JOINT EXPEDITIONARY BASE (JEB) LITTLE CREEK
VIRGINIA BEACH, VIRGINIA
2013 CONSUMER CONFIDENCE REPORT

Inside this issue:

For additional information:

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

Virginia Department of Health
683-2000
http://www.vdh.state.va.us/DrinkingWater/

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

Naval Facilities Engineering Command (NAVFAC) Mid-Atlantic Environmental
341-0482

The source of JEB Little Creek's drinking water is from Lake Gaston and Lake Wright and Western Branch Reservoirs.

The base is committed to providing you drinking water that is safe and reliable. Joint Expeditionary Base (JEB) Little Creek believes 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.

JEB LITTLE CREEK SOURCE WATER

JEB Little Creek purchases drinking water from the City of Norfolk. Water from Lake Gaston is blended with Norfolk's water and is treated at the Moores Bridges Water Treatment Plant in Norfolk. Norfolk's primary water supply comes from Lake Wright and Western Branch Reservoirs. From the reservoirs, water is pumped through pipes to the treatment plant. 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 Moores Bridges Water Treatment Plant provides state of the art treatment technology and surpasses all state and federal water quality standards and regulations. Moores Bridges not only treats the water, but also tests it for more than 250 substances. Once the water reaches JEB Little Creek, the Naval Facilities Engineering Command, Mid-Atlantic operates and maintains your potable water system and is dedicated to ensuring quality drinking water through monthly monitoring for coliform bacteria, quarterly monitoring for disinfection by-products, and monitoring for lead, and copper every three years.

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 to make it drinkable while groundwater may or may not have 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 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 come from gas stations, urban storm water runoff, and septic systems.
Radioactive contaminants, which can be naturally occurring or be 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.

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 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.

Last year, the Moores Bridges Water Treatment Plant conducted tests for more than 250 potential contaminants. All of those tests met EPA regulatory standards. The Navy tested the JEB Little Creek drinking water for a variety of contaminants.

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 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. Most 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. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. JEB Little Creek 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 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-Lant 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 have found many terms and abbreviations that you might not be familiar with. 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 like 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]	0.5	0.1 – 0.9	Yes	Added for the prevention of tooth decay
Haloacetic Acids (HAA5)	ppb	NA	60	37[2]	33[3]	ND - 37	Yes	Drinking water disinfectant by-product
Nitrate as Nitrogen	ppm	10	10	0.32	0.19	0.09 - 0.32	Yes	Erosion of natural deposits, runoff
Total Organic Carbon	ppm	NA	TT	2.5[1]	2.2	2.0 – 2.5	Yes	Occurs naturally in environment
Trihalomethanes (TTHM)	ppb	NA	80	49.7[2]	48[3]	24.7 – 49.7	Yes	Drinking water disinfectant by-product
Microbiological Contaminants	**Unit**	**MCLG**	**MCL**	**Highest Level**	**Average Level**	**Range**	**Meets EPA Standards**	**Possible Source of Contamination**
Total Coliform	# Positive	0	1	4**	NA	0 – 4	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. One total coliform organism was detected in September 2013, and four total coliform organisms were detected in October 2013. 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]	5.5	2.5[4]	0.2 – 5.5	Yes	Drinking water disinfectant

Substance	Unit	MCLG	MCL	Highest Level (NTU)	Lowest monthly percentage of samples meeting the limit	Likely Source	
Turbidity	NTU	NA	<1.0 maximum, and ≤0.3 < 95 % of the time	0.30	100 %	Yes	Soil Run-off
Water Utilities are required by *Waterworks Regulations* to continuously monitor the turbidity levels of the water leaving each of the filters in the treatment plant, and to record this information every 15 minutes.							

Lead and Copper Monitoring	Unit	MCLG	AL	Highest Level	Average Level	Range	Meets EPA Standards	Possible Source of Contamination
Copper (2013 data)	ppm	1.3	1.3	0.230	90th percentile = 0.220*	0.013 - 0.230	Yes	Corrosion of pipes; Erosion of natural deposits
Lead (2013 data)	ppb	0	15	29*	90th Percentile = 3*	ND - 29	Yes	Corrosion of household plumbing systems; Erosion of natural deposits
*One sample inadvertently collected from a warm-water faucet was above action limit for lead; resample to verify result was below action level. Determined that initial sample was taken from a spigot, which provided mixed hot and cold water, and should not have been used for sampling. Sampling location was changed to a sink where cold water could be isolated to meet sampling protocol requirements. The SDWA states that 90% of samples must be below the action level. JEB Little Creek is currently under reduced monitoring for lead and copper due to low lead levels. Lead and copper samples are collected every 3 years.								

[1] Highest monthly average for calendar year

[2] This number is the highest quarterly running average calculated from 2013

[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 50pCi/L to be the level of concern for Beta particles.

TT = Treatment Technique. A required process intended to reduce the level of a substance in drinking water.

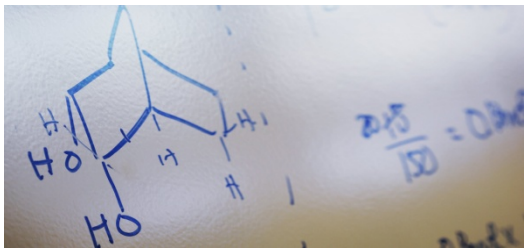
Secondary and Unregulated Monitored Substances	Unit	SMCL	Highest Level	Average Level	Range	Likely Source
Aluminum	ppm	0.20	0.04	0.02	0.01 - 0.04	Erosion of natural deposits; also from use of chemicals at water treatment plant
Chloride	ppm	250	23	18	14 - 23	Natural in environment
Iron	ppm	0.30	0.08	0.03	ND – 0.08	Natural in environment
Manganese	ppm	0.05	0.02	0.01	ND – 0.02	Natural in environment
pH	pH Units	6.5 – 8.5	7.9[1]	7.6	7.5 – 7.9	Adjusted during water treatment process
Nickel	ppm	n/a	0.003	0.002	ND – 0.003	Corrosion of plumbing materials
Sodium	ppm	n/a[2]	14	12	9 – 14	Natural in environment; also from use of chemicals at water treatment plant
Sulfate	ppm	250	36	34	31 – 36	Natural in environment; also from use of chemicals at water treatment plant
Total Dissolved Solids	ppm	500	118	109	100 - 118	Natural in environment
Zinc	ppm	5	0.18	0.12	0.04 – 0.18	Natural in environment; also from use of chemicals at water treatment plant

[1] Highest monthly average for calendar year

[2]For physician-prescribed "no salt diets," a limit of 20 ppm is suggested

Additional Information*	Unit	Average Level	Range
Alkalinity	ppm	24	15 – 32
Ammonia	ppm	0.1	ND – 0.3
Hardness	ppm	56	49 – 65
Silica	ppm	5	2 – 6

*The substances listed above are not regulated by the EPA; however, this information is provided as a service to our customers



VIOLATIONS AND EXCEEDANCES

Routine monitoring in September and October 2013 tested positive for Total Coliform bacteria. Total Coliform exceedances during the month of October resulted in a violation of a drinking water standard. Coliform bacteria are generally not harmful themselves. Coliforms are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems. The occupants of all the affected buildings were notified, in accordance with EPA regulations. Whenever we detect coliform bacteria in any sample, we perform additional testing on that sample to see if other bacteria is of greater concern, such as fecal coliform or *E. coli*, are present. **Additional testing on these samples did not find any of these bacteria.** We took additional samples for coliform bacteria that were negative. Although it is difficult to conclusively identify the source of the problem, chlorine residual decay was observed in the western portion of the installation as a result of low water demand in the area. This factor likely contributed to conditions allowing for Coliform growth within the piping system. Water tower 1553 was drained and extensive flushing was done to draw fresh water to the western distribution system. 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.