

Naval Support Activity (NSA) Mid-South Annual Water Quality Report for Year 2023

Why are we doing this report?

In order to ensure that tap water is safe to drink, the United States Environmental Protection Agency (EPA) and Tennessee Department of Environment and Conservation (TDEC), Division of Water Resources, regulate the amount of certain contaminants in water provided by public water systems. Congress, in its 1996 amendments to the Safe Drinking Water Act, mandated that the EPA promulgate regulations requiring community water systems to annually publish and provide, to their customers, Consumer Confidence Reports (CCRs). These reports must describe the quality of the water supplied to customers and provide educational information on health effects of various contaminants.

The sampling results are summarized in Table 1 and Table 2 below. The data presented in the report are from the most recent testing in accordance with the regulations. We welcome this opportunity to inform you of the high quality of water that is delivered to our customers at NSA Mid-South.

What is the source of our water?

Our public water system serving NSA Mid-South is a groundwater system consisting of five wells and a 4.2 million-gallon-per-day capacity. Of the five wells, two are in the Memphis Sands aquifer and are approximately 500 feet deep. Three are in the Fort Pillow aquifer and are approximately 1,400 feet deep. The water treatment plant is designed to remove naturally occurring iron and provide chlorination and fluoridation. The Tennessee Department of Environment and Conservation (TDEC) has prepared a Source Water Assessment Program (SWAP) Report for untreated water sources serving water to this water system. The SWAP Report assesses the susceptibility of untreated water sources to potential contamination. The URL address for Source Water Assessments is: <https://www.tn.gov/environment/program-areas/wr-water-resources/water-quality/source-water-assessment.html>. To ensure safe drinking water, all public water systems treat and routinely test their water. Groundwater is potentially susceptible to contamination from industrial and agricultural sources in the area; however, frequent monitoring has shown that NSA Mid-South's water remains free of these contaminants. In addition, to reduce the potential for groundwater contamination NSA Mid-South maintains a Wellhead Protection Plan.

Does my drinking water meet EPA standards and other rules that govern our operations?

Yes, our drinking water meets or exceeds all of EPA's health standards. During our last water plant inspection from TDEC in March 2024, we received a numerical rating of 596 out of 599 points, giving us a 99% rating, placing us among the state's "approved" public water systems. The State and EPA require us to test our water on a regular basis to ensure its safety and to report the results of this monitoring. The tables below show only the contaminants for which we have sampled recently and are above detectable levels. None of the results exceeded regulatory limits.

Why are there contaminants in our water?

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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the EPA's Safe Drinking Water Hotline at (800) 426-4791.

The sources of drinking water (both tap water and bottled water) include aquifers, 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:

- 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 stormwater 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 stormwater 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 stormwater runoff, and septic systems.
- 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, EPA and Tennessee Department of Environment and Conservation prescribe 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.

Do I need to take any 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 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/Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791.

Lead in Drinking 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. NSA Mid-South is responsible for providing high quality drinking water but can only control to the best of our ability the wide variety of materials used in plumbing components over the years. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may contact our Public Works Environmental Division. 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>.

How can I get involved?

Please feel free to call your PWD Installation Environmental Program Director, Jim Heide, at 901-874-5367 any time during regular operating hours with your questions and concerns. These operating hours are from 7 a.m. until 3:30 p.m. Monday – Friday.

Table 1. Detected Regulated and Unregulated Contaminants

Contaminants	MCLG ¹	MCL ²	Level found	Date	Violation	Typical Source
^a Total Coliform Bacteria (RTCR)	N/A	TT Trigger ⁶	None	Monthly	No	Naturally present in the environment.
^b Barium	No MCLG	2 PPM ³	.055 PPM	2/8/23	No	Discharge of drilling wastes; Discharge from metal refineries; Erosion from natural deposits
^c Fluoride	4 PPM ³	4 PPM ³	Average: .71 PPM Range: .69-.75 PPM	Monthly	No	Water additive, which promotes strong teeth; erosion of natural deposits; discharge from fertilizers & aluminum factories.
^d Lead	0 PPB ⁴	AL ⁵ =15 PPB ⁴	<2 PPB, 90 th percentile	8/1/23	No	Corrosion of household plumbing systems; erosion of natural deposits.
^e Copper	1.3 PPM ³	AL ⁵ =1.3 PPM ³	.019 PPM, 90 th percentile	8/1/23	No	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives.
^f Total Trihalomethanes	No MCLG	80 PPB ⁴	4.77 PPB	8/9/23	No	By-products of drinking water chlorination.
^g Radium 226 Radium 228 Combined	0 pCi/l	5 pCi/l	.803 pCi/l	2/9/23	No	Erosion of natural deposits
^h Sodium	No MCLG	No MCL	10.6 PPM	2/8/23	No	Erosion of natural deposits

^aOther contaminants that are monitored and below detection limit are not included in table.

¹ **MCLG**- Maximum contaminant level goal or 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.

² **MCL**- Maximum contaminant level or highest level of a contaminant that is allowed in drinking water. MCL's are set as close to the MCLGs as feasible using the best available treatment technology.

³ **PPM**- Parts per million or milligrams per liter, explained in the terms of money as one penny in \$10,000.

⁴ **PPB**- Parts per billion or micrograms per liter, explained in terms of money as one penny in \$10,000,000.

⁵ **AL** - Action Level, or the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

⁶ **TT**- Treatment Technique, or a required process intended to reduce the level of a contaminant in drinking water.

Iron occurs naturally in our raw water and occasionally accumulates in the distribution system. Iron shows up as “red” or “rusty” water at your tap. Although you do not want to drink water that is not clear, iron is not considered to be a hazard to your health. We test for iron daily and it is usually around .05 ppm. The aesthetic limit for iron is 0.3 ppm.

a. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other; potentially harmful, bacteria may be present. No positive coliforms found in any of our monthly monitoring samples.

b. Some people who drink water containing barium in excess of the MCL over many years could experience an increase in their blood pressure.

c. Fluoride is added to our water at levels recommended by the EPA and the US Department of Health and Human Services to help prevent tooth decay. Some people who drink water that contains fluoride well in excess of the MCL over many years could get bone disease. This could include pain and tenderness of the bones, and children’s teeth could become discolored.

d. TDEC requires all public water systems to test various sites in their distribution system for lead and copper. Corrosion of household plumbing systems and erosion of natural deposits are the sources for these contaminants. During the most recent round of lead and copper sampling, out of 20 samples taken, 0 samples contained concentrations exceeding the action level.

e. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

f. Some people who drink water containing radium 226 or 228 in excess of the MCL over many years may have an increased risk of getting cancer.

g. Some people who drink water that contains high levels of sodium could develop high blood pressure.

Table 2.

Contaminant	MRDLG ¹	MRDL ²	Level Found	Date	Violation	Typical Source
<u>Chlorine</u>	4.0 PPM	4.0 PPM	Average:1.39 PPM Range: .46-2.20 PPM	Daily	No	Water additive used to control microbes

¹ **MRDLG** - Maximum Residual Disinfectant Goal, or 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 contaminants.

² **MRDL** - Maximum Residual Disinfectant Level, or the highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the control of microbial contaminants.

a. Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could also experience stomach discomfort.

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 have been used to make coatings and products that are used as oil and water repellents for carpets, clothing, paper packaging for food, and cookware. They are also contained in some foams (aqueous film-forming foam or AFFF) currently used for fighting petroleum fires at airfields and in industrial fire suppression processes. 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 10, 2024, the US EPA established MCLs for a subset of PFAS chemicals. EPA requires implementation of sampling in accordance with the new MCLs within three years of the publication date and implementation of any required treatment within five years.

Compound	MCL
PFOA	4.0 parts per trillion (ppt) (also expressed as ng/L)
PFOS	4.0 ppt
PFHxS	10 ppt
PFNA	10 ppt
HFPO-DA (commonly known as GenX Chemicals)	10 ppt
Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS	1 (unitless) Hazard Index

These limits did not apply for the 2023 calendar year because they had not been published. However, the DoD proactively promulgated policies to monitor drinking water for PFAS at all service owned and operated water systems at a minimum of every two years. The DoD policy states that if water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than the 2016 EPA health advisory (HA) level of 70 ppt, water systems must take immediate action to reduce exposure to PFOS or PFAS. For levels less than 70 ppt but above the 4 ppt level (draft at the time of policy publication), DoD committed to planning for implementation of the levels once EPA’s published MCLs take effect.

Has NSA Mid-South tested its water for PFAS in 2023?

Yes. In April 2023 samples were collected from the potable water system.

We are pleased to report that drinking water testing results were below the Method Reporting Limit (MRL) for all 29 PFAS compounds covered by the sampling method, including PFOA and PFOS. This means that PFAS were not detected in your water.

Think before you flush!

Flushing unused or expired medicines can be harmful to your drinking water. Properly disposing of unused or expired medication helps protect you and the environment. Keep medications out of Tennessee's waterways by disposing in one of our permanent pharmaceutical take back bins. There are over 340 take back bins located across the state in all 95 counties, to find a convenient location please visit: <https://www.tnpharm.org/patient-resources/disposing-of-unwanted-drugs/>