UNITED STATES MARINE CORPS
MARINE CORPS BASE HAWAII
BOX 63002
KANEOHE BAY HAWAII 96863-3002

IN REPLY REFER TO:
5090
LFE/097-21
July 1, 2021

From: Commanding Officer, Marine Corps Base Hawaii
To: Residents, Marine Corps Base Hawaii

Subj: MARINE CORPS BASE HAWAII 2021 ANNUAL WATER QUALITY REPORT

Encl: (1) Board of Water Supply, City and County of Honolulu, 2021 Annual Water Quality Report
(2) Joint Base Pearl Harbor-Hickam Water System 2021 Annual Water Quality Report

1. Marine Corps Base Hawaii (MCBH) Water System receives potable water from the City and County of Honolulu (CCH) Board of Water Supply (BWS); chlorination is then added as disinfectant, prior to customer delivery. Maintenance and oversight of the MCBH potable water system is a joint effort between base utility personnel and the Environmental Compliance and Protection Division (ECPD).

2. In 1998, the U.S. Environmental Protection Agency (EPA) put into effect regulations that require community water system operators to provide their customers an annual report on the quality of their drinking water. This letter describes where your water comes from, what was detected in the water in the past year, and how those results compare to standards for safe drinking water.

Test results show your drinking water meets all Federal and State standards and is safe to drink.

3. The BWS office has identified the source(s) of the water which goes to MCBH. They consist of the following groundwater wells or aquifers on the Island:

- Kaluanui Wells
- Maakua Well
- Punaluu Wells II
- Punaluu Wells III
- Waihee Tunnel

Prior to delivering the water to MCBH, it was tested and met all federal and state standards.

4. MCBH is required to monitor the following constituents in its water system that are vulnerable to change:

a. Lead (Pb) and Copper (Cu)
b. Tri-halomethanes (THMs), Total halo acetic acid (HAA5)
c. Asbestos
d. Total Coliform Bacteria
e. Escherichia Coliform Bacteria (E-coli)

Constituents (a – c), along with total chromium and nitrates are primary regulated contaminants. Additionally, MCBH monitors levels of other constituents reported by the BWS. These include trace metals, anions such as chlorates and microbial constituents. MCBH also tested for perfluoroalkyl substances (PFAS).

Tables 1 and 2 below list the most recent testing results. The concentration amounts are expressed in terms of ppm or ppb as described below. For regulated substances (Table 1), allowable levels and goals are expressed in terms of Maximum Contaminant Level (MCL) and Maximum Contaminant Level Goals (MCLG) as described below. For unregulated substances (Table 2), the limits are expressed in terms of action levels or health advisories. Note that certain substances are monitored less frequently, as they are not expected to change significantly from year to year. If a substance is not listed, it was not detected.

Table 1 - Regulated Substances, MCBH K-Bay

Substance	Sample Year	Unit	Range		Allow	Goal	Common Sources
			Min	Max			
TTHM	*2020*	*ppb*	*1.80*	*2.30*	*< 80*	*None*	*Water disinfection byproduct*
HAA5	*2020*	*ppb*	*ND*	*ND*	*< 60*	*None*	*Water disinfection byproduct*
Total Chromium	*2020*	*ppb*	*1.2*	*2.5*	*< 100*	*100*	*Erosion of natural deposits*
Nitrate	*2020*	*ppm*	*0.160*	*0.190*	*< 10.0*	*10.0*	*Rainfall & agricul-tural activity*
Barium	*2020*	*ppb*	*0.003*	*0.006*	*< 2.00*	*2.00*	*Natural erosion*

Cont., Table 1

Substance	Sample Year	Unit	90th Percentile Reading	Allow	# Samples Above Allow	Common Sources
Copper	*2018*	*ppb*	*59*	*< 1,300*	*0*	*Corrosion of household plumbing systems*
Lead	*2018*	*ppb*	*5.66*	*< 15*	*1*	

Table 2 - Unregulated Contaminants, MCBH K-Bay

Substance	Sample Year	Unit	Range		Health Advisory	Common Sources
			Min	Max		
Chromium-6	*2020*	*ppb*	*1.3*	*2.4*	*13.0*	*Naturally and manmade source*
Strontium	*2020*	*ppm*	*0.046*	*0.19*	*4.00*	*Naturally occurring trace metal*
Vanadium	*2020*	*ppb*	*7.2*	*10.0*	*21.0*	*Naturally occurring trace metal*

5. The rules require that MCBH report on cryptosporidium, radon and any other relevant contaminants. Cryptosporidium is associated with surface water sources, whereas MCBH only receives potable ground water. There is currently no federally-enforced drinking water standard for radon. Detailed information on the sampling and analytical results can be obtained from Richard Mestan, MCBH ECPD, richard.mestan@usmc.mil, (808) 257-3694.

6. Educational Information:

As discussed, potable water supplied to MCBH comes from groundwater sources managed by the BWS. As water travels both above and below ground, it can come in contact with naturally and/or manmade substances. In some cases naturally occurring radioactive material can be dissolved in water. Substances

from human activity are usually considered as a contaminant by virtue of its nature or amount. These include:

a. Viruses and bacteria, which may come from sewage treatment plants, septic systems, livestock, and wildlife.
b. Salts and metals, which can be natural or may result from storm runoff, wastewater discharges, and farming.
c. Organic chemicals, which originate from industrial processes, petroleum processes, petroleum production, gas stations, storm runoff and septic systems.
d. Radioactive substances, which can be naturally occurring.
e. Pesticides and herbicides, which can come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.

The EPA Safe Drinking Water Act (SDWA) assigns regulatory standards to water contaminants based on human health, while the Food and Drug Administration (FDA) establishes limits for contaminants in bottled water. Some people may be more vulnerable to contaminants in drinking water than the general population. These include individuals with compromised immune systems and infants. More information about health risks associated with contaminants can be obtained by accessing the EPA's drinking water web site (www.epa.gov/safewater/).

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 most often 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 at http://www.epa.gov/safewater/lead.

7. EPA Issued Drinking Water Health Advisories for Per- and Polyfluoroalkyl Substances (PFAS):

Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS, Gen-X, and many other chemicals. The EPA has established health advisories for PFOA and PFOS based on the agency's assessment of the latest peer-reviewed science to provide drinking water system operators, and state, tribal and local officials who have the primary responsibility for overseeing these systems, with information on the health risks of these chemicals, so they can take the appropriate

actions to protect their residents. The EPA is committed to supporting state and public water systems as they determine the appropriate steps to reduce exposure to PFOA and PFOS in drinking water.

To provide Americans, including the most sensitive populations, with a margin of protection from a lifetime of exposure to PFOA and PFOS from drinking water, the EPA has established the health advisory levels at 70 parts per trillion.

PFAS in AFFF (Aqueous Film Forming Foam) has historically been used on MCBH in firefighting training and response. The historic use of AFFF on MCBH does not pose a threat to MCBH drinking water; all water used on base comes from the City and County of Honolulu (off-installation).

MCBH Sampling:

MCBH Facilities conducted independent sampling for PFAS in the drinking water system. Samples of drinking water entering the distribution system were collected on 30 November 2020 for analysis. **PFAS was NOT DETECTED in MCBH drinking water**.

8. A source water assessment for the CCH wells serving MCBH Kaneohe Bay was completed in 2003 and is available from MCBH ECPD. MCBH does not conduct public meetings about the drinking water system, however questions regarding the MCBH Annual Water Quality Report can be directed to MCBH ECPD, Attention Major Hart, Director, 257-5640 or Ed Zuelke, Compliance Chief, 257-7142.

9. Resolution of Deficiencies:

In 2020, the Hawaii Department of Health (HDOH) Safe Drinking Water Branch (SDWB), conducted a sanitary survey at MCBH. Three significant deficiencies were found, which were not corrected by the end of the calendar year (i.e.12-31-20). For this reason they are included in this report, along with documentation of their resolution0 below;

Deficiency 1 - Tank 1519: Remove piece of gasket or construction material observed on the bottom of the tank.

Resolution – HDOH approved a plan to empty the tank and remove the object by 2/12/21. This was completed 1/26/21.

Deficiency 2 - Tank 4087: HDOH found center vent louvers and inside mesh screens to be significantly deteriorated. A recommendation was made to either refurbish or replaced with a better design (i.e. given the harsh and windy sea spray conditions). This was likely contributing to particulate matter and discoloration (sheen) observed on the tank surface.

Resolution – HDOH approved a plan with a completion date of 3/15/21 to purchase a new vent to replace the existing one. MCBH completed the replacement of the vent and received HDOH approval on 3/12/21.

Deficiency 3 - Tank 4087: HDOH determined a need to remove or refurbish both conduit connections at exterior level gage location on the roof of the tank.

Resolution – HDOH approved a plan to correct the deficiency and MCBH completed these repairs on 1/25/21.

10. Definitions:

< -"less than"

CFU/100ml - Colony forming units per 100 milliliters of water sample.

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.

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.

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. MCGLs allows for a margin of safety.

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.

PFAS - Per- and polyfluoroalkyl substances (PFAS) are a group of man-made chemicals that includes PFOA, PFOS, GenX, and many other chemicals. PFAS is found in firefighting foam, Aqueous Film Forming Foam (AFFF).

ppb - Parts per billion or micrograms per liter of water sample.

ppm - Parts per million or milligrams per liter of water sample.

ppt - parts per trillion or nanograms per liter of water sample.

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J. P. Hart
Major, U. S. Marine Corps
Director, Environmental Compliance
and Protection Division
By direction of the Commanding Officer

Board of Water Supply
630 South Beretania Street
Honolulu, Hawaii 96843

2021 ANNUAL

WATER QUALITY REPORT

Federal and state law requires testing your drinking water for many different types of contaminants.

This report contains test results showing your water is **safe to drink** and meets all federal and state requirements. If a contaminant is **not listed**, then it was **not detected**.

Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843
www.boardofwatersupply.com

Federal and state law requires testing your drinking water for many different types of contaminants. Below is a complete list.

Regulated Primary Contaminants

- Acrylamide
- Alachlor
- Alpha emitters
- Antimony
- Arsenic
- Asbestos (>10 micron)
- Atrazine
- Barium
- Benzene
- Beryllium
- Beta/photon emitters
- Bromate
- Cadmium
- Carbofuran
- Carbon tetrachloride
- Chlordane
- Chlorite
- Chlorobenzene
- Chromium (total)
- Copper
- Cyanide
- 2,4-D
- Dalapon
- Di (2-ethylhexyl)adipate
- Dibromochloropropane (DBCP)
- o-Dichlorobenzene
- p-Dichlorobenzene
- 1,2-Dichloroethane
- 1,1-Dichloroethylene
- cis-1,2-Dichloroethylene
- trans-1,2-Dichloroethylene
- Dichloromethane
- 1,2-Dichloropropane (DCP)
- Dinoseb
- Dioxin
- Di(2-ethylhexyl)phthalate
- Diquat
- Endothall
- Endrin
- Epichlorohydrin
- Ethylbenzene
- Ethylene dibromide (EDB)
- Fecal coliform
- Fluoride
- Glyphosate
- Haloacetic Acids (HAA5)
- Heptachlor
- Heptachlor epoxide
- Hexachlorobenzene
- Hexachlorocyclopentadiene
- Lead
- Lindane
- Mercury (total)
- Methoxychlor
- Nitrate (as N)
- Nitrite (as N)
- Oxamyl (Vydate)
- PCBs
- Pentachlorophenol
- Picloram
- Polyaromatic hydrocarbons [benzo(a) pyrene]
- Radium 226 + 228
- Selenium
- Simazine
- Styrene
- Tetrachloroethylene (PCE)
- Thallium
- Toluene
- Total coliform
- Total Trihalomethanes (TTHMs)
- Toxaphene
- 2,4,5-TP
- 1,2,4-Trichlorobenzene
- 1,1,1-Trichloroethane
- 1,1,2-Trichloroethane
- Trichloroethylene (TCE)
- 1,2,3-Trichloropropane (TCP)
- Turbidity
- Uranium
- Vinyl chloride
- Xylenes (total)

Unregulated Contaminants

- Boron
- Bromacil
- Bromoform
- 1-Butanol
- Chlorate
- Chloride
- Chlorodifluoromethane
- Chromium, hexavalent
- DCPA Mono/Di-acid degradates
- Dieldrin
- HAA6Br
- HAA9
- Manganese
- Methyl t-Butyl Ether (MTBE)
- Perfluorooctanoic acid (PFOA) and perfluorohexanesulfonic acid (PFHxS)
- Sodium
- Strontium
- Vanadium

Measurements in this report, one part per million (ppm) is the same as one milligram of the substance in one liter of water (mg/L). To put this into perspective, one part per million is approximately one second in 11.5 days. One part per billion (ppb) is even smaller! – about 1 second in 31.7 years.

ENCLOSURE

HAA6Br are disinfection byproducts that are formed when chlorine is added to disinfect drinking water react with naturally occurring organic and inorganic matter present in water. The six brominated haloacetic acids (HAA6Br) are Bromochloroacetic Acid, Bromodichloroacetic Acid, Dibromoacetic Acid, Dibromochloroacetic Acid, Monobromoacetic Acid, and Tribromoacetic Acid. HAA6Br is currently being tested and reported under the Fourth Unregulated Contaminant Monitoring Rule (UCMR4). The purpose of UCMR4 is to collect data on contaminants that may be present in drinking water. The United States Environmental Protection Agency then uses this information to decide if changes to the regulations are needed.

HAA9 are disinfection byproducts that are formed when chlorine or chloramine is added to disinfect drinking water react with naturally occurring organic and inorganic matter present in water. The nine haloacetic acids (HAA9) are Bromochloroacetic Acid, Bromodichloroacetic Acid, Chlorodibromoacetic Acid, Dibromoacetic Acid, Dichloroacetic Acid, Monobromoacetic Acid, Monochloroacetic Acid, Tribromoacetic Acid, and Trichloroacetic Acid. HAA9 is currently being tested and reported under the Fourth Unregulated Contaminant Monitoring Rule (UCMR4). The purpose of UCMR4 is to collect data on contaminants that may be present in drinking water. The United States Environmental Protection Agency then uses this information to decide if changes to the regulations are needed.

Haloacetic Acids (HAA) and **Total Trihalomethanes** (TTHMs)[such as bromoform, bromodichloromethane, and dibromochloromethane] are by-products of drinking water chlorination.

Heptachlor epoxide is an organic chemical formed by the chemical and biological transformation of heptachlor in the environment. Heptachlor was once used as a non-agricultural insecticide. Heptachlor and its epoxide adsorbs strongly to soil.

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. BWS 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 2 minutes before using water for drinking or cooking. If you are concerned about lead in your water, you may choose to have your water tested by contacting private laboratories that are certified by the State for doing drinking water analyses. 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.

Manganese is a naturally-occurring element that can be found ubiquitously in the air, soil, and water. It is also used in the manufacturing of steel alloys, ceramics, glass, and as a food additive. The United States Environmental Protection Agency secondary drinking water maximum contaminant limit (SMCL) for manganese is 0.05 milligrams per Liter (50 parts per billion). Concentrations in water above the SMCL may create black to brown color staining and a bitter metallic taste.

Methyl t-Butyl Ether (MTBE) is used in gasoline to reduce auto emissions.

Nitrate (as nitrogen) occurs naturally in groundwater. According to EPA, nitrates may come from runoff from fertilizer use or leaching from septic tanks, sewage, or erosion of natural deposits. Nitrate in drinking water at levels above 10 parts per million (ppm) is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask for advice from your health care provider if the nitrate level is between 5 to 10 ppm.

Nitrite (as nitrogen) occurs naturally in groundwater. According to EPA, nitrites may come from runoff from fertilizer use or leaching from septic tanks, sewage, or erosion of natural deposits. Nitrite levels in drinking water in excess of the MCL could cause serious illness or be fatal to infants below the age of six months.

Perfluorooctanoic acid (PFOA) and perfluorohexanesulfonic acid (PFHxS) are chemicals known as perfluoroalkyl substances (PFAS) that have been used extensively in consumer products such as carpets, clothing, fabrics for furniture, paper packaging for food, and other materials (for example, cookware) designed to be waterproof, stain-resistant or non-stick. They have been used in fire-retarding foam and can be found in food packaging, consumer products, house dust, and drinking water.

Radium occurs naturally in groundwater from the erosion of natural deposits.

Radon is a naturally-occurring radioactive substance found everywhere on earth. It is a colorless, odorless gas produced from the natural decomposition of uranium. Because radon is a gas, it can move from water to the air in the course of dishwashing, showering, and other water-using activities. In the atmosphere, radon is harmless because it is diluted. However, in enclosed spaces such as basements, radon levels can build up. Appropriate ventilation is the best way to prevent indoor air accumulation of radon.

Selenium is found in discharge from petroleum and metal refineries, erosion of natural deposits, and discharge from mines.

Simazine may occur from herbicide runoff.

Sodium is a common element in the environment that occurs widely in soils, plants, water, and foods. It is also found in personal care products, foods, nutritional supplements, and medications.

Strontium is an alkaline earth metal that occurs naturally in the environment. Air, dust, soil, foods, and drinking water all contain small amounts of strontium. Ingestion of small amounts of strontium is not harmful. According to EPA, strontium levels more than 4000 parts per billion per day may lead to negative health effects. There is no evidence that drinking water with trace amounts of naturally-occurring strontium is harmful.

Sulfates are naturally occurring substances that are found in minerals, soil, and rocks. They are present in ambient air, groundwater, plants, and food. The principal commercial use of sulfate is in the chemical industry. Sulfates are discharged into water in industrial wastes and through atmospheric deposition. According to the United States Environmental Protection Agency, studies suggest sulfate levels more than 500 mg/L can act as a mild laxative.

Tetrachloroethylene (PCE) is used in dry cleaning, textile processing and as a degreaser. It can be discharged from factories and dry cleaners.

Total coliform bacteria are naturally present in the environment.

Trichloroethylene (TCE) is an organic chemical that may come from metal degreasing sites and other factories.

1,2,3-Trichloropropane (TCP) is an organic chemical formerly used as a soil fumigant in agriculture and as a gasoline additive. It has been found in a number of wells in Central Oahu.

Uranium occurs from the erosion of natural deposits.

Vanadium is a metal that naturally occurs in many different minerals and in fossil fuel deposits. Exposure to vanadium is very common, as it is a naturally occurring element that is found in many parts of the environment including at low levels in many foods. According to EPA, levels more than 21 parts per billion per day may lead to negative health effects. There is no federal drinking water standard for vanadium at this time.

Where Can I Get More Information?

Visit our website at **boardofwatersupply.com** or call Erwin Kawata at (808) 748-5080. You can also reach us by e-mail at contactus@hbws.org.

For information about the following topics, call:

Environmental Protection Agency

Federal drinking water regulations, health effects

Safe Drinking Water Hotline.....1-800-426-4791

Board of Water Supply

Communications Office.....(808) 748-5041

Water testing program (chemicals).....(808) 748-5840

Microbiology testing/chlorine taste.....(808) 748-5850

Copies of your Water Quality Report.....(808) 748-5041

State Department of Health

State and Federal drinking water standards, Hawaii drinking water monitoring/compliance, health effects

Safe Drinking Water Branch.....(808) 586-4258

How Can I Get Involved?

The Board meets at 2:00 p.m. on the fourth Monday of each month at the Board of Water Supply, 630 South Beretania Street, Honolulu, Hawaii. You are invited to participate in these meetings. For copies of Board meeting schedules and minutes, call (808) 748-5061 or visit www.boardofwatersupply.com.

Board of Water Supply
630 South Beretania Street • Honolulu, HI 96843
www.boardofwatersupply.com

2021 ANNUAL

WATER QUALITY REPORT

Supplemental Information

A separate report, containing the results of tests performed on samples of your water, accompanies this Supplemental Information.

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Is My Drinking Water Really Safe?

Yes, we take our responsibility to provide safe drinking water very seriously. Like you, we drink the same water and share the same concerns about its quality. Islandwide, the Board of Water Supply (BWS) operates over 94 water sources that are located among nine different water regions. Your tap water generally comes from those sources located within your area and not from all 94. The report shows the name of the source(s) serving your area and the region it is located in.

Each year, these sources and systems are tested for more than 80 different types of contaminants by the BWS.

The sources serving your area did not contain any of the listed contaminants except for the ones shown on the report. In all cases, the amounts found are fully compliant with the standards for safe drinking water.

Drinking Water Standards and Testing

In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. The Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water which must provide the same protection for public health. A contaminant is any substance that may pose a potential health concern if present in very large quantities.

The regulations require testing tap water for many different categories of contaminants. One category is the regulated or primary contaminants. Each has a maximum contaminant goal and maximum contaminant level. The **Maximum Contaminant Level Goal** (MCLG) is 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. The **Maximum Contaminant Level** (MCL) is the highest level of a contaminant that is allowed in drinking water. This limit is the standard for safe drinking water and is set by federal and/or state health agencies. MCLs are set as close to the MCLGs as feasible using the best available treatment technology.

The regulations also have testing requirements for certain unregulated contaminants. Health agencies generally do not specify MCLs or MCLGs for unregulated contaminants. However, they may establish an **action level** which is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

The rules also require testing the water in the distribution system (for trihalomethanes and coliform bacteria) and at the consumer's tap (for lead and copper).

Each contaminant category has its own monitoring frequency established by regulation. The testing is performed either annually, every two years or every three years as determined by federal and state drinking water regulations.

Where Does My Water Come From?

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. On Oahu, drinking water begins as rain falling over the Koolau and Waianae Mountain ranges. Because volcanic rock is porous, much of this rain is naturally filtered through the ground on its way to large underground formations called aquifers.

As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals, radioactive material, and substances resulting from the presence of animals or from human activity.

Source Water Assessments, reports that evaluate the susceptibility of our drinking water sources to pollution, have been completed as of 2004. These reports are available for review by calling Erwin Kawata at (808) 748-5080.

BWS Water Sources and Systems

The Board of Water Supply operates and maintains over 94 water sources that combine to deliver an average of 145 million gallons of water per day.

The water is supplied through a distribution system that contains over 2,100 miles of pipeline and 171 reservoirs. The entire system is monitored 24 hours a day.

What Kinds of Contaminants are a Concern to Drinking Water?

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.

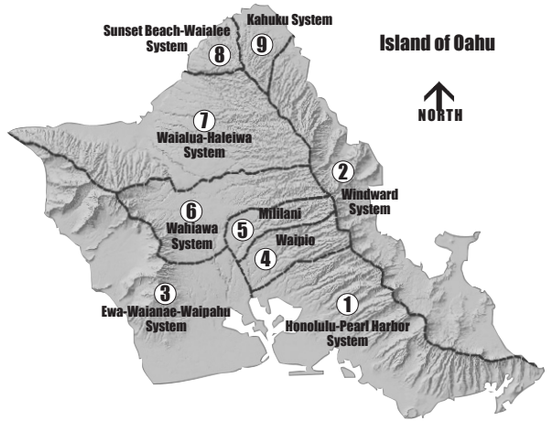
Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

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

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 1-800-426-4791 or the DOH at (808) 586-4258.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised individuals 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 healthcare providers. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection



by cryptosporidium are available from the EPA's Safe Drinking Water Hotline at 1-800-426-4791 or the DOH at (808) 586-4258.

What Kinds of Contaminants Have Been Found in Oahu's Water?

Below is a list of substances that have been found in Oahu's water and their possible sources. See the water quality report for the substances found in your water. In all cases, the amounts present are fully compliant with the standards.

Alpha and **beta activity** occur naturally in groundwater from the erosion of natural deposits and decay of natural and man-made deposits.

Antimony is found in discharge from petroleum refineries, fire retardants, ceramics, electronics, and solder.

Arsenic may occur from the erosion of natural deposits; runoff from orchards, runoff from glass, and electronics production wastes.

Atrazine may occur from runoff from herbicide used on row crops.

Barium may occur naturally in groundwater from the erosion of natural deposits.

Boron is a mineral found in food and the environment. It occurs naturally in rocks, soil, and seawater and is also used in vitamin supplements.

Bromacil is a broad-spectrum herbicide used for weed control in citrus and pineapple.

Bromide occurs naturally in the environment and is not being considered for regulation.

1-Butanol is used as a solvent in paints, surface coatings, lacquers, thinners, pharmaceutical formulations, waxes, and resins. The testing of this contaminant is currently being performed and reported under the Fourth Unregulated Contaminant Monitoring Rule (UCMR4). The purpose of UCMR4 is to collect data on contaminants that may be present in drinking water. The United States Environmental Protection Agency then uses this information to decide if changes to the regulations are needed.

Carbon tetrachloride is an organic chemical that may occur in drinking water from discharge from chemical plants and other industrial activities.

Chlorate is a byproduct of the drinking water disinfection process that forms when using sodium hypochlorite. According to EPA, chlorate levels more than 210 parts per billion may be a health concern.

Chlordane is a residue of a banned termiticide.

Chloride is a common element in the environment that occurs widely in soils, plants, water, and foods. It is most commonly found in nature as a salt of sodium called sodium chloride better known as table salt.

Chlorodifluoromethane also known as R-22, is a gas used for cooling in refrigeration and air conditioning systems.

Chromium may occur naturally in groundwater from the erosion of natural deposits.

Chromium, Hexavalent also known as chromium 6 is a chemical form of chromium that occurs naturally in rocks, animals, plants, soil, and in volcanic dust and gases. Water sources can be affected by hexavalent chromium naturally, or through contamination plumes from industrial centers, landfills, and improper discharge of industrial processing streams. EPA has not yet determined if low levels of hexavalent chromium in drinking water are a health risk.

Copper may occur in tap water from new or the corrosion of household copper plumbing systems, erosion of natural deposits, or leaching from wood preservatives.

DCPA Mono/Di-acid degradates are environmental breakdown products of the herbicide DCPA also known as Dacthal. DCPA is used to control weeds in ornamental turf and plants, strawberries, seeded and transplanted vegetables, cotton, and field beans.

Di (2-ethyhexyl) phthalate is found in discharge from rubber and chemical factories.

Dibromochloropropane (DBCP) is an organic chemical formerly used in Hawaii as a soil fumigant in pineapple cultivation and a petroleum additive. It has been found in several groundwater wells in Central Oahu.

1,2-Dichloropropane (DCP) is an organic chemical used as a solvent and pesticide that may occur in drinking water by leaching into groundwater. It also may come from improper waste disposal and discharge from industrial chemical factories.

Dieldrin is an organic chemical once used as a pesticide for controlling ground termites and may occur in drinking water by leaching into groundwater.

Ethylene dibromide (EDB) is an organic chemical formerly used in Hawaii as a soil fumigant in pineapple cultivation and petroleum additive. It has been found in some groundwater wells in Central Oahu.

Fecal coliform bacteria and **E. Coli** can be found in human and animal fecal waste and may also be found in soil.

Fluoride occurs naturally in groundwater. According to EPA, it may also come from the erosion of natural deposits or discharged from fertilizer and aluminum factories. It can be a water additive that promotes strong teeth. BWS does not add fluoride.

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

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) Punaluu Wells III	Groundwater	Chlorination	2
e) 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	2020	ppm	0.006	0.003	0.006	2.000	2.000	All Sources
Chromium	2020	ppb	2.500	1.200	2.500	100.000	100.000	All Sources
Nitrate	2020	ppm	0.190	0.160	0.190	10.000	10.000	b,e

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. MCGLs 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
(1)	Analysis by the State of Hawaii Department of Health
(2)	Analysis by the Honolulu Board Of Water Supply. Questions, call 748-5370.
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		
Chlorate	(2)	2020	ppb	49.000	15.000	49.000	210.000	a,b,c,e
Chloride	(2)	2020	ppm	180.000	16.000	180.000	250 **	All Sources
Chromium, Hexavalent	(2)	2020	ppb	2.400	1.300	2.400	13.000	a,b,c,e
Sodium	(2)	2020	ppm	36.000	13.000	36.000	60.000	All Sources
Strontium	(2)	2020	ppb	190.000	46.000	190.000	4000.000	a,b,c,e
Sulfate	(2)	2020	ppm	20.000	2.600	20.000	250 **	All Sources
Vanadium	(2)	2020	ppb	10.000	7.200	10.000	21.000	a,b,c,e

**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.

Distribution System Monitoring

Disinfection By-Products (2)

System Name	Contaminant	Unit	Min	Max	Highest LRAA	MCL (Allowed)	MCLG (Goal)
Honolulu-Windward-Pearl Harbor	Total Trihalomethanes	ppb	0.00	13.00	8.50	80	None
	Haloacetic Acids (HAA5)	ppb	0.00	2.20	0.70	60	None
		Unit	**Min**	**Max**	**Average**	**MCL (Allowed)**	**MCLG (Goal)**
	Haloacetic Acids (HAA6BR)	ppb	0.00	1.50	0.82	NYA	NYA
	Haloacetic Acids (HAA9)	ppb	0.00	1.50	0.82	NYA	NYA

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	0	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	2020	ppm	0.29	0.33	0.30	4	4

Lead/Copper Testing (2)

Contaminant	Sample Year	Unit	90th Percentile Reading	Action Level	# Samples Above Action Level
Copper	2018	ppm	0.029	1.300	0
Lead	2018	ppb	<1.000	15.000	0

No violations found for calendar year 2020

Date Report Printed: 3/09/2021

2021 Annual

Water Quality Report

Joint Base Pearl Harbor-Hickam Water System

(Waiawa, 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 up to Dec. 31, 2020.

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

This pamphlet provides information about the water that has been delivered to you over the past year. It describes where your water comes from, what it contains, and how it compares to standards for safe drinking water.

Our goal is, and always has been, to provide you safe and dependable drinking water.

Water Provider

The 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 prescribes regulations which 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 the 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, 1-5, and 1-6 show the levels of concentrations of regulated contaminants found in your water. In all cases, the levels measured met both 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 completed the Source Water Assessment in 2004. This document 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

Your drinking water comes from three ground water sources: Waiawa, Halawa, and Red Hill. Ground water is naturally filtered as it travels from the surface to the aquifer below ground. The water is pumped up from the aquifer, disinfected, fluoridated, and piped into the distribution system.

For a limited time during 2020:

- **The Manana housing area was supplemented with water from the Honolulu Board of Water Supply's (BWS) Pearl City Shaft and Well 1.**

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. NAVFAC Hawaii 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 wish to have your water tested. 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. We try to maintain the Navy's recommended concentration of approximately 0.7 ppm for fluoride and 0.2 ppm for chlorine throughout the distribution system.

2020 Testing at Red Hill Shaft

In January 2014, a fuel release from Tank #5 at the Red Hill Underground Fuel Storage Facility was reported. As a proactive measure and in accordance with the 2014 Transition Plan executed between the Navy and the State Department of Health, we have been conducting testing at the Red Hill Drinking Water Shaft above what is required by drinking water regulation for several years which includes volatile organic compound (VOC), semi-volatile organic compound (SVOC), lead, and total petroleum hydrocarbon-diesel (TPH-d). Table 1-6 shows the levels of contaminants detected at the Red Hill Drinking Water Shaft in 2020. We will continue to conduct this testing and include the test results in the future Water Quality Reports.

Concerns / Additional Copies

NAVFAC Hawaii does not have routine meetings about the water system. For questions and/or information, please contact NAVFAC Hawaii Public Affairs at 808-471-7300. For additional copies of this and other Navy water reports, go to:

- ***www.cnic.navy.mil/regions/cnrh/om/environmental/water_quality_information.html***
- ***www.navfac.navy.mil/navfac_worldwide/pacific/fecs/hawaii/about_us/hawaii_documents/Reports.html***

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 2021

Water Quality Data Table

The following tables list contaminants which were detected during the latest round of sampling 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 NAVFAC Hawaii. The presence of contaminants does not necessarily indicate that the water poses a health risk. You may 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							
Barium (ppm)	2	2	0.02	nd – 0.02	2017[1]	Erosion of natural deposits	No
Chromium (total) (ppb)	100	100	2.1	nd – 2.1	2017[1]	Naturally-occurring	No
Fluoride (ppm)	4	4	0.77	nd – 0.77	2020	Erosion of natural deposits; Water additive which promotes strong teeth	No
Lead (ppb)	15	0	10.1	nd – 10.1	2019[1]	Residue from man-made pollution such as auto emissions and paint; lead pipe, casing, and solder	No
Nitrate (ppm)	10	10	2.0	0.52 – 2.0	2020	Runoff from fertilizer use; Erosion of natural deposits	No
Organic Contaminants							
Chlordane (ppb)	2	0	0.36	nd – 0.36	2017[1]	Residue of banned termiticide	No
Heptachlor epoxide (ppt)	200	0	20	nd – 20	2017[1]	Breakdown of heptachlor (banned pesticide)	No
Unregulated Contaminants[2]							
Bromide (ppb)	n/a	n/a	765	124 - 765	2018[1]	Naturally-occurring	n/a
Chloride (ppm)	250[3]	n/a	235	34 - 235	2020	Naturally-occurring	n/a
Dieldrin (ppb)	n/a	n/a	0.05	nd – 0.05	2017[1]	Residue of banned insecticide	n/a
Manganese (ppb)	n/a	n/a	1.20	nd – 1.20	2018[1]	Naturally-occurring	n/a
Sodium (ppm)	n/a	n/a	124	26 – 124	2017[1]	Naturally-occurring	n/a
Sulfate (ppm)	250[3]	n/a	46	nd - 46	2020	Naturally-occurring	n/a

Contaminants in the BWS Source Water (Serving Manana Housing) **Table 1-2**

Contaminants (units)	MCL (Allowed)	MCLG (Goal)	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	0.050	0.047 – 0.052	2020	Fumigant previously used in agriculture	No
Barium (ppm)	2	2	0.004	0.003 – 0.004	2020	Erosion of natural deposits	No
Chromium (ppb)	100	100	1.3	1.3	2020	Naturally-occurring	No
Fluoride (ppm)	4	4	0.068	0.058 – 0.068	2020	Erosion of natural deposits; Water additive which promotes strong teeth	No
Nitrate (ppm)	10	10	0.970	0.690 – 0.970	2020	Runoff from fertilizer use; Erosion of natural deposits	No
Unregulated Contaminants[2]							
Chlorate (ppb)	n/a	n/a	26	22 – 26	2020	Byproduct of the disinfection process	n/a
Chloride (ppm)	250[3]	n/a	61	37 – 61	2020	Naturally-occurring	n/a
Chromium, hexavalent (ppb)	n/a	n/a	1.4	1.3 – 1.4	2020	Naturally-occurring	n/a
Dieldrin (ppb)	n/a	n/a	0.008	nd - 0.016	2020	Residue of banned pesticide	n/a
Sodium (ppm)	n/a	n/a	37	30-37	2020	Naturally-occurring	n/a
Strontium (ppb)	n/a	n/a	79	54-79	2020	Naturally-occurring	n/a
Sulfate (ppm)	250[3]	n/a	14	9.4 – 14	2020	Naturally-occurring	n/a
Vanadium (ppb)	n/a	n/a	11	11	2020	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	0.09[4]	0[5]	2019[1]	Corrosion of household plumbing systems; Erosion of natural deposits	No
Fluoride (ppm)	4	4	1.16	nd – 1.16	2020	Erosion of natural deposits; Water additive which promotes strong teeth	No

Disinfection Agent **Table 1-4**

Contaminants (units)	MRDL (Allowed)	MRDLG (Goal)	Highest Average	Range of Detection	Year of Sample	Typical Sources of Contaminants	Violation
Residual Chlorine (ppm)	4	4	0.5[6]	0.2 – 1.0	2020	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
Total Trihalomethanes (ppb)	80	n/a	3.7	3.7	2020	Byproduct of drinking water disinfection	No

2020 Testing – Red Hill Shaft **Table 1-6**

Contaminants (units)	MCL (Allowed)	MCLG (Goal)	DOH EAL	Highest Level Detected	Range of Detection	Violation
TPH-d, C8-C18 (ppb)	n/a	n/a	400	490[7]	nd – 490	n/a
Lead (ppb)	AL = 15	0	15	0.66	nd – 0.66	No
DOC (ppm)	n/a	n/a	n/a	1.4	nd – 1.4	n/a

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 EAL **Department of Health Environmental Action Level.** Risk-based levels published by DOH for compounds that do not have promulgated MCL values.

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.

TPH-d Total Petroleum Hydrocarbons as diesel fuel.

Table Abbreviations:

n/a not applicable.

nd not detectable at testing limits.

ppb parts per billion or micrograms per liter.

ppm parts per million or milligrams per liter.

ppt parts per trillion or nanograms per liter.

Table Notes:

1. 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 oldest sample collected is as indicated.
2. 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.
3. These are Secondary Maximum Contaminant Levels not enforced by EPA.
4. 90th percentile value of the samples collected.
5. Number of samples above the action level.
6. After each quarter, a running average is calculated using the preceding 12 months of data. The posted amount is the highest running average for the year.
7. One TPH-d (C8-C18) EAL exceedance occurred during 2020 testing on a post-chlorination sample. Pre-chlorination samples are believed to be more representative of any potential contact with fuels stored at the Red Hill Bulk Fuel Storage Facility and TPH-d (C8-C18) was not detectable at testing limits for all 2020 pre-chlorination samples. Hawaii Department of Health (HDOH) and the Navy will continue to conduct testing and include results in future Water Quality Reports.

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.

Additional Testing - PFAS

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 United States, 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) used for fighting petroleum fires at airfields and in industrial fire suppression processes because they rapidly extinguish fires, saving lives and protecting property. 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?

There is currently no established federal water quality regulation for any PFAS compounds. In May 2016, the EPA established a health advisory (HA) level at 70 parts per trillion (ppt) for individual or combined concentrations of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). Both chemicals are types of PFAS.

Out of an abundance of caution for your safety, the Department of Defense's (DoD) PFAS testing and response actions go beyond EPA Safe Drinking Water Act requirements. In 2020 the DoD promulgated a policy to monitor drinking water for PFAS at all service owned and operated water systems at a minimum of every three years.

The EPA's health advisory states that if water sampling results confirm that drinking water contains PFOA and PFOS at individual or combined concentrations greater than 70 parts per trillion, water systems should quickly undertake additional sampling to assess the level, scope, and localized source of contamination to inform next steps.

Has JBPHH tested its water for PFAS?

Yes. In November 2020 samples were collected from Halawa Shaft Chlorinator, Waiawa Shaft Chlorinator, and Red Hill Shaft Chlorinator.

We are informing you that 5 of the 18 PFAS compounds covered by the sampling method were detected above the method reporting limit (MRL). PFOA and PFOS were below the EPA HA level. The results are provided in Table 1-7. As PFOA and PFOS were below the EPA HA, there is no immediate cause for concern, but we will continue to monitor the drinking water closely to ensure that remains the case. In accordance with DoD policy, JBPHH will collect quarterly samples for PFAS for one year and then every two years thereafter as long as the results are below the MRL.

2020 PFAS Sampling Results at JBPHH **Table 1-7**

Contaminants (ppt)	MCL (Allowed)	Health Advisory (ppt)	Highest Level Detected	Range of Detection	Year of Sample	Violation
Perfluorooctanoic acid (PFOA)	n/a	70	3.2	nd – 3.2	2020	n/a
Perfluorooctanesulfonic acid (PFOS)	n/a	70	5.5	nd – 5.5	2020	n/a
Perfluorobutanesulfonic acid (PFBS)	n/a	n/a	2.4	nd – 2.4	2020	n/a
Perfluoroheptanoic acid (PFHpA)	n/a	n/a	nd	nd	2020	n/a
Perfluorohexanesulfonic acid (PFHxS)	n/a	n/a	4.0	nd – 4.0	2020	n/a
Perfluorononanoic acid (PFNA)	n/a	n/a	nd	nd	2020	n/a
Perfluorodecanoic acid (PFDA)	n/a	n/a	nd	nd	2020	n/a
Perfluorohexanoic acid (PFHxA)	n/a	n/a	2.9	nd – 2.9	2020	n/a
Perfluorododecanoic acid (PFDoA)	n/a	n/a	nd	nd	2020	n/a
Perfluorotridecanoic acid (PFTrDA)	n/a	n/a	nd	nd	2020	n/a
Perfluoroundecanoic acid (PFUnA)	n/a	n/a	nd	nd	2020	n/a
N-ethyl perfluorooctanesulfonamidoacetic acid	n/a	n/a	nd	nd	2020	n/a
N-methyl perfluorooctanesulfonamidoacetic acid	n/a	n/a	nd	nd	2020	n/a
Hexafluoropropylene oxide dimer acid (HFPO-DA)	n/a	n/a	nd	nd	2020	n/a
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	n/a	n/a	nd	nd	2020	n/a
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	n/a	n/a	nd	nd	2020	n/a
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	n/a	n/a	nd	nd	2020	n/a
Perfluorotetradecanoic acid (PFTA)	n/a	n/a	nd	nd	2020	n/a