2009 Water Quality Report

During 2009 WCSA met all water quality requirements as well as all reporting and monitoring requirements of the Virginia Department of Health and the U.S. Environmental Protection Agency. Also, we are pleased to report that Don Cole, Chief Operator of the Middle Fork Water Treatment Plant, received the 2009 Operator of the Year Award from the Virginia Section of the American Water Works Association.

Your Water Sources

Your water comes from one or more of the following sources:

- **Middle Fork of the Holston River (Main System)**—a surface water source treated by chemical and physical means including filtration to remove particulate matter, chlorination for disinfection, and fluoridation for the promotion of dental health.
- **Cole, Widener and Jones Springs at Mill Creek (Main System)**— ground water sources under the direct influence of surface water; treated by filtration to remove particulate matter, chlorination for disinfection, and fluoridation for the promotion of dental health.
- **Reservation Spring (Main System)**—a ground water source treated by chlorination for disinfection and fluoridation for the promotion of dental health.
- **South Holston Lake (Main System)**—a surface water source purchased from BVU; treated by chemical and physical means including filtration to remove particulate matter, chlorination for disinfection and fluoridation for the promotion of dental health. This source is treated at the BVU Water Treatment Plant.
- **Mendota Well (Mendota)** —a ground water source disinfected with chlorine. A small amount of sequestrating agent is also added to the water to help control the oxidation of iron and manganese. Iron and manganese are naturally present in water; however, when iron and manganese oxidize, water may appear reddish in color or cause a taste in brewed beverages like coffee and tea.
- **Cardwell Town Well (Hayter's Gap)**—a ground water source treated and purchased from the Town of Saltville. The well is approximately 450 feet deep and draws water from the Tonoloway Limestone aquifer.
- **Saltville No. 10 Well (Hayter's Gap)**—a ground water source treated and purchased from the Town of Saltville. The well is approximately 1,050 feet deep and draws water from the Honaker Formation aquifer. Water from this source is treated with chlorine for disinfection and fluoridation for the promotion of dental health.

Source Water Assessment

A *Source Water Assessment* of the WCSA water system was conducted in 2001-2002 by WCSA, the Virginia Department of Health and a private consulting agency. Assessments of the Saltville and Mendota water systems were conducted in 2002 by the Virginia Department of Health. The *Source Water Assessment* is a study and report that provides information about where WCSA's drinking water comes from and what could pose a threat to the drinking water quality. The studies concluded that WCSA's surface and ground water sources are highly susceptible to contamination. For more information about this report, please contact Doug Canody, WCSA Chief Engineer at (276) 676-6767.

Contaminants in Drinking Water

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 can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer who are 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 microbial contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

Potential Sources of Contamination

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:

- **Microbial Contaminants**, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- **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.
- **Pesticides and Herbicides**, which may come from a variety or sources such as agricultural and urban storm-water runoff, and residential uses.
- **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.
- **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 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.

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. WCSA 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 Drinking Water Hotline or online at http://www.epa.gov/safewater/lead.

Cryptosporidium

In 2008, WCSA and Bristol Virginia Utilities, which supplies some water to WCSA, began monitoring for *Cryptosporidium* in their source waters (before treatment) as required by the EPA's Long Term 2 Enhanced Surface Water Treatment Rule (LT2ESWTR). *Cryptosporidium* is a microscopic parasite found in surface water throughout the United States. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Although filtration removes *Cryptosporidium*, the most commonly-used methods cannot guarantee 100 percent removal. Under the LT2ESWTR, the average *Cryptosporidium* concentration determines if additional treatment measures are needed. Twenty four samples from each source are required for analysis over a two year period. During 2009, 12 samples were collected from the WCSA Middle Fork of the Holston River source which indicated an average *Cryptosporidium* concentration of 0.017 oocysts per liter. During 2009, 12 samples were also collected from the Bristol Virginia Utilities South Holston Lake source which indicated an average *Cryptosporidium* concentration of 0.067 oocysts per liter. While the monitoring indicates the presence of these organisms in the source water (before treatment), the current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Based on the *Cryptosporidium* monitoring results so far and the current performance of WCSA and Bristol Virginia Utilities treatment plants, it is anticipated both treatment plants will meet the future treatment requirements of the LT2ESWTR.

About WCSA

Our goal is to provide exceptional water and wastewater service at a reasonable cost to our existing customers and to expand our water distribution and wastewater collection systems to provide these services to growing and unserved areas of the county.

WCSA is the third largest waterworks in southwest Virginia, serving approximately 20,500 water and approximately 1,500 wastewater connections in Washington County and surrounding areas. WCSA was formed in 1976 when the Washington County Sanitary District #1 consolidated with Goodson Kinderhook Water Authority.

WCSA is a political entity chartered under the Water and Waste Authorities Act by Washington County; however, we are not supported by tax revenues. Our cost of operations is supported solely through income generated from the connection and monthly user fees paid by our customers. Generally, monthly user fees pay for operating expenses while connection fees pay for capital improvements related to growth and capacity development. Our operations are governed by a Board of Commissioners who are appointed by the Washington County Board of Supervisors. The WCSA Board of Commissioners meets the fourth Monday of each month in the WCSA E.W. Potts Board Room. Board meetings are open to the public and County residents are encouraged to attend. For a schedule of meeting times, please call our office or visit our website.

Have Questions?

Our office is open 8am-4:30pm Monday - Friday.

Abingdon	(276) 628-7151
Bristol	(276) 669-7153
Smyth County	(276) 783-7159
Fax	(276) 628-3594

www.wcsa-water.com

WATER QUALITY DATA

Reporting Period of 1/1/2009 to 12/31/2009

Main System (Middle Fork of the Holston River; Cole, Widener, Jones and Reservation Springs; South Holston Lake)

Substance (Units)	MCLG	MCL	Level Detected	Violation	Range Detected	Date of Sample	Typical Source of Substance
Nitrate (ppm)	10	10	1.25	No	0.4-1.25	2009	Runoff from fertilizer use; leaching from septic tanks; wastewater; erosion of natural deposits
Fluoride (ppm)	4	4	1.0	No	ND-1.0	2009	Water additive which promotes strong teeth
Alpha Emitters (pCi/l)	0	15	0.9	No	ND-0.9	2008	Erosion of natural deposits
Combined Radium (pCi/l)	0	5	1.9	No	0.9-1.9	2008	Erosion of natural deposits
Chlorine (ppm)	MRDLG=4	MRDL=4	1.29	No	0.2-1.9	2009	Water additive used to control microbes
Total Organic Carbon	N/A	TT, met when ≥ 1	1.22	No	1.00-2.45	2009	Naturally present in the environment
Haloacetic Acids (ppb)	N/A	60	24	No	ND-77	2009	By-product of drinking water disinfection
TTHMs (Total Trihalomethanes) (ppb)	N/A	80	26	No	ND-94	2009	By-product of drinking water disinfection
Turbidity (NTU)	N/A	TT, 1 NTU Max TT, ≤ 0.3 NTU 95% of the time	0.25 100%	No No	0.02-0.25 N/A	2009	Soil runoff

Substance (Units)	MCLG	Action Level	90th Percentile	Date of Sample	# of Sites Exceeding AL	Typical Source of Substance
Lead (ppb)	0	AL=15	2.7	9/26/09	0	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	1.3	AL=1.3	0.242	9/26/09	1	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Hayter's Gap Community (Cardwell Town and Saltville No. 10 Wells)

Substance (Units)	MCLG	MCL	Level Detected	Violation	Range Detected	Date of Sample	Typical Source of Substance
Nitrate (ppm)	10	10	1.25	No	0.5-1.25	2009	Runoff from fertilizer use; leaching from septic tanks; wastewater; erosion of natural deposits
Fluoride (ppm)	4	4	0.99	No	0.93-0.99	11/26/07	Water additive which promotes strong teeth
Alpha Emitters (pCi/l)	0	15	2	No	0.2-2	2008	Erosion of natural deposits
Combined Radium (pCi/l)	0	5	2.8	No	0.7-2.8	2008	Erosion of natural deposits
Chlorine (ppm)	MRDLG=4	MRDL=4	0.63	No	0.32-1.0	2009	Water additive used to control microbes
Haloacetic Acids (ppb)	N/A	60	4	No	N/A	2009	By-product of drinking water disinfection
TTHMs (Total Trihalomethanes) (ppb)	N/A	80	25	No	N/A	2009	By-product of drinking water disinfection

Substance (Units)	MCLG	Action Level	90th Percentile	Date of Sample	# of Sites Exceeding AL	Typical Source of Substance
Lead (ppb)	0	AL=15	3.4	8/28/08	0	Corrosion of household plumbing systems; erosion of natural deposits
Copper (ppm)	1.3	AL=1.3	0.414	8/28/08	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Mendota Community (Mendota Well)

Substance (Units)	MCLG	MCL	Level Detected	Violation	Range Detected	Date of Sample	Typical Source of Substance
Alpha Emitters (pCi/l)	0	15	1.1	No	N/A	1/2/08	Erosion of natural deposits
Combined Radium (pCi/l)	0	5	1.7	No	N/A	1/2/08	Erosion of natural deposits
Chlorine (ppm)	MRDLG=4	MRDL=4	1.22	No	0.6-1.5	2009	Water additive used to control microbes
TTHMs (Total Trihalomethanes) (ppb)	N/A	80	1.8	No	N/A	7/8/09	By-product of drinking water disinfection

Substance (Units)	MCLG	Action Level	90th Percentile	Date of Sample	# of Sites Exceeding AL	Typical Source of Substance
Copper (ppm)	1.3	AL=1.3	0.032	8/26/08	0	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

Key Terms and Definitions

- **Action Level (AL):** the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Maximum Contaminant Level (MCL):** 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.
- **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.
- **Maximum Residual Disinfectant Level Goal (MRDLG):** the level of 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.
- **Maximum Residual Disinfectant Level (MRDL):** 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.
- **Treatment Technique (TT):** a required process intended to reduce the level of a contaminant in drinking water.
- **Nephelometric Turbidity Units (NTU):** a measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of our filtration system.
- **Measuring units:**
  - **N/A:** not applicable
  - **ND:** not detectable at testing limits
  - **ppb:** parts per billion or micrograms per liter
  - **ppm:** parts per million or milligrams per liter
  - **pCi/L:** picocuries per liter—a measure of radioactivity in water

Table Notes:

- The state 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, though representative, are more than one year old.
- We tested for many more constituents than is included in the table. We only report on detected constituents.
- MCLs are set at very stringent levels by the US EPA. 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 MCLs 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 other contaminants.