



# Marine Corps Base Quantico

## 2018 Annual Drinking Water Quality Report

### Camp Upshur Water System PWSID 6153063



#### Introduction

Marine Corps Base Quantico G-F, Installation and Environment Division, is pleased to present the Base's Camp Upshur Annual Water Quality Report for 2018. This report is designed to inform you about the quality of water and services we deliver to you every day.

Our constant goal is to provide you, the consumer, with a safe and dependable supply of drinking water.

We are committed to ensuring the quality of your water. To help us meet this goal, we have established a Water Quality Response Team. Personnel from the Base Naval Health Clinic join with our Water Quality Assurance Technician, to respond to customer concerns and water quality questions. Together, they have the resources to test the chemical and bacteriological quality at the consumers tap.

Our water sources for the Camp Upshur distribution system (PWSID No. 6153063) are two deep wells.

#### Summary

The Camp Upshur water system routinely monitors for constituents in your drinking water according to State and Federal laws. This report shows the results of our monitoring for the period January 1 through December 31, 2018.

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:**

- i. *microbial contaminants*, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife;
- ii. *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;
- iii. *pesticides and herbicides*, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses;
- iv. *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;
- v. *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, USEPA prescribes regulations that limit 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 .

Drinking water, including bottled water, may reasonably be expected to contain at least a small amount of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. More information about drinking water contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking water Hotline at 1-800-426-4791 or visiting their website at <http://water.epa.gov/drink/index.cfm>.

#### The Facts

This report contains information on all regulated contaminants found in your drinking water. Additionally, over 85 water tests are performed for a variety of contaminant not found in the water delivered to the Base. *An explanation of the results is included in a data table at the end of this report.*

Maximum Contaminant Levels (MCL's) are set at very stringent levels by the USEPA. In developing the standards USEPA assumes that the average adult drinks 2 liters of water each day throughout a 70-year life span. USEPA generally sets MCL's 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.

The VDH conducted a source water assessment in 2002. The purpose was to determine the relative susceptibility of the source water to activities in the watershed. The source water was calculated to have a high susceptibility to contamination due to ongoing Base activities. There was no evidence of contamination of the water source in any of our testing.



#### Microbial Analysis

**Total Coliform:** *Coliforms* are bacteria that are present naturally in the environment and are used as an indicator that other, potentially harmful bacteria, may be present.

When Coliform bacteria are found, special follow-up tests are done to determine if harmful bacteria are present in the water supply. If the limit is exceeded, the water supplier must notify the public .

We are pleased to report there were no positive bacteriological samples taken from the Camp Upshur distribution system in 2018.

**System**

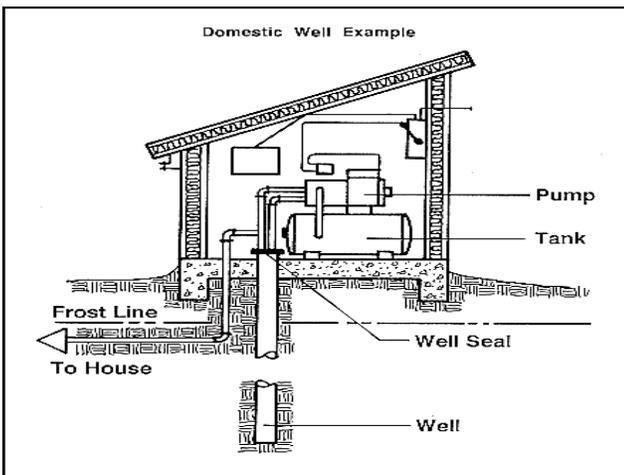
We encourage our customers to contact us to report their observations. At that time, we will visit the site and determine if we need to run additional tests. If you have any questions about this report or concerning your water please contact Hunho Kim, Water and Wastewater Commodities Manager (703) 432-2466.



**Should Some People Take Special Precautions?**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune system compromised persons such as persons with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be partially at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbiological contaminants are available from the USEPA Safe Drinking Water Hotline at 1-800-426-4791. We constantly monitor the water supply for various contaminants. **We strongly recommend that our customers not use water from the hot water tap for consumption.**

Any contaminants found in the water may accumulate in the hot water tank. This would be true anywhere, regardless of the water source. This does not mean that there is anything wrong with our



drinking water. All water tests are conducted on water from the cold-water tap. Our concern is that the water quality is unknown when water from the hot-water tap is consumed. We believe you are better served by heating cold-water for this purpose.

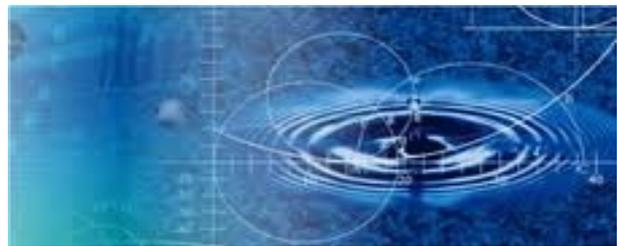
**Lead and Copper**

The lead levels found in samples taken at Upshur are well below regulatory limits.



More information about drinking water contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking water Hotline at 1-800-426-4791 or visiting their website at <http://water.epa.gov/drink/index.cfm>.

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. Marine Corps Base Quantico 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, until it becomes cold or reaches a steady temperature before using the 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 USEPA's Safe Drinking water Hotline at 1-800-426-4791 or visit <http://www.epa.gov/safewater/lead>.



[www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).

**Conclusion**

Thank you for allowing us to continue providing your family with clean, quality water this year. In order to maintain a safe and dependable water supply we sometimes need to make improvements that benefit all of our customers.

Our customers can help protect themselves and our water system by careful use of this resource, which is the heart of our community, our way of life and our children's future.

## Quantico Marine Corps Base Water Quality Report Camp Upshur 2018

Microbiological Results	MCLG	MCL	No. of Samples Indicating Presence of Bacteria	Highest total number of positive samples per month	Samples collected per Month	Violation	Major source in drinking water.
Total Coliform Bacteria	0	No more than one positive sample per month	0	0	1	No	Naturally present in the environment
Fecal Coliform	0	A routine sample & a repeat sample are total coliform positive & one is also fecal coliform.	0	0	NA	No	Naturally present in the environment

We may not exceed one positive sample per month.

We are pleased to report there were no samples that indicated the presence of bacteria.

### Primary Regulated Contaminants

Metals (units)	MCLG	Action Level	90th Percentile	Number of sites tested	No. of Sites Exceeding action level.	Range Low to Highest	Violation	Source
Copper (ppm)	0	1.3ppm	0.089ppm	5	0	Range 0.050-0.225ppm	No	Corrosion of household plumbing systems
Lead (ppb)	0	15ppb	<0.0020 ppb	5	0	All samples below detection level	No	Corrosion of household plumbing systems

The Lead and Copper results are from June-September 2018; next test are to be conducted in 2019.

Parameter (units)	MCLG	MCL	Average Results	Range Low to High	Violation	Source
Nitrate-Nitrite (ppm)	10ppm	10ppm	0.60ppm	Both samples were 0.60ppm	No	Leaching from septic tanks, fertilizer, erosion of natural deposits.
Chlorine (ppm) Results from distribution system.	MRDLG 4ppm	MRDL 4ppm	1.0 ppm	0.4-2.4	No	Added to drinking water as a disinfectant.
Barium (ppm)	2	2	.36 ppm	0.298-0.430ppm	No	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits

Disinfection By-Products	MCLG	MCL	Results	Violation	Source
Haloacetic Acids Group HAA5 (ppb)	0	60ppb	6ppb Results from 2018	No	By-product of drinking water disinfection.
Trihalomethane THM (ppb)	0	80ppb	10ppb Results from 2018	No	By-product of drinking water disinfection.

### Secondary Regulated Contaminants

Parameter (units)	PMCL	SMCL	Average Results	Range Low to High	Violation	Source
Chloride (ppm)	NA	250ppm	10.8ppm	9.71-11.9ppm	No	Naturally present in environment
Sulfate (ppm)	NA	250ppm	32.3ppm	27.3-37.3ppm	No	Naturally present in the environment; addition of water treatment substances.
Zinc (ppm)	NA	5ppm	0.071	0.70-0.071ppm	No	Naturally present in environment
Sodium (ppm)	NRL	NRL	21ppm	20-22ppm	NA	Naturally present in the environment; addition of water treatment substances.

### Physical Quality

Parameter (Units)	PMCL	SMCL	Average Results	Range Low to High	Violation	Source
Total Dissolved Solids (ppm)	NA	500ppm	288ppm	274ppm-283ppm	No	Naturally present in environment

### Key to acronyms and abbreviations.

<b>Non-Detects ND</b>	Laboratory analysis indicates that the constituent is below the detection level.
<b>Parts per million, PPM &amp; Milligrams per liter MG/L</b>	Parts per million and milligrams per liter are the same. One part per million corresponds to one minute in two years, or a penny in \$10,000.
<b>Parts per billion PPB &amp; Micrograms per liter Mcg/L</b>	Parts per billion and Micrograms per liter are the same. One part per billion corresponds to one minute in 2000 years, or a penny in \$10,000,000.
<b>Picocuries per liter (pCi/l)</b>	Picocuries per liter is a measure of the radioactivity in the water.
<b>Action Level AL</b>	Concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow.
<b>Treatment Techniques (TT)</b>	A treatment technique is a required process intended to reduce level of contaminant in drinking water
<b>Maximum Contaminant Level MCL</b>	The highest level of a contaminate that is allowed in drinking water. MCL's are set as close to the MCLG's as feasible using the best available treatment technology
<b>Maximum Contaminant Level Goal MCLG</b>	The "Goal" (MCLG) is the level of a contaminant in drinking water below which there is no known or expected risk to MCLG's allow for a margin of safety.
<b>Maximum Residual Disinfection Level MRDL</b>	The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfection is necessary for control of microbial contaminants.
<b>Maximum Residual Disinfection Level Goal MRDLG</b>	The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLG does not reflect the benefits of the use of disinfectants.
<b>No Regulatory Limit NRL</b>	A substance or chemical constituent that is of interest but currently does not have a regulatory limit or concentration.
<b>Action Level AL</b>	Concentration of a contaminant which, if exceeded, triggers treatment or other requirements a water system must follow.