



Marine Corps Base Hawaii Annual Drinking Water Consumer Confidence Report

Public Water System No. 356

2024

**MCBH drinking water meets all
Federal and State standards
and is safe to drink.**

This Consumer Confidence Report (CCR) is provided in accordance with U.S. Environmental Protection Agency (EPA) regulations that require community water system operators to provide their customers an annual report on the quality of their drinking water. This report describes where your water comes from, what was detected in the water in the past year (Jan 1 – Dec 31, 2023), and how those results compare to standards for safe drinking water. **Test results confirm MCBH drinking water meets all Federal and State standards and is safe to drink.**

Water Source

MCBH serves over 10,000 military personnel, families, and civilians.

Marine Corps Base Hawaii (MCBH) receives potable water from the **City and County of Honolulu (CCH) Board of Water Supply (BWS)**, which is responsible for monitoring primary regulated constituents and a rotating list of secondary, unregulated constituents. **The BWS 2024 Annual Consumer Confidence Report is included as Enclosure 1** and indicates the groundwater sources supplying water to the MCBH water system include:

- Kaluanui Wells
- Ma'akua Well
- Punalu'u Wells II
- Waihee Tunnel

A source water assessment for the CCH wells serving MCBH Kaneohe Bay was completed in 2003 and is available from the MCBH Environmental Compliance and Protection Division (ECPD). MCBH does not conduct public meetings about the drinking water system, however questions regarding the assessment and in general, can be directed to MCBH ECPD.

The areas identified below are served by the Joint Base Pearl Harbor Hickam (JBPHH) water system. **The JBPHH 2024 Annual Water Quality Report is included as Enclosure 3.**

- Manana Housing
- Camp Smith
- Pu'uloa Rifle Range
- Pearl City Annex (PCA) (warehouses only)
- Marine Barracks is a Navy neighborhood on JBPHH that is the historical location of the marine barracks during WW2. (i.e., not a MCBH neighborhood).

Should you have any questions, please feel free to contact Patrick Crile, MCBH ECPD at **808-496-4358** or Patrick.Crile@USMC.mil

Terms Used in this Report

AL

- **Action Level:** a level that triggers additional treatment or other requirements that a water system must follow.

MCL

- **Maximum Contaminant Level:** 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.

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.

MFL

- Million fibers per liter

MRDL

- **Maximum Residual Disinfectant Level:** The highest level of a disinfectant allowed in drinking water.

MRDLG

- **Maximum Residual Disinfectant Level Goal:** The level of a drinking water disinfectant below which there is no known or expected risk to health.

ND

- Not Detected

NQ

- Not Quantifiable (< means "less than")

pCi/L

- Picocuries Per Liter (A measure of Radioactivity)

ppb

- Parts per billion or Micrograms per Liter

ppm

- Parts per million or Milligrams per liter

ppt

- Parts per Trillion or Nanograms per liter

TT

- **Treatment Technique:** a required process intended to reduce the level of a contaminant in drinking water.

Education

Possible Contaminants

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.

Contaminants that may be found in source water:


- **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 byproducts of industrial processes and petroleum production, and can also 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 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. 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 water poses a health risk.

More information about drinking water contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline at **1-800-426-4791** or visiting their website at <https://www.epa.gov/ground-water-and-drinking-water>





Some people may be more vulnerable to contaminants in drinking water than the general population. Immune system compromised persons, such as persons with cancer undergoing chemotherapy, people who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be partially at risk from infections. Infants less than a year in age are vulnerable to nitrates. These people should seek advice about drinking water from their health care providers. Additional advice and guidelines about drinking water are available from their health care provider. EPA/CDC (Center for Disease Control) guidelines on appropriate measures to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from **the EPA's Safe Drinking Water Hotline (1-800-426-4791).**

The MCBH Public Water System (PWS) is responsible for providing **high quality drinking water and is in compliance with EPA action level standards for lead.** Lead is a toxic metal that can accumulate in the body upon exposure and is harmful to human health. Pregnant women, infants, children, and adults could experience various health problems if drinking water containing lead above action levels is consumed regularly. Examples of potential health effects are as follows:

- **Pregnant women:** Reduced fetus growth, Premature birth
- **Children, infants, fetuses:** Damage to nervous system, Physical and Mental development impairments, Impaired formation and function of blood cells
- **Adults:** Kidney function impairment, Increased blood pressure and incidence of hypertension, Reproductive problems

Lead detected in drinking water is attributed to materials and components associated with service lines and home plumbing. If you are concerned about lead in your drinking 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, are available from **the EPA's Safe Drinking Water Hotline (1-800-426-4791)** or at <http://www.epa.gov/safewater/lead>.

Chlorine is added as a disinfectant to the MCBH potable water system prior to delivering to customers on-base. **Disinfection kills bacteria, viruses, and other microorganisms that cause disease and immediate illness.** Chlorine is an effective disinfectant that keeps the water clean as it travels to the consumers tap.

Maintenance and oversight of the MCBH potable water system is a joint effort between base utility personnel and ECPD. MCBH also independently samples for the constituents in its system (Table 1).

Table 1 – Constituents Sampled by MCBH

| Constituent | Frequency | Timeframe | No. of Locations |
|--|---------------|-----------------|------------------|
| Lead and Copper | Every 3 years | August | 30 |
| Disinfection Bi-Products (THM and HAA) | Annually | February | 4 |
| Total Coliform Bacteria | Monthly | Twice per Month | 15 |
| Escherichia Coli Bacteria (E-Coli) | Monthly | Twice per Month | 15 |
| Asbestos | Every 9 years | August | 1 |

THM = Trihalomethanes
HAA = Haloacetic Acids

The most recent BWS and MCBH drinking water quality results are summarized in Tables 2 and 3 (Regulated Contaminants) and Table 4 (Unregulated Contaminants). Tables list substances that were detected in the drinking water during 2023. The presence of these substances does not necessarily constitute a health risk.

Unregulated contaminants do not have designated maximum limits but require monitoring and are expressed in terms of action levels or health advisories.

Table 2 – Regulated Contaminants

| Contaminant | Sample Year | Unit | Result | | MCL | MCLG | Typical Sources |
|--------------------------|-------------|-------|--------|-------|-----|------|--------------------------------------|
| | | | Min | Max | | | |
| Total Coliform | 2023 | Y/N | N | N | N | N | Naturally occurring |
| E-Coli | 2023 | Y/N | N | N | N | N | Human and animal fecal waste or soil |
| Trihalomethanes (Total) | 2023 | ppb | 0 | 15 | 80 | None | Water disinfection byproduct |
| Haloacetic Acids (Total) | 2023 | ppb | ND | ND | 60 | None | Water disinfection byproduct |
| Beta/Photon Emitters | 2021 | pci/l | 3.0 | 3.0 | 50 | 0 | Naturally occurring in Hawaii |
| Nitrate | 2023 | ppm | 0.16 | 0.17 | 10 | 10 | Rainfall & agricultural activity |
| Barium | 2023 | ppb | 0.002 | 0.008 | 2.0 | 2.0 | Natural erosion |
| Chromium | 2023 | ppb | 1.2 | 2 | 100 | 100 | Erosion of natural deposits |
| Asbestos | 2021 | MFL | ND | ND | 7.0 | 4.0 | Natural and water main cement |

ND = Not Detected above laboratory detection levels

ppm = parts per million

ppb = parts per billion

pci/L = Picocuries per liter

MFL = Million fibers per liter

Table 3 – Regulated Contaminants (Cont.)

| Contaminant | Sample Year | Unit | 90 th Percentile Jan - Jun | 90 th Percentile Jun - Dec | Action Level | # Samples Above Action Level | Common Sources |
|-------------|-------------|------|---------------------------------------|---------------------------------------|--------------|------------------------------|---|
| Lead | 2023 | ppb | ND | ND | 15 | 0 | Corrosion of household plumbing systems |
| Copper | 2023 | ppm | 0.050 | 0.061 | 1.3 | 0 | Corrosion of household plumbing systems |

Table 4 – Unregulated Contaminants

| Contaminant | Sample Year | Unit | Range | | Health Advisory | Common Sources |
|-------------|-------------|------|-------|-----|-----------------|---|
| | | | Min | Max | | |
| Bromoform | 2023 | ppb | 1.2 | 1.2 | 0 | Disinfection byproduct |
| Chlorate | 2023 | ppb | 16 | 39 | 210 | Disinfection/with bleach |
| Chloride | 2023 | ppm | 16 | 240 | 250** | Common environmental element |
| Chromium-6 | 2023 | ppb | 1.2 | 2.2 | 13 | Naturally and manmade source |
| Sodium | 2023 | ppm | 13 | 39 | 60 | Common environmental element |
| Strontium | 2022 | ppb | 52 | 270 | 4,000 | Naturally occurring trace metal |
| Sulfate | 2023 | ppm | 2.6 | 25 | 250** | Naturally occurring in minerals and rocks |
| Vanadium | 2022 | ppb | 5.0 | 11 | 21 | Naturally occurring trace metal |

** Secondary Maximum Containment Levels (SMCLs) are standards established as guidelines to assist public water systems in managing the aesthetics quality (taste, odor, and color) of drinking water. The EPA does not enforce SMCLs.

Results

Test results confirm that **MCBH drinking water meets all Federal and State standards and is safe to drink** in accordance with EPA regulations. Should you have any questions, please feel free to contact Patrick Crile, MCBH Environmental Compliance and Protection Division at **808-496-4358** or Patrick.Crile@USMC.mil

The water serving **600 Mokapu Road** has been tested and meets all Federal and State standards.

00121651

The water quality monitoring results are presented below.

The water sources serving this address are:

| Source Name | Origin of Water | Treatment | Region |
|---------------------|-----------------|--------------|--------|
| a) Kaluanui Wells | Groundwater | Chlorination | 2 |
| b) Maakua Well | Groundwater | Chlorination | 2 |
| c) Punaluu Wells II | Groundwater | Chlorination | 2 |
| d) Waihee Tunnel | Groundwater | Chlorination | 2 |

Source Water Monitoring

The substances detected in these sources are shown below. If a substance is not shown, then it was not detected.

Regulated Contaminants (2)

| Contaminant | Sample Year | Unit | Highest Average | Range | | MCL (Allowed) | MCLG (Goal) | Found in Sources |
|----------------------|-------------|-------|-----------------|---------|---------|---------------|-------------|------------------|
| | | | | Minimum | Maximum | | | |
| Barium | 2023 | ppm | 0.008 | 0.002 | 0.008 | 2.000 | 2.000 | All Sources |
| Beta/Photon Emitters | 2021 | pci/l | 3.000 | 3.000 | 3.000 | 50.000 | 0.000 | c |
| Chromium | 2023 | ppb | 2.000 | 1.200 | 2.000 | 100.000 | 100.000 | All Sources |
| Nitrate | 2023 | ppm | 0.170 | 0.160 | 0.170 | 10.000 | 10.000 | a,b,d |

| | |
|-----------------|--|
| Definitions: | |
| MCL | Maximum Contaminant Level. 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. |
| 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 allows for a margin of safety. |
| GAC | Granular Activated Carbon Filtration |
| Health Advisory | An estimate of acceptable drinking water levels for a chemical substance based on health effects information. Health advisory is not a legally enforceable standard. |
| CFU/100ml | Colony forming units per 100 milliliter |
| mrem/yr | Millirems Per Year (A measure of Radiation) |
| pCi/L | Picocuries Per Liter (A measure of Radioactivity) |
| ppb | Parts per billion or Micrograms per liter |
| ppm | Parts per million or Milligrams per liter |
| ppt | Parts per trillion or Nanograms per liter |
| NQ | Not Quantifiable (<means "less than") |
| NYA | Not Yet Applicable |
| N/A | Not Applicable |
| ND | Not Detected |
| * | EPA considers 50 pCi/L to be the level of concern for beta particles |
| ** | Secondary Maximum Containment Levels (SMCLs) are standards established as guidelines to assist public water systems in managing the aesthetics quality (taste, odor, and color) of drinking water. EPA does not enforce SMCLs. |
| (1) | Analysis by the State of Hawaii Department of Health |
| (2) | Analysis by the Honolulu Board Of Water Supply. Questions, call 748-5370. |
| (3) | Results from UCMR5 monitoring |
| (4) | This contaminant is considered in EPA's proposed Hazard Index (HI) calculation, a cumulative health risk to be considered when multiple compounds are present, even if individual MCLs or EALs are met. The Hazard Index (HI) is the sum of the ratios of respective contaminants and the proposed EPA requirement is for this sum of ratios to be less than 1.0 (unitless) to be in compliance. See: https://www.epa.gov/system/files/documents/2023-03/How%20to%20calculate%20the%20Hazard%20Index_3.14.23.pdf |
| (5) | These are interim values; scientific review at EPA is not finished. |
| LRAA | Locational running annual average is the average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. |
| MRDL | Maximum residual disinfectant level: The highest level of a disinfectant allowed in drinking water. |
| MRDLG | Maximum residual disinfectant level goal: The level of a drinking water disinfectant below which there is no known or expected risk to health. |

Unregulated Contaminants (Do not have designated maximum limits but require monitoring)

| Contaminant | Tested By | Sample Year | Unit | Highest Average | Range | | Health Advisory | Found in Sources |
|----------------------|-----------|-------------|------|-----------------|---------|---------|-----------------|------------------|
| | | | | | Minimum | Maximum | | |
| Bromoform | (2) | 2023 | ppb | 1.200 | 1.200 | 1.200 | 0.000 | c |
| Chlorate | (2) | 2023 | ppb | 39.000 | 16.000 | 39.000 | 210.000 | All Sources |
| Chloride | (2) | 2023 | ppm | 240.000 | 16.000 | 240.000 | 250 ** | All Sources |
| Chromium, Hexavalent | (2) | 2023 | ppb | 2.200 | 1.200 | 2.200 | 13.000 | All Sources |
| Sodium | (2) | 2023 | ppm | 39.000 | 13.000 | 39.000 | 60.000 | All Sources |
| Strontium | (2) | 2022 | ppb | 270.000 | 52.000 | 270.000 | 4000.000 | All Sources |
| Sulfate | (2) | 2023 | ppm | 25.000 | 2.600 | 25.000 | 250 ** | All Sources |
| Vanadium | (2) | 2022 | ppb | 11.000 | 5.000 | 11.000 | 21.000 | All Sources |

Distribution System Monitoring

Disinfection By-Products (2)

| System Name | Contaminant | Sample Year | Unit | Min | Max | Highest LRAA | MCL (Allowed) | MCLG (Goal) |
|--------------------------------|-------------------------|-------------|------|------|-------|--------------|---------------|-------------|
| Honolulu-Windward-Pearl Harbor | Total Trihalomethanes | 2023 | ppb | 0.00 | 15.00 | 11.80 | 80 | None |
| | Haloacetic Acids (HAA5) | 2023 | ppb | 0.00 | 0.00 | 0.00 | 60 | None |

Microbial Contaminants (2)

| System Name | Contaminant | Number of positive E. coli samples found | Violation (Yes/No) | Number of assessments required to perform | Major sources in drinking water |
|--------------------------------|-------------|--|--------------------|---|---------------------------------|
| Honolulu-Windward-Pearl Harbor | E. coli | 1 | No | 0 | Human and animal fecal waste |

Level 1 Assessment: A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

Level 2 Assessment: A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

Residual Chlorine (2)

| System Name | Sample Year | Unit | Lowest Monthly Average | Highest Monthly Average | Running Annual Average | MRDL | MRDLG |
|--------------------------------|-------------|------|------------------------|-------------------------|------------------------|------|-------|
| Honolulu-Windward-Pearl Harbor | 2023 | ppm | 0.29 | 0.32 | 0.30 | 4 | 4 |

Lead/Copper Testing (2)

| Contaminant | Sample Year | Unit | 90th Percentile Reading | | Action Level | # Samples Above Action Level |
|-------------|-------------|------|-------------------------|-----------------|--------------|------------------------------|
| | | | January - June | July - December | | |
| Lead | 2023 | ppb | ND | ND | 15.000 | 0 |
| Copper | 2023 | ppm | 0.050 | 0.061 | 1.300 | 0 |

See: https://www.boardofwatersupply.com/water-quality/lead-copper-rule

No violations found for calendar year 2023

Date Report Printed: 3/27/2024

PFAS

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 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 PFA’s in drinking water?

On April 10, 2024, the US EPA established MCLs for a subset of PFAS chemicals.

Table 5 – PFAS Limits Summary

| Compound | Final MCLG | Final MCL (enforceable levels) |
|---|---------------------------|--------------------------------|
| PFOA | Zero | 4.0 ppt |
| PFOS | Zero | 4.0 ppt |
| PFHxS | 10 ppt | 10 ppt |
| PFNA | 10 ppt | 10 ppt |
| HFPO-DA (commonly known as GenX Chemicals) | 10 ppt | 10 ppt |
| Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS | 1 (unitless) Hazard Index | 1 (unitless) Hazard Index |

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.

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 Marine Corps Base Hawai’I tested its water for PFAS in 2023?

Yes. In December 2023 a sample was collected from the entry point into the MCBH PWS.

Results

We are pleased to report that drinking water testing results were below the Method Reporting Limit (MRL) for all 25 PFAS compounds covered by the sampling method, including PFOA and PFOS. This means that **PFAS were not detected in your water system.** In accordance with DoD policy, the water system will be resampled every two years for your continued protection. Total number of analytes must be validated against your sample results.



Water Quality Report

Joint Base Pearl Harbor-Hickam Water System

(Waiawa, Aiea-Halawa & Red Hill Sources)

This report meets federal and state requirements for Consumer Confidence Reports. This report is updated annually and reflects monitoring data collected from Jan 1 - Dec 31, 2023.

The Navy is pleased to provide you with this year’s annual Water Quality Report for the Joint Base Pearl Harbor-Hickam (JBPHH) Drinking Water System.

This pamphlet provides information about the water delivered to you during the 2023 calendar year. It gives information on where your water comes from, what it contains, and how it compares to established standards for safe drinking water.

Due to the November 20, 2021, release at Red Hill, all drinking water for JBPHH now comes from the Waiawa Shaft (see page 2).

For more information on the Red Hill Release, Response, and Restoration efforts, please see: <https://jbphh-safewaters.org/>

The Navy’s goal is, and always has been, to provide you safe and dependable drinking water.

Water Provider

Naval Facilities Engineering Systems Command (NAVFAC) Hawaii operates the water system servicing your area. As the Navy water provider in the State of Hawaii (State), we primarily supply water to military installations and housing.

Drinking Water Standards

The Environmental Protection Agency (EPA) and State regulations require us to test your water for contaminants on a regular basis, making sure it is safe to drink, and to report our results accordingly.

To ensure that tap water is safe to drink, EPA regulations limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration does the same for bottled water.

In this latest compliance monitoring period, we conducted tests for over 70 contaminants that have potential for being found in your drinking water. Tables 1-1, 1-2, 1-3, 1-4, and 1-5 show the concentration levels of regulated contaminants found in your water. In all cases, the levels measured were below EPA and State requirements for safe drinking water.

We are continually working to protect your drinking water from contaminants. The State’s Department of Health (DOH) completed the Source Water Assessment in 2004 which identifies the susceptibility of your water supply to contamination. The source water assessment is available for review by contacting NAVFAC Hawaii Public Affairs, at 808-471-7300.

Source of Water

Historically, your drinking water came from the Waimalu and Moanalua groundwater aquifer systems via three supply wells/shafts: Waiawa, Aiea-Halawa, and Red Hill. Groundwater is naturally filtered as it travels from the surface to the aquifers below ground. The water is pumped up from the aquifer, disinfected, fluoridated, and piped into the JBPHH drinking water distribution system.

The Red Hill and Aiea-Halawa shafts were taken offline on November 28, 2021, and December 3, 2021, respectively, due to the Red Hill Shaft Incident (see page 2). Since

December 3, 2021, drinking water for the JBPHH Water System has been supplied solely by the water from the Waiawa Shaft.

Possible Source of Contaminants

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. It can also pick up other substances resulting from the presence of animals or human activity. 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’s Safe Drinking Water Hotline at 1-800-426-4791.

Potential Contaminants

Contaminants that may be present in your 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.

Radionuclide contaminants – which can be naturally-occurring or be the result of oil and gas production and mining activities.

Lead – 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. The Navy 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 30 seconds to two minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may request to have the Navy test your water. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available at: www.epa.gov/safewater/lead

Navy Water Requirements

In accordance with Navy policy, chlorine and fluoride are added to your water supply after the water is pumped from the ground. The Navy’s goal is to maintain concentrations of approximately 0.7 parts per million (ppm) for fluoride and 0.2 ppm for chlorine throughout the distribution system.

2021 Red Hill Shaft Incident

On November 20, 2021, a mixture of JP-5 (jet fuel) and water was released from a fire suppression drain line into the drinking water in the Red Hill Shaft. The Red Hill Shaft has been isolated and offline since November 28, 2021. On November 29, 2021, DOH issued a Health Advisory for the JBPHH Public Water System recommending, “All Navy water system users to avoid using the water for drinking, cooking, or oral hygiene. Navy water system users who detect a fuel odor from their water should avoid using the water for drinking, cooking, bathing, dishwashing, laundry, or oral hygiene.”

As a result of the fuel release, the Navy, in cooperation with DOH, EPA, and the U.S. Army, has implemented a set of plans and corrective actions to ensure safe drinking water and restore/recover the aquifer and drinking water system. The plans include:

- **Red Hill Shaft Recovery and Monitoring Plan**
<https://www.cpf.navy.mil/Portals/52/Downloads/JBPHH-Water-Updates/2022-01-26-red-hill-shaft-recovery-and-monitoring-plan.pdf>
- **Drinking Water Distribution Recovery Plan**
<https://www.cpf.navy.mil/Portals/52/Drinking-Water-Distribution-System-Recovery-Plan.pdf>
- **Drinking Water Sampling Plan**
https://www.cpf.navy.mil/Portals/52/Downloads/JBPHH-Water-Updates/Drinking%20Water%20Sampling%20Plan%20Addendum_V6_010422_Final2.pdf?ver=IHgyhCw68Io4cd8FtQAuEA%3d%3d

The Drinking Water Distribution System Recovery Plan divided the JBPHH Water System and Aliamanu Military Reservation Water System into 19 zones and detailed standard operating procedures for the flushing and sampling of each of the zones during the recovery effort in 2022. High-volume flushing of the Navy drinking water distribution system (all water mains/laterals/buildings) with 3 to 5 volumes of clean water from the Waiawa Shaft was conducted to restore safe drinking water to all Navy Water System users. Other corrective measures, such as fixture replacement, were also implemented where appropriate.

On March 18, 2022, after verification of recovery efforts and a thorough review of sample results, the DOH amended the health advisory and declared the drinking water safe for all 19 zones. To ensure a continuous supply of safe drinking water, the Navy implemented its Long-Term Monitoring plan that spanned for 24 months until February 2024. All drinking water sampling results are compiled and published on our Safe Waters website (see link below) designed to provide the public access to the most recent data reports and updates to the ongoing efforts to maintain safe drinking water. Sampling results will also be included in future Water Quality Reports:

www.cpf.navy.mil/JBPHH-Water-Updates/

Tier 1 Public Notification Close Out

On March 23, 2023, the Navy officially closed out its Tier 1 Public Notification Rule Notice of Violation (NOV), issued on May 22, 2022, because of the 2021 Red Hill Shaft incident. In last year’s Water Quality Report, the Navy was required to publish its failure to provide a Tier 1 Public Notification within 24-hours of national primary drinking water regulation violations and other situations as determined by the State as required by Hawaii Administrative Rules (HAR) 11-20-18(b)(1)(G).

The administrative notice is available at:

https://jbphh-safewaters.org/public/administrative_notice_noo_a_mended_june_30.pdf

This notice includes an explanation of the drinking water contamination, actions taken by the Navy to remediate the

situation and identifies the point of contact for more information.

Tier 3 Public Notification

Per Hawaii Administrative Rules (HAR) 11-20-18(d), a public water system must provide a Tier 3 public notice within one year of the issued violation for failing to test its drinking water system for total coliform bacteria following the notification from its consecutive water system of a total coliform positive sample result.

On July 25, 2023, total coliform bacteria was detected in a routine water sample, collected on July 24, 2023, from the Aliamanu Military Reservation (AMR) Water System (PWS 337), which receives water from the JBPHH water system. Under the HAR 11-20-50(c)(1)(ii)(D), the JBPHH was required to collect, within 24 hours of confirmation of the final total coliform positive sample results, at least one sample from the ground water source in use at the time when the total coliform positive sample was collected and could have potentially put 65,250 people at risk. However, JBPHH collected samples from the source on August 2, 2023, which the sample results were negative for total coliform bacteria. This water quality report rectifies the Notice of Ground Water Rule Monitoring Violation issued to the Navy on November 1, 2023.

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether your drinking water meets health standards. During July 2023, we did not complete all required bacteriological monitoring for total coliform bacteria at the JBPHH water system. We therefore cannot be sure of the quality of the Joint Base Pearl Harbor-Hickam drinking water during that time.

What should I do?

There is nothing you need to do at this time. You do not need to boil your water or take other corrective actions. You may continue to drink the water. If a situation arises where the water is no longer safe to drink, you will be notified within 24 hours.

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.

Steps We are Taking

To ensure safe drinking water, the Navy revisited and revised its Total Coliform Bacteria Standard Operating Procedures to include instances, such as the one in July 2023, and will conduct the required testing to ensure compliance with the Ground Water Rule and the Safe Drinking Water Act.

For Questions/Concerns and Additional Copies

For questions/concerns or, more information, please contact:
NAVFAC Hawaii Public Affairs Office (PAO)
Telephone: 808-471-7300
Email: NFHI_PAO_DL@us.navy.mil

For additional copies of this and other Navy water reports, visit:

- <https://cnrh.cnmc.navy.mil/Operations-and-Management/Environmental/Water-Quality-Information/>
- <https://pacific.navfac.navy.mil/Facilities-Engineering-Commands/NAVFAC-Hawaii/About-Us/Hawaii-Documents/Water-Quality-Reports/>

Please share this information with all other people who drink this water, especially those who may not have received this notice.

Official Address

Naval Facilities Engineering Systems Command, Hawaii
400 Marshall Road,
JBPHH, HI 96860-3139

Printed June 2024

Water Quality Data Table

The following tables list contaminants that were detected during the latest compliance sampling period (Jan 1 – Dec 31, 2023) required by EPA and State regulations. The water samples were collected from either the source water or distribution system and analyzed by the State, BWS and/or the Navy. The presence of contaminants does not necessarily indicate that the water poses a health risk. Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. You can obtain more information about contaminants and potential health effects by calling the EPA’s Safe Drinking Water Hotline 1-800-426-4791 or the State’s Department of Health at 808-586-4258.

| Contaminants in the Navy’s Source Water | | | | | | | Table 1-1 |
|--|---------------|-------------|------------------------|---------------------|----------------|--|-----------|
| Contaminants (units) | MCL (Allowed) | MCLG (Goal) | Highest Level Detected | Range of Detection | Year of Sample | Typical Sources of Contaminants | Violation |
| Inorganic Contaminants | | | | | | | |
| Fluoride (ppm) | 4 | 4 | 0.8 | nd-0.8 ¹ | 2023 | Erosion of natural deposits; Water additive which promotes strong teeth | No |
| Nitrate (ppm) | 10 | 10 | 0.54 | 0.54 | 2023 | Runoff from fertilizer use; Erosion of natural deposits | No |
| Unregulated Contaminants ^{3,7} | | | | | | | |
| Lithium (ppb) | n/a | n/a | nd | nd | 2023 | Naturally occurring metal that may concentrate in brine waters | n/a |
| Perfluorinated and Polyfluorinated Alkyl Substances in Drinking Water (PFAS) | n/a | n/a | nd | nd | 2023 | Synthetic chemical used in a wide range of consumer products and industrial applications | n/a |

| Contaminants in the BWS Source Water (Serving Manana Housing) | | | | | | | Table 1-2 |
|---|------------------|--------------------------|--------------------------------|--------------------|----------------|---|-----------|
| Contaminants (units) | MCL (Allowed) | MCLG (Goal) ² | Highest Average Level Detected | Range of Detection | Year of Sample | Typical Sources of Contaminants | Violation |
| Regulated Contaminants | | | | | | | |
| 1,2,3-Trichloropropane (ppb) | 0.6 | 0 | 0.037 | nd – 0.051 | 2023 | Fumigant previously used in agriculture | No |
| Barium (ppm) | 2 | 2 | 0.004 | 0.003 – 0.004 | 2023 | Erosion of natural deposits | No |
| Chromium (ppb) | 100 | 100 | 0.975 | nd – 1.200 | 2022 | Naturally-occurring | No |
| Fluoride (ppm) | 4 | 4 | 0.065 | 0.055 – 0.065 | 2023 | Erosion of natural deposits; Water additive which promotes strong teeth | No |
| Nitrate (ppm) | 10 | 10 | 0.810 | 0.640 – 0.810 | 2023 | Runoff from fertilizer use; Erosion of natural deposits | No |
| Unregulated Contaminants ^{3,7} | | | | | | | |
| Chlorate ⁷ (ppb) | 210 | n/a | 30.000 | 29.000 – 30.000 | 2023 | Byproduct of the disinfection process | n/a |
| Chloride(ppm) | 250 ⁴ | n/a | 65.000 | 38.000 – 65.000 | 2023 | Naturally-occurring | n/a |
| Chromium, hexavalent ⁷ (ppb) | 13.000 | n/a | 1.300 | 1.200 – 1.300 | 2023 | Naturally-occurring | n/a |
| Dieldrin (ppb) | 0.200 | n/a | 0.006 | nd – 0.012 | 2023 | Residue of banned pesticide | n/a |
| Sodium (ppm) | 60.000 | n/a | 37.000 | 29.000 – 37.000 | 2023 | Naturally-occurring | n/a |
| Strontium ⁷ (ppb) | 4000.000 | n/a | 81.000 | 62.000 – 81.000 | 2022 | Naturally-occurring | n/a |
| Sulfate(ppm) | 250 ⁴ | n/a | 13.000 | 8.800 – 13.000 | 2023 | Naturally-occurring | n/a |
| Vanadium ⁷ (ppb) | 21.000 | n/a | 10.000 | 9.300 – 10.000 | 2022 | Naturally-occurring | n/a |

| Contaminants in the Distribution System | | | | | | | Table 1-3 |
|---|---------------|-------------|------------------------|--------------------|----------------|---|-----------|
| Contaminants (units) | MCL (Allowed) | MCLG (Goal) | Highest Level Detected | Range of Detection | Year of Sample | Typical Sources of Contaminants | Violation |
| Copper (ppm) | AL = 1.3 | 1.3 | 0.179 ⁵ | nd – 0.179 | 2023 | Corrosion of household plumbing systems; Erosion of natural deposits | No |
| Fluoride (ppm) | 4 | 4 | 0.89 | 0.15 – 0.89 | 2023 | Erosion of natural deposits; Water additive which promotes strong teeth | No |

| Disinfection Agent | | | | | | | Table 1-4 |
|-------------------------|----------------|--------------|--------------------------------|--------------------|----------------|---|-----------|
| Contaminants (units) | MRDL (Allowed) | MRDLG (Goal) | Highest Average Level Detected | Range of Detection | Year of Sample | Typical Sources of Contaminants | Violation |
| Residual Chlorine (ppm) | 4 | 4 | 0.54 ⁶ | 0.48 – 0.54 | 2023 | Water additive used to control microbes | No |

| Disinfection Byproducts | | | | | | | Table 1-5 |
|-------------------------|---------------|-------------|------------------------|--------------------|-------------------|--|-----------|
| Contaminants (units) | MCL (Allowed) | MCLG (Goal) | Highest Level Detected | Range of Detection | Year of Sample | Typical Sources of Contaminants | Violation |
| TTHM (ppb) | 80 | n/a | 1.5 | nd – 1.5 | 2023 ² | Byproduct of drinking water disinfection | No |

As previously described on page 2, after the November 20, 2021 fuel release and issuance of the DOH Health Advisory, extensive testing was conducted to initially determine the level of contamination present, and later to confirm that system flushing was effective. Table 1-6 list the detected contaminant levels below and after flushing and/or addition corrective actions were applied.

| Contaminant Detections in Distribution System/Residences During Drinking Water Long-Term Monitoring Plan | | | | Table 1-6 |
|--|---------------|------------------------------------|----------------|---|
| Table Contaminants (units) | MCL (Allowed) | Highest Contaminant Level Detected | Year of Sample | Contaminant Level After Corrective |
| Antimony (ppb) | 6 | 1.2 | 2023 | Below MCL |
| Barium (ppm) | 2 | 0.0097 | 2023 | Below MCL |
| Chromium (ppb) | 100 | 7.50 | 2023 | Below MCL |
| Copper (ppm) | AL = 1.3 | 0.729 | 2023 | Below MCL |
| Lead (ppb) | AL = 15 | 59 | 2023 | Location was flushed and resampled. The resample was 0.13 and below AL. |
| Selenium (ppb) | 50 | 4 | 2023 | Below MCL |
| Mercury (ppb) | 2 | 0.120 | 2023 | Below MCL |
| Total Trihalomethanes (ppb) | 80 | 9.51 | 2023 | Below MCL |
| Total Petroleum Hydrocarbons | ISP= 266 ISP | 132 | 2023 | Below MCL |
| Total Petroleum Hydrocarbons (gasoline) (ppb) | ISP= 266 ISP | 68.5 | 2023 | Below MCL |
| Total Petroleum Hydrocarbons (oil) (ppb) | ISP= 266 ISP | 124 | 2023 | Below MCL |

Table Definitions:

- AL****Action Level.** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
- DOH****Department of Health.**
- EAL****Environmental Action Level.** Environmental Action Levels are concentrations of contaminants in drinking water and other media (e.g., soil, soil gas, and groundwater) below which the contaminants are assumed to not pose a significant threat to human health or the environment. Exceeding the EAL does not necessarily indicate that contamination at the site poses environmental hazards but generally warrants additional investigation.
- ISP****Incident Specific Parameter.** The Hawaii DOH uses multiple criteria to assess the safety of the drinking water including maximum contaminant levels (MCLs), previously established action levels (ALs), health advisory levels (HALs), and incident specific parameters (ISPs).
- J**Estimated Value
- MCL****Maximum Contaminant Level.** 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.
- 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.
- MRDL****Maximum Residual Disinfectant Level.** 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.
- MRDLG****Maximum Residual Disinfectant Level Goal.** 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.

Table Abbreviations:

- n/a** not applicable.
- ppb** parts per billion or micrograms per liter.
- ppt** parts per trillion or nanograms per liter.
- nd** not detectable at testing limits.
- ppm** parts per million or milligrams per liter.

Table Notes:

1. Only one sample collected.
2. The State and EPA require us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. The date of the last sample collected is as indicated.
3. These results are for informational purposes. There are no set standards. EPA will use this data to help determine where certain contaminants occur and whether it needs to regulate these contaminants. At this time, these contaminants do not have MCLs or MCLGs.
4. These are Secondary Maximum Contaminant Levels not enforced by EPA.
5. Per the Lead and Copper Rule, results are measured as 90th percentile value of samples collected.
6. After each quarter, a running average is calculated using the preceding 12 months of data. This value is the highest running average for the year.
7. National Secondary Drinking Water Regulations (NSDWRs), or secondary standards, are non-enforceable guidelines regulating contaminants that may cause cosmetic or aesthetic effects in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply with the standard.

Note: 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/CDC guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from the EPA’s Safe Drinking Water Hotline 1-800-426-4791.

PFAS Testing

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.

| Compound (ppt) | MCL (Allowed) | MCLG (Goal) |
|---|---------------|-------------|
| PFOA | 4.0 | 0 |
| PFOS | 4.0 | 0 |
| PFHxS | 10 | 10 |
| PFNA | 10 | 10 |
| HFPO-DA (commonly known as GenX Chemicals) | 10 | 10 |
| Mixtures containing two or more of PFHxS, PFNA, HFPO-DA, and PFBS | 1 HA | 1 HA |

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.

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 the JBPHH Water System tested its water for PFAS in 2023?

Yes. In April and October 2023, samples were taken from JBPHH’s Waiawa Well Shaft.

Below MRL

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 system as shown in Table 1-1. In accordance with DoD policy, the water system will be resampled every two years for your continued protection.