

Serving Those Who Serve.®



Este informe contiene información muy importante sobre su agua beber. Tradúzcalo o hable con alguien que lo entienda bien.

This water quality report has been reviewed by the Virginia Department of Health.

2018 Water Quality Report
Joint Expeditionary Base Little Creek-Fort Story East Campus
PWS ID#: 3810210
Old Dominion Utility Services, Inc.
Subsidiary of American States Utility Services, Inc.



Dedicated to Delivering Clean Water

Every day, people depend on American States Utility Services, Inc. (ASUS) for the water that enhances their quality of life. We operate and maintain water and wastewater systems on military bases across the country, dedicating ourselves to producing drinking water that meets all state and federal standards and continually striving to adopt new methods for delivering the best quality drinking water to the military installations we serve. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education, while continuing to meet the needs of all of our water users.

Old Dominion Utility Services, Inc. (ODUS), a wholly-owned subsidiary of ASUS, is the sole provider of your water service. Our certified operators ensure the safe delivery of all potable water, taking water samples at approved sites to ensure its quality throughout our system. With a deep commitment to customer care, ASUS works diligently to protect every drop of water. As a utility provider, we constantly analyze our systems to determine which areas might need repair, replacement, or even supplementary facilities. ASUS also puts a strong focus on water efficiency, actively providing educational outreach for customers to further encourage better resource management.

We at ASUS are proud to be able to provide our services to the military personnel, civilians, and family members who live and work at Joint Expeditionary Base Little Creek-Fort Story East Campus (JEB LCFS East). We're honored to support the role your military installation plays in defending the country, both at home and abroad. We achieve this goal by always putting our fundamental ideals into practice. We pay special attention to the ultimate measure of success: our customer's peace of mind.

In order to maintain a safe and dependable water supply, we sometimes need to make improvements that will benefit all our customers. These improvements are sometimes reflected as rate structure adjustments. With our own team's deeply-rooted military background, we have an intimate understanding of what it takes to make an installation thrive, and we take pride in delivering unparalleled care in this regard.

We are pleased to present you with this annual water quality report and thank you for allowing us to serve you and your family. Please remember that we are always available to assist you should you ever have any questions or concerns about your water. For more details, you can view our past and current Water Quality Reports at www.asusinc.com.

Sincerely,
Your Management Team

Susan Miller
Director of Operations, Mid-Atlantic Region
American States Utility Services, Inc.



Grover "Cleve" Branton
Assistant Utility Manager, Old Dominion Utility Services, Inc.
American States Utility Services, Inc.



Important Information about Your Water

Your Drinking Water Source

The drinking water being delivered to you is purchased from the City of Norfolk and rechlorinated by the City of Virginia Beach. Virginia Beach, including Joint Expeditionary Base Little Creek-Fort Story (JEB LCFS East), is provided water through a 76-mile pipeline leading from Lake Gaston on the North Carolina-Virginia border to Lake Prince, a reservoir in Suffolk that is owned and operated by Norfolk.

Lake Gaston water is treated at the Moores Bridges Water Treatment Plant in Norfolk, where it is blended with City of Norfolk water. Norfolk's primary water supply comes from Lake Prince and Western Branch Reservoir in Suffolk and Lake Burnt Mills in Isle of Wright.

During extended dry periods, these lakes may be supplemented with water from deep wells located around the lakes and pump-overs from the Blackwater and Nottoway Rivers, located west of the lakes. In-town lakes in Norfolk and Virginia Beach also supplement Norfolk's water supply.

These include Lake Wright, Lake Whitehurst, Little Creek Reservoir, Lake Smith, Lake Lawson, and Stumpy Lake. From the reservoirs, water is pumped to the treatment plant.

What the EPA Wants You to Know

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those 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 for 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 at (800) 426-4791.

Lead in Home Plumbing

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. We are 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 30 seconds to 2 minutes before using water for drinking or cooking.

The Health Department recommends that you only use cold water for drinking, cooking, and especially for making baby formula. 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.

Important Information about Your Water

Substances that Could Be in Your Water

In order to ensure that tap water is safe to drink, the U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. 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 the water poses a health risk.

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 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 a result of oil and gas production and mining activities.

For more information about contaminants and potential health effects can be obtained by calling EPA's Safe Drinking Water Hotline at (800) 426-4791.

Chloramine Disinfection

In Fall 2000, Norfolk and Virginia Beach, along with other cities in South Hampton Roads, changed from a chlorine disinfection process to chloramines.

Chloramine disinfection is created when chlorine is combined with a small amount of ammonia. The purpose of this change was to lower disinfection byproducts in response to new and more stringent state and federal regulations.

Chloraminated water is safe for drinking, cooking, bathing, and all other everyday uses. There are, however, two groups of people who should take special precautions in using chloraminated water: kidney dialysis patients and fish owners.

Like chlorine, chloramines must be removed from water used in kidney dialysis machines and aquariums.

Source Water Assessment

Your water is tested before and after it is treated to ensure it meets federal and state standards. The Hampton Roads Planning District Commission has completed a Source Water Assessment of the City of Norfolk water sources in 2017.

The surface water sources were rated as relatively high in susceptibility to contamination (one reason it's important for water treatment) 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, a susceptibility explanation chart, and term definitions. The report is available by contacting Peter Pommerenk at (757) 385 4171 or ppommere@vbgov.com.

Important Information about Your Water

UCMR 4 Sampling

In 2018, the City of Norfolk participated in the 4th stage of the EPA's Unregulated Contaminant Monitoring Rule (UCMR4) program by performing additional tests on our drinking water.

UCMR4 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

Sodium

There is presently no established standard for sodium in drinking water. Water containing more than 20 mg/L should not be used as drinking water for those persons whose physician has placed them on severely restricted sodium diets.

The maximum detected level was 16 mg/L, the average was 13 mg/L and the range was 10 – 16 mg/L.

2018 Results for Detected Contaminants

JEB LCFS East, Norfolk, and Virginia Beach constantly monitor for various contaminants in the water supply to meet all regulatory requirements. The tables list 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.

The following tables list the drinking water contaminants that were detected during the 2018 calendar year. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in these tables is from testing done January 1 – December 31, 2018. The state requires JEBLCFS East to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one year old.

The State recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

DEFINITIONS

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppt (parts per trillion): One part substance per trillion parts water (or nanograms per liter).

pCi/L (picocuries per liter): A measure of radioactivity.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

MCL (Maximum Contaminant Level): 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.

MCLG (Maximum Contaminant Level Goal): 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.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): 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.

NA: Not applicable

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

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

SMCL (Secondary Maximum Contaminant Level): Secondary Maximum Contaminant Levels are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects. These contaminants are not considered a risk to human health at the SMCL. Secondary MCLs are set to manage the odor, taste and appearance of drinking water.

SMCLG (Secondary Maximum Contaminant Level Goal): Secondary Maximum Contaminant Level Goals have not been established.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as LRAAs.

2018 Results for Detected Contaminants (continued)

Source Water Quality - Detected Contaminants Monitored by the City of Norfolk

Primary Standards: Heath-based (Units)	Primary MCL	MCLG	Range of Detection	Average Level	Highest Level	Meets EPA Standard?	Likely Source
Turbidity							
Highest single measurement of the Treated Surface Water (NTU)	TT = 1.0	N/A			0.24	Yes	Soil Runoff
Lowest percent of all monthly readings less than or equal to 0.3 NTU (%)	TT = 95	N/A	0.30 maximum	100.00%		Yes	Soil Runoff
Regulated Substances (units)							
2, 4-D (ug/L)	70	70	ND - 0.3	ND	0.3	Yes	Agricultural Runoff
Atrazine (ug/L)	3	3	ND - 0.05	ND	0.05	Yes	Agricultural Runoff
Barium (ug/L)	2000	2000	30 - 40	30	40	Yes	Erosion of natural deposits
Fluoride (mg/L)	4	4	0.1 - 0.9	0.7	0.8*	Yes	Added to promote strong teeth
Nitrate (as Nitrogen) (mg/L)	10	10	0.10 - 0.19	0.14	0.19	Yes	Erosion of natural deposits, runoff
Total Organic Carbon (mg/L)	TT	N/A	1.7 - 2.9	2.4	2.8*	Yes	Occurs naturally in the environment
Secondary & Unregulated Substances Monitoring (units)	Secondary MCL	Secondary MCLG	Range of Detection	Average Level	Highest Level	Likely Source	
Aluminum (mg/L)	0.2	N/A	0.02 - 0.03	0.02	0.03	Erosion of natural deposits, also from addition of treatment chemicals at the water treatment plant (WTP)	
Chloride (mg/L)	250	N/A	10 - 22	17	22	Occurs naturally in the environment	
Foaming Agents (ug/L)	500	N/A	3 - 10	7	10	Occurs naturally in the environment	
Iron (mg/L)	0.3	N/A	ND - 0.14	0.08	0.14	Occurs naturally in the environment	
Manganese (mg/L)	0.05	N/A	ND - 0.005	ND	0.005	Occurs naturally in the environment	
pH [acidity] (pH units)	6.5 - 8.5	N/A	7.3 - 8.5	7.7	7.8*	Occurs naturally in the environment	
Sulfate (mg/L)	250	N/A	27 - 34	31	34	Occurs naturally in the environment, also from addition of treatment chemicals at the WTP	
Total Dissolved Solids (mg/L)	500	N/A	102 - 126	112	126	Occurs naturally in the environment	
Zinc (mg/L)	5	N/A	0.06 - 0.25	0.18	0.25	Occurs naturally in the environment, also from addition of treatment chemicals at the WTP	

N/A = Not Applicable.

ND = Not Detected, below minimum report level.

*This number is the highest monthly average for the calendar year.

2018 Results for Detected Contaminants (continued)

Source Water Quality-Detected Contaminants Monitored by the City of Norfolk

Unregulated Substances Monitoring (units)	Suggested Limit	MCL	Range of Detection	Average Level	Likely Source
Alkalinity (mg/L)	N/A	N/A	24-34	29	Occurs naturally in the environment
Ammonia (mg/L)	N/A	N/A	ND - 0.20	0.10	Occurs naturally in the environment
Hardness as CaCO ₃ (mg/L)	N/A	N/A	45 - 64	55**	Occurs naturally in the environment
Metolachlor (mg/L)	N/A	N/A	ND - 0.1	ND	Agricultural runoff
Nickel (mg/L)	N/A	N/A	ND - 0.003	ND	Corrosion of plumbing material
Silica (mg/L)	N/A	N/A	3 - 9	6	Occurs naturally in the environment
Sodium (mg/L)	N/A***	N/A	10 - 16	13	Occurs naturally in the environment

**Norfolk's water averages range between soft and slightly hard. This means there is enough hardness for soaps and detergents to work properly, yet not too much to interfere with most industrial applications. To find grains per gallon, divide value by 17.

***For physician-prescribed "no salt diets," a limit of 20 mg/L is suggested.

Distribution System Water Quality - Monitored by Old Dominion Utility Services, Inc.

Disinfection Byproducts & Disinfectant Residuals (Units)	Primary MCL (MRDL)	MCLG	Range of Detection	Highest 4-Quarterly Average	Meets EPA Standard?	Likely Source
Chloramines (as Cl ₂) (mg/l)	4	4	0.23 - 2.6	1.4	Yes	Water additive for control of microbes
HAA5 [Total of 5 Haloacetic Acids] Stage 2 Monitoring (ug/l)	60	N/A	22 - 41	40	Yes	Byproduct of drinking water chlorination
TTHMs [Total of 4 Trihalomethanes] Stage 2 Monitoring (ug/l)	80	N/A	19.0 - 54.8	43	Yes	Byproduct of drinking water chlorination
Inorganic Constituents (units)	Action Level	MCLG	Range of Detection	90% Level	Meets EPA Standard?	Likely Source
Copper (mg/l)	1.3	1.3	0.008 - 0.147	0.098	Yes	Corrosion of household plumbing
Lead (ug/l)	15	0	ND - 2	2	Yes	Corrosion of household plumbing

We are pleased to report to you there were no detections of total or fecal coliforms in the monthly samples collected during calendar year 2018.

N/A = Not applicable. ND = Not detected.



Questions?

If you have questions about your local drinking water quality:

At Joint Expeditionary Base Little Creek-Fort Story East Campus, call Susan Miller at (757) 888-0485.

At Norfolk, call Jillian Terhune, Division of Water Production and Water Quality, City of Norfolk, at 441-5678 or Jillian.Terhune@norfolk.gov.

At Virginia Beach, call Susan Sadowski, Virginia Beach Department of Public Utilities Laboratory, at 385-1400 or ssadowsk@vbgov.com.

At Virginia Department of Health Office of Drinking Water at (757) 683-2000 (vdh.virginia.gov/ODW).

If you have questions or concerns about decisions affecting your drinking water quality, please contact the following:

Virginia Beach Department of Public Utilities is part of the City of Virginia Beach municipal government. The Virginia Beach City Council meets on the first and third Tuesdays of each month except July and December, when the meetings occur on the first and second Tuesdays. Information and agendas for upcoming meetings may be requested from the Virginia Beach City Clerk's office at (757) 385-4303 or found at www.VBgov.com

The Norfolk City Clerk to see when water quality presentations are scheduled before the Norfolk City Council. For times and agenda, call (757) 664-4253.

Or contact Bob Montague, Director, Virginia Beach Department of Public Utilities, at (757) 385-4171 (bmontagu@vbgov.com)

Serving Those Who Serve[®]

2018 Water Quality Report
Joint Expeditionary Base Little Creek-Fort Story East Campus
PWS ID#: 3810210
Old Dominion Utility Services, Inc.
Subsidiary of American States Utility Services, Inc.

