

STAFFORD
Virginia

2012 Water Quality Report



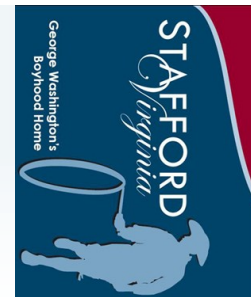
Testing Fire Hydrant Flow

George Washington's
Boyhood Home



Stafford's 350th Anniversary is
in 2014! For more
information, visit
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POSTAL CUSTOMER
STAFFORD, VIRGINIA





Message from the Director

It is my pleasure to provide you with the Annual Water Quality report for calendar year 2012. The information in this report is evidence of the Board of Supervisors commitment to its priorities for the community, which include Public Safety, Infrastructure and Service Excellence. It also reflects our dedication to providing you with high quality water through the diligent efforts of all of us in Stafford's Utilities Department. From the customer service specialists who answer the telephone, the meter technicians who monitor the water flow, the line crew workers and supervisors who keep the water lines and valves functioning, the mechanics providing the water tank and pump support, the water treatment operators ensuring quality water is produced, and all the other engineering, financial and support staff, we all are committed to ensuring this excellent product is available to you at the turn of a tap, twenty-four hours a day.

The Department of Utilities operates and maintains two water treatment facilities, 614 miles of water lines, 14 water storage tanks, and more than 5,080 fire hydrants. Together, these systems produced and delivered an average of 9.5 million gallons of water each day in 2012. Additionally, the construction of a third reservoir, the Rocky Pen Run Reservoir, demonstrates our commitment to serving the needs of our community.

The Stafford Board of Supervisors and your government staff have worked hard over the years to make Stafford the ideal place to live, work and raise a family. As Stafford prepares to celebrate its 350th anniversary next year, we have much to celebrate as a community. Our water system improves our quality of life as we visit our parks, promote our area for business investment, and help us prepare for emergencies. Water is life, and life in Stafford is good!

Harry Critzer

Director

Stafford Department of Utilities



Source Water Assessments

In 2002, the Virginia Department of Health conducted assessments of our two water reservoirs at Abel and Smith lakes to determine how susceptible they were to contamination. Since both are surface water reservoirs open to the environment and both have specific land use activities and potential sources of contamination within a 5-mile radius of the raw water intakes, both reservoirs were determined to be highly susceptible to contamination. We ask for your help to properly dispose of trash, waste oil and other hazardous materials so that they do not enter streams, storm drains or other possible routes of contamination to our reservoirs.

We Want To Hear From You!

Today, we face many water-related issues including protection of our water resources, timely renewal and replacement of aging pipes, planning to meet current and future water needs, and upgrades to our treatment facilities to meet increasingly stringent water quality requirements. We ask for and value your input as these issues are discussed; please attend meetings of the Board of Supervisors and the Utilities Commission in the George L. Gordon, Jr., Government Center to stay informed on important issues. Please visit us online at www.staffordcountyva.gov for meeting dates and times. You can also call us at 311 or 540-658-8630 for more information.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised individuals, such as those undergoing chemotherapy, having undergone organ transplants, having HIV/AIDS or other immune system disorders, and some elderly people and infants can be particularly at risk from infections. If you feel you are at risk, please seek advice about drinking water from your 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 at (800)426-4791.

**Celebrate Stafford's
350th Anniversary in 2014!**
**For information, visit
www.stafford350.com.**

New Reservoir Update

The proposed Rocky Pen Run Reservoir, which will be located in southern Stafford in the Hartwood District, is scheduled to be operational in 2014. The overall project consists of a river intake pumping station, an earthen dam, a state-of-the-art water treatment facility, two large distribution pipelines, and significant environmental mitigation. Construction is currently underway on the dam and the water treatment facility. This project is the product of years of planning, permitting, and significant work on the part of the Stafford Board of Supervisors, Stafford Utilities Department, County staff, and local, state, and federal regulatory agencies. This endeavor is projected to serve the water needs of Stafford County well into the middle of the 21st century.



Definitions

AL, Action Level: the concentration of a contaminant which triggers treatment or other requirements which a water system must follow.

CDC, Centers for Disease Control

EPA, United States Environmental Protection Agency

MCL, Maximum Contaminant Level: the highest level of a contaminant allowed in drinking water.

MCLG, Maximum Contaminant Level Goal: the level of a contaminant in drinking water below which there is no known or expected risk to health.

MRDL, Maximum Residual Disinfectant Level: the level of disinfectant added for water treatment which may not be exceeded at the consumer's tap.

MRDLG, Maximum Residual Disinfectant Level Goal: the level of disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the US EPA.

NTU, Nephelometric Turbidity Units: a measurement of the clarity of water.

pCi/L, Picocuries per liter: measure of radioactivity

ppb, Parts per billion: measure of concentration equal to 1 cent in \$10 million or about 1 minute in 1,902 years.

ppm, Parts per million: measure of concentration equal to 1 cent in \$10,000 or about 1 minute in 694 days.

TT, Treatment Technique: required process intended to reduce the level of a contaminant in drinking water.

Regulated Substances Table 2012, PWSID #6179100

Regulated Contaminants (samples taken from the water distribution system)							
Parameter	Average Results	Range of Results	Units	MCL	MCLG	In Compliance? Yes/No	Source
Haloacetic Acids (HAA5s)	31 (highest 4-qtr. compliance avg.)	18 - 40 (for individual sample sites)	ppb	Average of last 4 quarters ≤ 60 ppb	None	Yes	Byproduct of drinking water disinfection
Trihalomethanes (TTHMs)	43 (highest 4-qtr. compliance avg.)	23 - 79.1 (for individual sample sites)	ppb	Average of last 4 quarters ≤ 80 ppb	None	Yes	Byproduct of drinking water disinfection
Fluoride	0.84	0.39-1.50	ppm	4	4	Yes	Added to water to promote strong teeth
Nitrate + Nitrite	0.28	2 tests performed	ppm	10	10	Yes	Erosion of natural deposits, fertilizer runoff
Total Organic Carbon (TOC)	The running annual average of quarterly TOC percent removals ranged from 1.07 to 1.46		None	Treatment Technique: Running annual avg. of quarterly TOC % removals must be ≥ 1.0		Yes	Naturally present in the environment
Chlorine (samples taken from the water distribution system)							
Parameter	Highest 12-Month Running Annual Average	Range of Results (individual sites)	Units	MRDL	MRDLG	In Compliance? Yes/No	Source
Chloramines	2.9	0 - 4.1	ppm	4.0	4.0	Yes	Added as water disinfectant
Metals (samples taken from the customer's tap)							
Parameter	Action Level	MCLG	Test Results	Number of sampling locations above the EPA Action Level	In Compliance? Yes/No	Source	
Lead	90% of all test results must be 15 ppb or less	15 ppb	Results from 2010 <3 ppb to 8.0 ppb; 100% of the 31 samples taken were 15 ppb or less	0	Yes	Corrosion in household plumbing systems	
Copper	90% of all test results must be 1.3 ppm or less	1.3 ppm	Results from 2010 100% of the 31 test results were 0.130 ppm or less	0	Yes	Corrosion in household plumbing systems	
Turbidity (samples taken from filtered water at the treatment facility)							
Parameter	MCL		Units	Max. Detected	Lowest Percentage of Monthly Samples Meeting Limit	In Compliance? Yes/No	Source
Turbidity	Treatment Technique (TT) - at least 95% of all samples taken each month must be 0.3 NTU or less; 1 NTU maximum		NTU	0.27	100% of all samples taken were 0.3 NTU or less	Yes	Soil erosion from runoff

1. Tests were performed for an additional 71 possible contaminants which were NOT DETECTED.
2. Lead, copper, and total coliforms are reported to the Health Dept. on a County-wide basis.
3. Lead and copper results are from 2010.

Lead and Copper

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. Stafford County Utilities is responsible for providing high quality drinking water. We have no lead service lines, but we 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 at <http://www.epa.gov/safewater/lead>.

Use Water Wisely

Stafford is fortunate to have two water reservoirs and one more under construction. However, we should always be thinking of ways to use water wisely. With summer underway, the Utilities Department provides the following lawn-watering tips to keep your yard healthy and environmentally friendly.

- Use a shut-off nozzle when watering your lawn or flower beds.
- Install an automatic sprinkler timer on an outdoor faucet.
- Plant with water-efficient landscaping and use mulch. Organic mulches help minimize evaporation.
- Reprogram automatic electronic controllers frequently to correspond with current weather conditions.
- Thatch and aerate your lawn for better water filtration.
- Use more efficient sprinklers that provide large drops of water close to the ground.

Potential Sources of Water Contaminants

The Abel Lake and Smith Lake reservoirs are the sources of public water in Stafford County. Almost 86 square miles of land drains into these reservoirs. As the water travels over 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 of sources such as agriculture, urban storm water runoff and residential uses;
- **Organic chemical contaminants** including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems; or
- **Radioactive contaminants** which can be naturally occurring or can be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, EPA prescribes regulations that 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.

Drinking water, including bottled water, may contain small amounts of some of these contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. We must test the water to ensure that any contaminants present are below the maximum levels set by EPA. We test for color, iron, manganese, turbidity, organics and other materials. We add fluoride to promote healthy teeth, and the water is disinfected to protect against waterborne disease. You can obtain additional information and learn about potential health effects by calling the Environmental Protection Agency's Safe Drinking Water Hotline at (800) 426-4791.

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