**ppb** = parts per billion, or micrograms per liter (µg/l)

**ppt** = parts per trillion or nanograms per liter (ng/l)

**pCi/L** = picocuries per liter (a measure of radioactivity)

**ND** = None Detected.

**N/A** = Not Applicable

<sup>1</sup> Copper and Lead – 90<sup>th</sup> percentile value of the latest round of sampling during July 2019.

<sup>2</sup> Number of individual samples that exceeded 15 ppb. (Lead) or 1.3 ppm. (Copper).

<sup>3</sup> Amount detected is the lowest of the annual rolling average of the four quarterly calculations made in 2019. Range is minimum and maximum of all samples used to calculate average.

A value greater than or equal to 1 indicates the water system complies with TOC removal requirements.

<sup>4</sup> Turbidity is a measure of the cloudiness of water. The highest single measurement and the lowest monthly percentile of samples meeting the turbidity limits.

<sup>5</sup> Amount detected is the highest rolling annual average (Chloramines) or highest locational rolling annual average (TTHM and HAA5).

<sup>6</sup> The reported value is the highest measurement.

<sup>7</sup> Range is the lowest and highest of all samples.

## Lead in Drinking Water

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. Public Utilities 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 at (800) 426-4791 or <http://www.epa.gov/safewater/lead>.

## Cryptosporidium in Drinking Water

Cryptosporidium is a microbial parasite found in surface water throughout the United States. The North Anna River, which is the source water for Hanover's Doswell Water Treatment Plant, was analyzed for the presence of cryptosporidium in April 2015 thru March 2017. We collected 48 samples and found an average of 0.6 Oocysts per 100 liters (Oocysts/100L). Hanover also purchases water from the City of Richmond and County of Henrico. Both get source water from the James River. Richmond collected 48 samples in 2015 thru 2017 and found an average of 5.4 Oocysts/100L. Henrico collected 24 samples between 2015 and 2017 and found an average of 3.3 Oocysts/100L. These values are less than EPA's action level of 7.5 Oocysts/100L. Cryptosporidium is very hard to kill but greatly reduced with treatment and disinfection. These processes are performed at all of the County's source facilities, which includes all plants. There is no indication that Cryptosporidium has ever been present in Hanover's drinking water.

# How Can YOU *protect your* DRINKING WATER?

Have you ever considered all the places water is used in your home? You may be surprised at how many diverse ways water can be used. The water entering your property is free of contamination; however, it is your responsibility to protect the water on your property and in your home. Drinking water systems may become contaminated through uncontrolled cross-connections or backflows.



## IMPORTANT NOTICE:

Cross-connections and backflows are most commonly found in irrigation systems and can create health hazards. The safety of Hanover's water system is at risk when backflow prevention devices are not installed or maintained properly. These devices on irrigation systems must be inspected and serviced annually. An excellent time to have backflow prevention devices inspected and serviced is in the fall when systems are winterized. When returning the system to service in the spring, care should be taken not to damage the device. Please be a good neighbor and join Hanover County Public Utilities in keeping our drinking water safe. For more information please contact Customer Service at (804) 365-6024 or visit us on the web at [www.hanovercounty.gov](http://www.hanovercounty.gov).

## WHAT IS A CROSS-CONNECTION?

A "cross-connection" is any connection between your drinking water and a source of contamination. A cross-connection exists when there is a physical connection between drinking water piping and another system. An example is a lawn irrigation system connected to both the public water system and another water source. It is important to eliminate cross-connections to prevent contamination of the water system.

## WHAT IS A BACKFLOW?

A "backflow" occurs when water in a hose or a water pipe goes backward toward your house and the County water system. This is caused by a change in water pressure. When a backflow occurs, contaminants can end up in your home piping. For example, if while washing your car there is a significant water pressure drop while the hose is submerged in a bucket of soapy water, the water could flow backward if a proper backflow preventer is not installed. Care should be taken to make sure proper backflow preventers are installed on all fixtures.

## WHERE CAN BACKFLOW OCCUR?

**Irrigation Systems:** Irrigation systems make watering your lawn or garden much easier, but if not properly constructed, a backflow can occur. Backflow protection should be provided on all irrigation systems with a reduced pressure zone device (RPZ), or a pressure type anti-siphon vacuum breaker (PVB) which must be inspected and serviced annually.

**Toilets:** Toilets need water to flush waste materials into the sewer system. The water that flushes the toilet enters into the toilet tank from the small hose or pipe connected to the bottom of the tank. It is essential that the float valve inside of the tank is the correct type so that the contents of the tank don't get back into the drinking water in your home.

**Sinks, Tubs, Tanks:** The faucets in your bathroom or kitchen must be located so that the end of the faucet is above the overflow level of the sink or tub. Fill lines to water troughs, pools and tanks must also be physically separated or air-gapped. If there is no air-gap, the contents can be "back siphoned" into the water line.

**Hose Bibs:** The ordinary garden hose is one of the most common ways to contaminate the water supply. This can happen when one end of the hose is attached to an outdoor faucet, and the other end is connected to an aspirator type bottle or submerged in a liquid. Insecticides or other chemicals can be siphoned back into the drinking water supply. You can easily prevent the possibility of this type of contamination by installing a hose bib vacuum breaker. This is a small, inexpensive device that simply attaches to a threaded hose bib.

Vacuum breakers are required to be installed on all hose bibs.



Vacuum Breaker

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