



Message from the Director

It is with great satisfaction that our department provides the Annual Water Quality report for calendar year 2014. Harnessing the value of clean water for our growing community, Stafford County employs a dedicated team of multidisciplinary water professionals working around the clock to ensure high quality water is delivered to your tap.

This year marks the inaugural year for the new Lake Mooney Water Treatment Facility. This state-of –the-art facility uses membrane technology to ensure the most consistent levels of water treatment currently available. Our team there and at Smith Lake water treatment facility, combined with the distribution system maintenance team and the 15 water storage tanks and 629 miles of water lines, produced and delivered an average of 9.3 million gallons of water to our customers each day in 2014.

Stafford’s infrastructure is a top priority for our Board of Supervisors. To help us meet the needs of our community, the Board approved a restructuring of user fees for public water and sewer in 2013. New rates for water usage go into effect on June 1, 2015. The new fees will be reflected in the utility bills that you will receive on or after July 1, 2015, for water service provided on or after June 1, 2015. Please visit www.staffordcountyva.gov or call 658-8616 for more information.

Our commitment to you, our customers and community, is evident with every call we take, and the thousands of tests we make, to provide the clean water you’ve come to expect from us. This report summarizes the great value available for you, our customer, every time you reach for your tap.

Michael T. Smith
Director
Stafford Department of Utilities

Source Water Assessments

In 2002, the Virginia Department of Health conducted assessments of our 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, the 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.



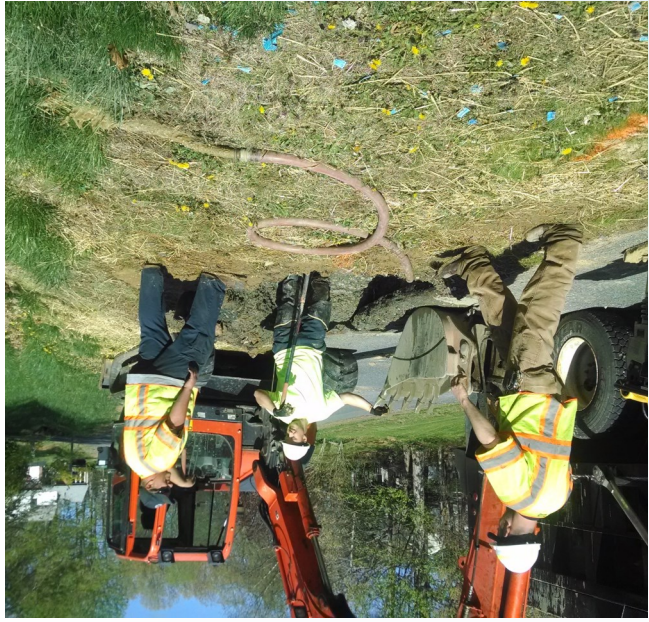
New Reservoir Update

Lake Mooney, located in southern Stafford in the Hartwood District, is continuing to fill. The overall project consisted 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. 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 new water source and its treatment facility are projected to serve the water needs of Stafford County well into the middle of the 21st century.



George Washington's Boyhood Home

Stafford Utilities Repairing a Residential Water Service



STAFFORD
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Utilities

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Virginia

2014
Water Quality Report

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 2014, 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)	44 (highest 4-qtr. compliance avg.)	15 -60 (for individual sample sites)	ppb	Average of last 4 quarters " 60 ppb	None	Yes	Byproduct of drinking water disinfection
Trihalomethanes (TTHMs)	49 (highest 4-qtr. compliance avg.)	21 - 66 (for individual sample sites)	ppb	Average of last 4 quarters " 80 ppb	None	Yes	Byproduct of drinking water disinfection
Fluoride	0.73	0.36-1.43	ppm	4	4	Yes	Added to water to promote strong teeth
Nitrate + Nitrite	0.15	<.06 - 0.24 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 1.30 to 1.67		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	3.2	0.0 - 4.2	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 2013 <1 ppb to 4.0 ppb; 100% of the 32 samples taken were 4 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 2013 0.2 ppm to 0.8 ppm; 100% of the 32 samples were 0.8 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	0.51	99.9% of all samples taken were 0.3 NTU or less	Yes	Soil erosion from runoff

1. Tests were performed for an additional 39 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 2013.

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. 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

Abel Lake, Lake Mooney and Smith Lake reservoirs are the sources of public water in Stafford County. More than 86 square miles of land drain 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.

Stafford Department of Utilities

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