

# Annual Water Quality Report

## INTRODUCTION

This Annual Drinking Water Quality Report for calendar Year 2013 is designed to provide you with valuable information about your drinking water quality. The City of Waynesboro is committed to providing 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 meets all state and Federal requirements administered by the Virginia Department of Health (VDH), Office of Drinking Water.

## 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 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 storm water 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 storm water 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 storm water 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. Water from surface sources is treated to make it drinkable while groundwater may or may not have any treatment. 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. 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).

## **Sources and Treatment of Your Drinking Water**

Your drinking water is provided by two wells and one spring. The combined sources are treated by a membrane filtration plant. The water is then chlorinated for disinfection and supplemented with fluoride.

### **Source Water Assessments**

A source water assessment has been completed by VDH. The assessment determined that our sources may be susceptible to contamination because they are located in an area that promotes migration of contaminants from land use activities of concern. More specific information may be obtained by contacting the water system representative listed below.

### **Quality of Your Drinking Water**

Your drinking water is routinely monitored according to Federal and State Regulations for a variety of contaminants. The tables that follow show the results of our monitoring for the period of January 1<sup>st</sup> through December 31st, 2013.

## **Contaminant Regulations**

We constantly 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 detection limits of the lab equipment. Maximum Contaminant Levels (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 MCL's 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 contaminants.

### **Lead Contaminants**

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. We are 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 15-30 seconds 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 (1-800-426-4791) or at <http://www.epa.gov/safewater/lead>.

### **Cryptosporidium**

Cryptosporidium is a microbial pathogen found in surface water throughout the US. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100% removal. Our monitoring did not indicate the presence of these organisms in

our source water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immune-compromised people, infants, small children and the elderly are at greater risk of developing life-threatening illness. We encourage immune-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may spread through means other than drinking water.

## Definitions

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 present

**Parts per million (ppm) or Milligrams per liter (mg/l)** - one part per million corresponds to one minute in 2 years or one 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 one penny in \$10,000,000

**Parts per trillion (ppt) or Nanograms per liter (nanograms/l)** - one part per trillion corresponds to one minute in 2,000,000 years or one penny in \$10,000,000,000

**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 clarity of water. Turbidity in excess of 5 NTUs is just noticeable to the average person

**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

**Maximum Contaminant Level, or MCL** - the highest level of a contaminant that is allowed in drinking water. MCLs are set as close to 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

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

## Violation Information

We did not have any violations during the year 2013.

## Water Quality Results

| Contaminant/Unit of Measure      | MCLG | MCL | Level Found/Range             | Violation | Sample Date              | Typical Source of Contamination                                                                                           |
|----------------------------------|------|-----|-------------------------------|-----------|--------------------------|---------------------------------------------------------------------------------------------------------------------------|
| <b>Inorganic Contaminants</b>    |      |     |                               |           |                          |                                                                                                                           |
| Fluoride ppm                     | 4    | 4   | Avg: 0.62<br>Range: 0.19-1.32 | No        | Daily<br>1/1/13-12/31/13 | Erosion of natural deposits; Water additive which promotes strong teeth. Discharge from Fertilizer and aluminum factories |
| Nitrate 10 ppm                   | 10   | 10  | 0.52                          | No        | December 2013            | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits                               |
| Barium ppm                       | 2    | 2   | 0.0253                        | No        | November 2013            | Discharge of drilling wastes; discharge from metal refineries and erosion of natural deposits                             |
| <b>Radiological Contaminants</b> |      |     |                               |           |                          |                                                                                                                           |
| Combined Radium (pCi/L)          | 0    | 5   | 0.58                          | No        | December 2009            | Erosion of natural deposits                                                                                               |
| Alpha emitters (pCi/L)           | 0    | 15  | 0.86                          | No        | December 2009            | Erosion of natural deposits                                                                                               |
| Gross Beta (pCi/L)               | 0    | 50  | 1.5                           | No        | December 2009            | Decay of natural and man-made deposits                                                                                    |

| Contaminant/Unit of Measure         | MCLG | MCL                                                                | Level Found/Range                                                                   | Violation | Sample Date               | Typical Source of Contamination                                                                                |
|-------------------------------------|------|--------------------------------------------------------------------|-------------------------------------------------------------------------------------|-----------|---------------------------|----------------------------------------------------------------------------------------------------------------|
| <b>Lead &amp; Copper</b>            |      |                                                                    |                                                                                     |           |                           |                                                                                                                |
| Copper ppm                          | 1.3  | AL=1.3                                                             | 0.129 (90 <sup>TH</sup> Percentile)<br>Zero of 30 samples collected exceeded the AL | No        | July/August 2013          | Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood or wood preservatives |
| Lead ppm                            | 0    | AL=15                                                              | 3.5 (90 <sup>th</sup> Percentile)<br>1 of 30 samples collected exceeded the AL      |           | July/August 2103          | Corrosion of household plumbing systems; Erosion of natural deposits                                           |
| <b>Disinfection by-Products</b>     |      |                                                                    |                                                                                     |           |                           |                                                                                                                |
| TTHM's (Trihalomethanes) ppb        | 0    | 80                                                                 | Avg.: 4 ppb<br>Range: 0.26-7.24                                                     | No        | Quarterly 2013            | By-product of drinking water chlorination                                                                      |
| Haloacetic acids (Haas) ppb         | NA   | 60                                                                 | Avg: >1 ppb<br>Range: ND-1.14                                                       | No        | Quarterly 2013            | By-product of drinking water chlorination                                                                      |
| <b>Bacteriological Contaminants</b> |      |                                                                    |                                                                                     |           |                           |                                                                                                                |
| Total Coliform Bacteria             | 0    | Presence of Coliform Bacteria in no more than one sample per month | 2 samples positive for total coliform out of 246                                    | No        | 20 samples per Month 2013 | Naturally present in environment                                                                               |
| Turbidity NTU ppm                   | 0    | 0.3                                                                | Max.: 0.053<br>Avg.: 0.037<br>All monthly percentages 100% of samples < 0.3 NTU     | No        | Daily 1/1/13-12/31/13     | Soil runoff; Turbidity is a measure of cloudiness of water                                                     |

The results in the table include testing done from 2009-2013. The state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. If you have any questions about this report or want additional information, please contact: Mr. Greg Campbell at (540)-946-3754.