



## Consumer Confidence Report (CCR)



### 2021 Water Quality Report Okuma Recreational Area Okinawa, Japan

#### Introduction

This is an annual report on the quality of tap water delivered to Okuma Recreational Area, 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 Okuma Recreational Area.

#### 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.

#### Okuma Water System Information

The Okuma Recreational Area drinking water system and treatment plant is operated and maintained by the 18th Force Support Squadron, Detachment 1. The water is pumped into the installation water treatment plant from the Hiji River then gravity-fed into the distribution system.

#### 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:



**Bioenvironmental Engineering Flight**  
DSN: 315-634-4752  
Commercial: 098-937-1111 ext. 634-4752

# 2021 Water Quality Table

## Abbreviations/Definitions Used:

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

**Calendar Year (CY):** January through December.

**MCL:** Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water

**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 disinfectant to control microbial contamination.

**Millirem per Year (mrem/yr):** A mrem is a dose of energy to the body and one thousandth of a rem. The US regulates 179 manmade nuclides, and each of them has a concentration of radiation (measured in pCi/L), which is converted to a fraction and summed and compared to the 4 mrem per year dose limit.

**NA:** Not applicable.

**Parts per Million (ppm) or Milligrams per Liter (mg/L):** a unit of measure for concentration of a contaminant.

**Part per Billion (ppb) or Micrograms per Liter (µg/L):** a unit of measure for concentration of a contaminant.

**Part per Trillion (ppt) or Nanograms per Liter (ng/L):** a unit of measure for concentration of a contaminant.

**Picocuries per Liter (pCi/L):** a common measure of radioactivity.

## TABLE 1: DETECTED PARAMETERS

*This table summarizes the monitoring results for all detected parameters*

INORGANIC CHEMICALS	VIOLATION? YES/NO	UNITS	HIGHEST LEVEL DETECTED	MCLG	MCL	AL	LIKELY SOURCE OF CONTAMINATION
Sodium	No	mg/L	17	NA	NA	NA	Erosion of natural deposits
Barium	No		3.05	2	2	2	
Nitrate	No		<1.0	10	10	5	Runoff from fertilizer use; leaching septic tanks/sewage; erosion of natural deposits
Nitrite	No		<0.1	1	1	0.5	
RADIONUCLIDES	VIOLATION? YES/NO	UNITS	HIGHEST LEVEL DETECTED	MCLG	MCL	AL	LIKELY SOURCE OF CONTAMINATION
Uranium (2018)	No	pCi/L	<0.670	0	15	NA	Erosion of natural deposits
Gross Alpha (2018)	No		2.2 ± 1.9	0	15		
Combined Radium (2018)	No		<0.48	0	5		
Beta Particles	Yes (Table 3)	mrem/yr	NA	0	4		
MICROBIAL CONTAMINANTS	VIOLATION? YES/NO	UNITS	HIGHEST LEVEL DETECTED	MCLG	MCL	AL	LIKELY SOURCE OF CONTAMINATION
Total Coliform	No	N/A	0	0	1 positive per month	NA	Naturally present in the environment
RESIDUAL DISINFECTANTS	VIOLATION? YES/NO	UNITS	HIGHEST LEVEL DETECTED	MRDLG	MRDL	AL	LIKELY SOURCE OF CONTAMINATION
Free Chlorine	No	ppm	0.83	4	4	NA	Water additive used to control microbes
LEAD AND COPPER	VIOLATION? YES/NO	UNITS	90th PERCENTILE VALUE	MCLG	Sites Exceeding AL/No. of Sites	AL <sup>1</sup>	LIKELY SOURCE OF CONTAMINATION
Lead	No	mg/L	0.003	0	1/11 <sup>2</sup>	0.015	Corrosion from household plumbing systems, erosion of natural deposits
Copper	No		0.147	1.3	0/11	1.3	
DISINFECTION BYPRODUCTS	VIOLATION? YES/NO	UNITS	Annual Average	MCLG	MCL <sup>3</sup>	AL	LIKELY SOURCE OF CONTAMINATION
Total Trihalomethanes	No	mg/L	0.034	NA	0.080	NA	By-products of drinking water chlorination
Halo-Acetic Acids	No		0.008	NA	0.060		
Total Organic Carbon	No		0.545	NA	NA		
PERFLUORINATED COMPOUNDS	VIOLATION? YES/NO	UNITS	HIGHEST LEVEL DETECTED	MCLG	MCL	AL <sup>4</sup>	LIKELY SOURCE OF CONTAMINATION
PFOA (2020)	No	PPT	0.26	NA	NA	70	Runoff from Commercial/Industrial use
PFOA (2020)	No		Not Detected				

**Notes:** 1. The AL for Lead and Copper is based on the 90th percentile value – i.e., no more than 10% of all sampled taps.  
2. The site above the AL was resampled; samples taken were below the AL.  
3. The MCL for Total Trihalomethanes and Haloacetic Acids is based on an annual average of 4 quarterly samples.  
4. EPA Safe Drinking Water Act Lifetime Health Advisory limit established in May 2016.

## TABLE 2: NOT-DETECTED PARAMETERS

*The following parameters were not detected in any sample.*

INORGANIC CHEMICALS
Antimony, Arsenic, Beryllium, Cadmium, Chromium, Nickel, Selenium, Cyanide, Fluoride, Thallium, Mercury
PESTICIDES/PCBS
Endothal, Diquat, Chlordane, Toxaphene, 2,4-D, Dalapon, Dinoseb, Pentachlorophenol, Picloram, 2,4,5-Tp, Aldicarb, Aldicarb Sulfone, Aldicarb Sulfoxide, Carbofuran, Oxamyl, Glyphosate, 2,3,7,8-Tetrachlorodibenzo-P-Dioxin, 1,2-Dibromo-3-Chloropropane, Alachlor, Atrazine, Di (2-Ethylhexyl) Adipate, Di (2-Ethylhexyl) Phthalate, Endrin, Ethylene Dibromide (Edb), Heptachlor, Heptachlor epoxide, Hexachlorobenzene, Hexachlorocyclopentadiene, Lindane, Methoxychlor, Simazine, Benzo[a]pyrene
VOLATILE ORGANIC CHEMICALS
Benzene, Carbon Tetrachloride, 1,2-Dichlorobenzene, 1,2-Dichloroethane, 1,1-Dichloroethylene, Cis-1,2-Dichloroethylene, Trans-1,2-Dichloroethylene, Dichloromethane, 1,2-Dichloropropane, Ethylbenzene, Styrene, Tetrachloroethylene, Toluene, 1,2,4-Trichlorobenzene, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane, Trichloroethylene, Vinyl Chloride, Xylenes (Total), Monochlorobenzene, Para-Dichlorobenzene

## TABLE 3: MONITORING VIOLATIONS

The 2020 JEGS published mid-2021 instituted a new requirement to sample for beta particles and photon activity to include tritium and strontium-90 every nine years for four consecutive quarters. Most systems will never need to monitor for beta particle and photon radioactivity. These emitters generally come from nuclear facilities; commercial nuclear power plants; institutional sources such as research facilities, hospitals, and universities; and from industrial sources such as laboratories and pharmaceutical companies. The island of Okinawa does not have water systems that are susceptible to this kind of contamination. Sampling for beta particles began in 2021. The Bioenvironmental Engineering Flight was notified in March 2022 the sample results were lost by the laboratory for sampling conducted in 2021. Due the missed results, sampling was restarted in 2022. Results will be reportable once four consecutive quarters are completed. The health risk from unreported sampling periods can lead to uncertainty in characterization, which may increase risk, however the Bioenvironmental Engineering Flight has a sample result of 0.58 mrem/yr reported in the Kadena AB 2021 CCR for beta particles, which is less than the 4 mrem/yr limit. This exposure is less than the exposure from natural background radiation. This indicates an overall low baseline risk of radionuclides on Okinawa. Notification within the annual CCR is appropriate due to the administrative error only, and no direct impact on human health. Once the results are received, Bioenvironmental Engineering Flight will publish a public notification and additionally, consolidate this information in future CCRs. In an effort to reduce reporting time, Bioenvironmental Engineering Flight contracted a different laboratory to analyze sample results.

# 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 perfluorinated compounds?

Perfluorinated compounds are a group of manufactured chemicals that include Perfluorooctanesulfonic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS). Perfluorinated compounds have been used for decades in many commercial products such as stain resistant carpeting, firefighting foam, nonstick cookware, fabric coatings and some food packaging. The EPA continues to develop the science on any health effects on humans and evaluate whether these contaminants should be regulated in our drinking water. On May 19, 2016, the EPA established lifetime health advisory levels of 70 parts per trillion for PFOA and PFOS in drinking water. These compounds are classified as emerging contaminants due to evolving regulatory standards.

## 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.



18th Operational Medical Readiness Squadron  
Commercial: 098-938-1111 ext. 634-4752  
基地内：634-4752  
基地外から：098-938-1111 ext. 634-4752



18th Civil Engineer Squadron Customer Services  
DSN: 634-2424  
Commercial: 098-938-1111 ext. 634-2424  
基地内：634-2424  
基地外から：098-938-1111 ext. 634-2424