

INTRODUCTION

This Annual Drinking Water Quality Report is presented by the Halifax County Service Authority (HCSA) for calendar year 2018 and is designed to inform you about your drinking water quality. Our goal at HCSA is to provide you with a safe and dependable supply of drinking water, and 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 Halifax County Service Authority (HCSA) received the 2018 Excellence in Waterworks Operations and Performance Award from the Virginia Department of Health.

If you have questions about this report, or if you want additional information about any aspect of your drinking water or want to know how to participate in decisions that may affect the quality of your drinking water, please contact: William Samples, HCSA Superintendent of Water at 434-575-4255. For more information can be obtained by calling the Environmental Protection Agency's Safe Drinking Water Hotline (800-426-4791) or visiting www.epa.gov/safewater.

GENERAL INFORMATION

The sources of drinking water (both tap 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 stormwater 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 stormwater 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 stormwater 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, EPA prescribes regulations that limit the concentration 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 human health.

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

Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.

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. EPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the Safe Drinking Water Hotline (800-426-4791).

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 Halifax County 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 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 www.epa.gov/safewater/lead.

SOURCE OF YOUR DRINKING WATER

The source of your drinking water is surface water with the raw water intake located in the Dan River. Treatment of the raw water consists of chemical addition, coagulation, flocculation, settling, filtration, fluoridation and chlorination. All of these processes work together to remove the physical, chemical, and biological contaminants to make the water safe for drinking.

A source water assessment of our system was conducted in 2002 by the Virginia Department of Health. The Dan River was determined to be of high susceptibility to contamination using the criteria developed by the state in its 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 5 years. The report is available by contacting your water system representative at the phone number or address given elsewhere in this drinking water quality report.

DEFINITIONS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The table on the next page shows the results of our monitoring for calendar year 2018. In the table and elsewhere in this report you will find many terms and abbreviations you might not be familiar with. The following definitions are provided to help you better understand these terms:

Non-detects (ND) - lab analysis indicates that the contaminant is not present within the detection limits of the instrument used.

Parts per billion (ppb) or Micrograms per liter (ug/l) - one part per billion corresponds to one minute in 2,000 years, or one penny in \$10,000,000.

Parts per million (ppm) or Milligrams per liter (mgl) - one part per million corresponds to one minute in two years or one penny in \$ 10,000.

Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.

Nephelometric Turbidity Unit (NTU) - nephelometric turbidity unit is a measure of the cloudiness of the water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Action Level (AL) - the concentration of a contaminant, which, if exceeded, triggers treatment or other requirements, which a water system must follow.

Treatment Technique (TT) - a required process intended to reduce the level of a contaminant in drinking water.

Maximum Contaminant Level Goal, or 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 Contaminant Level, or 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 residual disinfection level goal (MRDLG) – the level of a 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.

Abbreviations: NA – Not Applicable.

WATER QUALITY RESULTS

Radiological Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found	Violation	Date of Sample	Typical Source of Contamination
Alpha emitters pCi/L	0	15	<0.6	No	March 2015	Erosion of natural deposits
Combined Radium pCi/L	0	5	<0.6	No	March 2015	Erosion of natural deposits
Inorganic Contaminants						
Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Exceedance	Date of Sample	Typical Source of Contamination
Nitrates ppm	10	10	0.21	No	March 2018	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits.

Lead ppb	0	AL = 15	1.2 (90 th percentile) Range: ND - 12 Of the 20 samples collected none exceeded the AL.	No	September 2018	Corrosion of household plumbing systems; Erosion of natural deposits
Copper ppm	1.3	AL=1.3	0.18 (90 th percentile) Range: ND to 2.32 Of the 20 samples collected only one exceeded the AL.	No	September 2018	Corrosion of household plumbing systems; Erosion of natural deposits
Fluoride ppm	4	4	Average: 0.57 Range: 0.07 – 1.04	No	Monthly 2018	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Barium ppm	2	2	0.023	No	March 2018	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Antimony ppb	6	6	0.4	No	March 2018	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder

Microbiological Contaminants

Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Turbidity / NTU	N/A	1.0 Max TT 0.3 in 95% of monthly samples	0.021-0.19 (Range) 100 % <0.3	No	Daily 2018	Soil Runoff
Total Coliform Bacteria	NA	TT	0	No	Monthly 2018	Naturally present in the environment

Disinfection Byproducts

Contaminant / Unit of Measurement	MCLG	MCL	Level Found / Range	Violation	Date of Sample	Typical Source of Contamination
Chlorine ppm	MRDLG = 4	MRDL = 4.0	Avg. 0.57 Range: 0.1 – 1.0	No	Monthly at bacti sample points	Water additive used to control microbes
HAA5s (Total Haloacetic Acids) ppb	N/A	60 4 Qtr. Avg.	Highest Qtr. 28 Range: 19 - 35	No	Quarterly 2018	By-product of drinking water disinfection
TTHMs (Total Trihalomethanes) ppb	N/A	80 4 Qtr. Avg.	Highest Qtr. 76 Range: 29 to 78	No	Quarterly 2018	By-product of drinking water disinfection
Total Organic Carbon (TOC) ppm	N/A	TT-TOC removal ratio greater than or equal to 1.00	Lowest Quarterly Ave. Ratio: 1.00 Range: 1.00 to 1.49	No	Tested quarterly at raw and treated water	Naturally present in the environment

Unregulated Contaminant Monitoring Rule (UCMR3)						
Contaminant / Unit of Measurement	MCLG	MCL	Average / Range	Violation	Date of Sample	Typical Source of Contamination
Strontium ppb	NA	NA	120	NA	June 2014	Naturally occurring element; used in steel production, as a catalyst, and as a lead scavenger
Vanadium ppb	NA	NA	Average: 0.95 Range: 0.9-1.0	NA	June 2014	Naturally occurring element; commonly used in the production of other substances
1,4-Dioxane ppb	NA	NA	0.10	NA	June 2014	Used in the manufacture and processing of paper, cotton, textile products, automotive coolant, cosmetics and shampoos
Chromium, Hexavalent ppb	NA	NA	0.16	NA	June 2014	Discharge from steel and pulp mills; erosion of natural deposits

UCMR3

HCSA was enrolled in the UCMR3 program by the EPA for sampling of unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by USEPA. The purpose of monitoring for these contaminants is to help USEPA decide whether the contaminants should have a standard. This program was based off of the utility's population served, in which we were under the qualifying 10,000 served and we will no longer be continuing this sampling program unless we reach the qualifying population mark.

WATER QUALITY RESULTS

We regularly monitor for various contaminants in the water supply 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 detection limits of the lab equipment. Most of the results in the table are from testing done in 2018. However, the state allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently.

MCL's are set at very stringent levels. To understand the possible health effects described for many regulated constituents, a person would have to drink 2 liters of water every day at the MCL level for a lifetime to have a one-in-a-million chance of having the described health effect.

VIOLATION INFORMATION

We are also pleased to report to you that there were no detections of total coliforms or fecal coliforms in the monthly samples collected during the calendar year 2018 and that the Authority did not receive any violations in the 2018 reporting year.

This Drinking Water Quality Report was prepared by William Samples, HCSA Superintendent of Water, Halifax County Service Authority, at 2529 Houghton Avenue, South Boston, VA 24592. Should you have questions about this report, or if you want additional information about any aspect of your drinking water or want to know how to participate in decisions that may affect the quality of your drinking water, please contact Mr. William Samples, HCSA Superintendent of Water at (434) 575-4255.