Fort Detrick Drinking Water Quality Report

Calendar Year 2024

We are delighted to share the 2024 Annual Drinking Water Quality Report for Fort Detrick, Maryland. This report is designed to inform the Fort Detrick community about the quality of drinking water provided to our customers. The Directorate of Public Works (DPW) remains dedicated to delivering safe and reliable drinking water. Once again, our drinking water has met or exceeded the stringent standards set by the Environmental Protection Agency (EPA) and Maryland Department of the Environment (MDE). Additionally, we take pride in responsibly returning treated sanitary waste to the environment.

In accordance with the "Consumer Confidence Reporting Rule" of the Safe Drinking Water Act (SDWA), community water systems are required to issue annual reports on water quality to the public. This report satisfies the SDWA requirements for the water produced and supplied to the Fort Detrick community. It contains details about our water sources, its constituents, and potential health risks linked to any contaminants.

Occasionally, Fort Detrick community members may notice discolored or "cloudy" drinking water due to changes in flow conditions, water main breaks, or construction activities, which can disturb sediment within the water lines. To ensure water quality, our supply is disinfected using both chlorine and ultraviolet (UV) treatments before reaching customers. Chlorine is also maintained within the distribution system for added quality control. Please note that cloudy water does not affect drinking water quality and is safe for consumption. Furthermore, water filters have been installed in the main distribution lines to help minimize cloudy water occurrences.

This Drinking Water Quality Report details the quality of water produced at the Fort Detrick WTP (Public Water System ID MD010-0011).

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Source of Your Drinking Water

Fort Detrick is permitted to withdraw water from local resources in accordance with permits regulated by the MDE. The average monthly volume of water consumed at Fort Detrick during calendar year 2024 was 1.290 million gallons per day. Source water provided by Fort Detrick comes from the Monocacy River. In general, sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells.

What's in the Drinking Water?

All drinking water sources, including bottled water, can be exposed to contamination from both naturally occurring and human-made sources. As water moves across land or through the ground, it absorbs naturally occurring minerals, including radioactive material, and may pick up substances linked to animal activity or human actions. For the Potomac River watershed, potential contamination arises from point and non-point sources, such as transportation, agriculture, septic systems, and runoff from developed areas.

These contaminants may include microbial agents, inorganic or organic chemicals, pesticides, herbicides, and radioactive substances. A susceptibility analysis by the Maryland Department of the Environment (MDE) identifies turbidity, disinfection by-product precursors, and pathogenic microorganisms as key concerns. Sampling within the watershed shows that storm events lead to the highest concentrations of these microorganisms.

Factors such as nutrient enrichment, algal blooms, and natural organic matter contribute to disinfection by-product precursors. Decaying organic matter lowers oxygen levels in the river, while algae growth raises total organic carbon in the water. The interaction of organic carbon with disinfectants during the water treatment process creates disinfection by-products in treated water. High turbidity often stems from erosion and sediment transport during storms.

It is important to note that the presence of contaminants does not necessarily imply a health risk. For more details about contaminants and health effects, contact the EPA's Safe Drinking Water Hotline at 800-426-4791.

Vulnerable Community Members

Certain groups of individuals may face a higher risk of exposure to contaminants in drinking water compared to the general population. This includes people with compromised immune systems, such as those undergoing cancer treatment, organ transplant recipients, individuals with HIV/AIDS or other immune disorders, elderly persons, and infants. These individuals are more susceptible to infections and should consult their healthcare providers regarding concerns about drinking water safety. For guidance on reducing the risk of infection from Cryptosporidium and other microbial contaminants, the EPA and CDC offer recommendations accessible through the EPA's Safe Drinking Water Hotline at 800-426-4791.

Cryptosporidium (microbial pathogens)

Cryptosporidium, a microbial pathogen, is commonly found in surface water across the United States. Monitoring has detected these organisms in source water. While filtration processes are effective in removing Cryptosporidium, they cannot ensure complete removal. Infection occurs when the pathogen is ingested, though it can also be transmitted through sources other than drinking water. At Fort Detrick, there have been no reported health issues associated with the ingestion of microbial pathogens through drinking water.

Bottled vs. Tap Water

Bottled water is packaged in both glass and plastic containers, which, if not recycled, often end up in landfills across the globe. A single plastic bottle takes about 1,000 years to fully decompose. Choosing a reusable water bottle and refilling it with tap water is not only more convenient and cost-effective but also significantly better for the environment.

Monitoring of Your Drinking Water

We take pride in delivering safe and reliable drinking water to the Fort Detrick community. To ensure its safety, the EPA enforces regulations that limit the levels of specific contaminants in water supplied by public systems. Similarly, the FDA sets contaminant limits for bottled water to ensure equivalent public health protection. As detailed in the table titled "Analyte/Contaminant Groups and Monitoring Frequency," our drinking water is constantly monitored to maintain quality standards. The tap water provided to our customers consistently complies with all EPA and MDE health and safety requirements.

Your water is analyzed exclusively using EPA-approved laboratory methods. Our team collects water samples from various points in the distribution system, which are then tested at accredited laboratories for a comprehensive range of quality parameters. The left column of the accompanying table lists the monitored contaminant groups, while the right column outlines their monitoring frequency.

Analyte/Contaminant Groups and Monitoring Frequency Table

Analyte/Contaminant Group	Monitoring Frequency
Arsenic	Once yearly
Fluoride	Once yearly, Additionally, a sample was taken by MDE on 05/28/2024.
Nitrate	Once yearly, Additionally, a sample was taken by MDE on 05/28/2024.
Metals (Phase II/V)	Once yearly
Atrazine	Once yearly
2SOC[1]	Once yearly
5SOC (Method 525)	Twice yearly
VOC[2]	Once yearly
Gross Alpha[3]	Every 9 years Samples taken by MDE.
Beta/photon emitters	A sample was taken by MDE on 05/28/2024.
Radium-228	Every 9 years Samples taken by MDE.
Total Haloacetic Acids	Four times yearly (4 quarters)
Total Trihalomethanes	Four times yearly (4 quarters)
Bacteriologic samples	9 per month
Total Organic Carbon	1 set per month
Lead	**20 samples were be taken in July-September 2024. (Every 3 years)**
Copper	**20 samples were be taken in July-September 2024. (Every 3 years)**
Per- and Polyfluoroalkyl Substances (PFAS)	Two times yearly (2 quarters)

1 - Synthetic Organic Contaminants (SOC) include Carbofuran, Dalapon and 2,4-D.

2 - Volatile Organic Contaminants (VOC) include Benzene, Styrene and Toluene.

3 - Gross Alpha particles include Combined Radium-226/228, and Uranium.

Definitions of Key Terms/Acronyms Used in this Report

CDC Centers for Disease Control and Prevention; serves as the National focus for developing and applying disease prevention and control, environmental health, and health promotion and education activities.

EPA Environmental Protection Agency; Federal governing agency for the regulation of drinking water quality.

FDA Food & Drug Administration; Federal governing agency which establishes limits for contaminants in food and bottled beverages.

MCL Maximum Contaminant Level; The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the maximum contaminant level goals (MCLGs) as feasible using the best available treatment technology.

MCLG Maximum Contaminant Level Goal; 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.

MDE Maryland Department of the Environment; State governing agency for the regulation of drinking water quality.

MGD Million gallons per day.

NTU Nephelometric turbidity unit; a measure of turbidity in water.

PFOA Perfluorooctanoic acid

PFOS Perfluorooctane sulfonate

ppt parts per trillion; a unit of measure equivalent to a single penny in $10,000,000,000. Generally equivalent to nanograms per liter.

ppb parts per billion; a unit of measure equivalent to a single penny in $10,000,000. Generally equivalent to micrograms per liter.

ppm parts per million; a unit of measure equivalent to a single penny in $10,000. Generally equivalent to milligrams per liter.

SDWA Safe Drinking Water Act; Federal law which sets forth drinking water regulations.

Total Haloacetic Acids (HAA) Byproducts of drinking water disinfection. Includes monochloroacetic acid, monobromoacetic acid, dichloroacetic acid, trichloroacetic acid, bromochloroacteic acid and dibromoacetic acid.

Total Trihalomethanes (TTHMs) Byproducts of drinking water chlorination. Includes chloroform, bromodichloromethane, dibromochloromethane, and bromoform.

Notices of Violations

In 2024, Fort Detrick received one (1) violation from the MDE associated with disinfection byproduct levels exceeding regulatory limits. The exceedance had negligible impacts to the water quality and consumer health was not effected by the incident. Trihalomethane running annual average of 81.9 ppb exceeded regulatory limit of 80 ppb in the 3rd quarter of 2024. Numerous plant operations were modified to aid in the prevention of any future events.

Public Involvement

For additional information concerning the Fort Detrick Consumer Confidence Report, please contact the Fort Detrick Environmental Division at 301-619-0327 or the Environmental Hotline at 301-619-0044.

Water Conservation

Fort Detrick residents and workforce are responsible for conserving water, understanding that it saves money and protects a valuable natural resource. During droughts or infrastructure maintenance and repairs, the Garrison Commander may enforce strict water conservation measures.

Plumbing Problems and Repairs

Fort Detrick residents should contact Balfour Beatty Communities at https://www.detrickhomes.com for plumbing repairs. Authorized personnel at administrative and industrial facilities should contact the DPW Trouble Desk https://www.armymaintenance.com/arma for plumbing repairs.

Monitoring Results

The table below presents Fort Detrick's sampling results for the Calendar Year 2024 reporting period. In addition to these findings, extensive testing was conducted for many other contaminants, but none were detected.

Results Table - Detected Contaminants

Contaminant	MCL[1]	MCLG	Level Found	Range	Sample Date	Within Standards
Chlorine	4.0 ppm	4.0 ppm	2.3 ppm[2]	0.0-2.3 ppm	1-2 per month	Yes
Barium	2.0 ppm	2.0 ppm	0.22 ppm	NA	9 Jan	Yes
Nitrate	10 ppm	10 ppm	2.6 ppm / 1.5 ppm[3]	NA	9 Jan & 28 May	Yes
Fluoride	4.0 ppm	4.0 ppm	0.52 ppm / 0.65 ppm[3]	NA	9 Jan & 28 May	Yes
Beta/Photon emitters	50 pCi/L	0 pCi/L	4.5 pCi/L[3]	NA	28 May	Yes
Total Haloacetic Acids	60 ppb[4]	NA	32.0 ppb[4]	10.8-32.0 ppb[4]	Quarterly	Yes
Total Trihalomethanes	80 ppb[4]	NA	81.9 ppb[4]	19.5-153 ppb[4]	Quarterly	No[4]
Turbidity[5]	0.3 NTU[5]	NA	0.075 NTU[5]	0.021-0.075 NTU	Daily	Yes
Turbidity[5]	1.0 NTU[5]	NA	0.390 NTU[5]	0.021-0.390 NTU	Daily	Yes
Total Organic Carbon Removal	NA	NA	46.3 % (Avg)	32%-80%	Monthly	Yes
Perfluorobutanoic acid (PFBA)	NA	NA	2.8 ppt	2.5-2.8 ppt	29 Jan & 6 Aug	Yes
Perfluoropentanoic acid (PFPeA)	NA	NA	4.2 ppt	1.8-4.2 ppt	29 Jan & 6 Aug	Yes
Perfluorohexanoic acid (PFHxA)	NA	NA	2.8 ppt	1.7-2.8 ppt	29 Jan & 6 Aug	Yes
Perfluoroheptanoic acid (PFHpA)	NA	NA	1.3 ppt	1.0-1.3 ppt	29 Jan & 6 Aug	Yes
Perfluorooctanoic acid (PFOA)	4 ppt[6]	0	2.5 ppt	2.0-2.5 ppt	29 Jan & 6 Aug	Yes
Perfluorononanoic acid (PFNA)	10 ppt[6]	10 ppt	0.49 ppt	All 0.49 ppt	29 Jan & 6 Aug	Yes
Perfluorobutanesulfonic acid (PFBS)	NA[6]	NA	2.7 ppt	All 2.7 ppt	29 Jan & 6 Aug	Yes
Perfluorohexanesulfonic acid (PFHxS)	10 ppt[6]	10 ppt	1.0 ppt	0.54-1.0 ppt	29 Jan & 6 Aug	Yes
Perfluorooctanesulfonic acid (PFOS)	4 ppt[6]	0	2.7 ppt	All 2.7 ppt	29 Jan & 6 Aug	Yes
Lead	15 ppb	0	<2 ppb[7]	<2-9 ppb[7]	July—Sept	Yes
Copper	1.3 ppm	1.3 ppm	0.066ppm[7]	0.0061-0.094 ppm[7]	July—Sept	Yes

1. *Applicable State, Local, or Federal MCL, TT, or AL value.*
2. *Running annual average. Chlorine residuals must be detectable in 95% of monthly samples collected in the distribution system. The running annual average cannot exceed 4.0 ppm.*
3. *On 05/28/2024, MDE sampled at Fort Detrick, recording a higher fluoride level than ours for the year. Also, sampled for Nitrate and Beta.*
4. *Disinfection By-Products cannot exceed a running annual average of 60 ppb for total haloacetic acids and 80 ppb for total trihalomethanes. The "Level Found" column indicates the maximum running annual average in 2024. The "Range" column lists individual concentrations used to calculate it.. The running average exceeded 80 ppb MCL in Qtr 3. Qtr 1, Qtr 2, and Qtr 4 stayed within the limit.*
5. *Turbidity levels of representative samples of filtered water must be ≤ 0.3 NTU in at least 95% of monthly measurements. Levels cannot exceed a maximum of 1.0 NTU at any time.*
6. *MCLs for PFOA & PFOS are set at 4 ppt, while PFHxS, PFNA, and HFPO-DA (GenX) each have limits of 10 ppt. For mixtures containing PFHxS, PFNA, HFPO-DA, and PFBS, the EPA established a hazard index of 1.0 to assess risk and determine action. Public water systems must meet new standards by April 2029.*
7. *90th percentile for Lead and Copper. Lead and Copper had zero sites that exceeded the Action Levels.*

Common Sources of Contaminants and Potential Health Effects

Contaminant	Potential Health Effects	Common Sources of Contaminant
Chlorine	Chlorine in excess of MCL could cause irritating effects to eyes and nose; stomach discomfort.	Water additive used to control microbes.
Barium	Barium in excess of MCL can cause an increase in blood pressure.	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits.
Nitrate	Infants below the age of six months who drink water containing nitrate in excess of the MCL could become seriously ill and, if untreated, may result in death. Symptoms include shortness of breath and blue baby syndrome.	Runoff from fertilizer use; leaching from septic tanks, sewage; and erosion of natural deposits.
Fluoride	Fluoride in excess of MCL can cause bone disease, including pain and tenderness of the bones. Increased fluoride may cause mottling of children's teeth (dental fluorosis).	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories.
Atrazine	Some people who drink water containing atrazine well in excess of the MCL over many years could experience problems with their cardiovascular system or reproductive difficulties.	Runoff from herbicide used on row crops.
Total Haloacetic Acids	Total Haloacetic Acids in excess of MCL can cause an increased risk of cancer.	By-product of drinking water disinfection.
Total Trihalomethanes	Total Trihalomethanes in excess of MCL can cause an increase in liver, kidney or central nervous system problems; increased risk of cancer.	By-product of drinking water chlorination.
Turbidity	Turbidity has no health effects. However, turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea and associated headaches.	Soil runoff.
Total Organic Carbon	Total organic carbon has no health effects. Total organic carbon provides a medium for the formation of disinfection byproducts.	Naturally present in the environment.
Perfluorobutanoic acid (PFBA) Perfluoropentanoic acid (PFPeA) Perfluorohexanoic acid (PFHxA) Perfluoroheptanoic acid (PFHpA) Perfluorooctanoic acid (PFOA) Perfluorononanoic acid (PFNA) Perfluorobutanesulfonic acid (PFBS) Perfluorohexanesulfonic acid (PFHxS) Perfluorooctanesulfonic acid (PFOS)	PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFNA, PFBS, PFHxS, and PFOS are classified as Per- and polyfluoroalkyl substances (PFAS). Exposure to PFAS contaminants exceeding the MCL may lead to various adverse health effects, such as liver damage, thyroid disease, decreased fertility, high cholesterol levels, obesity, hormone suppression, and an increased risk of cancer.	PFAS, including PFBA, PFPeA, PFHxA, PFHpA, PFOA, PFNA, PFBS, PFHxS, and PFOS, are a group of synthetic (man-made) chemicals. They are commonly used in the production of fluoropolymer coatings and products designed to resist heat, oil, stains, grease, and water. These compounds are widely found in various industries, such as cookware manufacturing, waterproof clothing, food packaging, and firefighting foams, contributing to their prevalence in the environment.

Polyfluoroalkyl Substances (PFAS)

PFAS, or per- and polyfluoroalkyl substances, refer to a vast group of over 4,000 synthetic chemicals that have been in use since the 1940s. These substances are found in a wide range of products, such as stain- and water-resistant fabrics, carpeting, cleaning agents, paints, cookware, food packaging, and fire-fighting foams. Their extensive application has led to their presence in the environment, where they have been detected in soil, surface water, groundwater, and seafood across several states. Notably, certain PFAS compounds are persistent in both the environment and the human body, with the ability to accumulate within the food chain.

Between 2020 and 2022, the Maryland Department of the Environment (MDE) conducted a PFAS monitoring program for Community Water Systems. The findings are available on MDE's website: PFAS Landing Page.

In April 2024, the Environmental Protection Agency (EPA) finalized enforceable MCLs for six PFAS compounds in drinking water. The MCLs are as follows:

- PFOA and PFOS: 4 ppt
- PFHxS, PFNA, and HFPO-DA (GenX): 10 ppt each

For mixtures containing PFHxS, PFNA, HFPO-DA, and PFBS, the EPA introduced a hazard index of 1.0 to assess risk and guide necessary actions. Public water systems must comply with these new standards by April 2029, representing a significant advancement in regulating PFAS to safeguard public health.

Additionally, the Fifth Unregulated Contaminant Monitoring Rule (UCMR5) began testing in 2023 for 29 PFAS compounds and lithium, with the program continuing through 2025. UCMR5 mandates testing for all community water systems serving populations of 3,300 or more. Moreover, three randomly selected Maryland systems with populations below 3,300 will also participate in the testing. Any detection exceeding the minimum reporting levels for these substances must be disclosed in the Consumer Confidence Report.

Lead and Copper Rule

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. Fort Detrick is responsible for providing high quality drinking water and removing lead pipes but cannot control the variety of materials used in plumbing components in your home. You share the responsibility for protecting yourself and your family from the lead in your home plumbing. You can take responsibility by identifying and removing lead materials within your home plumbing and taking steps to reduce your family's risk. 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 water and wish to have your water tested, contact Fort Detrick Environmental Division at 301-619-0327 or the Environmental hotline at 301-619-0044. 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. **An initial inventory of service line pipe materials located within our service area was required to be submitted to the MDE by October 16, 2024. Our initial inventory was submitted to MDE on September 16, 2024 and is available upon request.**

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