



Consumer Confidence Report (CCR)

2022 Water Quality Report Kadena Air Base Okinawa, Japan



Introduction

This is an annual report on the quality of tap water delivered to Kadena Air Base, Okinawa, Japan. The purpose of this report is to provide you, our customers, with general information about the quality of water you drink. In order to ensure that tap water is safe to drink, the Environmental Protection Agency (EPA) prescribes regulations that limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration (FDA) regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. In Japan, the Government of Japan (GOJ) and the United States Forces Japan, also regulate the quality of drinking water through the Japanese Environmental Governing Standards (JEGS) which apply the EPA standards to our water system.

What is a Consumer Confidence Report?

In 1996, Congress amended the Safe Drinking Water Act to require that all community water systems in the United States deliver to their customers a brief annual water quality report called a Consumer Confidence Report (CCR).

Is my water safe?

Our water is safe to drink. No one is interested more in the high quality of our drinking water than the 18th Operational Medical Readiness Squadron, Bioenvironmental Engineering Flight. We are committed to providing safe drinking water to you at all times. Our routine monitoring program, which follows water quality standards and monitoring requirements set forth in the JEGS, enables us to maintain optimal water quality on Kadena Air Base.

Do I need to take special precautions?

Although our water is safe to drink and meets all water quality standards, some individuals are more susceptible to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer and 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. 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 Safe Drinking Water Hotline (800-426-4791).

Are contaminants in my drinking water?

All drinking water, including bottled water, may reasonably be expected to contain small amounts of impurities dissolved in the water. The presence of impurities in the water does not necessarily indicate that the water poses a

health risk. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, naturally-occurring radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Microbial contaminants, such as viruses and bacteria, may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. Inorganic contaminants, such as salts and metals, 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 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, are by-products of industrial processes, petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems. Radioactive contaminants can be naturally occurring or be the result of oil and gas production and mining activities.

Kadena Air Base Water System Information

The Kadena Air Base drinking water system is operated and maintained by the 18th Civil Engineer Squadron. The water is distributed from the Chatan Water Treatment Plant and Ishikawa Water Treatment Plant to Kadena AB. The water supplied to these treatment plants are a combination of surface waters (reservoirs and rivers), groundwater wells, and a desalination plant fed by the East China Sea.

Monitoring of your drinking water

The 18th Operational Medical Readiness Squadron, Bioenvironmental Engineering Flight is responsible for drinking water monitoring of Air Force owned or managed installations, including military family housing on Okinawa. We are committed to providing safe drinking water to you at all times. We use only EPA and GOJ approved laboratory methods to analyze your drinking water. Trained personnel collect water samples from the distribution system and resident's taps. Samples are then shipped to an accredited laboratory where a full spectrum of water quality analyses is performed.

We at the Bioenvironmental Engineering Flight along with the Water and Fuels System Maintenance Flight are proud of the opportunity to provide you with clean drinking water. We work around the clock to provide top quality drinking water to every tap. We ask that all our customers continue to help us protect and conserve our water sources and contact us if you have concerns about the safety or dependability of your drinking water.

For More Information Contact:



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2022 Water Quality Table

TABLE 1: REGULATED CONTAMINANTS

This table summarizes the monitoring results for all detected regulated contaminants¹

Contaminant	Violation? Yes/No	Units	Highest Level Detected	Goal (MCLG or MRDLG)	Limit (MCL or MRDL)	Typical Source of Contamination	
Barium	No	ppm	0.009	2	2	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	
Nitrate	No	ppm	0.13	10	10	Runoff from fertilizer use; leaching septic tanks/sewage; erosion of natural deposits	
Selenium	No	ppb	5.6	50	50	Discharge from petroleum refineries; erosion of natural deposits; discharge from mines	
Beta/photon emitters ²	No	pCi/L	1.9	0	50	Decay of natural and man-made deposits	
Total Coliform Bacteria ³	Yes (Table 3)	NA	0	0	1 positive monthly sample	Naturally present in the environment	
Chlorine	Yes (Table 3)	ppm	Average: 0.28 Range: 0 - 1.4	4	4	Water additive used to control microbes	
Total Trihalomethanes (TTHMs) ³	No	ppb	41	NA	80	Byproducts of drinking water disinfection	
Halo-Acetic Acids (HAA5) ⁴	No	ppb	3	NA	60		
Bromate	No	ppb	1	0	10		
Contaminant	Violation? Yes/No	Units	90 th Percentile Results	Number of Sites Exceeding AL	Goal (MCLG)	Action Level ⁵	Typical Source of Contamination
Lead ⁶	No	ppb	2	1 of 30	0	15	Corrosion from household plumbing systems, erosion of natural deposits
Copper ⁶	No	ppm	0.13	0 of 30	1.3	1.3	

TABLE 2: UNREGULATED CONTAMINANTS

This table summarizes the monitoring results for unregulated contaminants

Contaminant	Violation? Yes/No	Units	Highest Level Detected	EPA Lifetime Health Advisory ⁷	Typical Source of Contamination
Perfluorooctanesulfonic Acid (PFOS)	NA	ppt	2.1	70	Runoff from Commercial/Industrial use
Perfluorooctanoic Acid (PFOA)	NA		<1.9	70	
Sodium	NA	ppm	28	NA	NA

Notes: 1. An additional 68 regulated contaminants were tested in calendar year 2022 and not detected in the drinking water. Contact our office for a full list of monitored contaminants.

2. Beta/photon emitter results are based on the average of 3 quarters tested in 2022.

3. Monitoring for *Cryptosporidium* and disinfectant contact times (i.e. CT values) are not applicable as treated water is purchased from host nation water treatment plants.

4. TTHM and HAA5 results are based on the highest locational annual running average.

5. Lead and Copper Action Level is based on the 90th percentile value – i.e., no more than 10% of all sampled taps should exceed the AL.

6. Lead and Copper is a triennial monitoring requirement. Last compliance monitoring occurred in 2020. Next sampling will take place in 2023.

7. EPA Safe Drinking Water Act Lifetime Health Advisory limit established in May 2016. See FAQ on next page for more information.

TABLE 3: MONITORING VIOLATION

We are required to monitor your drinking water for specific contaminants on a regular basis. Results of regular monitoring are an indicator of whether or not our drinking water meets health standards. We conducted over 780 tests of the Kadena Air Base drinking water during 2022, yet we did not complete documentation and/or monitoring for chlorine, total coliform, and thallium. The health risk from unreported sampling periods can lead to uncertainty in characterization, which may increase risk, however, sampling from reported periods did not indicate an increased risk to human health.

Contaminant	Month	Samples Collected	Required Number of Samples
Chlorine and Total Coliform Bacteria	January	23	25 chlorine and total coliform bacteria samples each per month
	March	24	
	April	18	
	July	24	
	August	15	
	September	18	
	October	16	
	November	16	
	December	17	
Thallium	Oct-Dec	0	2

What is being done?

Bioenvironmental Engineering has updated quality control processes to reduce the probability of missing sampling events and documentation in the future. Training was also conducted to ensure that technicians are aware of required actions when sampling locations are not accessible. No further actions need to be taken by the consumers.

ABBREVIATIONS & DEFINITIONS

Action Level (AL): The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level (MCL): 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.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs allow for a margin of safety.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectant to control microbial contamination.

NA: Not applicable.

ppm: Parts per million or milligrams per liter (one part per million is equivalent to one penny in 10 thousand dollars).

ppb: Parts per billion or micrograms per liter (one part per billion is equivalent to one penny in 10 million dollars).

ppt: Parts per trillion or nanograms per liter (one part per trillion is equivalent to one penny in 10 billion dollars).

pCi/L: picocuries per liter, a common measure of radioactivity.

Frequently Asked Questions

Why does the water sometimes look rusty?

Rusty or reddish tinted water may occur because of a sudden change in pressure due to flushing of a fire hydrant, etc. Iron causes the discoloration and is not a health risk. The normal flow of water will usually clear the mains within two hours or less. Check your water by flushing a toilet three times every 15 to 20 minutes. If you live on or near the end of a long distribution line, additional flushing may be required. Galvanized iron pipes or fittings within a home or building may also cause discolored water. Running the water will clear the piping system. If the hot water is rusty, the water heater may need to be flushed.

What is a Boil Water Notice?

Any time a drop in pressure occurs from a water main break or system maintenance, the Bioenvironmental Engineering Flight issues a Boil Water Notice and immediate sampling requirements go into effect. Boil Water Notices in these cases are precautionary and do NOT necessarily mean that contamination has been detected or is suspected. In other cases, if coliform is detected as part of our routine sampling program, a Boil Water notice will also go into effect as a precaution while corrective measures are taken. In this case, resampling continues until the corrective measures are completed.

Is it okay to drink from a garden hose?

The water supplied to the water hose is safe, but a garden hose is treated with special chemicals that can contain bacteria and other substances.

Will using a home water filter make the water safer or healthier?

Most filters improve the taste, smell and appearance of water, but they do not necessarily make the water safer or healthier. If you use filters, please keep in mind that they require regular maintenance and replacement. Failure to perform maintenance and replacement can result in unsafe water.

What can I do to improve the quality of my drinking water?

Running the cold water tap for 30 seconds prior to use helps to flush out small amounts of metals that may leach into water that has been sitting in metal pipes overnight. Water used for consumption should always come from the cold-water tap. Hot water has a higher potential to leach metals into the water.

How will I know if my water is not safe to drink?

Your water supplier must notify you if your water does not meet standards or if there is a waterborne disease emergency. The notice will describe any precautions you need to take, such as boiling your water.

I don't like the taste/smell/appearance of my tap water. What's wrong with it?

Even when water meets standards, you may still object to its taste, smell, or appearance. Taste, smell and appearance are also known as aesthetic characteristics and do not pose adverse health effects. Common complaints about water aesthetics include: temporary cloudiness (typically caused by air bubbles) or chlorine taste (which can be improved by letting the water stand exposed to the air).

Does the water system have a lead problem?

The Japan Environmental Governing Standards (JEGS) states 90 percent of samples must be below the action level. The water system met this criterion in 2020. The water system will continue to be sampled for lead, and the next samples will be taken between June and September 2023. 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. 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 the water for drinking or cooking.

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 industrial and consumer products around the globe, including in the U.S., for decades. Due to their widespread use and environmental persistence, most people in the United States have been exposed to certain PFAS. 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.

Is there a US or Japanese regulation for PFAS in drinking water?

There is currently no US federal drinking water standard for any PFAS compounds. In May 2016, the U.S. Environmental Protection Agency (EPA) established a lifetime drinking water 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. The Department of Defense (DoD) issued a policy in 2020 to monitor drinking water for PFAS at all DoD owned and operated water systems at a minimum of every three 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 HA level of 70 ppt, water systems would 1) take immediate action to reduce exposure to PFOS or PFOA, to include providing alternative drinking water; and 2) undertake additional sampling to assess the level, scope, and localized source of contamination. Similarly in 2020, Japan set a temporary PFOA and PFOS individual or combined target of 50 ppt.

What about the EPA's 2022 interim Health Advisories or proposed regulations?

EPA issued interim Health Advisories for PFOS and PFOA in 2022. However, these newer levels are below quantifiable limits (i.e., below detection levels). EPA announced a proposed regulation on PFAS drinking water standards for public comment on March 14, 2023. The Department supports EPA taking regulatory actions to address PFAS, including a drinking water standard for PFAS that will apply to all drinking water suppliers once final. DoD respects and values the public comment process on this proposed nationwide drinking water rule and looks forward to the clarity that a final regulatory drinking water standard for PFAS will provide.

In anticipation of this EPA drinking water regulation and to account for emerging science that shows potential health effects of PFOS and PFOA at levels lower than 70 ppt, DoD is evaluating its efforts to address PFAS in drinking water, and what actions we can take to be prepared to incorporate this standard, such as reviewing our current data and collecting additional sampling where necessary. DoD remains committed to communicating and engaging with our communities throughout this process.

Has Kadena Air Base tested its water for PFAS?

Yes. In March 2022, samples were collected at building 342 and building 4067. We are informing you that PFOS was detected (2.1 ppt) but below the 2016 EPA HA. PFOA was not detected. Bioenvironmental Engineering will resample the system in accordance with DoD policy for your continued protection. Additionally, the Chatan and Ishikawa Water Treatment Plants routinely monitor for PFAS and post the results on the Okinawa Prefectural Enterprise Bureau website at <http://www.eb.pref.okinawa.jp.e.sa.hp.transer.com/opeb/309/619>.

Is a Japanese translation of the CCR available?

All sections of the CCR are written in English. Please contact the Bioenvironmental Engineering Flight at 634-4752 for Japanese translation.

第18航空医療中隊、生物環境工学部 (BEF) は、沖縄にある空軍所有の施設及びその他の関連施設、更には基地内住宅の水道飲料水のモニタリングを空軍規則により行なっています。BEFはモニタリングの水道水分析結果を消費者信頼度レポート (CCR)で利用者及び関係者に報告しています。

CCRの全てが英文訳の文書です。日本語訳希望者は BEF までご連絡下さい。基地内：634-4752 基地外から：098-938-1111 ext. 634-4725

Where can I go for additional information?

This CCR will be posted on the Kadena AB homepage at <https://www.kadena.af.mil>. Select About Us Tab, choose Consumer Confidence Reports.