



NAVAL STATION NORFOLK & NSA HAMPTON ROADS, HEADQUARTERS COMPLEX NORFOLK, VIRGINIA 2013 CONSUMER CONFIDENCE REPORT

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Naval Station Norfolk and Naval Support Activity Hampton Roads, Headquarters Complex (NSN & NSA HR HQ Complex) are committed to providing you drinking water that is safe and reliable. NSN & NSA HR HQ Complex believe that providing you with accurate information about your water is the best way to assure that your water is safe.

This Consumer Confidence Report is a snapshot of the quality of your drinking water in 2013. The purpose of this annual report is to advise consumers of where their water comes from, provide water quality data, advance greater understanding of drinking water, and heighten awareness to conserve water resources.

NSN & NSA HQ COMPLEX SOURCE WATER

NSN & NSA HR HQ Complex purchase drinking water from the City of Norfolk. Norfolk's primary water supply comes from eight reservoirs located in Norfolk as well as Suffolk/Isle of Wight County. Additionally water sources include the Blackwater, and Nottoway Rivers and four deep wells located in Suffolk. From the reservoirs, water is pumped through pipes to the 37th Street Treatment Plant which is located in Norfolk. Water treatment chemicals are added to the water, causing small solid particles to clump together and sink to the bottom of a settling basin. The water is then filtered to remove bacteria, algae, and other impurities. Finally, the water is disinfected with chloramines to kill any remaining bacteria. The 37th Street Water Treatment Plant provides state of the art treatment technology and surpasses all state and federal water quality standards and regulations. In addition to the over 230 substances that are tested at the 37th Street Treatment Plant, Naval Station staff routinely monitors for bacteriological pathogens, disinfection byproducts, lead, and copper in order to meet federal and state regulations and to ensure the highest water quality possible.

ABOUT DRINKING WATER

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. Substances (referred to as contaminants) in source water may come from septic systems, discharges from domestic or industrial wastewater treatment facilities, agricultural and farming activities, urban storm water runoff, residential uses, and many other types of activities. Water from surface sources is treated while groundwater may or may not receive any treatment.

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 may 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 may come from gas stations, urban storm water runoff, and septic systems.

Radioactive contaminants, which may be naturally occurring, or the result of oil and gas production and mining activities.

In addition to these contaminants, all lakes and streams contain algae, which are microscopic plants that can cause taste and odor problems in drinking water.

For additional information:

City of Norfolk Division of
Water Quality
757-441-5678
<http://www.norfolk.gov/utilities/quality/default.asp>

Virginia Department of
Health
757-683-2000
<http://www.vdh.state.va.us/drinkingwater/>

USEPA Safe Drinking
Water Hotline
800-426-4791
<http://www.epa.gov/safewater/>

NAVFAC Mid-Atlantic
Environmental
757-341-0482



The source of NSN/NSA's drinking water includes eight reservoirs, two rivers, and four deep wells.

ABOUT DRINKING WATER (continued)

All 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. More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency's (EPA) Safe Drinking Water Hotline (800-426-4791).

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



Who needs to take special precautions?

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 systems 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/Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the EPA's Safe Drinking Water Hotline (800-426-4791).

Kidney dialysis patients should consult with their health care providers or dialysis centers in order to take special precautions when using chloraminated water. Fish owners should be sure chloramines are removed from the water before it is used in aquariums or ponds. Many pet stores sell water conditioners for chloraminated water.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. The primary source of Lead in drinking water is materials and components associated with service lines and home plumbing. NSN & NSA HR HQ Complex are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components in buildings. 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 have questions about your water, please contact NAVFAC Mid-Atlantic Environmental at 757-341-0482. 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>.

DEFINITIONS AND ABBREVIATIONS

Contaminants in your drinking water are routinely monitored according to Federal and State regulations. The table on the following pages shows the results of monitoring for 2013. In the tables and elsewhere in this report you may find many terms and abbreviations which you are not familiar. The following definitions are provided to help you better understand these terms:

- **Action Level (AL)** - The concentration of a contaminant that, if exceeded, triggers treatment or other requirements which a water system must follow.
- **Maximum Contaminant Level (MCL)** - The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to MCLGs as feasible using the best available treatment technology.
- **Maximum Contaminant Level Goal (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 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.
- **Maximum Residual Disinfectant 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 contamination.
- **Nephelometric Turbidity Unit (NTU)** - A measure of the clarity, or cloudiness, of water. Turbidity in excess of 5 NTU is just noticeable to the average person. Turbidity is monitored because it is a good indicator of the effectiveness of our filtration system.
- **Non-detection (ND)** - Laboratory analysis indicates that the contaminant is not present.
- **Picocuries per liter (pCi/L)** - A measure of the radioactivity in water.
- **Parts per million (ppm) or Milligrams per liter (mg/L)** - A measurement of the amount of contaminant per unit of water. A part per million is one cent in \$10,000 or one minute in two years.
- **Parts per billion (ppb) or Micrograms per liter (ug/L)** - A measurement of the amount of contaminant per unit of water. A part per billion is like one cent in \$10,000,000 or one minute in 2,000 years.
- **Secondary Maximum Contaminant Level (SMCL)** - Non-enforceable standard that is established for aesthetic considerations
- **Treatment Technique (TT)** - A required process intended to reduce the level of a contaminant in drinking water.

WATER QUALITY DATA

The tables below list only those contaminants that were present in your drinking water at levels detectable by laboratory equipment. Unless otherwise noted, the data presented in these tables is from testing done in 2013. We are required to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not change. The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. The EPA sets the Maximum Contaminant Levels (MCLs) and the Maximum Contaminant Level Goals (MCLGs) as listed in the tables. The Regulated Substances Table and the Unregulated Substances Table are provided for your information and as required by the Consumer Confidence Rule.

2013 WATER QUALITY TABLE

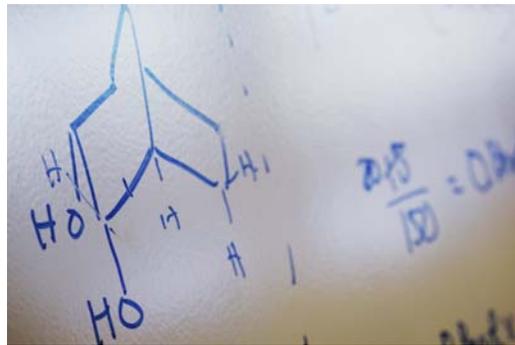
Regulated Substances	Unit	MCLG	MCL	Highest Level	Average Level	Range	Meets EPA Standards	Possible Source of Contamination
Barium	ppm	2	2	0.04	0.03	0.03 - 0.04	Yes	Erosion of natural deposits
Fluoride	ppm	4	4	0.9 ¹	0.6	0.1 – 0.9	Yes	Added for the prevention of tooth decay
Haloacetic Acids (HAA5)	ppb	NA	60	39.5 ²	40 ³	ND – 39	Yes	Drinking water disinfectant by-product
Nitrate as Nitrogen	ppm	10	10	0.33	0.17	0.06 – 0.33	Yes	Erosion of natural deposits—runoff
Total Organic Carbon	ppm	NA	TT	2.4 ¹	2.1	1.9 – 2.4	Yes	Occurs naturally in environment
Trihalomethanes (TTHM)	ppb	NA	80	53.6 ²	55 ³	3.3 – 53.6	Yes	Drinking water disinfectant by-product
Lead and Copper Monitoring	Unit	MCLG	AL	Highest Level	Average Level	Range	Meets EPA Standards	Possible Source of Contamination
Lead (2013 Data)	ppb	0	15	12	90 th Percentile = 4	ND - 12	Yes	Corrosion of household plumbing systems; Erosion of natural deposits
Copper (2013 Data)	ppm	1.3	1.3	0.716	90 th percentile = 0.178	0.030 – 0.716	Yes	Corrosion of galvanized pipes; Erosion of natural deposits
Microbiological Contaminants	Unit	MCLG	MCL	Highest Level	Average Level	Range	Meets EPA Standards	Possible Source of Contamination
Total Coliform	# Positive	0	More than 2 samples	8*	NA	0 - 7	No	Naturally present in the environment
* This number represents the highest number of positive coliform samples in a month. See Violations and Exceedances for explanation. Coliform bacteria were detected as follows: October (eight), September (one), August (two), and July (three). Extensive flushing was commenced to draw fresh water to the area and re-sampling results have since been negative for Total Coliform.								
Residual Disinfectants	Unit	MCLG	MCL	Highest Level	Average Level	Range	Meets EPA Standards	Possible Source of Contamination
Total Chlorine Residual	ppm	4	4 ⁴	5.2	2.3 ⁴	0.1 – 5.2	Yes	Drinking water disinfectant
Turbidity	Unit	MCLG	MCL	Highest Level (NTU)	Lowest monthly percentage of samples meeting the limit	Meets EPA Standards	Possible Source of Contamination	
Turbidity	NTU	NA	<1.0 maximum, and ≤0.3 95% of the time	0.34	99%	Yes	Soil Run-off	

Turbidity is a measure of the cloudiness of water. Turbidity, by itself, is not harmful, but it can interfere with the disinfection of drinking water.

¹ This number is the highest monthly average of compliance samples for the calendar year; ² This number is the highest quarterly average of compliance samples for the calendar year; ³ This number is the annual average calculated from compliance samples for the calendar year. ⁴ Annual average; ⁵ The MCL for Beta particles is 4 mrem/year. EPA considers 50 pCi/L to be the level of concern for Beta particles.

Secondary and Unregulated Monitored Substances	Unit	SMCL	Highest Level	Average Level	Range	Likely Source
Aluminum	ppm	0.20	0.06	0.04	0.03 – 0.06	Erosion of natural deposits; also from use of chemicals at water treatment plant
Chloride	ppm	250	23	18	15 - 23	Natural in environment
Iron	ppm	0.30	0.06	0.02	ND – 0.06	Natural in environment
Manganese	ppm	0.050	0.02	0.01	ND – 0.02	Natural in environment
Nickel	ppm	n/a	0.003	ND	ND – 0.003	Corrosion of plumbing materials
pH (acidity)	pH units	6.5 – 8.5	7.7	7.6	7.5 – 7.7	Adjusted during water treatment process
Sodium	ppm	n/a*	26	21	15 - 26	Natural in environment; also from use of chemicals at water treatment plant
*For physician-prescribed "no salt diets" a limit of 20 ppm is suggested.						
Sulfate	ppm	250	36	33	29 - 36	Natural in environment; also from use of chemicals at water treatment plant
Total Dissolved Solids	ppm	500	121	106	91 – 121	Natural in environment
Zinc	ppm	5	0.12	0.11	0.10 – 0.12	Natural in environment; also from use of chemicals at water treatment plant

Additional Information	Unit	Average Level	Range
Alkalinity	ppm	25	17 – 33
Ammonia	ppm	0.1	ND – 0.3
Hardness	ppm	38	29 – 45
Silica	ppm	6	2 – 9



VIOLATIONS AND EXCEEDANCES

One or more samples taken during routine monitoring in July, August, September, and October of 2013 were found to be positive for Total Coliform bacteria. During the months of July and October, more than 2 monthly samples were positive, which is a violation of a drinking water standard. Coliform bacteria are generally not harmful themselves and are naturally present in the environment. The presence of coliform bacteria in NSN & NSA HR HQ Complex routine samples indicated that other, potentially-harmful, bacteria may be present. and this was a warning of potential problems. Consumers were notified, in accordance with EPA regulations. Whenever coliform bacteria are detected in any sample, additional testing is performed on that sample to see if other bacteria of greater concern, such as fecal coliform or E. coli, are present. **Additional testing on these samples did not identify the presence of these other more harmful bacteria.** Although it is difficult to conclusively identify the source of the problem, chlorine residual decay as result of excessive warm weather, and other environmental factors, likely contributed to conditions allowing for coliform growth within the piping system. Extensive flushing was performed to draw fresh water to the area and re-sampling results have since been negative for total coliform.

QUESTIONS

Please contact NAVFAC Mid-Atlantic Environmental staff at 757-341-0482 if you have any questions regarding this report.