

Town of Christiansburg

DRINKING WATER QUALITY REPORT

2016



CONTENTS

p. 1

Message from Mayor Barber

p. 2

About Your Water

p. 4

Health Information

p. 5

Sampling Results

p. 7

Treatment Plant Information

p. 8

Resources



Residents tour the sedimentation basins at the New River Valley Regional Water Authority's water treatment plant.

Message from Mayor Barber



The Town of Christiansburg is pleased to release the annual Drinking Water Quality Report for the calendar year 2016. This report covers extensive testing performed between January 1 and December 31, 2016 throughout our water system.

We are committed to supplying our citizens with a safe and dependable supply of drinking water. All drinking water must meet federal and state requirements administered by the Virginia Department of Health (VDH) and the Environmental Protection Agency (EPA).



I am happy to report that our drinking water is safe and meets all federal and state requirements.

We want to make sure our customers are informed about their water quality. The Town is always available to assist citizens who are interested in learning more about water in Christiansburg.

If you have questions about this report, please contact our Director of Engineering, Wayne O. Nelson, P.E., at 540-382-6120. You may also find information at www.nrvwater.org.

Sincerely,

A handwritten signature in black ink that reads "D. Michael Barber". The signature is written in a cursive, flowing style.

D. Michael Barber

About Your Water

4 pumping stations

6 water storage tanks

150 miles of water main

2,317,502 gallons used per day

YOUR WATER IS SOURCED FROM THE NEW RIVER.



The New River Valley Regional Water Authority treats surface water obtained from the New River using conventional treatment methods such as coagulation, flocculation, sedimentation, filtration and, finally, disinfection. The water is pumped from the treatment system through a network of pipes to storage tanks where it is then distributed to your tap.



What's in my drinking water?

Drinking water, including bottled drinking 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 can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline 800-426-4791.

In order to ensure that tap water is safe to drink, EPA prescribes regulations that limit the amount of certain contaminants in water provided by public systems.

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

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.

Possible Contaminants:

- **Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations or 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban runoff, and septic systems
- **Radioactive Contaminants**, which can be naturally occurring or be the results of oil and gas production and mining activities

Health Information

Lead in Homes

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.

The Town of Christiansburg is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. If your water has been sitting for several hours, you can minimize the potential for lead exposure by running your tap for 30 seconds to 2 minutes before using water for drinking and 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 800-426-4791 or at www.epa.gov/saferwater/lead.

Vulnerability to Contaminants

Some people may be more vulnerable to contaminants in drinking water than the general population.

Immunocompromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, the elderly 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* (see p. 6) and other microbiological contaminants are available from the Safe Drinking Water Hotline 800-426-4791.

Source Water Assessment

A source water assessment was conducted in 2002 which determined the New River to be highly susceptible to contamination. This is common of other water systems in Virginia when the source is from surface waters. Information from this report may be obtained through the New River Valley Regional Water Authority (www.nrvwater.org).

Sampling Results

The New River Valley Regional Water Authority and the Town of Christiansburg routinely monitor contaminants in your drinking water according to federal and state laws. The tables below list all of the drinking water contaminants that are applicable for the calendar year of this report.

The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. 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 change.

Regulated Contaminants*

Contaminants (units)	MCLG or MRDLG	MCL, TT or MRDL	Level Detected	Range (lowest-highest)	Violation	Typical sources
Nitrite and Nitrate (ppm)	10	10	0.56	N/A	No	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Haloacetic acids [HHAAs] (ppb)	N/A	60	36	16 - 57	No	Byproduct of drinking water disinfection
Total Trihalomethanes [TTHM] (ppb)	N/A	80	39	17 - 62	No	Byproduct of drinking water disinfection
Total organic carbon (removal ratio)	N/A	TT (in compliance if ≥ 1.0)	1.00	N/A	No	Naturally present in the environment
Barium (ppm)	2	2	0.024	N/A	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Chlorine (ppm)	4	4	3.26	1.80-3.90	No	Water additive to control microbes
Turbidity (NTU) ¹	N/A	TT, 1 NTU max TT, ≤ 0.3 (95% of the time)	0.09, 100% of the time	0.02 - 0.09	No	Soil runoff
Fluoride (ppm)	4	4	0.65	N/A	No	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories

1: Turbidity is a measure of the cloudiness of water. We monitor it because it is a good indicator of the effectiveness of our filtration system. The EPA requires that we report the highest single turbidity result measured during the year.

Lead and Copper Contaminants*

Contaminants (units)	MCLG	Action level	Amount detected (90th percentile)	Sample date	Violation	Sites above action level	Typical sources
Copper (ppm)	1.3	1.3	0.0764	Sept. 2014	No	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

* These tables only show those contaminants which were detected in the water.

Definitions:

In the results table on the previous page, you may have found terms and abbreviations that you are not familiar with. To help better understand these terms, we've provided the following definitions.

- **Maximum Contaminant Level Goal or MCLG** is 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 or MCL** is 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 or MRDLG** is 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 or MRDL** is 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.
- **Treatment Technique or TT** is a required process intended to reduce the level of a contaminant in drinking water.
- **Violation** means that the level of a contaminant or disinfectant in your drinking water has exceeded the maximum level allowed by EPA.
- **Action Level** means the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that an owner shall follow.
- **PPB (parts per billion)** means one part substance per billion parts water (or micrograms per liter).
- **PPM (parts per million)** means one part substance per million parts water (or milligrams per liter).

Cryptosporidium

In 2016, the New River Valley Regional Water Authority began monitoring for *Cryptosporidium* in source water, as required by EPA's Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). *Cryptosporidium* is a microscopic parasite found in surface water throughout the United States. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection.

Although filtration removes *Cryptosporidium* from source water, the most commonly used filtration methods cannot guarantee 100 percent removal. During 2016, the average concentration of *Cryptosporidium* was 0.0 oocysts per liter in the three samples collected. LT2ESWTR requires that 24 samples be taken over a two-year period. Based on the *Cryptosporidium* monitoring results so far, and the current performance of the treatment plant, we anticipate meeting the requirements of LT2ESWTR.

Treatment Plant Information

The water treatment plant on Peppers Ferry Road supplies water to the Town of Christiansburg, Town of Blacksburg, Montgomery County and Virginia Tech.

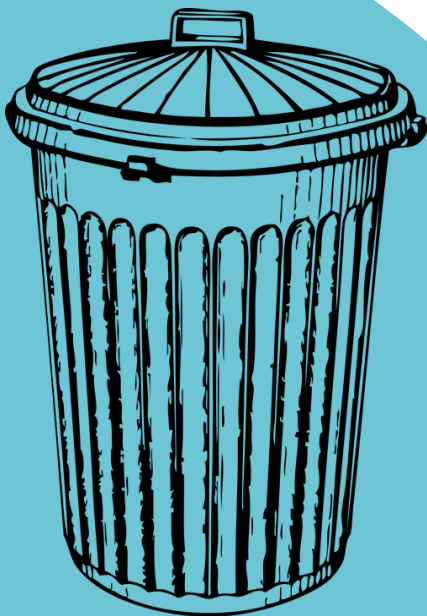
The treatment plant, originally built in 1957, will soon undergo major renovations for the first time since 1977.

This much-needed upgrade will create a safer work environment, improve efficiency and ensure the treatment plant is able to continue providing its customers with high quality water.



Pictured are two of the plant's water pumps. The pumps draw water from the New River to the treatment plant.

Public Stewardship: Do your part!



The Town of Christiansburg and the New River Valley Regional Water Authority work continually to provide top quality water to every tap. We ask that all of our customers help us protect our water sources, which are the heart of our community, our way of life and our children's future.

Remember, all storm drain inlets drain to our creeks and rivers. Please dispose of pesticides, oils and other hazardous wastes properly to avoid contaminating your drinking water. The Montgomery Regional Solid Waste Authority has free Household Hazardous Waste Collection (see p. 8). Please respect the environment.

Resources

- **Attend a Water Authority meeting**

Community members are welcome to attend NRV Regional Water Authority meetings, which are held every third Wednesday of the month at 4 p.m. in Room 4000 at University Gateway Center, 902 Prices Fork Road, Blacksburg, VA 24060.

- **Take a tour of the water plant**

To schedule a tour, please contact Executive Director Caleb Taylor at 540-639-2575.

- **Dispose of household hazardous waste**

A monthly collection day is held from 9 a.m. to noon on the third Saturday of every month for disposal of household hazardous waste materials. You must preregister by calling 540-381-2820 and dial 0 for an attendant. Collection is located at 555 Authority Drive in Christiansburg. For more information, visit www.mrswa.com/household-hazardous-waste.html.

- **Learn more**

If you have questions about this report, please contact the Engineering Department at 540-382-6120.

For more information about water in the New River Valley, please visit www.nrvwater.org.

The EPA (www.epa.gov/Your-Drinking-Water) and the Centers for Disease Control and Prevention (www.cdc.gov/healthywater/drinking) websites offer a substantial amount of information on many issues related to water resources, water conservation and public health.

The Virginia Health Department's Office of Drinking Water (www.vdh.gov/ODW) provides current information on water issues in Virginia, including valuable information about our watershed.