

# *Annual Drinking Water Quality Report for 2008*

## Woodland Avenue Extension

**PWS ID No. 5089955**

### **INTRODUCTION**

This Annual Drinking Water Quality Report for the 2008 calendar year 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 have questions about this report, or 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:

Henry County Public Service Authority Mr. Darrell Campbell (276) 634-2555
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### **GENERAL INFORMATION**

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up substances resulting from the presence of animals or from human activity. Contaminants in source water may be naturally occurring substances, or may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban stormwater runoff, residential uses, and many other types of activities. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment.

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 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 stormwater 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, EPA prescribes regulations which limit the amount of certain contaminants in water and 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.

All 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).

### **VULNERABLE POPULATIONS**

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). *Cryptosporidium* are microscopic organisms that may enter surface waters from runoff containing animal wastes. If ingested, *Cryptosporidium* may cause diarrhea, fever and other gastrointestinal symptoms. The EPA Long Term 2 Enhanced Surface Water Treatment Rule required the City of Martinsville water supply to initiate testing the raw water for *Cryptosporidium*, beginning

April 2008, and we are happy to report the organisms were not detected during 2008. The finished water is not required to be tested.

## **SOURCE(S) AND TREATMENT OF YOUR DRINKING WATER**

The source of your drinking water is surface water purchased from the City of Martinsville and distributed to the customers. The City's source of water under normal (non-drought) conditions is the Beaver Creek Reservoir and under emergency and drought conditions are the Leatherwood Creek and / or the Little Beaver Creek. Water is collected and treated by the City of Martinsville Water Treatment Plant. Treatment of the raw surface water includes chemical addition, coagulation, flocculation, settling, filtration, fluoridation, corrosion control, and chlorine disinfection. All of these processes work together to remove the biological, chemical, and physical contaminants to make the water safe for human consumption.

A source water assessment of our system was conducted in 2002 by the Virginia Department of Health. The wells were 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, an inventory of known land use activities of concern, and documentation of any known contamination within the last 5 years. The report is available by contacting your water system owner, Mr. Darrell Campbell, (276) 634-2555.

## **WATER CONSERVATION TIPS**

Did you know that the average U.S. household uses approximately 350 gallons of water per day? Luckily, there are many low-cost or no-cost ways to conserve water. Water your lawn at the least sunny times of the day. Fix toilet and faucet leaks. Take short showers - a 5 minute shower uses 4 to 5 gallons of water compared to up to 50 gallons for a bath. Turn the faucet off while brushing your teeth and shaving; 3-5 gallons go down the drain per minute. Teach your kids about water conservation to ensure a future generation that uses water wisely. Make it a family effort to reduce next month's water bill!

## **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 this monitoring for the period of January 1<sup>st</sup> through December 31<sup>st</sup>, 2008. 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:

*Non-detects (ND)* - lab analysis indicates that the contaminant is not detectable, based on the limits of the analytical equipment used.

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

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

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

*Nephelometric Turbidity Unit (NTU)* - nephelometric turbidity unit is a measure of the cloudiness of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

*Action Level (AL)* - 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.

*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.

*Variances and exemptions* - state or EPA permission not to meet an MCL or a treatment technique under certain conditions

## **WATER QUALITY RESULTS**

We routinely monitor for various contaminants in the water supply to meet all regulatory requirements. The table lists only those contaminants that had some level of detection. Many other contaminants have been analyzed but were not present or were below the detection limits of the lab equipment.

<b>Inorganic Contaminants</b>						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Turbidity (NTU)	NA	TT=1 NTU max	0.35 Max Range: <0.10 – 0.35	No	Every 2 hours at the City of Martinsville Treatment Plan	Soil runoff
		TT=95% of monthly samples must be <0.3 NTU	99.9% were <0.3 NTU			
Nitrate (ppm)	10	10	0.11	No	May 2008	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Fluoride (ppm)	4	4	Avg: 0.99 ppm Range: ND – 1.58	No	Daily at the City of Martinsville WTP	Erosion of natural deposits; water additive which promotes stronger teeth; discharge from fertilizer and aluminum factories
Total Organic Carbon - TOC (ppm)	NA	TT-TOC (Removal ratio greater than or equal to 1.0)	0.85 Minimum Annual Average Removal Ratio Range: 0.84 – 1.56	<b>YES</b>	Tested Monthly at the City's WTP	Naturally present in the environment
<b>Radiological Contaminants</b>						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Alpha emitters (pCi/L)	0	15	1.1	No	April 2003	Erosion of natural deposits
Combined radium (pCi/L)	0	5	0.2	No	April 2003	Erosion of natural deposits
Beta Emitters (pCi/L)	0	50	2.3	No	April 2003	Decay of natural and man-made deposits
<b>Disinfectant / Disinfection Byproduct Contaminants</b>						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Exceedance	Date of Sample	Typical Source of Contamination
HAA5s (Total Haloacetic Acids) (ppb)	N/A	60	Highest Compliance Avg.: 40 Range: 11 – 53	No	Quarterly 2008	By-product of drinking water disinfection
TTHM ( Total Trihalomethanes) (ppb)	N/A	80	Highest Compliance Avg.: 64 Range: 48 – 80	No	Quarterly 2008	By-product of drinking water disinfection
Chlorine (ppm)	MRDL G=4	MRDL = 4	Highest Quarterly Avg- 0.30 Range 0.20 – 0.40	No	Tested Monthly	Water additive used to control microbes
<b>Lead and Copper Contaminants</b>						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Exceedance	Date of Sample	Typical Source of Contamination
Copper (ppm)	1.3	1.3	0.068 (90 <sup>th</sup> Percentile) Range: Not Detected to 0.085 All five samples were below the respective Action Level	No	September 2008	Corrosion of household plumbing systems; Erosion of natural deposits
Lead (ppb)	0	15	3 (90 <sup>th</sup> Percentile) Range: Not Detected to 3 All five samples were below the respective Action Level	No	September 2008	Corrosion of household plumbing systems; Erosion of natural deposits

The results in the table are from testing done between 2003 and 2008. 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 results, though representative, are more than one year old.

The U.S. Environmental Protection Agency sets MCLs at very stringent levels. 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-one-million chance of having the described health effect for other contaminants.

We are pleased to report there were no detections of total coliform bacteria or E.coli in the monthly water samples collected from the distribution system during 2008.

#### **ADDITIONAL INFORMATION FOR 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 Henry County Public Service Authority 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>.

#### **VIOLATION INFORMATION**

Woodland Avenue Extension did not incur any violations during the 2008 calendar year. The City of Martinsville, which is the supplier of the system's water, did receive a violation. Based on the test results of routine monthly samples collected during the April – June 2008 quarter, the City of Martinsville water supply did not meet the minimum total organic carbon (TOC) removal treatment technique. The removal is determined from samples collected from the raw water tap and the treated water (post-filtration) at the City's Water Treatment Plant. The running annual average ratio of actual / required percent removal TOC during this period was 0.85, below the required 1.0 minimum. The Virginia Department of Health issued a Notice of Violation to the City by letter dated July 23, 2008. The TOC removal requirements are established to ensure plants operate to optimize organic removal and minimize formation of disinfection byproducts in the water supply. The treatment plant did not have significant upsets or operational problems that contributed to this performance deficiency. Higher raw water TOC levels were noted following significant rainfall periods, such that it also raised the treated water TOC levels and there were enough events to impact the plant's ability to meet the TOC removal requirement. The City's water supply has returned to compliance. The City continues to optimize treatment at the raw water source and the water treatment plant to remove the organic precursors as much as possible. Note throughout the violation period the levels of TTHM and HAA5 in the City's supply were well below their respective Primary Maximum Contaminant Levels (PMCLs).