NAVAL AIR STATION OCEANA
VIRGINIA BEACH, VIRGINIA
2024 CONSUMER CONFIDENCE REPORT

Naval Air Station Oceana (NAS Oceana) is committed to providing you drinking water that is safe and reliable. NAS Oceana believes that providing you with accurate information about your water is the best way to assure that your water is safe.

Each year, the Consumer Confidence Report (CCR) is required to be distributed by July 1st of the current year. This CCR is a snapshot of the quality of your drinking water in 2024.

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.

Inside this issue:

For additional information:

City of Norfolk Division of Water Quality
(757)441-5678
http://www.norfolk.gov/tap-water

Virginia Department of Health
(757)683-2000
http://www.vdh.virginia.gov/Drinking-Water/

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

Public Works Division (PWD) Environmental, Drinking Water Program
(757)433-3434

The source of NAS Oceana's drinking water is from Lake Gaston and Lake Wright and Western Branch Reservoirs.

NAS OCEANA WATER SOURCE

NAS Oceana purchases drinking water treated by the City of Norfolk and conveyed through the consecutive water system of the City of Virginia Beach. The City of Norfolk obtains its raw (untreated) water from eight reservoirs, two rivers and four deep wells. From these sources, raw water is pumped to one of two water treatment plants. At both plants 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 City of Virginia Beach is served by the Moore's Bridges Water Treatment Plant. The Moore's Bridges Water Treatment Plant provides state of the art treatment technology and surpasses all state and federal water quality standards and regulations. Moore's Bridges not only treats the water, but also tests it for more than 250 substances. Water from the treatment plant reaches NAS Oceana by passing through the City of Norfolk and City of Virginia Beach distribution systems (piping). Once the water reaches NAS Oceana, 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.

A source water assessment of our system has been conducted by the Hampton Roads Planning District Commission. This was done to determine the susceptibility of reservoirs, rivers, and wells to contamination. The City of Norfolk's (our water provider) susceptibility has been rated as high. However, Norfolk's Moore's Bridges Water Treatment Plant tests and treats the water to meet federal drinking water standards. To obtain a copy of this study, please contact the Drinking Water Program Manager at (757) 433-3434.

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 (contaminants) resulting from the presence of animals or from human activity. 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.

ABOUT DRINKING WATER (continued)

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 compounds, 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.

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 Moore's Bridges Water Treatment Plant conducted tests for more than 250 potential contaminants. All of those tests met EPA regulatory standards. The Navy tested the NAS Oceana 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.

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. NAS Oceana is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in plumbing components. You share the responsibility for protecting yourself and your family from potential lead in your home plumbing. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your drinking water and wish to have your water tested, contact PWD Environmental at (757)433-3434. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at http://www.epa.gov/safewater/lead.

Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous systems problems.

In accordance with the Lead and Copper Rule Revisions (LCRR), a service line inventory has been prepared for this installation. A copy of this inventory is available at the Environmental office. Please contact PWD Environmental at (757)433-3434 for further information.

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 2024. 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.

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	0.02 – 0.04	Yes	Erosion of natural deposits
Fluoride	ppm	4.0	4.0	0.4[1]	0.3	0.1 – 1.1	Yes	Added for the prevention of tooth decay
Nitrate as Nitrogen	ppm	10	10	0.27	0.12	0.03 – 0.27	Yes	Erosion of natural deposits, runoff
Total Organic Carbon	%	NA	TT	56% removal[2,3]	-	50 – 70 % removal	Yes	Occurs naturally in environment

Microbiological Contaminants	Unit	MCLG	MCL	Highest Level	Average Level	Meets EPA Standards	Possible Source of Contamination
E. Coli	# of positive samples	0	*	0	NA	YES	Human and animal fecal waste

* Effective April 1, 2016 The Revised Total Coliform Rule established the following Primary Maximum Contamination Level (PMCL): In compliance unless (i) the waterworks has an E. coli-positive repeat sample following a total coliform-positive routine sample; (ii) the waterworks has a total coliform-positive repeat sample following an E. coli-positive routine sample; (iii) the waterworks owner fails to take all required repeat samples following an E. coli-positive routine sample; or (iv) the waterworks owner fails to test for E. coli when any repeat sample tests positive for total coliform.

Residual Disinfectants and Disinfection By Products	Unit	MCLG	MCL	Highest Level[4]	Range (Individual Results)	Meets EPA Standards	Possible Source of Contamination
Haloacetic Acids (HAA5)	ppb	NA	60	25.3	0 - 37	Yes	Drinking water disinfectant by-product
Trihalomethanes (TTHM)	ppb	NA	80	36.7	22.5 – 42.8	Yes	Drinking water disinfectant by-product
Total Chlorine Residual	ppm	4[5]	4[6]	1.8	0.02 – 4.2	Yes	Drinking water disinfectant

Substance	Unit	MCLG	MCL	Highest Level	Lowest monthly percentage of samples meeting the limit	Meets EPA Standards	Likely Source
Turbidity**	NTU	NA	<1.0 maximum, and ≤0.3 95 % of the time	0.11	100 %	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.

Lead and Copper Monitoring (2024)	Unit	MCLG	AL	Samples above AL	90th Percentile	Range	Meets EPA Standards	Possible Source of Contamination
Copper	ppb	1,300	1,300	0	196	22 - 401	Yes	Corrosion of pipes; Erosion of natural deposits
Lead	ppb	0	15	0	2	ND - 2	Yes	Corrosion of household plumbing systems; Erosion of natural deposits

[1]Highest Monthly average for calendar year.
[2]Running annual average, calculated quarterly.
[3] EPA requires 45% removal
[4]This number is the highest running annual average of quarterly compliance samples for the 2023 calendar year; for Total Chlorine Residual, the highest running annual average was determined by calculating quarterly values which were based on monthly compliance samples.
[5]MRDLG.
[6]MRDL.

Secondary and Unregulated Monitored Substances	Unit	SMCL	Highest Level	Average Level	Range	Likely Source
Aluminum	ppm	0.05 - 0.20	0.02	0.02	0.017 -0.024	Erosion of natural deposits; also from use of chemicals at water treatment plant
Boron	ppm	N/A	0.05	ND	ND – 0.05	Natural in environment and manmade origins
Chloride	ppm	250	18	16	13 – 18	Natural in environment
pH	pH Units	6.5 – 8.5	7.8[7]	7.7	7.3 – 8.3	Adjusted during water treatment process
Iron	ppm	0.3	0.03	ND	ND – 0.03	Natural in environment
Manganese	ppm	0.05	0.006	ND	ND – 0.006	Natural in environment and manmade origins
Nickel	ppm	N/A	0.003	ND	ND – 0.003	Corrosion of plumbing materials
Sodium	ppm	NA[8]	17	14	12 – 17	Natural in environment; also from use of chemicals at water treatment plant
Sulfate	ppm	250	40	33	29 – 40	Natural in environment; also from use of chemicals at water treatment plant
Total Dissolved Solids	ppm	500	117	110	101 – 117	Natural in environment
Zinc	ppm	5	0.28	0.20	0.04 – 0.28	Natural in environment; also from use of chemicals at water treatment plant

[7] Highest monthly average for calendar year.
[8]For physician-prescribed “no salt diets,” a limit of 20 ppm is suggested.

Unregulated Contaminant Monitoring Rule 5 (UCMR5)	Unit	SMCL	Highest Level	Average Level	Range	Likely Source
Perfluoropentanoic acid (PFPeA)[9]	ppb	n/a	0.0051	ND	ND – 0.0051	Industrial / Man-Made
Perfluorohexanoic acid (PFHxA)[9]	ppb	n/a	0.0037	ND	ND – 0.0037	Industrial / Man-Made
Perfluorooctanesulfonic acid (PFOS)[9]	ppb	0.0040	0.0058	ND	ND – 0.0058	Industrial / Man-Made

[9]Above results from City of Norfolk’s Unregulated Contaminant Monitoring Rule 5 (UCMR5) sampling. Final sampling event for Norfolk occurred in 2023.

EPA uses the Unregulated Contaminant Monitoring (UCM) program to collect data for contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe Drinking Water Act (SDWA). Every five years EPA reviews the list of contaminants and selects no more than 30 for a nationwide drinking water survey to provide occurrence data for potential future regulation. Sampling for UCMR5 at NAS Oceana occurred in 2024.

For UCMR5 at NAS Oceana, samples were tested for lithium as well as 29 different PFAS components. None of the contaminants tested in this cycle were above the Minimum Reporting Levels (MRL). The MRL is used to provide the smallest measured concentration of contaminant that may be reliably reported by the lab using a given analytical method.

Detailed results and MRL’s can be obtained by contacting the Environmental Department at (757)433-3434.

Additional Information*	Unit	Average Level	Range
Alkalinity	ppm	35	29 – 42
Ammonia	ppm	0.1	ND – 0.3
Hardness	ppm	55[10]	50 - 59
Silica	ppm	7	5 - 8

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

[10]Norfolk’s water averages in the 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 ppm value by 17.

PER – AND POLYFLUOROALKYL SUBSTANCES

What are per- and polyfluoroalkyl substances and where do they come from?

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of man-made chemicals. PFAS have been used in a variety of industries and consumer products around the globe, including in the U.S., since the 1940s. PFAS are found in many consumer products, as well as in industrial products, like certain firefighting agents called aqueous film forming foam (AFFF). PFAS is also found in essential use applications such as in microelectronics, batteries, and medical equipment. PFAS chemicals are persistent in the environment, and some are persistent in the human body – meaning they do not break down and they can accumulate over time.

Is there a regulation for PFAS in drinking water?

On April 26, 2024, the United States Environmental Protection Agency (EPA) published a National Primary Drinking Water Regulation (NPDWR) final rule on drinking water standards for six PFAS under the Safe Drinking Water Act (SDWA). The rule establishes the following maximum contaminant levels (MCLs):

- perfluorooctane sulfonic acid (PFOS) = 4 ppt
- perfluorooctanoic acid (PFOA) = 4 ppt
- hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX) = 10 ppt
- perfluorononanoic acid (PFNA) = 10 ppt
- perfluorohexane sulfonic acid (PFHxS) = 10 ppt
- HI MCL for PFHxS, PFNA, perfluorobutane sulfonic acid (PFBS), and GenX = 1 (unitless).

Under the NPDWR, regulated public water systems (PWS) are required to complete initial monitoring by April 26, 2027. Beginning April 26, 2027, regulated PWSs will conduct ongoing compliance monitoring in accordance with the frequency dictated by the rule and as determined by the initial compliance monitoring results. Regulated PWSs must demonstrate compliance with the Maximum Contaminant Levels (MCLs) by April 26, 2029.

In order to provide safe drinking water to all Department of Defense (DoD) personnel, OSD policy extends this requirement to all DoD systems which provide drinking water for human consumption, regardless of size of the drinking water system. In addition to the six regulated compounds, DoD-owned systems are required by DoD policy to monitor for all 25 compounds detected when using EPA Method 533.

Protecting the health of our personnel, their families, and the communities in which we serve is a priority for the Department. DoD is committed to complying with requirements of the NPDWR and the continued provision of safe drinking water to those that work and live on DoD installations.

Has NAS Oceana tested its water for PFAS in 2024?

Yes. As part of the Unregulated Contaminant Monitoring Rule (UCMR), samples were tested quarterly at NAS Oceana in 2024. We are pleased to report that drinking water testing results for all 29 PFAS covered by the sampling methods, including the six regulated PFAS, were not detected in your water system. Additional information regarding this sampling can be found in the UCMR 5 section of this report.

What is next?

NAS Oceana will continue to monitor for PFAS in accordance with EPA regulation and DOD policy. Once required initial monitoring is available, we will compare the sample results to the MCL and Hazard Index (HI) trigger levels. This will determine what our continuing monitoring requirements will be beginning in 2027.

VIOLATIONS AND EXCEEDANCES

No Violations issued this year.

QUESTIONS

Please contact PWD Environmental staff at 757-433-3434 if you have any questions regarding this report.

To access this report electronically, please visit the Commander, Navy Region Mid-Atlantic website at:
https://cnrma.cnic.navy.mil/Operations-and-Management/Environmental-Support/Drinking-Water-Quality-Information/

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 2024. 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. For lead and copper monitoring, compliance is based on the 90th percentile value.
- **Level 1 Assessment** – A Level 1 assessment is a study of the waterworks to identify potential problems and determine, if possible, why total coliform bacteria have been found in our waterworks.
- **Level 2 Assessment** – A level 2 assessment is a very detailed study of the waterworks to identify potential problems and determine, if possible, why an *E. Coli* PMCL violation has occurred and why total coliform bacteria have been found in our waterworks on multiple occasions.
- **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 based on running annual average. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants. For chlorine and chloramines, a waterworks is in compliance with the MRDL when the running annual average of monthly averages of samples taken in the distribution system, computed quarterly, is less than or equal to the MRDL.
- **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.
- **NA** – Not applicable
- **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 the 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.