

Annual Drinking Water Quality Report

Town of Gate City

PWSID # 1169405

INTRODUCTION

This Annual Drinking Water Quality Report for calendar year **2014** is designed to inform you about your drinking water quality. Our goal is to provide you with a safe and dependable supply of drinking water, and we want you to understand the efforts we make to protect your water supply. The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health (VDH).

If you want additional information about any aspect of your drinking water or want to know how to participate in decisions that may affect the quality of your drinking water, please contact:

Gate City Water Plant Supervisor, Loretta Cruby, 325 Broadwater Avenue, Gate City, VA 24251, 276-386-3260

The times and location of regularly scheduled board meetings are as follows:

Town Council meets the 2nd Tuesday of each month at 6:30 PM in the Gate City Town Hall.

GENERAL INFORMATION

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. Contaminants that may be present in source water include: (1) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (2) 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. (3) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. (4) 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 stormwater runoff, and septic systems. (5) 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, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health.

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).

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/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

SOURCES OF YOUR DRINKING WATER

The sources of your drinking water are surface water as described below:

- Town of Gate City water treatment plant. The source of supply is Big Moccasin Creek with the raw water intake adjacent to the water treatment plant.
- Scott County PSA/Moccasin Gap water treatment plant. The sources of supply also Big Moccasin Creek with the raw water intake adjacent to the water treatment plant.

The Virginia Department of Health conducted a source water assessment of the Town of Gate City and Scott County PSA/Moccasin Gap water treatment plants during 2002. The Big Moccasin Creek was determined to be of high susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. The assessment report consists of maps showing the source water assessment area and an inventory of known land use activities of concern. The report is available by contacting the Town of Gate City at the phone number or address given elsewhere in this drinking water quality report.

DEFINITIONS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The table on the next page shows the results of our monitoring for the period of January 1st to December 31st, **2014**. In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

Maximum Contaminant Level, or 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 Contaminant Level Goal, or 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.

Non-detects (ND) - lab analysis indicates that the contaminant is not present

Parts per million (ppm) or Milligrams per liter (mg/l) - one part per million corresponds to one minute in two years or a single penny in \$10,000.

Parts per billion (ppb) or Micrograms per liter - one part per billion corresponds to one minute in 2,000 years, or a single penny in \$10,000,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

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

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

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of our filtration system.

Maximum Residual Disinfectant Level Goal or MRDLG – the level of 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 – 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.

WATER QUALITY RESULTS

Regulated Contaminants

Contaminant (units)	MCLG	MCL	Level Detected	Violation (Y/N)	Range	Date of Sample	Typical Source of Contamination
Nitrate + Nitrite (ppm)	10	10	1.21	N	0.83 – 1.21	2014	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Fluoride (ppm)	4	4	0.64	N	0.61 – 0.64	2014	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Barium (ppm)	2	2	0.021	N	0.02 – 0.021	2014	Discharge of drilling waste; Discharge from metal refineries; Erosion of natural deposits
Chlorine (ppm)	4.0	4.0	1.46	N	0.62 – 2.0	2014	Water additive used to control microbes
Total Organic Carbon	N/A	TT \geq 1.0	1.0	N	1.0 – 1.78	2014	Naturally present in the environment
Haloacetic Acids (ppb)	N/A	60	42	N	12 - 63	2014	By-product of drinking water disinfection
Trihalomethanes (ppb)	N/A	80	52	N	12 - 85	2014	By-product of drinking water disinfection
Turbidity (NTU)	N/A	<u>TT < 0.3 NTU</u> <u>95% of the time</u>	0.15	N	0.12 – 0.12	2014	Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

Lead and Copper Contaminants

Contaminant (units)	MCLG	Action Level	90 th Percentile Level Detected	Date of Sampling	# of Sampling Sites Exceeding Action Level	Typical Source of Contamination
Lead (ppb)	0	AL = 15	4	2014	1	Corrosion of household plumbing system; Erosion of natural deposits
Copper (ppm)	1.3	AL = 1.3	0.093	2014	0	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives

The water quality results in the above tables are from testing done in 2014. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though accurate, is more than one year old.

MCL's are set at very stringent levels by the U.S. Environmental Protection Agency. In developing the standards EPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. EPA generally sets MCLs at levels that will result in no adverse health effects for some contaminants or a one-in-ten-thousand to one-in-a-million chance of having the described health effect for other contaminants.

ADDITIONAL HEALTH INFORMATION

Cryptosporidium: In 2010, the Town of Gate City and Moccasin Gap - Scott County PSA began monitoring for *Cryptosporidium* in their source water (before treatment) 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*, the most commonly used filtration methods cannot guarantee 100 percent removal. Under the LT2ESWTR, the average *Cryptosporidium* concentration determines if additional treatment measures are needed. Twenty-four samples are required for analysis over a two-year period. During 2012, the average *Cryptosporidium* concentration was 0.00 oocysts per liter for the 2 samples collected from each water source. While the *Cryptosporidium* monitoring doesn't indicate the presence of these organisms in each source water (before treatment), the current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Based on the *Cryptosporidium* monitoring results so far and the consistent performance of the treatment plant, we anticipate surpassing any future treatment requirements of the LT2ESWTR.

Lead: If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Town of Gate City 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 two minutes or until it becomes cold or reaches a steady temperature 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>.

VIOLATION INFORMATION

Your water system did not have any violations in 2014.

PROTECTING OUR WATER:

Town of Gate City's Cross Connection Control Program

INTRODUCTION:

Town of Gate City's Public Works Department and Water Treatment Plant Operators strives to continuously ensure the safety of your drinking water. A vital link in this effort is the Town's Cross Connection and Backflow Prevention Control Program. The Commonwealth of Virginia's Department of Health Waterworks Regulations requires drinking water suppliers to establish and enforce a cross-connection and backflow prevention program. The goal of the program is to prevent contamination of the Town's drinking water supply caused by backflow or backsiphonage.

WHAT IS CROSS CONNECTION?

Cross Connection is a physical connection between a possible source of contamination and the public drinking water system piping.

This connection, if not properly protected, can lead to the contamination of the drinking water system through a backflow event.

WHAT IS BACKFLOW?

Backflow is the reversal of water flow through a cross connection from a possible source of contamination into the public drinking water system. Backflow may be caused by either backpressure or backsiphonage. A loss of pressure in the public drinking water system may lead to backsiphonage through unprotected cross connections, or backpressure may be created when the water pressure of a facility's internal water system is elevated above the supply pressure of the public drinking water system resulting in backflow through unprotected cross connections.



THE WATER SYSTEM'S ROLE

The Town's role begins with good system maintenance and sound operations. By replacing pipes before they break, taking steps to ensure that system pressures do not fall during periods of high demand, and asking for the cooperation of customers when there is a risk that system pressures could fall below safe levels.

In 2007 the Town adopted the Cross Connection and Backflow Prevention Program. Under this program we must identify locations where the risk of cross connection is high and ensure that the proper measures are taken to minimize that risk. For example, these and other businesses would be required to install high-grade backflow prevention assemblies and have them tested by a certified inspector yearly:

- School and Churches
- Laundry Mats
- Commercial Car Washes
- Greenhouses
- Properties with In-Ground Irrigation Sprinklers
- Properties with Swimming Pools connected to Public Water Supply.
- Clinics and Laboratories (Including Veterinary Hospitals)
- Medical and Dental Offices
- Funeral Parlors
- Apartment Complexes and Large Residential Dwellings with Treated Water Boilers
- Water Treatment Plants or Facilities with Multiple Water Services Lines with Roof Tanks and/or Elevated Storage Tanks
- Restaurants
- Nursing Homes
- Barber Shops and Beauty Salons

If your property or business type is not included in the above list and you have a specific question about your legal requirements, please call the Town Hall.

WHY DO BACKFLOW PERVENTERS HAVE TO BE TESTED YEARLY?

Mechanical backflow preventers have internal seals, springs, and moving parts that are subject to fouling, wear, or fatigue. Also, mechanical backflow preventers and air gaps can be bypassed. Therefore, all backflow preventers have to be tested periodically to ensure that they are functioning properly. A visual check of air gaps is sufficient, but mechanical backflow preventers have to be tested with properly calibrated gauge equipment.

YOUR ROLE AS A WATER CUSTOMER

By taking steps to control cross connections and prevent the possibility of backflow at your home, you will help to protect the public water supply and ensure that your family continues to enjoy safe drinking water.

The most common cross-connection is a typical garden hose, which is left submerged in a volume of water or other fluid (i.e. a garden hose left in a bucket of soapy water). Other cross-connections include kitchen sprayers in a sink filled with dirty water, irrigation systems, boilers and other appliances supplied by water.

LEGAL REFERENCES

Virginia Code section is 32.1-170

Administrative Code, refer to 12VAC5-590-580 through 12VAC5-590-630

Virginia Uniform Statewide Building Code section 312.9



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