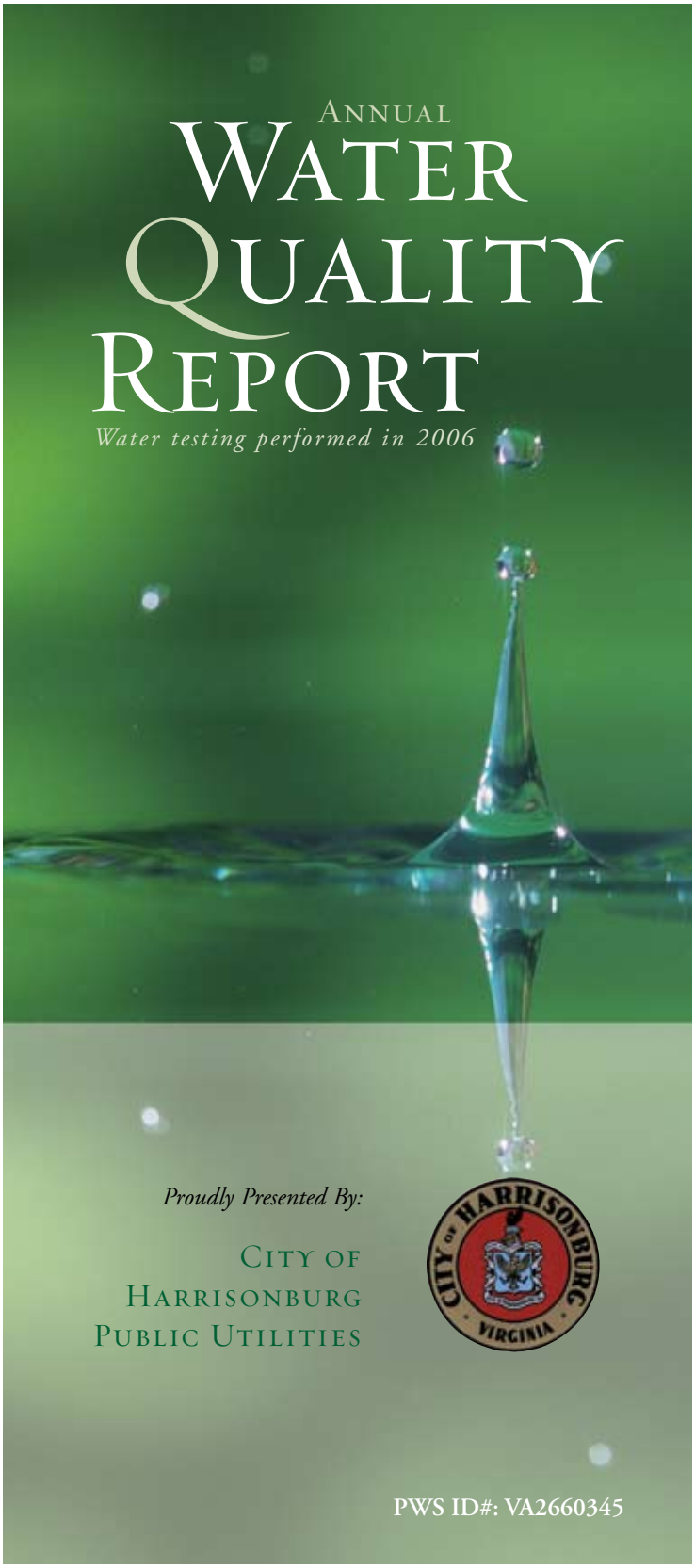

Annual
Water Quality Report
Water testing performed in 2006
Proudly Presented By:
City of Harrisonburg Public Utilities
CITY OF HARRISONBURG
VIRGINIA
PWS ID#: VA2660345

## Substances That Might be in Drinking Water

To ensure that tap water is safe to drink, U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. 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 water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

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, in some cases, radioactive material; and substances resulting from the presence of animals or from human activity. Substances 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, or wildlife;

**Inorganic Contaminants**, such as salts and metals, which can be naturally occurring or may 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 by-products of industrial processes and petroleum production, and may also come from gas stations, urban stormwater runoff, and septic systems;

**Radioactive Contaminants**, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, call the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

## Continuing Our Commitment

Once again we proudly present our annual water quality report. This edition covers all testing completed from January 1, 2006 through December 31, 2006. We are pleased to tell you that our compliance with all state and federal drinking water laws remains exemplary. As in the past, we are committed to delivering the best-quality drinking water. To that end, we remain vigilant in meeting the challenges of source water protection, water conservation, and community education while continuing to serve the needs of all of our water users.

If you have questions about this report or want additional information about the quality of your drinking water, please contact our Director of Public Utilities, Michael Collins, at (540) 434-9959. You may see updates of this report on our Web site: www.harrisonburgva.gov.

## Important Health Information

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, some elderly, and infants may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

## Where Does My Water Come From?

The City of Harrisonburg has two reliable water supply sources. The Dry River in Rawley Springs is a surface water source. The watershed includes the Switzer Reservoir Impoundment, which can supply the piping network at capacity with four million gallons per day (except during drought) of the highest quality water at the most cost-effective price. The North River in Bridgewater is also a surface water source and provides up to 7.5 million gallons per day and 5.5 million gallons per day during drought. The water quantity and quality of the North River fluctuates due to runoff conditions at the withdrawal site. Because our treatment facility has the capacity to provide 15 million gallons of clean drinking water every day, we are in the process of developing a supply line from the South Fork Shenandoah River. Once this project has been completed, we expect to provide a supply of 15 million gallons per day to our customers.

## Source Water Assessment

A Source Water Assessment for the City of Harrisonburg was completed by the Virginia Department of Health on May 24, 2002. This assessment determined that the city's water sources, North River and Dry River, are surface waters exposed to a wide array of changing hydrologic, hydraulic, and atmospheric conditions. More specific information may be obtained by contacting the Harrisonburg Director of Public Utilities, Michael Collins, at (540) 434-9959.

## Disinfection and Filtration Techniques

### *Disinfection*

The addition of chlorine to potable drinking water is heralded as the most significant advancement to control waterborne diseases caused by bacteria and viruses. Free chlorine concentrations may range from a maximum of 3.0 ppm to a minimum required 0.2 ppm. In Harrisonburg, we maintain a 1.0 ppm to 0.2 ppm range by using multiple injection locations rather than maximizing the chlorine at the single entry point. Although we are comfortable with our strategy, our efforts during the next year will focus upon legislation requirements regarding the creation of by-products. We will selectively sample our system for total trihalomethanes and haloacetic acids; these compounds have been identified as potential carcinogens that are created during the disinfection process. The presence and degree of these by-products depends on characteristics of the water system and compounds in the water.

### *Filtration*

The Surface Water Treatment Rule under the 1986 Safe Drinking Water Act (SDWA) Amendments requires that many surface water supply systems and groundwater under the influence of surface water filter their water supplies.

Natural filtration removes most suspended matter from groundwater as the water passes through porous layers of soil into aquifers. Surface water, however, may be subject to direct animal, human, and industrial contamination that can cause disease or illness in humans, so it must be filtered by a permanent treatment system.

Here in Harrisonburg, we have recently upgraded and modernized our treatment plant to provide 15 million gallons per day of output to meet state and federally mandated water quality levels. The upgraded portion of our facility became fully operational in 2005 at a cost of $4,700,000.

## Harrisonburg Water and Sewer Expenses and Services Provided

As a City of Harrisonburg customer, you may wonder what you are really paying for when you pay that utility bill every month. In this chart, we have attempted to show you the expenses related to the services provided per 1000 gallons during the 2005-2006 fiscal year.

| Harrisonburg Water and Sewer Expenses and Services Provided | | | | |
|---|---|---|---|---|
| 2005-2006 WATER AND SEWER ITEMIZATION OF EXPENSES | WATER FUND | | SEWER FUND | |
| | COST PER 1000 GALS. | SERVICES PROVIDED | COST PER 1000 GALS. | SERVICES PROVIDED |
| ADMINISTRATION | $0.11 | customer service administrative functions | $0.30 | executive services engineering services |
| "PUMPS, STORAGE, MONITORING" | $0.21 | water operations water maintenance | $0.05 | sewer operations sewer maintenance |
| "TRANSMISSION, COLLECTION, DISTRIBUTION" | $0.26 | support programs, repairs to water system, assist road paving, water system reliability, water system accountability, water system quality, equipment & vehicles, buildings and grounds, Miss Utility, assist other departments, new water services, and construction | $0.46 | support programs, repairs to sewer system, assist road paving, sewer system reliability, I&I abatement, equipment & vehicles, buildings and grounds, Miss Utility, assist other departments, new sewer services, and construction |
| UTILITY BILLING | $0.10 | utility bills and accounting | $0.12 | utility billing field services |
| MISCELLANEOUS | $0.82 | equivalent taxes depreciation | $0.82 | equivalent taxes depreciation |
| PURIFICATION OR TREATMENT | $0.41 | water plant operations water plant maintenance | $0.84 | HRRSA operations HRRSA maintenance |
| TOTAL OPERATING | $1.91 | | $2.58 | |
| CAPITAL | $0.72 | capital outlay and capital repacements capital additions | $0.30 | capital outlay and capital repacements capital additions |
| TOTAL DEBT SERVICE | $0.33 | raw water project debt storage tank debt | $0.62 | HRRSA debt |
| TOTAL TRANSFERS | $0.28 | support general fund | $0.30 | support general fund |
| TOTAL WATER FUND | $3.25 | | $3.81 | |

| UTILITY PROVIDER | EQUIVALENT RESIDENTIAL CONNECTIONS | WATER $/5000 GAL | SEWER $/5000 GAL | W & S RATE $/5000 GAL |
|---|---|---|---|---|
| City of Harrisonburg | 22,387 | 11.78 | 15.96 | 27.74 |
| Virginia Control Group | N/A | 19.94 | 22.83 | 42.77 |

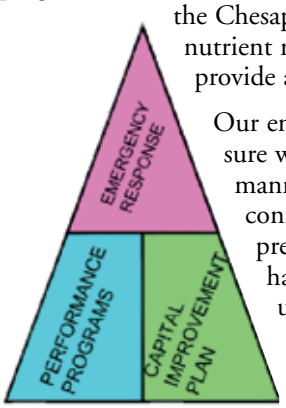
*Courtesy of Draper Aden Associates 2006 study*

## Management Strategy within Harrisonburg Public Utilities

Here at Harrisonburg Water and Sewer we allocate funds, resources and directives toward a "Triangle of Operations". We target three specific areas of concern that include: 1) performance programs, 2) capital improvements and 3) emergency response planning.

Our emphasis with performance programs is the operation and maintenance necessary to sustain our goals to meet customer service levels, to comply with state and federal mandates and to maintain our existing assets for purpose of reliability.

Our emphasis with capital improvements is to rehabilitate aging facilities to support a steady or enhanced level of service and the addition of new facilities to accommodate growth. Many projects exist within our capital program but the two most significant targets are the need to accommodate the Chesapeake Bay Restoration effort through enhanced nutrient removal at our wastewater plant by 2010 and to provide additional water supply to the city by 2012.



TRIANGLE OF OPERATIONS

Our emphasis with emergency response is to make sure we are prepared to react to various natural and manmade catastrophic events. Our activities will conform to the coordinated effort of local disaster preparedness programs. In addition, our activities have been preplanned to conform to mandates under Section 1433 (b) of the Safe Drinking Water Act as amended by Public Health Security and Bioterrorism Preparedness and Response Act of 2002.

## Community Participation

We encourage consumers to report all concerns regarding water quality. It is important that we recognize, investigate, and record each event. This information will be used to guide future operation strategies and capital improvements. Please report your concerns to (540) 434-9959, extension 112.

## Sampling Results

We are pleased to report that during the past year, the water delivered to your home or business complied with, or did better than, all state and federal drinking water requirements. For your information, we have compiled the table below to show what substances were detected in our drinking water during 2006. Although all of the substances listed below are under the Maximum Contaminant Level (MCL) set by the U.S. EPA, we feel it is important that you know exactly what was detected and how much of the substance was present in the water. The state requires us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

### REGULATED SUBSTANCES

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | MCL [MRDL] | MCLG [MRDLG] | AMOUNT DETECTED | RANGE LOW-HIGH | VIOLATION | TYPICAL SOURCE |
|---|---|---|---|---|---|---|---|
| **Alpha Emitters** (pCi/L) | 2001 | 15 | 0 | 0.7 | NA | No | Erosion of natural deposits |
| **Beta/Photon Emitters**[1] (pCi/L) | 2001 | 50 | 0 | 1.8 | NA | No | Decay of natural and man-made deposits |
| **Combined Radium** (pCi/L) | 2001 | 5 | 0 | 0.7 | NA | No | Erosion of natural deposits |
| **Fluoride** (ppm) | 2006 | 4 | 4 | 1.21 | 0.08–1.70 | No | Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories |
| **Haloacetic Acids [HAA]** (ppb) | 2006 | 60 | NA | 28.4 | 14–45 | No | By-product of drinking water disinfection |
| **Nitrate** (ppm) | 2006 | 10 | 10 | 1.18 | NA | No | Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits |
| **Total Coliform Bacteria** (% positive samples) | 2006 | 5% of monthly samples are positive | 0 | 2 | NA | No | Naturally present in the environment |
| **Total Organic Carbon** (% removal) | 2006 | TT | NA | 99 | NA | No | Naturally present in the environment |
| **TTHMs [Total Trihalomethanes]** (ppb) | 2006 | 80 | NA | 34.3 | 15–73 | No | By-product of drinking water chlorination |
| **Turbidity**[2] (NTU) | 2006 | TT | NA | 0.38 | 0.04–0.38 | No | Soil runoff |
| **Turbidity** (Lowest monthly percent of samples meeting limit) | 2006 | TT | NA | 96.7 | NA | No | Soil runoff |

**Tap water samples were collected from 32 sample sites throughout the community**

| SUBSTANCE (UNIT OF MEASURE) | YEAR SAMPLED | ACTION LEVEL | MCLG | AMOUNT DETECTED (90TH%TILE) | SITES ABOVE ACTION LEVEL | VIOLATION | TYPICAL SOURCE |
|---|---|---|---|---|---|---|---|
| **Copper** (ppm) | 2004 | 1.3 | 1.3 | 0.08 | 0 | No | Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives |
| **Lead**[3] (ppb) | 2004 | 15 | 0 | 2 | 2 | No | Corrosion of household plumbing systems; Erosion of natural deposits |

[1] The MCL for beta particles is 4 mrem/year. U.S. EPA considers 50 pCi/L to be the level of concern for beta particles.

[2] Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

[3] Infants and young children are typically more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested and flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the Safe Drinking Water Hotline at (800) 426–4791.

## Table Definitions

**AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**MCL (Maximum Contaminant Level):** 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.

**MCLG (Maximum Contaminant Level Goal):** 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.

**MRDL (Maximum Residual Disinfectant Level):** 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.

**MRDLG (Maximum Residual Disinfectant Level Goal):** 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.

**NA:** Not applicable.

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

**pCi/L (picocuries per liter):** A measure of radioactivity.

**ppb (parts per billion):** One part substance per billion parts water (or micrograms per liter).

**ppm (parts per million):** One part substance per million parts water (or milligrams per liter).

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