2006 Water Quality Report

Our Mission Is Clear

WESTERN VIRGINIA
WATER AUTHORITY

Introduction

Water Quality

This water quality report, supplied annually to our water customers, contains information about the source of your water, what it contains and how it compares to the standards set by regulatory agencies. The Water Division of the Western Virginia Water Authority vigilantly safeguards your water supplies and is proud to report that in 2005, the Water Authority was in full compliance with all state and federal monitoring and reporting requirements without a single violation.

Water Sources and Service

The Water Authority is fortunate to operate several water sources – Carvins Cove Reservoir, Spring Hollow Reservoir, Crystal Spring, Falling Creek Reservoir and several wells (see pages four and five for more water source information). Having this diversity of surface and groundwater sources, rather than a sole source, provides greater operational flexibility and reliability in the event of a drought or other emergencies.

The Water Authority treats and delivers 23 million gallons of drinking water per day to more than 55,000 customer accounts (155,000 residents in the City of Roanoke and Roanoke County, as well as customers in the Town of Vinton, the City of Salem and Botetourt County). The Water Authority also maintains 48 drinking water storage tanks, 50 pump stations and 960 miles of water main.

In Fiscal Year 2005, the Water Authority replaced approximately 2,500 water meters with radio-read capable meters. The Water Authority also replaced 25,000 feet of water main, including the Brambleton and Orange Avenue mains. Staff also prepared an Emergency Management Plan for providing potable water during an extended power outage.

The Water Authority's headquarters is in downtown Roanoke at 601 S. Jefferson Street, at the corner of Jefferson and Franklin. This property, historically known as the Coulter Building, is central to the Water Authority's customer service area and is located along a Valley Metro bus route. Free parking is available in front of the building on Jefferson Street, along adjacent streets and behind the building in the Allright parking lot on Franklin. At the Coulter Building, water and sewer customers may pay their bills; start, stop or transfer service; and receive free water conservation and water and sewer pipe care information. Please stop by and visit the Water Authority's headquarters.

WESTERN VIRGINIA
WATER AUTHORITY

601 S. Jefferson Street
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E-mail billing questions to billing@westernvawater.org

The Western Virginia Water Authority is an incorporated public body independent of local government, formed on July 1, 2004. The Water Authority is governed by a board of directors, whose meetings are open to the public.

In January 2006, drinking water laboratory staff from Carvins Cove and Spring Hollow Water Treatment Facilities consolidated operations and now all work at Spring Hollow. Laboratory staff collects samples throughout the Authority's service area and delivers them to Spring Hollow for testing. The laboratory team performs more than 4,000 bacteria and chemical analyses on reservoir, plant and distribution samples each month.

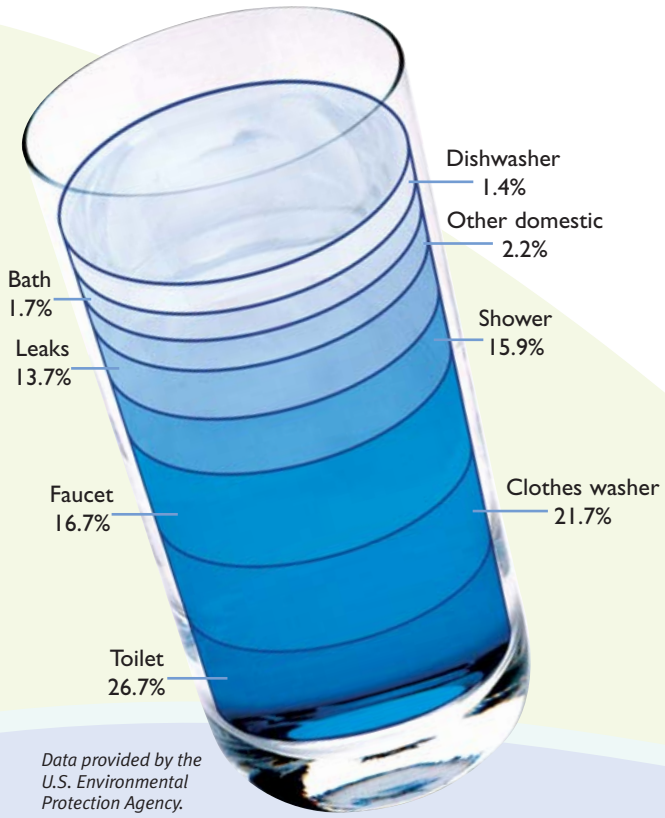
Every Drop *Still* Counts

The amount of water in the earth's water cycle hasn't changed in billions of years – we are using the same water today that dinosaurs used. The way we use water, however, and the rate at which we use it, have changed. Using water efficiently helps protect our water supplies, especially during periods of drought. It is always important to conserve water, and it should never be wasted any time we use it. Conserving water also cuts water and sewer bills and reduces water-heating costs. In addition, using water wisely helps the Water Authority reduce costs and energy used to treat and pump both drinking water and wastewater.

The Best Ways to Save

- **Use water wisely outdoors.** Outdoor water use can account for almost 40% of home water consumption. Watering a lawn with a sprinkler can use 75 gallons in 10 minutes; washing a car with the hose running for 15 minutes can use 112 gallons! Reducing lawn areas wherever possible saves water and reduces the amount of lawn herbicides and fertilizers that can run off with rain and pollute waterways. Consider landscaping with drought-tolerant trees, shrubs, grasses, groundcovers and other perennials. Retain soil moisture by mulching plantings well, and use a rain gauge to measure rainfall and irrigation. Water plants only when they need it. Use mosquito-proof rain barrels or buckets to capture rainwater. Use buckets for car washing, instead of a hose. Commercial car washes use water efficiently and many recycle water. Use a broom, not a hose, to clean sidewalks and driveways.
- **Toilets.** Toilet flushing accounts for more than a quarter of indoor water use. If possible, replace old toilets. Toilets made before 1992 use between 5 and 7 gallons per flush. By installing 1.6-gallon flush toilets, a family of four can save 14,000 to 25,000 gallons of water per year. If replacing toilets is not possible, place a water-displacement bag in toilet tanks to reduce the amount of water needed to flush. For all toilets, flush only when necessary; never use toilets as wastebaskets.
- **Clothes washers.** Consider replacing old clothes washers with water- and energy-efficient front-loading machines, which can use up to half as much water as older washers. Visit the American Council for an Energy-Efficient Economy's Web site (www.aceee.org) for information on energy- and water-efficient appliances. For all washing machines, wash only full loads and select the appropriate water level or load size.
- **Leaks.** Leaky toilets, pipes, hoses and faucets can account for almost 14% of home water use, and this water isn't even used! Fix leaks immediately; to check for silent toilet tank leaks, place a few drops of food coloring in the tank and check for color in the bowl. If color appears in the bowl, the toilet is leaking.

How much water do we use indoors?



Data provided by the U.S. Environmental Protection Agency.

Western Virginia Water Authority Water Sources

& Drinking Water Treatment

Carvins Cove Reservoir & Treatment Facility

Carvins Cove Reservoir is within Carvins Cove Natural Reserve, a 12,672-acre area near Hollins University in Botetourt County. The land in the reserve above the 1,200-foot contour is owned and operated by the City of Roanoke. The land below this elevation, and the reservoir, are owned and operated by the Western Virginia Water Authority. In addition to receiving water from the 11,200-acre drainage area (or watershed), the reservoir is fed from two underground tunnels that carry overflow from Tinker and Catawba Creeks. This surface water source covers 630 acres and stores 6.5 billion gallons of water at full pond. Carvins Cove Water Treatment Plant has the capacity to treat 28 million gallons of water from the reservoir every day. The treatment process takes place in a series of basins. Water is first aerated to remove unwanted dissolved gases and to oxidize dissolved metals, which reduces any unpleasant tastes and odors. Flash mixing of chemicals is the next step, where alum is added to coagulate suspended particles. Water then flows into settling basins where the particles clump together, become heavy and settle to the bottom of the basins. The water is next filtered through gravel, sand and carbon, and disinfected with chlorine. Fluoride is added to promote strong teeth, and orthophosphate is added to control corrosion in pipes. All of the northeastern and northwestern parts of the city, and the majority of the southeastern part of the city, to Reserve Avenue, are served by Carvins Cove. Portions of northern and northeastern Roanoke County are also served by Carvins Cove.

Carvins Cove Natural Reserve also offers outdoor recreation opportunities, including boating, fishing, hiking and nature viewing. For more information, call the Natural Reserve at 563-9170.

Crystal Spring

Crystal Spring flows at the base of Mill Mountain in the southern part of the city. This groundwater source provides an average flow of 3.5 million gallons of water a day, which is filtered in the Crystal Spring Filtration Plant, completed in the fall of 2002.The plant's microfiltration system filters out all particles larger than 0.2 micron. One micron is one thousandth of a millimeter. Filtered water is treated with chlorine and fluoride and pumped to water customers from Crystal Spring Pumping Station. Crystal Spring serves the southwestern part of the city and part of southern Roanoke County. With the capacity to treat five million gallons of water a day, Crystal Spring Filtration Plant is the largest microfiltration plant in Virginia.

Crystal Spring Filtration Plant

Falling Creek Reservoir

Falling Creek Reservoir is a surface water source located in Bedford County east of Vinton. It covers 21 acres and stores 85 million gallons of water at full pond. It is fed by Beaver Reservoir, which covers 69 acres and stores 435 million gallons of water at full pond. The treatment process of this water source is similar to that of Carvins Cove Treatment Plant; treatment capacity is 1.5 million gallons a day. Falling Creek serves King Street northeast to Route 60 and along Route 24 to 13th Street.

Muse Spring Well

Muse Spring Well is used as a temporary, emergency water source. It is in the southeastern part of the city and can supply up to 1 million gallons of water per day. Water is pumped and disinfected with chlorine and is mixed with water from Carvins Cove in the southeastern part of the city. Muse Spring Well was not used in 2005.

Spring Hollow Reservoir & Treatment Facility

The water source for this system comes from the Roanoke River and is pumped into Spring Hollow Reservoir, a 3.2-billion-gallon side-stream storage reservoir. Water is withdrawn from the reservoir for treatment at Spring Hollow Water Treatment Facility. Treatment includes clarification, filtration, chlorine disinfection and fluoridation. Spring Hollow Water Treatment Facility currently has the capacity to treat 18 million gallons of water a day and can be expanded to 36 million gallons a day. Treated water is stored in a 2-million-gallon storage tank and is then pumped through the north and south transmission lines to the distribution system. Current usage averages 7.19 million gallons a day. During an emergency, standby wells may be used to supplement source water. This system supplies water to Hidden Valley, Oak Grove, Penn Forest, Hunting Hills, Clearbrook, Castle Rock, Canterbury Park, Bridlewood, Brookwood, Woodbridge, Big Hill, Campbell Hills, Twine Hollow, Little Brushy Mountain, Cherokee Hills, Glenvar East, North Beverly Heights, Wooded Acres, Berwick Heights, Georgetown Park, Mount Vernon Heights, North Lakes, Montclair, The Woodlands, Starmount, Suncrest Heights and Hanging Rock subdivisions and adjacent areas.

Salem Source

Water is purchased through contract from the City of Salem's downtown and Glenvar filtration plants to supply Andrew Lewis Place, Robin Hood Park and Roanoke County along West Main Street, east of the Glenvar Treatment Plant.

Martin Creek System

Nine wells supply this groundwater source, which is disinfected with chlorine prior to distribution. Water is distributed throughout the community by two storage tanks and distribution piping consisting of 8-inch, 6-inch and 4-inch pipe. The total source/pump capacity is equal to 76,000 gallons per day. Current usage is approximately 32,637 gallons per day. This system supplies water to the Forest Edge and Carriage Hills areas.

Delaney Court System

One well supplies this groundwater source, which is disinfected with chlorine prior to distribution. Water is distributed throughout the community by a storage tank, a booster pump station and distribution piping consisting of 2-inch pipe. The total source/pump capacity is equal to 43,200 gallons per day. Current usage is approximately 8,218 gallons per day. This system supplies water to the Delaney Court subdivision.

Country Hills System

The source is groundwater obtained from one well. Chlorine is used to disinfect the water prior to distribution. Water is distributed throughout the community by a storage tank and distribution piping consisting of 6-inch, 4-inch and 2-inch pipe. The total source/pump capacity is equal to 43,200 gallons per day. Usage in 2004 was approximately 5,066 gallons per day.

Spring Hollow Water Treatment Plant

Customer Service Areas

Several water sources serve different parts of the Water Authority's customer service area, as shown on this map. Refer to pages 4 and 5 for complete information about these water sources.

CRAIG CO.

CRAIG CO.

ROANOKE CO.

SALEM

81

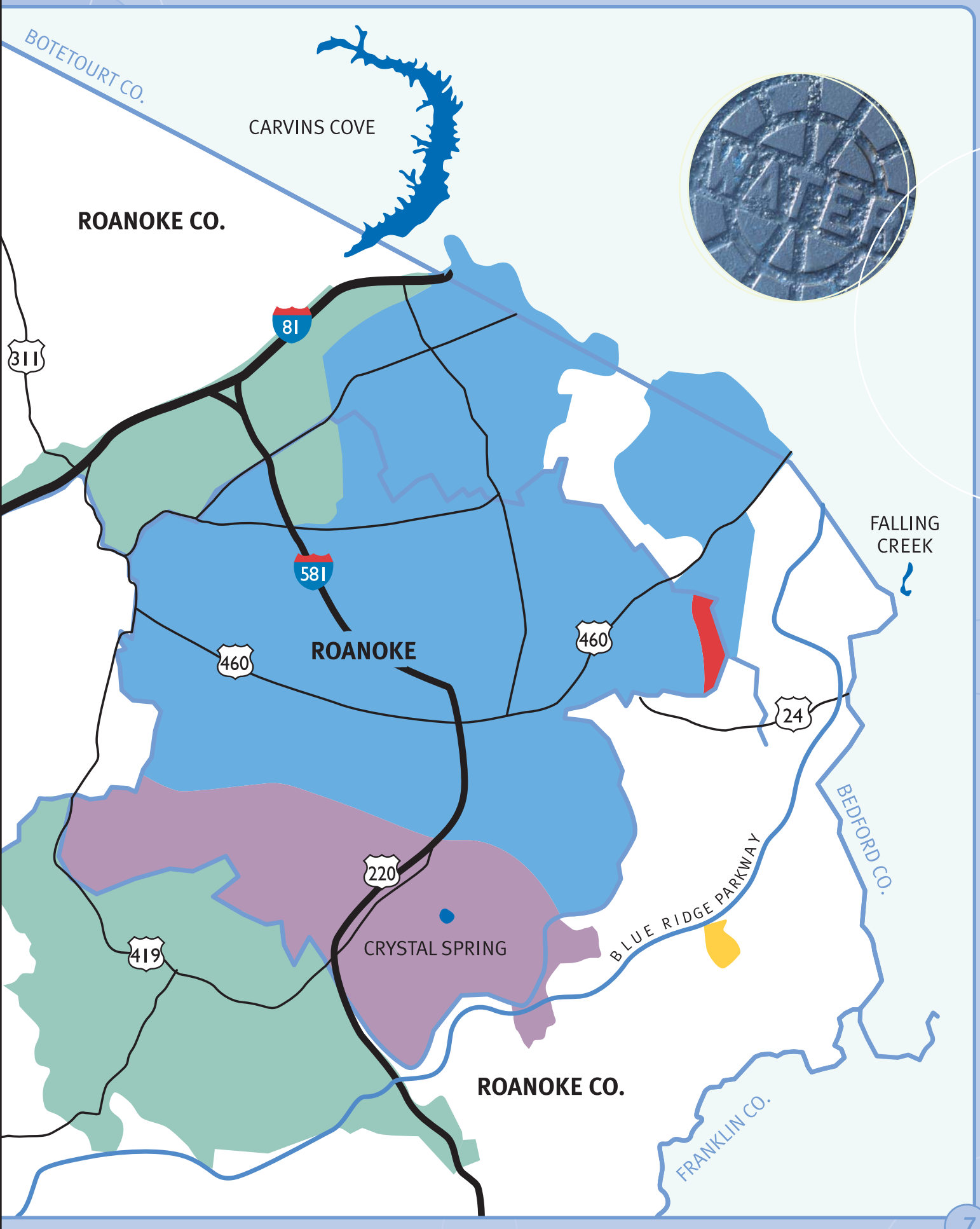
SPRING HOLLOW

ROANOKE CO.

COUNTRY HILLS

221

- SPRING HOLLOW
- MARTIN CREEK
- COUNTRY HILLS
- DELANEY COURT
- CARVINS COVE
- SALEM SOURCE
- CRYSTAL SPRING
- FALLING CREEK


BOTETOURT CO.
CARVINS COVE
ROANOKE CO.
81
311
581
460
460
ROANOKE
FALLING
CREEK
24
220
419
CRYSTAL SPRING
BLUE RIDGE PARKWAY
BEDFORD CO.
ROANOKE CO.
FRANKLIN CO.

Water Quality & Health

As water travels over the land's surface or through the ground, it dissolves naturally occurring minerals and can be polluted by animals and human activity. Contaminants in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban stormwater runoff, residual uses and many other activities. Water from surface sources is treated to make it suitable for consumption while groundwater may or may not require treatment.

Drinking water, including bottled 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 about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline at 1-800-426-4791.

Turbidity, or the amount of suspended particles in water, does not always present health risks. Turbidity can, however, interfere with disinfection and provide a medium for microbial growth. Turbidity may also indicate the presence of disease-causing organisms. These organisms can include bacteria, viruses and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches. Therefore, the U.S. Environmental Protection Agency and the Virginia Department of Health—our water quality regulators—set limits for turbidity. The percentage of water samples meeting turbidity limits in 2005 for compliance was 100 percent in all Water Authority water sources (see table on pages 10 and 11).

Through the water treatment process, contaminants are filtered from the Water Authority's water supply to safe levels, and turbidity levels are reduced well below legal limits. Constant testing ensures that the treated water supply remains safe. Some people may be more vulnerable to trace contaminants in drinking water than the general population. People whose immune systems have been compromised, such as cancer patients undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, and some older adults and infants, can be particularly at risk from infections. These people should seek advice about drinking water from their healthcare providers. Environmental Protection Agency/Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Environmental Protection Agency Safe Drinking Water Hotline (1-800-426-4791). The following are other resources for drinking water safety information:

Virginia Department of Health: 540-463-7136

Roanoke Environmental Health Department: 540-857-7663

Centers for Disease Control and Prevention: 1-800-311-3435, 404-639-3311 or 404-639-3312 (TTY)

Source Water Assessments

The Western Virginia Water Authority has completed a source water assessment of Crystal Spring, Falling Creek and Carvins Cove water supplies. The assessment is a requirement of the Virginia Department of Health's (VDH) Source Water Assessment Program (SWAP) in accordance with the 1996 Amendments of the Safe Drinking Water Act. Based on the land use activities and potential sources of contamination in the assessment areas, the source water assessments determined that water sources that serve the city are susceptible to contamination. This designation does not mean that the source water has been impacted or that it will be impacted. It does mean if there is a release of pollutants in the assessment area, the source water could be impacted. The VDH completed a source water assessment of Spring Hollow Reservoir's water source, the Roanoke River. This source water assessment determined that the Roanoke River may be susceptible to contamination because it is surface water exposed to a wide array of contaminants at varying concentrations. Also, changing hydrologic, hydraulic and atmospheric conditions promote migration of contaminants from land use activities of concern into the Roanoke River. The assessment also determined that Water Authority wells might be susceptible to contamination because they are located in areas that promote migration of contaminants from land use activities of concern. More specific information may be obtained by contacting the Western Virginia Water Authority's Water Division at 380-2687.

2005 Water Quality Data

The table on pages 10 and 11 summarizes water-testing results from 2004 for both regulated and unregulated substances. All regulated substances must be tested annually, except for lead and copper, which must be tested every three years, and radiologicals, which must be tested every four years. This 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 lab equipment.

Cryptosporidium and *Giardia*

The bacteria *Cryptosporidium* and *Giardia* are microscopic organisms that can cause fever, diarrhea and other gastrointestinal symptoms when ingested. The organisms come from animal and human wastes, and are eliminated through water filtration and disinfection. Even though the presence of these organisms is not regulated by the state or federal government, the Western Virginia Water Authority has tested for *Cryptosporidium* and *Giardia* in all of its water sources and has not detected either organism.

Lead and Copper

In 1992, the U.S. Environmental Protection Agency created new standards for acceptable levels of lead and copper in drinking water. Every year since 1992, the city's, county's and Water Authority's water have met these standards. The regulations state that 90 percent of samples taken from drinking water taps in 100 homes considered to be at high risk for lead, due to lead services, pipes or lead solder in copper pipes, must be below 15 parts per billion (ppb) for lead and 1.3 ppm for copper. Sampling has been conducted in accordance with the regulations since 1992 and results have been well below the standards.

Lead's suspected health effects in adults include high blood pressure, hearing problems and kidney and nervous system disorders. In infants and children, lead can interfere with formation of red blood cells, cause low birth weight, delay physical and mental development, and is a probable cancer risk. Copper is a nutritionally essential element, but at high levels, copper can cause gastrointestinal difficulties such as nausea and diarrhea.

When water leaves the Water Authority's treatment facilities, it is virtually free of lead and copper. Once the water enters a building, however, the building's plumbing can contain lead, copper or other elements that can leach into tap water. If the safety of a building's plumbing is questionable, run tap water until it changes temperature to assure that the plumbing has been flushed. Business and residential owners with lead or copper plumbing may have tests conducted by independent laboratories.

Water Discoloration

Changes in water pressure in water systems can occasionally cause drinking water to be discolored. The discoloration is caused by sediments in pipes mixing with clear water. The sediments occur naturally from the oxidation of iron in pipes. While discolored water is ordinarily safe to drink, it is best to flush any discolored water from pipes by turning on all cold-water faucets in your home or business. Avoid turning on hot-water faucets so the discolored water is not drawn into water heaters.

One cause of water pressure change is from the use or flushing of fire hydrants. Fire–EMS and Water Authority employees occasionally test hydrants to ensure that they are working properly and to flush sediments out of pipes.

Water pressure can also change in the event of water main breaks. If you notice evidence of a water main break or a leaking fire hydrant in the city or county, call 853-5700.

Definitions:

Action Level (AL):
The concentration of a contaminant that triggers treatment or other requirement that a water system must follow.

HAA5s:
Haloacetic acids.

Maximum Contaminant Level (MCL):
The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the MCLG as feasible using the best available treatment technology.

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.

MDRL:
Maximum disinfection residual level.

mg/L:
Milligrams per liter (for example, one minute in two years).

MPN:
Most probable number.

NTUs:
Nephelometric Turbidity Units; a measure of turbidity.

pCi/L:
Picocuries per liter is a measure of the radioactivity in water.

ppm:
One part per million (for example, one minute in two years).

ppb:
One part per billion (for example, one minute in 2,000 years).

THMs:
Trihalomethanes.

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

µg/L:
Micrograms per liter (for example, one minute in 2,000 years).

µmhos/cm:
Micromhos per centimeter; a measure of conductivity.

Regulated Substances

Substance	Units	Ideal Goals (EPA's MCLG)	Highest Level Allowed (EPA's MCL)	(RANGE)/AVERAGE Carvins Cove	Falling Creek	Crystal Spring	City of Salem
Barium	ppm	2	2	<0.2	<0.2	<0.2	
Chlorate	ppm		1				
Chlorine	ppm		4-MDRL	(1.3-1.5)/1.4	(1.1-1.4)/1.3	(0.9-1.2)/1.1	(0.63-2.22)/1.49
Chloride	ppm		250	<5	<5	6.78	14.65
Chlorite	ppm		1				
Fluoride	ppm	4	4	(0.8-1.0)/0.9	(0.9-1.0)/1.0	(0.9-1.1)/1.0	(0.14-1.25)/.91
Iron	ppm		0.3	<0.2	<0.2	<0.2	
Total Nitrate and Nitrite (as N)	ppm	10	10	<0.05	<0.05	0.66	0.48
Manganese	ppm		0.05	0.01	0.01	<0.01	
Zinc	ppm		5	<0.2	<0.2	<0.2	
Color	color units		15	<5	<5	<5	
Corrosivity		Non-Corrosive	<10 highly aggressive >12 non aggressive	9.38	7.56	11.9	
THMs	ppb	0	80	(48-51)/48	(68-77)/77	(10-11)/10	(13.9-96.7)/34.1
HAA5s	ppb	0	60	(36-48)/38	(40-58)/40	(6-6)6	(6.7-115)/42.7
pH	pH units		6.5-8.5	(8.0-8.3)/8.2	(7.8-8.6)/8.4	(7.5-8.0)/7.7	(6.4-8.1)/7.25
Total Dissolved Solids	ppm		500	68	52	149	237.5
Sulfate	ppm		250	13.0	5.98	<5	38.05
Sulfide	ppm			<0.03	<0.03	<0.03	
Turbidity	NTU	N/A	T.T.	(0.04-0.11)/0.06	(0.03-0.10)/0.06	(0.02-0.03)/0.02	0.2755
Total Coliform Bacteria	MPN/100mL or present/ absent	0	Presence of coliform bacteria in >5% of monthly samples	0	0	0	0
Fecal Coliform Bacteria	MPN/100mL or present/ absent	0	A routine and a repeat sample are total coliform positive, and one is also fecal coliform or E. coli positive	0	0	0	0

Most recent monitoring period

Gross Alpha	pCi/L	0	15	1.8	0.1	1.1	
Gross Beta	pCi/L	0	50	2.9	1.3	1.8	
Radium 226/228	pCi/L	0	5	0.0	0.1	1.5	

Lead and Copper

Most recent monitoring period

Lead	ppb	0 µg/L	AL=15	8 (4 samples exceeded AL)	0 samples exceeded AL
Copper	ppm	1.3 mg/L	AL=1.3	0.8 (1 sample exceeded AL)	0 samples exceeded AL

Unregulated Substances

Orthophosphate	ppm	unregulated		(1.0-1.1)/1.1	(1.0-1.1)/1.0		
Conductivity	µmhos/cm	unregulated		(121-172)/138	(60-104)/69	282	452.5
Silica	ppm	unregulated					
Sodium	ppm	No limits designated		7.97	9.47	<5	5.3

Other parameters (Not regulated)

Alkalinity	ppm	unregulated		(35-54)/43	(20-21)/20	129	(72-200)/133
Hardness	ppm	unregulated		(39-59)/47	(9-17)/11	139	(22-240)/179

Figures with a range were derived from running annual averages. The Western Virginia Water Authority (WVWA) constantly monitors its water supplies for various contaminants 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 maximum contaminant level. The WVWA has tested for volatile organics (VOCs), pesticides, synthetic organic compounds (SOCs) and total organic carbons (TOCs), all of which met with current state and federal standards for drinking water.

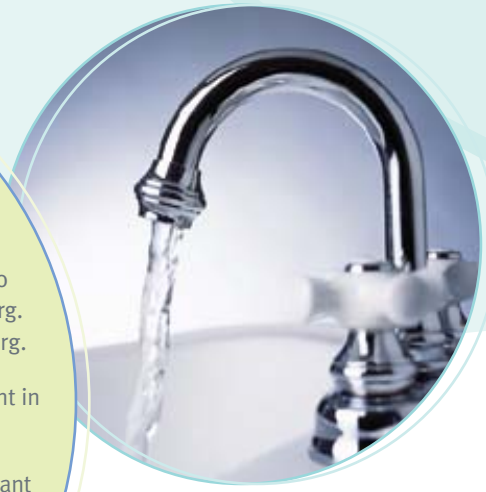
Spring Hollow	Martin Creek	Delaney Court	Country Hills	Source of Substance
0.04	0.005	<0.20	0.0022	Naturally present in the environment; discharge of drilling waste or mineral refineries
0.03				By-product of drinking water chlorine dioxide
1.0	0.2	0.6	0.4	Required disinfectant added during treatment process to eliminate bacteria
8.79	21.3	5.86	2.64	Naturally occurring in the environment
0.04				By-product of drinking water chlorine dioxide
0.9	1.2	0.5	0.2	Erosion of natural deposits; water additive to promote strong teeth; discharge from aluminum and fertilizer factories
0.07	0.3	<0.20	<0.05	Naturally occurring in the environment
0.58	0.16	0.8	0.8	Run-off from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
0.02	0.023	<0.10	<0.002	Naturally occurring in the environment
0.20	0.09	<0.20	7.5	Naturally occurring in the environment
0	0	0	<5	Physical property of water
11.58	9.3	11.47	10.6	Physical property that occurs when water reacts with metal
23	4.4	0.5		By-product of drinking water chlorination
19	2.7	0.1		By-product of drinking water chlorination
7.5	7.5	7.5	6.8	Acidity or basicity of water
194	244	148	131	Physical property of water
19.8	26.6	<5	5.68	Naturally present in the environment
2.3	1.87	<0.03	<1	Naturally present in the environment
<0.05		0.09	<1	Soil run-off
0	0	0	0	Naturally present in the environment
0	0	0	0	Human and animal waste
1.85	(0.0-2.9)/0.4	0	0.2	Erosion of natural deposits
3.11	(0.2-4.2)/2.3	1	1.2	Decay of natural and man-made deposits
0.68	0.1		1.2	Erosion of natural deposits
0 samples exceeded AL	0 samples exceeded AL	0 samples exceeded AL		Natural/industrial deposits, plumbing solder, brass alloy in faucets
0 samples exceeded AL	0 samples exceeded AL	0 samples exceeded AL	0 samples exceeded AL	Natural/industrial deposits, plumbing, wood preservatives
0.65	0	0.07	<0.1	Corrosion inhibitor added during treatment process
295	319	230	202	Physical property of water
18.44	25.4	35.1	26	Naturally present in the environment
9.23	19.3	8.63	4.6	Naturally occurring in the environment
121	169	111	84	Measurement of naturally occurring carbonates
147	173	100	90	Measurement of naturally occurring hardness metals

Complete water quality data are available from the Western Virginia Water Authority.

See page 9 for table definitions


Crystal Spring Filtration Plant

Citizen input is welcome!



Water Authority customers with questions or comments about their water supply, treatment or quality may call the Water Authority at 853-5700 or write to Western Virginia Water Authority, 601 S. Jefferson Street, Roanoke, VA 24011. For general inquiries, customers may also contact the Water Authority by e-mail at info@westernvawater.org. Billing questions may be directed to billing@westernvawater.org.

To report a water main break, sewer backup or leaking fire hydrant in the city or county, call 853-5700.

Tours of Carvins Cove Treatment Plant, Crystal Spring Filtration Plant and Spring Hollow Treatment Plant are available upon request for school, civic, neighborhood or other groups. For tour information, please call 853-1315. Water Authority staff members also are available to give presentations to groups about water supply, treatment and quality.

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