

Water Quality Monitoring Results 2005

Contaminant	MCLG	MCL or PMCL	Level Found	Range	Violation	Date of Samples	Typical Source of Contamination
<b>Microbiological Contaminants</b>							
Total Coliform Bacteria	0	Absent	Absent in 100% of samples collected	N/A	No	1/1/05 - 12/31/05	Naturally present in the environment
Turbidity, (NTU)	1	TT < 0.3 NTU max; NTU (8/05); 97% of the samples.	< 1.0, 29 NTU highest reported (8/05); 97% were < 0.1 NTU	< 1 - 29 NTU.	No	1/1/05 - 12/31/05	Soil runoff
Total Organic Carbon Raw water samples, ppm	N/A	N/A	1.4 - 2.3	0 - 1.56 ppm	No	1/1/05 - 12/31/05	Naturally present in the environment
Total Organic Carbon Combined Filter water samples, ppm	N/A	N/A	< 2.0 ppm	< 0.9 - 1.0 ppm	No	1/1/05 - 12/31/05	Naturally present in the environment
<b>Radioactive Contaminants</b>							
Beta/Photon emitters*, pCi/L	0	50 pCi/L	1.6 pCi/L	1.6 pCi/L	No	2/18/2003	Decay of natural and man-made deposits
Alpha emitters, pCi/L	0	15 pCi/L	0.4 pCi/L	0.4 pCi/L	No	2/18/2003	Erosion of natural deposits
Radium-228, pCi/L	0	5 pCi/L	0.45 pCi/L	0.45 pCi/L	No	2/18/2003	Erosion of natural deposits
<b>Inorganic Contaminants</b>							
Copper, ppm	1.3	AL = 1.3 ppm	0.138 ppm	< 0.061 - 0.266 ppm; of 10 samples collected, none exceeded the AL	No	6/6/2005	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead, ppb	0	AL = 15 ppb	0.138 ppb	0.0 - 0.061 ppb; of 10 samples collected, none exceeded the AL	No	6/6/2005	Corrosion of household plumbing systems; erosion of natural deposits
Fluoride, ppm	4 ppm	4 ppm	0.92 ppm average of all samples collected	0.2 - 1.4 - 2.29 ppm	No	1/1/05 - 12/31/05	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Nitrate/Nitrite, ppm	10 ppm Nitrate; 1 ppm Nitrite	10 ppm Nitrate; 1 ppm Nitrite	0.035 ppm Nitrate/Nitrate combined test result	0.36 ppm	No	4/4/2005	Runoff from fertilizer use; leaching from septic tank sewage; erosion of natural deposits
<b>Volatile Organic Contaminants</b>							
Chlorine, ppm	4.0 ppm	4.0 ppm	1.51 ppm	0.4 - 2.4 ppm	No	1/1/05 - 12/31/05	Water additive used to control microbes
Haloacetic Acids (HAA5), ppb	N/A	60 ppb	17-46 ppb of all samples collected	1 - 67 ppb	No	1/1/05 - 12/31/05	Byproduct of drinking water disinfection
Total Trihalomethanes (TTHM), ppb	N/A	80 ppb	41-46 ppb of all samples collected	31-56 ppb	No	1/1/05 - 12/31/05	Byproduct of drinking water chlorination

\* Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing emitters in excess of the MCL over many years may have an increased risk of getting cancer. The PMCL for beta particles is 4 mrem/yr. The EPA considers 50 pCi/L to be the level of concern for beta particles.

CONTACT INFORMATION

This Water Quality Report was prepared by the Town's Superintendent of Water and Wastewater, Thomas W. Fore. If you have questions about this report or would like additional information about any aspect of your drinking water, or would like to know how to participate in the decisions that affect the quality of your drinking water, please contact Mr. Fore at 946-1267. Decisions concerning your drinking water quality are made during the regularly scheduled Town Council meeting held on the second Wednesday of each month at 7:00 p.m. in the Town Hall, located at 186 South Main Street. If you are interested in obtaining a copy of the Town of Amherst's source water assessment, please call 401-0108 or write to: Superintendent of Water and Wastewater, Town of Amherst, P.O. Box 280, Amherst, VA 24521.

Town of Amherst



2005

Drinking Water Quality Report

## INTRODUCTION

This Annual Drinking Water Quality Report for the calendar year 2005 is designed to inform you about your drinking water quality. The Town's goal is to provide you with a safe, dependable and affordable supply of drinking water, and to help you understand its efforts to protect your drinking water supply. The quality of your drinking water must meet state and federal requirements administered by the Virginia Department of Health (VDH).

## GENERAL INFORMATION

As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and can pick up other substances as well, all of which are referred to as contaminants. In source water, these may come from septic tank systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water 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 require any treatment.

Various contaminants may be present in source water. They include **microbial contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural or livestock operations and wildlife; **inorganic contaminants**, such as salts and metals, which may be naturally occurring or a result of urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming; **pesticides** and **herbicides**, which may come from a variety of sources, including agricultural operations, urban storm water runoff and residential uses; **organic chemical contaminants**, including synthetic

and volatile organic compounds, which are often byproducts of industrial processes and petroleum production and may also come from gas stations, urban runoff and septic systems; and **radioactive contaminants**, which may be naturally occurring or the result of oil and gas productions and mining activities.

In order to ensure that tap water is safe to drink, the US Environmental Protection Agency (EPA) prescribes regulations to limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection of public health.

All drinking water, including bottled water, may reasonably be expected to contain at least small amounts of contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. 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, persons with HIV/AIDS or other immune system disorders, some elderly, and infants can all be particularly at risk from infections. These persons should seek advice about drinking water from their health care providers. Information about EPA/CDC guidelines on drinking water contaminant regulations and appropriate means to lessen the risk of cryptosporidium and other microbiological contaminants is available from the EPA's Safe Drinking Water Hotline at 1-800-426-4791.

## SOURCE AND TREATMENT OF YOUR DRINKING WATER

The source of the Town's drinking water is the Buffalo River, a surface water source located in

the upper middle basin of the James River. In a source water assessment of our system conducted in April 2003 by the Virginia Department of Health, the Buffalo River was determined to be of high susceptibility to contamination based on the criteria developed by the state in its approved Source Water Assessment Program. The assessment 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. Information regarding the report can be obtained as explained under the Contact Information in this report.

The Town's Water Treatment Plant is a conventional surface water filtration plant. At various points in the treatment process, chemicals are added to the water. Aluminum sulfate and soda ash are added to remove contaminants dissolved in the water; chlorine is added for disinfection; fluoride is added to promote strong teeth; carbon is added when necessary to improve the taste and odor of the water; and lime and orthophosphate are added to reduce the corrosivity of the finished water. The water travels through a combination of mixing chambers, then into settling chambers where contaminants and suspended matter settle out. The water is then filtered before being pumped into the distribution system. If you would like to tour the water treatment plant, contact Tom Fore as explained under the Contacts Information in this report for an appointment.

## DEFINITIONS

Contaminants in your drinking water are routinely monitored according to federal and state regulations. The table on the other side of this page shows the results of the Town's monitoring for the period 1/1/05-12/31/05. In the table and elsewhere in this report, you will

find many abbreviations that you may not be familiar with. The following definitions are provided to help you understand these terms.

**Parts Per Million (ppm)**: measure of concentration, corresponds to one minute in two years or a single penny in \$10,000.00.  
**Parts Per Billion (ppb)**: measure of concentration, corresponds to one minute in twenty years or a single penny in \$10,000,000.00.

**Nephelometric Turbidity Units (NTU)**: measurement of the clarity of the water; turbidity in excess of 5 NTU is just noticeable to the average person.

**Action Level (AL)**: concentration of a contaminant that, if exceeded, triggers treatment or other requirements that 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 (MCL)**: the highest allowable 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 health risk.

**Milirems Per Year (mrem/yr)**: a measure of radiation absorbed by the body.

**PicoCuries Per Liter (pCi/L)**: a measure of radioactivity.

## QUALITY MONITORING

The Town of Amherst constantly monitors various contaminant levels in the water supply to meet all regulatory requirements. The table included in this report 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.