

2010

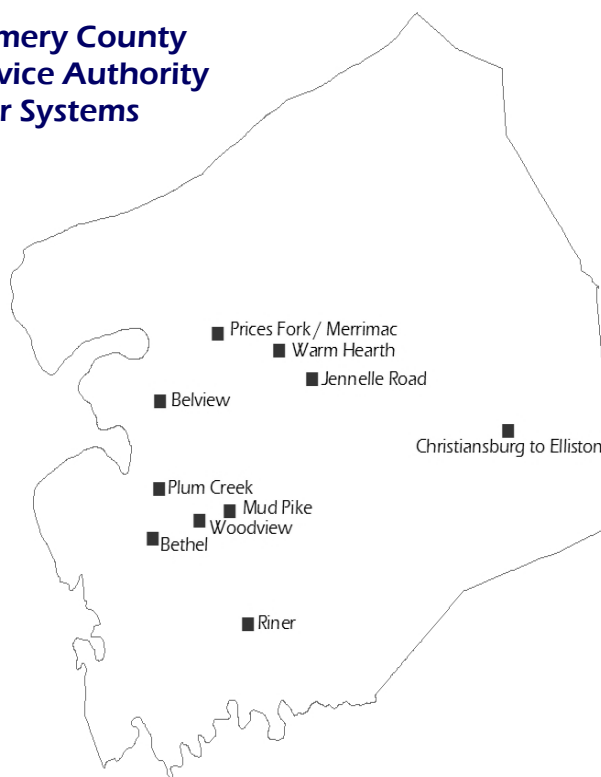
Price's Fork/Merrimac

Consumer Confidence Report



Montgomery County
Public Service Authority
Water Systems

THE MONTGOMERY COUNTY PUBLIC SERVICE AUTHORITY IS PLEASED TO REPORT THAT YOUR DRINKING WATER IS SAFE AND MEETS OR EXCEEDS ALL VIRGINIA DEPARTMENT OF HEALTH AND UNITED STATES ENVIRONMENTAL PROTECTION AGENCY STANDARDS.



Introduction

This report is designed to inform you about your drinking water quality. Our goal is to provide a safe and dependable supply of drinking water. 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).

The Montgomery County Public Service Authority (PSA) operates ten individual public water

systems in the unincorporated areas of the County. Combined, these systems consist of over 90 miles of water mains, four wells, 16 water tanks, 22 pumps, 23 pressure reducing valves, four connections to the Town of Blacksburg, three connections to the Town of Christiansburg, two connections to the City of Radford, and one connection to the Arsenal. Approximately 25.5 million gallons of water are distributed by the PSA monthly.

If you have questions

about this report, please contact:

Don Todora
PSA Operations Specialist
(540) 381-1997

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

Bob Fronk
PSA Director
(540) 381-1997

PSA board meetings are held at 7:00 p.m. on the first

Monday of each month in the County Administration Conference Room in the Montgomery County Government Center, 755 Roanoke Street in Christiansburg.

Our goal is to provide a safe and dependable supply of drinking water. We want you to understand the efforts we make to protect your water supply.

This and other important information are available on the PSA website: MontVA.com/psa

General information

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. **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.** USEPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants along with **additional information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-**

4791) or by visiting their website (www.epa.gov/safewater).

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 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 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, the **USEPA 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.

Sources and treatment of your drinking water

The ten water systems operated by the Public Service Authority include both surface water and groundwater sources. Three are supplied by the Town of Blacksburg: Warm Hearth, Belview, and Jennelle Road. Two are supplied by the Town of Christiansburg: Christiansburg to Elliston and Mudpike Road. Two are supplied by the City of Radford: Plum Creek and Bethel. Two are supplied by wells operated by the PSA: Riner and Woodview. The remaining system, Price's Fork/Merrimac, is supplied by the Arsenal with backup connections to the Town of Blacksburg and the Town of Christiansburg.

The New River is the surface water source supplying the systems connected to Blacksburg, Christiansburg, Radford, and the Arsenal. The raw water goes to either the Blacksburg-Christiansburg-VPI Water Authority

Treatment Plant, the Radford Water Treatment Plant, or the Arsenal Potable Water Treatment Plant. **Treatment consists of chemical addition, coagulation, flocculation, settling, filtration and disinfection.** All these processes work together to remove the physical, chemical and biological contaminants to make the water safe for drinking. The New River was determined to be of high susceptibility to contamination using criteria developed by the State in its USEPA 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 five years from the date of the assessment.** Treatment plants are operated to minimize threats associated with potential contamination of these water sources.

Treatment of the groundwater sources at the PSA's wells consist of the addition of chlorine to disinfect the water. Chlorine residuals and turbidities are checked on a daily basis at the wells and throughout all the individual distribution systems. Water storage tanks are checked at least three times weekly. **Source water assessments have been completed for the PSA's groundwater supplied systems: Riner and Woodview.** These wells have a high susceptibility to contamination due to migration of contaminants with land use activities of concern, potential conduits to groundwater and/or potential sources of contamination in the assessment areas. **There has been no known contamination of these sources within the last five years.** Source water assessments are available to view upon written request.

Drinking water levels

The U.S. Environmental Protection Agency sets MCL's at very stringent levels. In developing these standards, USEPA assumes that the average adult drinks two liters of water each day throughout a 70-year lifespan. USEPA generally sets MCL's at levels that will result in no adverse health affects for some contaminants or a one-in-one million chance of having the described health effect for other contaminants.

Quality on Tap

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. **The table on the following page shows the results of our monitoring for the period of January 1 to December 31, 2010.** Any contaminants not listed in the table were not detected in your drinking water.

PSA water is routinely monitored for up to 76 regulated, 48 unregulated, and many non-regulated contaminants. The Virginia Department of Health 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 presented in the following table may be more than one year old.

In the table and elsewhere in this report, you will find many terms and abbreviations with which you might not be familiar. **The following definitions are provided to help you better understand these terms.**

ppm mg/l	parts per million milligrams per liter	One part per million corresponds to one minute in two years, or a single penny in \$ 10,000.00.
ppb µg/l	parts per billion micrograms per liter	One part per billion corresponds to one minute in 2,000 years, or a single penny in \$ 10,000,000.00
MCLG	Maximum Contaminant Level Goal	the level of contaminant in drinking water below which there is no known or expected risk to health. MCLG's allow for a margin of safety.
MCL	Maximum Contaminant Level	the highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology.
AL	Action Level	the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow
pCi/L	Picocuries per liter	a measure of the radioactivity in water
N/A	Not Applicable	abbreviation used in the "range" section
mrem/yr	millirems per year	a measure of radiation absorbed by the body
MRDLG	Maximum Residual Disinfectant Level Goal	the level of drinking water disinfectant below which there is no known or expected risk to health. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.
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.
TT	Treatment Technique	a required process intended to reduce the level of a contaminant in drinking water
NTU	Nephelometric Turbidity Unit	a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.
ND	Not Detected	Lab analysis indicates that the contaminant is not present or is below detection limit

Additional health 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 Montgomery 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 15 to 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 Water Drinking Hotline (800-426-4791)** or at <http://www.epa.gov/safewater/lead>.

Cryptosporidium

Back in 1992, the Blacksburg, Christiansburg, VPI Water Authority observed that drinking water researchers and EPA were becoming concerned about *Cryptosporidium* (*Crypto*), a microscopic parasite present in most surface waters serving water suppliers. Ingestion of *Crypto* may cause cryptosporidiosis, an abdominal infection. The most effective method of removal is filtration such as what is practiced at the Water Authority although its removal is not 100% guaranteed. Disinfection, such as with chlorine, has been found to be ineffective against *Crypto*.

In 1994, the Water Authority began routine testing for *Crypto* in the New River. Many of the samples since then have shown no *Crypto* while others have indicated the presence of *Crypto* in very small numbers.

As of 2008, under the USEPA "Long Term 2 Enhanced Surface Water Treatment Rule", we are now required to collect at least 24 samples (monthly) over a 2 year period. The Water Authority has chosen to collect 48 samples over those 2 years. Furthermore, we are **required** to tell you about that monitoring and give you the results. During 2010, the Water Authority collected 6 official samples from the New River and the average *Crypto* concentration was 0.0978 oocysts per liter. While the monitoring indicates the presence of these organisms in our source water (before treatment), the current test methods do not allow analysts to determine if the organisms are dead or alive. Based on the *Cryptosporidium* monitoring results so far, the Water Authority anticipates having no problem meeting future USEPA treatment requirements.

MCL violation information

There were no violations during 2010.

Price's Fork/Merrimac

2010 water quality results of regulated contaminants

In the distribution system

Microbiological contaminants present

CONTAMINANT (units)	MCLG	MCL	LEVEL DETECTED	RANGE	IN COMPLIANCE	DATE OF SAMPLE	TYPICAL SOURCE OF CONTAMINANT
TOTAL ORGANIC CARBON (ppm)	N/A	TT, met when ≥ 1	<u>1.0</u> (0.87) *	<u>1.0 to 1.09</u> (0.87 to 1.00)	<u>YES</u> (YES)	<u>2010</u> (2010)	Naturally present in the environment
TURBIDITY (NTU)	N/A	TT, 1 NTU max TT, ≤ 0.3 95% of the time	<u>0.08</u> (0.44) <u>100%</u> (97%)	<u>0.02 to 0.08</u> (N/A)	<u>YES</u> (YES)	<u>2010</u> (2010)	Soil runoff

*RAAP Bldg. 419 water system had a minimum TOC removal ratio (using the four quarter running annual averages) of 0.87 during the 3rd and 4th quarters 2010. However, the average treated water TOC was 1.56 mg/L and 1.57 mg/L for the 3rd and 4th quarters (respectively) running annual averages. Therefore, the RAAP Bldg. 419 waterworks was in compliance with the treatment technique for control of disinfection byproduct precursors by meeting one of the alternative compliance criteria—having treated water TOC <2.0 mg/L calculated quarterly as a running annual average.

Radioactive contaminants present

CONTAMINANT (units)	MCLG	MCL	LEVEL DETECTED	RANGE	IN COMPLIANCE	DATE OF SAMPLE	TYPICAL SOURCE OF CONTAMINATION
COMBINED RADIUM (pCi/L)	0	5	<u>1.4</u> (0.19)	<u>N/A</u> (N/A)	<u>YES</u> (YES)	<u>2010</u> (2010)	Erosion of natural deposits
ALPHA EMITTERS (pCi/L)	0	15	(1.3)	(N/A)	(YES)	(2009)	Erosion of natural deposits

Inorganic contaminants present

CONTAMINANT (units)	MCLG	MCL	LEVEL DETECTED	RANGE	IN COMPLIANCE	DATE OF SAMPLE	TYPICAL SOURCE OF CONTAMINATION
FLUORIDE (ppm)	4	4	<u>0.67</u> (0.07)	<u>N/A</u> (N/A)	<u>YES</u> (YES)	<u>2010</u> (2010)	Erosion of natural deposits, water additive which promotes strong teeth
NITRATE/NITRITE (ppm)	10	10	<u>0.95</u> (0.83)	<u>N/A</u> (N/A)	<u>YES</u> (YES)	<u>2010</u> (2010)	Runoff from fertilizer use, leaching from septic tanks, sewage, erosion of natural deposits
BARIUM (ppm)	2	2	<u>0.024</u> (0.026)	<u>N/A</u> (N/A)	<u>YES</u> (YES)	<u>2010</u> (2010)	Discharge of drilling wastes, discharge from metal refineries, erosion of natural deposits

Volatile organic contaminants present

CONTAMINANT (units)	MCLG	MCL	LEVEL DETECTED	RANGE	IN COMPLIANCE	DATE OF SAMPLE	TYPICAL SOURCE OF CONTAMINATION
CHLORINE (ppm)	MRDLG=4	MRDLG=4	1.39	0.3 to 2.1	YES	2010	Water additive used to control microbes
HALOACETIC ACID (ppb)	N/A	60	39	18 to 69	YES	2010	By-product of drinking water disinfection
TOTAL TRIHALO- METHANES (ppb)	N/A	80	62	16 to 133	YES	2010	By-product of drinking water disinfection

At the customer tap

Inorganic contaminants present

CONTAMINANT (units)	MCLG	ACTION LEVEL	90TH PERCENTILE	# SITES EXCEEDING AL	IN COMPLIANCE	DATE OF SAMPLE	TYPICAL SOURCE OF CONTAMINATION
LEAD (ppb)	0	15	3	0	YES	2008	Corrosion of household plumbing
COPPER (ppm)	1.3	1.3	0.037	0	YES	2008	Corrosion of household plumbing

Microbiological contaminants present

CONTAMINANT (units)	MCLG	MCL	LEVEL DETECTED	AFTER RESAMPLING	IN COMPLIANCE	DATE OF SAMPLE	TYPICAL SOURCE OF CONTAMINATION
COLIFORM	0	1	1	0	YES	JULY	Naturally present in the environment

SPECIAL NOTICE

From January 1, 2010 until June 21, 2010 the Prices Fork/Merrimac water distribution system was connected to the Town of Blacksburg with water supplied by the Blacksburg-Christiansburg-VPI Water Authority; those results are shown underlined above. Beginning June 22, 2010 the Prices Fork/Merrimac water distribution system was connected to the Radford Army Ammunition Plant with water supplied through its building 419 Water Treatment Plant; those results are shown in (parentheses) above. Both water plants are using surface water from the New River.

There are two major differences in the water supplied by the Arsenal and Blacksburg. For one, the Blacksburg water provides fluoridation, and the Arsenal does not. Secondly, the Arsenal water is disinfected with chlorine, and the Blacksburg water is disinfected with chloramines. Chloramination is a process in which ammonia is added to chlorinated water. Both methods are perfectly safe and widely used for drinking water; however, using chloraminated water for kidney dialysis may require a change in the way water is pretreated, and patients should contact their doctor. Chloramines also require a change in the way water is dechlorinated for aquariums and ponds.

The PSA provides notices to local news medias when the water supply changes. Notices are also posted on the Montgomery County and PSA websites. An email alert can be sent to you by signing up to the Montgomery County lists and checking the box: Utilities, Public Service Authority. This is available at the website: MontVA.com and go to the "News Room" to sign up.