2013 Consumer Confidence Report on the Quality of Tap Water at Fort Monroe, VA
PWSID #3650150

Introduction

This annual water quality report or Consumer Confidence Report is prepared and distributed by Veolia Water and the Fort Monroe Authority as required by the Safe Drinking Water Act. This report explains where your water comes from, what analytical testing shows about it, and other things you should know about your drinking water. Fort Monroe's goal 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. Drinking water quality must meet state and federal requirements administered by the Virginia Department of Health (VDH). The water produced by Newport News Waterworks is treated and tested by state-of-the-art equipment and techniques and meets or exceeds state and federal standards for water-quality.

General Information

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 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 (such as viruses and bacteria), which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic (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 (including synthetic and volatile organics), which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff and septic systems.
- Radioactive, which can be naturally occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations, which limit the amount of certain contaminants in water provided by public water systems. 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. More information about contaminants and potential health effects can be obtained by calling the EPA Safe Drinking Water Hotline (800-426-4791).

Water Sources and Treatment

During 2013, the drinking water at Fort Monroe was purchased from Newport News Waterworks (NNWW). NNWW obtains water from surface water sources such as rain, streams and from the Chickahominy River. This water is stored, prior to treatment, in five reservoirs owned and operated by NNWW. Groundwater provides a secondary source of water. Brackish water is pumped from deep wells in the Lee Hall section of Newport News. The surface water and groundwater are treated separately and blended together before distribution.

NNWW operates two water treatment plants; Lee Hall Water Treatment Plant and Harwood's Mill Water Treatment Plant. First, the surface water is pumped to the treatment plants. The water passes through screens and then aluminum sulfate (alum) and polymer are added. These chemicals cause tiny particles in the water to cling together (coagulation), making the particles easier to remove. After the water is clarified, ozone (disinfection) is added to kill microorganisms such as bacteria and viruses. The water is then sent through filters to remove any remaining particles (filtration). Lime is added to adjust the pH, fluoride is added to prevent tooth decay in children, and zinc orthophosphate is added to control corrosion inside the pipe system. Finally, chloramines, the secondary disinfectant, are added to maintain disinfection through the pipe system to your home or workplace. The brackish groundwater is pumped to a desalination plant located at the Lee Hall facility. Using a process called reverse osmosis, water is forced by high pressure through membranes that can remove the salt and most other contaminants to produce very high-quality water. The water is blended with treated surface water prior to distribution.

For more information concerning Newport News drinking water quality, please contact Newport News Waterworks at 757-926-1000 or visit their website at http://www.nngov.com/waterworks.

Surface Water Source Assessment

The Hampton Roads Planning District Commission conducted a Source Water Assessment of NNWW in 2001-02. NNWW surface water sources were rated as relatively high in susceptibility, while their deep groundwater wells were rated as low in susceptibility to contamination using the criteria developed by the state in its approved Source Water Assessment Program. The assessment report includes maps showing the source water assessment area, an inventory of known land use activities, a susceptibility explanation chart, and definitions of key terms. The report is available by contacting NNWW, the VDH or the Hampton Roads Planning District Commission.

Water Quality Testing

All sources of drinking water contain some naturally occurring contaminants. Because water is the universal solvent, many materials are easily dissolved upon contact. At low levels, these contaminants generally are not harmful in our drinking water. Newport News Waterworks uses a system of multiple barriers that help prevent a range of contaminants that may be present in source water, such as bacteria and parasites, from reaching the treated water supply. This complex water treatment system includes watershed protection, filtration, and disinfection, which greatly reduces the risk of serious waterborne illness.

Water Quality Testing (continued)

Contaminants in your drinking water are routinely monitored according to federal and state regulations. The following tables show the results of monitoring for the year 2013. Every regulated substance that was detected in water provided by NNWW, even in the minutest concentration, is listed in the following tables. The tables contain the name of each substance detected, the highest level allowed by regulation (MCL) the ideal goal for public health (MCGL), the amount detected, the typical sources of each substance and whether or not a set regulation was violated. Tests reveal that the water distributed to our customers is free of bacteria or parasites and meets all federal and state drinking water standards.

Newport News Waterworks participated in the U.S. Environmental Protection Agency's (EPA) third round of the Unregulated Contaminant Monitoring Rule (UCMR3). Approximately 6,000 utilities nationwide monitored unregulated contaminants for a year to help the EPA determine the occurrence of these contaminants in drinking water and whether or not they need to be regulated for protection of public health. The results of those findings are in TABLE 2 on page 3.

Definitions of Key Terms Used in the Tables

Action Level (AL) - the concentration of a contaminant which, 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 the 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.
Minimum Reporting Level (MRL) – an estimate of the lowest concentration of a compound that laboratories would report as a detection.
Maximum Residual Disinfectant Level (MRDL) - the highest level of a residual contaminant allowed in drinking water. MRDLs are set as close to the MRDLGs as feasible, using the best available treatment technology.
Maximum Residual Disinfectant Level Goal (MRDLG) - the level of a residual contaminant in drinking water below which there is no known or expected risk to health.
Nephelometric Turbidity Unit (NTU) – nephelometric turbidity is a measure of the clarity of the water. Turbidity in excess of 5 NTUs is just noticeable to the average person.
Not Detected (ND) – laboratory analysis indicates that the substance analyzed is not present, or was not detected above the analytical method detection limit.
Parts per million (ppm) - one part per million corresponds to one minute in two years, or a single penny in $10,000.
Parts per billion (ppb) - one part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
Parts per trillion (ppt) – one part per trillion corresponds to one minute in 2,000,000 years or a single penny in $10,000,000,000.
Picocuries per liter (pCi/L) - picocuries per liter is a measure of the radioactivity in water.
Secondary Maximum Contaminant Level (SMCL) – EPA recommended MCLs for Secondary Drinking Water Standards.
Treatment Technique (TT) - a required process intended to reduce the level of a contaminant in drinking water.

Table 1- Newport News Waterworks

TABLE 1 Contaminant and Unit of Measurement	EPA Ideal Goal (MCLG)	Highest EPA Allowed Level (MCL)	Max Detected (what we found)	Range Detected Low-High	Meets State & Federal Standards	Likely Source
INORGANICS						
Copper (ppm)	1.3	AL = 1.3	0.084[1]	0.011-0.172	YES	Corrosion of household plumbing
Lead (ppb)	0	AL = 15	0.0[1]	<1.0-4.6	YES	Corrosion of household plumbing
Fluoride (ppm)	4	4	1.20	<0.91-1.08	YES	Added to promote strong teeth
Barium (ppm)	2	2	0.021	0.020-0.021	YES	Erosion of natural deposits
Nitrate (ppm)	10	10	0.040	0.036-0.040	YES	Erosion of natural deposits
Nitrite (ppm)	1	1	0.003	0.002-0.003	YES	Erosion of natural deposits
ORGANICS - regulated at the treatment plants						
Chloroform (ppb)	none	none	2.0	0.6-3.3	YES	By-product of chlorination
Dichlorobromomethane (ppb)	none	none	1.8	1.3-2.2	YES	By-product of chlorination
Dibromochloromethane (ppb)	none	none	0.8	0.8-0.9	YES	By-product of chlorination
DISINFECTION BY-PRODUCTS AND PRECURSORS						
Total Trihalomethanes (ppb)	0	80	25[2]	8-41	YES	By-product of chlorination
Haloacetic Acids (ppb)	0	60	32[2]	0-54	YES	By-product of chlorination
Total Organic Carbon removal	none	TT	1.16[3]	1.07-1.76	YES	Naturally present in the environment
MICROBIOLOGICAL						
Turbidity (NTU)	none	TT	0.29[4]	0.02-0.29	YES	Soil runoff
Chloramines (ppm)	MRDLG 4	MRDL 4	3.1[2]	0.1-5.9	YES	Water additive used to control microbes
Total Coliform	0	<5%[5]	0.53%	0.0%-0.53%	YES	Naturally present in the environment
RADIOLOGICAL - results from 2010, required to test again in 2016						
Beta/Photon Emitters (pCi/L)	0	4	1.8	1.8-1.8	YES	Decay of natural & man-made deposits

Table 2 - Newport News Waterworks

TABLE 2 - *Unregulated substances. This monitoring provides a basis for future regulatory actions to protect public health.*

Contaminant and Unit of Measurement	MRL	Max Detected	Range Detected Low-High	Sources
UNREGULATED CONTAMINANT MONITORING REGULATION 3 - ORGANICS				
Chlorate (µg/L)	20	550	0-550	Agricultural defoliant or desiccant; disinfectant by-product; and used in production of chlorine dioxide
Total Chromium (µg/L)	0.2	0.28	0-0.28	Naturally occuring, used in industry and can be discharged by industrial facilities. Total Chromium is the sum of chromium in all its valence states.
Hexavalent Chromium Cr-6 (dissolved) (µg/L)	0.030	0.180	0.044-0.180	Naturally occuring. Used in making steel and other alloys. A new Environmental Protection Agency (EPA) risk assessment, not finalized yet, has raised concerns about the risk to human health.
Strontium (µg/L)	0.3	150	90-150	Naturally occuring. Has been used commercially to produce color TV tubes. It also blocks x-ray emissions.
Vanadium (µg/L)	0.2	1.00	0.49-1.00	Naturally occuring. Is used as an additive to steel to make engine parts and tools.

NNWW Sampling Notes: (Tables 1 and 2)

Excluding the radiological results, all test samples reported in Table 1 were taken in 2012-2013 (those samples taken in 2012 are part of a required four-quarter running average). Lead, copper and radiological samples will be taken again in 2016.

1 At least 90% of the samples for Copper Lead were at or below this level. None of the individual samples exceeded the Action Level. Because our lead and copper levels are so low, we only have to test every three years. Our next sampling is in 2016.

2 For Trihalomethanes, Haloacetic Acids, and Chloramines, the highest detected level is based on a system-wide, four-quarter running average of several samples (for Chloramines, it is an annual running average). The range numbers are the results from individual samples.

3 For Total Organic Carbon removal, compliance is based on a running four-quarter average. The range is the individual monthly ratio from both water treatment plants. TOC has no adverse health effects, but can be a critical component in the formation of disinfection by-products.

4 Turbidity is a measure of water cloudiness. It is a good indicator of the effectiveness of our filtration system. 100% of samples were within the turbidity limit.

Fort Monroe Sampling Notes (Table 3):

1 See the Notice of Violation statement on Page 5.

2 The detected level is the compliance level based on a running annual average. The range numbers are the results from individual sample locations.

3 At least 90% of samples were at or below this level. The levels detected are 90th percentile values.

4 The state allows Fort Monroe and NNWW to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data, though accurate, is more than one year old.

5. Fort Monroe is required to test for Total Coliform every month. There were no positive samples for Total Coliform in 2013.

Table 3 - 2013 Regulated Contaminants of the Fort Monroe Distribution System.

Contaminant, units	Year, Month or Date of Sample	MCLG	MCL	MAX CONC	RANGE	TYPICAL SOURCE
Total Trihalomethane THM, mg/L	2013 / Quarterly	0	80 ppb	17 ppb	8.7 - 26.8 ppb	By-product of drinking water chlorination
Haloacetic Acids HAA(5) mg/L (Note 2)	2013 / Quarterly	0	60	3 ppb	2 – 4.8 ppb	By-product of drinking water chlorination
Total Chlorine (Chloramines) (Note 2)	2013, Monthly	4	MRDL=4.0	0.18 ppm	ND – 0.47 ppm	Additive used to control microbes
Lead, ppb (Note 3 – 4)	2012	0	AL=15	12.21 90% percentile	<0.2 – 19.1	Corrosion of household plumbing systems; erosion of natural deposits
Copper, ppm (Note 3 - 4)	2012	0	AL=1.3	0.365 90% percentile	0.0279 – 0.618	Corrosion of household plumbing systems; erosion of natural deposits

More Water Quality Information

- **Sodium** – The EPA has not set a standard for sodium in drinking water. However, sodium levels in drinking water are usually low and unlikely to be a significant contribution to adverse health effects. The average level of sodium found in our treated water was 13 mg/L, and the range was 5.7-25.8. Should you have a health concern, please contact your health care provider.

- **Lead** - Lead is not detectable in the treated water tested monthly from either treatment plant. However, if present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water comes primarily from materials and components associated with service lines and home plumbing. Newport News Waterworks 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 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 at www.epa.gov/safewater/lead. In addition, NNWW recommends that you prepare baby formula with cold water.

More Water Quality Information (continued)

- **Hardness** - No EPA standard is set. Water treated by NNWW is considered moderately soft (4-6 grains which is equal to 70-120 mg/L as calcium carbonate or CaCO3). In 2011 the average was 76 mg/L with a range of 58-95.

- **Fluoride** - Fluoride is added to water to prevent tooth decay. NNWW adheres to drinking water regulations set by the EPA and guidance provided by the Virginia Department of Health (VDH). Waterworks' fluoride level is well within the range set by EPA and in accordance with the recommendation of 0.9 mg/L set by the VDH. The U.S. Department of Health and Human Services proposed recommendation to lower the fluoride level is being studied nationally and locally. If the VDH alters their fluoride guidance to Virginia water utilities, we will comply.

Public Participation Opportunities

Because NNWW is a department of the City of Newport News, major decisions about your drinking water are made by Newport News City Council. They Council meets on the second and fourth Tuesdays of each month at 7:00pm and you are welcome to attend and participate. The meetings are broadcast live on Newport News City Channel and can be viewed live or on-demand by all customers in the NNWW service area on the web at www.nngov.com.

The Fort Monroe Authority (FMA) is a political subdivision of the Commonwealth of Virginia and is governed by a twelve member Board of Trustees. The FMA Board meets no less than quarterly to discuss operations and to make managerial and financial decisions including matters related to the water distribution system on Fort Monroe. You are welcome to attend and participate in these meetings as well. The schedule of upcoming meetings can be found on the web at www.fmauthority.com/public-meetings/meeting-schedule/ .

Information for Special Populations

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 and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium are available from the Safe Drinking Water Hotline (800-426-4791).

Notice of Violation of Drinking Water Sampling Requirements

We violated a drinking water standard. Even though this was not an emergency, as our customers, you have a right to know what happened and what we are doing to correct this situation.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. During the month of December 2013 we did not monitor for Coliform bacteria and therefore cannot be sure of the quality of our drinking water during that time.

There is nothing you need to do at this time.

Based on the size of the water works distribution system and in accordance with our approved sampling plan we are required to test one sample each month for the presence of Coliform bacteria. In December 2013 we failed to take the required sample. We have taken samples each month since the missed sample and no Coliform bacteria were found in any of those samples.

We have arranged for regular sampling to take place each month and have instituted internal controls to make certain the required sampling does indeed occur as scheduled.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses). You can do this by posting this notice in a public place or distributing copies by hand or mail.

If there are any questions or concerns regarding this Notice of Violation please contact Veolia Water or the Fort Monroe Authority at the addresses or phone numbers listed below.

For More Information

This report is available on the Fort Monroe Authority website at http://www.fmauthority.com/about/the-fort-monroe-authority/public-documents/ in the utility section. If you have questions concerning this report, please contact the Fort Monroe Authority by calling 757-637-7778 or call Veolia Water at 757-224-2411. You may also request additional copies or submit questions and concerns to either the Fort Monroe Authority or Veolia Water at the following addresses:

Fort Monroe Authority
ATTN: Public Relations
151 Bernard Road
Fort Monroe, VA 23651
757-637-7778

Veolia Water
ATTN: Project Manager
57 Patch Road
Fort Monroe, VA 23651
757-224-2411