Consumer Confidence Report
Drinking Water Systems 2020
Commander, Fleet Activities Sasebo

Issued in accordance with OPNAVINST 5090.1D and OPNAV M-5090.1, implemented in January 2014.
This report is updated annually and reflects monitoring data collected in 2020.

The Navy is pleased to provide the annual Consumer Confidence Report (CCR) of Drinking Water Systems that support Sasebo Main Base, Hario Housing, Akasaki, Iorizaki, Harioshima, Maebata, and Yokose. This report provides information about the water delivered to Commander, Fleet Activities Sasebo (CFAS) in calendar year 2020. It describes where our water comes from, what it contains, and how it compares to standards for safe drinking water. **The drinking water at CFAS is safe to drink. Our goal is, and always has been, to provide safe and dependable drinking water.**

Source of Water

Potable drinking water at CFAS is purchased from two sources:

1. The Sasebo City Waterworks Bureau
2. Saikai City Waterworks Bureau

The Sasebo City Waterworks Bureau provides drinking water to Main Base, Maebata, Hario Housing, Akasaki, and Iorizaki. The Saikai City Waterworks Bureau provides drinking water to Yokose. These waterworks filter and chlorinate the drinking water before it is provided to CFAS. Both waterworks obtain their water from one or more of the following surface water sources: Yamanota Water Treatment Plant, Hirota Water Treatment Plant, and Saikai-shi Chubu Water Treatment Plant. Harioshima Ordnance continues to receive hauled, containerized water to three holding tanks. The water truck filling point, which is located on CFAS Main Base, is monitored for all primary and secondary drinking water contaminants on a regular basis.

Water Distribution Systems

NAVFAC Far East Public Works Department (PWD) at CFAS operates the water distribution system servicing your area. The distribution system is comprised of pipes, valves, storage tanks and pumps, which maintain a minimum positive water pressure of 20 pounds per square inch (psi) at all times. The Sasebo City and Saikai City Waterworks Bureaus do not fluorinate the water supplies. NAVFAC PWD supplements chlorination to the water provided by the city waterworks at Yokose.

Water Quality

This year, as in years past, CFAS drinking water met all criteria established in the Japan Environmental Governing Standards 2020 (JEGS), Commander, Navy Installations Command Instruction 5090.1A, and applicable parts of the National Primary Drinking Water regulations promulgated under the Safe Drinking Water Act of 1974. The JEGS intent is to ensure Department of Defense (DoD) activities and installations in Japan protect human health and the natural environment through the promulgation of specific environmental compliance criteria. Our drinking water standards are derived from the same standards used in the U.S. to ensure that safe drinking water is available to all installation personnel. The standards require us to monitor and test our water for contaminants on a regular basis to ensure it is safe to drink.

Possible Source of Contaminants

As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals. It can also pick up other contaminants resulting from the presence of animals or human activity. Drinking water, including bottled water, may reasonably be expected to contain trace amounts of some contaminants. The presence of contaminants does not necessarily indicate that the water poses a health risk. Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those 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. 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 storm water run-off, industrial or domestic wastewater discharge, 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.
- **Disinfection Byproducts** can form in water when disinfectants such as chlorine used to control microbial pathogens combine with naturally occurring materials found in source water.

More information about contaminants and potential health effects can be obtained by calling the Environmental Protection Agency (EPA) Safe Drinking Water Hotline at 1-800-426-4791 or visiting the EPA website at https://www.epa.gov/ground-water-and-drinking-water/table-regulated-drinking-water-contaminants.

Other Potential Contaminants

Lead

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. Infants and children who drink water containing lead in excess of the action level could experience delays in their physical or mental development. Children could show slight deficits in attention span and learning abilities. Adults who drink this water over many years could develop kidney problems or high blood pressure. **CFAS lead sampling results meet the requirements for drinking water set forth in the JEGS and the EPA Lead and Copper Rule.** When water has been unused for several hours, you can further minimize the potential for lead exposure by flushing the tap for 30 seconds to two minutes before using the water for drinking or cooking. Information on lead in drinking water is available at https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.

Lead in Priority Areas (LIPA) Sampling (Screening for Lead at Tap Sources)

CFAS samples all drinking water faucets for lead at Priority Areas every five years in an effort to reduce children's potential exposure (CNIC Instruction 5090.6). Priority areas include DoD schools, child development centers, and youth centers across CFAS. The Navy LIPA screening level was lowered to 15 parts per billion (ppb) lead from the 20 ppb used in the first round of sampling (2014) as a result of guidance updates (OPNAV45, Mar 2019). Sampling was performed at CFAS in June and July 2019 at over 430 faucets in eight facilities. Results were received 28 AUG 2019. Thirty (30) faucets initially exceeded the screening level, and the faucets were taken out of service pending further analysis and corrective action. Seventeen (17) faucets were subsequently cleared with aerator maintenance. Thirteen (13) faucets were replaced as a corrective action. The new faucets were cleared 01 MAY 2020 by lead testing with results below the screening level. Notification and results summaries were provided to parents and caregivers after initial sampling and after corrective actions. The notifications are available at https://www.cnic.navy.mil/regions/cnrj/installations/cfa_sasebo/om/public_works/.html.

Per- and Polyfluoroalkyl Substances (PFAS)

What are per- and polyfluoroalkyl substances and where do they come from?

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 [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 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 obtain drinking water results for PFAS at purchased water systems.

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 ppt, water systems should undertake additional sampling to assess the level, scope, and localized source of contamination to inform next steps. Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers.

https://www.cnic.navy.mil/om/base_support/environmental/water_quality/Testing_for_Perfluorochemicals.html

Has CFAS tested its water for PFAS?

Yes. Samples were collected from thirteen (13) sampling locations in the CFAS drinking water systems in November 2020. Results are summarized below.

- Results Detected but Below the Health Advisory: All systems (Main Base, Hario Housing, Akasaki, Harioshima, Iorizaki, Maebata, and Yokose).

  We are informing you that five of the 18 PFAS compounds covered by the sampling method (PFBS, PFHpA, PFHxA, PFOA, and PFOS) were detected above the method reporting limit (MRL) from the water provided by the Sasebo City Waterworks Bureau (all CFAS systems except Yokose). One of the 18 PFAS compounds, PFOA, was detected above the method reporting limit (MRL) from the water provided by the Saikai City Waterworks Bureau (Yokose). The PFAS results are provided in Tables I – IX. PFOA and PFOS were below the EPA HA level in all cases. As PFOA and PFOS were below the EPA Health Advisory, there is no immediate cause for concern.

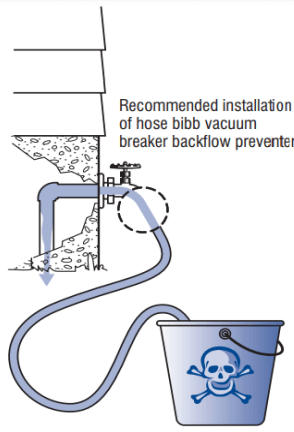
Drinking Water Monitoring

CFAS uses EPA approved laboratory methods to analyze drinking water. The EPA and JEGS allow some contaminants to be monitored less than once per year because the concentrations of these contaminants do not change frequently. For example, Lead and copper and Volatile Organic Compounds (VOCs) were sampled in 2018, and Radionuclides and Synthetic Organic Compounds (SOCs; PCBs, Herbicides and Pesticides) were sampled in 2019; these are monitored every three years and their levels are not expected to vary significantly from year to year. Also, the water samples for each method were collected from multiple locations. For example, Total Coliform is monitored at 26 locations each month throughout CFAS, including 12 locations at Sasebo Main Base. The collected samples are analyzed individually. Frequencies of constituents sampled at CFAS are provided below.

Constituent	Frequency
pH, Turbidity, Chlorine Residual	Daily
Total Coliform	Monthly
Nitrates and Nitrites	Quarterly
Disinfection Byproducts (DBPs)[1]	Quarterly and Annually[2]
Inorganic Chemicals	Annually
Volatile Organic Compounds (VOCs)	Every 3 years
Synthetic Organic Compounds (SOCs)	Every 3 years
Lead and Copper	Every 3 years
Radionuclides	Every 3 years
Asbestos	Every 9 years

[1] Total Trihalomethanes (TTHM) and Haloacetic Acids (HAA5). [2] Main Base and Hario Housing DBPs are monitored quarterly, other sites annually. Annual sampling of DBPs is performed in August when it is warmer. Harioshima hauled water is monitored at Main Base.

Tables I – VII list all the constituents detected above laboratory detectable limits at each one of the CFAS drinking water systems during sampling in 2020. A complete list of constituents analyzed in 2020 is shown in the Appendix. The presence of contaminants does not necessarily indicate that the water poses a health risk. None of the samples exceeded the JEGS and other applicable drinking water health standards. As such, **CFAS' drinking water is safe and fit for human consumption**.



Cross-connection and Backflow Prevention Tip

Did you know that any connection between a public drinking water system and a separate source of questionable quality is considered a cross-connection?

For example, an ordinary garden hose submerged in a bucket of water, car radiator, or swimming pool can result in backflow contamination. To protect our water supply, a simple screw-on vacuum breaker must always be attached to the faucet when a garden hose is used.

Vacuum Breaker

Frequently Asked Questions

Does the annual Consumer Confidence Report indicate there is something wrong with the water, or that it's unsafe?

Each U.S. Navy overseas installation is required by CNIC policy to provide its customers with a water quality report known as a Consumer Confidence Report (CCR). The CCR is an overview of the water quality delivered by your community water system. This report lists the regulated contaminants the community water system detected in the treated water, and the level at which they were found for the preceding calendar year. Any exceedances of applicable regulations or guidance will be reported.

Why does the water sometimes look rusty?

Rusty or reddish tinted water may occur when a sudden change in pressure in the water distribution system causes rust in the distribution pipes to become dislodged. Iron causes the discoloration; it is not a health risk. If water looks rusty, flush your tap for three minutes or until clear before using water. Running the water will clear the piping system. If hot tap water is rusty, the water heater may need to be flushed.

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 aesthetic characteristics and do not pose health risks. 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). If you want to improve the taste, smell and appearance of your water, you can install a home water filter. Please keep in mind that filters require regular maintenance and replacement, and if ignored, water taste, smell, or appearance issues may reoccur.

Installation Water Quality Board

The Installation Commanding Officer has established an Installation Water Quality Board (IWQB) to ensure that there is a reliable supply of drinking water for all persons using CFAS facilities.

Installation Commander…….. 252-3456
Chief Staff Officer……... 252-3444
Public Works Officer……... 252-3452
U.S. Naval Clinic…… 252-2586
Public Affairs Officer ……..….. 252-3029
Public Works Production Officer…… 252-2210
Public Works Environmental Director…… 252-3369

For questions on drinking water in general please contact:
CFAS Public Works Department-Environmental Division at 252-3723

TABLE I
SASEBO MAIN BASE – DRINKING WATER CONSTITUENTS DETECTED IN 2020

Contaminant	Unit of Measurement	Detected Level		Standard (MCL/ MRDL)	Violation?	Possible Sources of Contamination
		High	Low		Yes / No	
INORGANIC CONTAMINANTS						
Barium	mg/L	0.0078	-	2.0	No	Erosion of natural deposits.
Nitrate (as Nitrogen)	mg/L	0.7	0.5	10	No	Runoff from fertilizer and erosion of natural deposits.
Sodium	mg/L	7.8	-	200	No	Erosion of natural deposits.
DISINFECTANTS & DISINFECTION BYPRODUCTS						
Residual Chlorine	mg/L	0.89	0.19	4.0*	No	Disinfectant added for water treatment.
Total Trihalomethanes	mg/L	0.0150	0.0085	0.080	No	By-product of drinking water chlorination.
Halo Acetic Acids	mg/L	0.0090	0.0058	0.060	No	By-product of drinking water chlorination.
Per-and Polyfluoroalkyl Substances (PFAS)**						
Perfluoro-1-butane sulfonic acid (PFBS)	ppt	1.5	ND	50***	No	Persistent man-made chemicals in the environment.
Perfluoro-n-hexanoic acid (PFHxA)	ppt	0.73	0.40	50***	No	Persistent man-made chemicals in the environment.
Perfluoro-n-octanoic acid (PFOA)	ppt	2.5	0.40	50***	No	Persistent man-made chemicals in the environment.
Perfluorooctane sulfonic acid (PFOS)	ppt	1.6	ND	50***	No	Persistent man-made chemicals in the environment.

Notes:
CFAS monitors for many contaminants, only those detected during laboratory analysis are listed above.
* Residual Chlorine - Maximum Residual Disinfectant Level allowed in drinking water.
** All other PFAS were not detected. See Appendix for a full list of the eighteen PFAS analyzed. Sevens samples were collected, one from each of the Main Base distribution zones (Hirase, Nimitz Park, Dragon Vale, Fiddlers Green, Tategami, Jajima, and Dry Dock 2).
*** Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers. The EPA Health Advisory level is 70 ppt for PFOA and PFOS.

Abbreviations and Definitions:
MCL: Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water.
MRDL: Maximum Residual Disinfectant Level. The level of a disinfectant added for water treatment measured at the consumer's tap.
mg/L: milligrams per Liter.
ppt: parts per trillion, or nanograms per Liter
- : dash is one sample per water source based on sampling plan; no separate High and Low values.

TABLE II
HARIO HOUSING – DRINKING WATER CONSTITUENTS DETECTED IN 2020

Contaminant	Unit of Measurement	Detected Level		Standard (MCL/ MRDL)	Violation?	Possible Sources of Contamination
		High	Low		Yes / No	
INORGANIC CONTAMINANTS						
Barium	mg/L	0.017	-	2.0	No	Erosion of natural deposits.
Nitrate (as Nitrogen)	mg/L	0.6	0.3	10	No	Runoff from fertilizer and erosion of natural deposits.
Sodium	mg/L	9.6	-	200	No	Erosion of natural deposits.
DISINFECTANTS & DISINFECTION BYPRODUCTS						
Residual Chlorine	mg/L	0.79	0.15	4.0*	No	Disinfectant added for water treatment.
Total Trihalomethanes	mg/L	0.0300	0.0170	0.080	No	By-product of drinking water chlorination.
Halo Acetic Acids	mg/L	0.0220	0.0140	0.060	No	By-product of drinking water chlorination.
Bacteria						
Total Coliform	Presence	Positive**		> 1+/mo.	No	Treatment or distribution system issues.
Per-and Polyfluoroalkyl Substances (PFAS)* **						
Perfluoro-n-heptanoic acid (PFHpA)	ppt	0.75	-	50****	No	Persistent man-made chemicals in the environment.
Perfluoro-n-hexanoic acid (PFHxA)	ppt	1.6	-	50****	No	Persistent man-made chemicals in the environment.
Perfluoro-n-octanoic acid (PFOA)	ppt	3.2	-	50****	No	Persistent man-made chemicals in the environment.
Perfluorooctane sulfonic acid (PFOS)	ppt	0.35	-	50****	No	Persistent man-made chemicals in the environment.

Notes:
CFAS monitors for many contaminants, only those detected during laboratory analysis are listed above.
* Residual Chlorine - Maximum Residual Disinfectant Level.
** One monthly sample out of 24 tests collected in 2020 at the Hario Housing system tested positive for Total Coliform bacteria. Total coliform are generally not harmful themselves. Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, bacteria may be present. The sample tested negative for E. coli, which can be harmful to human health. The positive Total Coliform sample was cleared by repeat samples taken within 24 hours at the same location, and at locations upstream and downstream. The requirement for Total Coliform, testing more than one positive sample per month at the system, was not exceeded.
*** All other PFAS were not detected. See Appendix for a full list of the eighteen PFAS analyzed.
**** Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers. The EPA Health Advisory level is 70 ppt.
Abbreviations and Definitions:
MCL: Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water.
MRDL: Maximum Residual Disinfectant Level. The level of a disinfectant added for water treatment measured at the consumer's tap.
mg/L: milligrams per Liter.
ppt: parts per trillion, or nanograms per Liter
- : dash is one sample per water source based on sampling plan; no separate High and Low values.

TABLE III
AKASAKI FUEL TERMINAL – DRINKING WATER CONSTITUENTS DETECTED IN 2020

Contaminant	Unit of Measurement	Detected Level		Standard (MCL/ MRDL)	Violation?	Possible Sources of Contamination
		High	Low		Yes / No	
INORGANIC CONTAMINANTS						
Barium	mg/L	0.0078	-	2.0	No	Erosion of natural deposits.
Nitrate (as Nitrogen)	mg/L	0.7	0.5	10	No	Runoff from fertilizer and erosion of natural deposits.
Sodium	mg/L	7.8	-	200	No	Erosion of natural deposits.
DISINFECTANTS & DISINFECTION BYPRODUCTS						
Residual Chlorine	mg/L	0.77	0.45	4.0*	No	Disinfectant added for water treatment.
Total Trihalomethanes	mg/L	0.0190	-	0.080	No	By-product of drinking water chlorination.
Halo Acetic Acids	mg/L	0.0092	-	0.060	No	By-product of drinking water chlorination.
Per-and Polyfluoroalkyl Substances (PFAS)**						
Perfluoro-n-hexanoic acid (PFHxA)	ppt	0.49	-	50***	No	Persistent man-made chemicals in the environment.
Perfluoro-n-octanoic acid (PFOA)	ppt	0.44	-	50***	No	Persistent man-made chemicals in the environment.

Notes:
CFAS monitors for many contaminants, only those detected during laboratory analysis are listed above.
* Residual Chlorine - Maximum Residual Disinfectant Level.
** All other PFAS were not detected. See Appendix for a full list of the eighteen PFAS analyzed.
*** Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers. The EPA Health Advisory level is 70 ppt for PFOA and PFOS.

Abbreviations and Definitions:
MCL: Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water.
MRDL: Maximum Residual Disinfectant Level. The level of a disinfectant added for water treatment measured at the consumer's tap.
mg/L: milligrams per Liter.
ppt: parts per trillion, or nanograms per Liter
- : dash is one sample per water source based on sampling plan; no separate High and Low values.

TABLE IV
HARIOSHIMA ORDNANCE* – DRINKING WATER CONSTITUENTS DETECTED IN 2020

Contaminant	Unit of Measurement	Detected Level		Standard (MCL/ MRDL)	Violation?	Possible Sources of Contamination
		High	Low		Yes / No	
INORGANIC CONTAMINANTS						
Barium	mg/L	0.0078	-	2.0	No	Erosion of natural deposits.
Nitrate (as Nitrogen)	mg/L	0.7	0.5	10	No	Runoff from fertilizer and erosion of natural deposits.
Sodium	mg/L	7.8	-	200	No	Erosion of natural deposits.
DISINFECTANTS & DISINFECTION BYPRODUCTS						
Residual Chlorine	mg/L	0.81	0.11	4.0**	No	Disinfectant added for water treatment.
Total Trihalomethanes	mg/L	0.0150	0.0085	0.080	No	By-product of drinking water chlorination.
Halo Acetic Acids	mg/L	0.0090	0.0058	0.060	No	By-product of drinking water chlorination.
Per-and Polyfluoroalkyl Substances (PFAS)* **						
Perfluoro-n-hexanoic acid (PFHxA)	ppt	0.42	-	50 ppt****	No	Persistent man-made chemicals in the environment.

Notes:
CFAS monitors for many contaminants, only those detected during laboratory analysis are listed above.

* Harioshima Ordnance continues to receive hauled, containerized water to three holding tanks adjacent to facilities using the water. The water truck filling point, which is located on CFAS Main Base, is also monitored for all primary and secondary drinking water contaminants on a regular basis. These results shown on Table IV include inorganics and disinfectant byproducts which were measured at the main base, and residual chlorine and PFAS which were measured at the Harioshima site.
** Residual Chlorine - Maximum Residual Disinfectant Level allowed in drinking water.
*** All other PFAS were not detected. See Appendix for a full list of the eighteen PFAS analyzed.
**** Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers. The EPA Health Advisory level is 70 ppt for PFOA and PFOS.

Abbreviations and Definitions:
MCL: Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water.
MRDL: Maximum Residual Disinfectant Level. The level of a disinfectant added for water treatment measured at the consumer's tap.
mg/L: milligrams per Liter.
ppt: parts per trillion, or nanograms per Liter
- : dash is one sample per water source based on sampling plan; no separate High and Low values.

TABLE V
IORIZAKI FUEL TERMINAL – DRINKING WATER CONSTITUENTS DETECTED IN 2020

Contaminant	Unit of Measurement	Detected Level		Standard (MCL/ MRDL)	Violation?	Possible Sources of Contamination
		High	Low		Yes / No	
INORGANIC CONTAMINANTS						
Barium	mg/L	0.0078	-	2.0	No	Erosion of natural deposits.
Nitrate (as Nitrogen)	mg/L	0.7	0.5	10	No	Runoff from fertilizer and erosion of natural deposits.
Sodium	mg/L	7.8	-	200	No	Erosion of natural deposits.
DISINFECTANTS & DISINFECTION BYPRODUCTS						
Residual Chlorine	mg/L	0.50	0.18	4.0*	No	Disinfectant added for water treatment.
Total Trihalomethanes	mg/L	0.0190	0.0180	0.080	No	By-product of drinking water chlorination.
Halo Acetic Acids	mg/L	0.0075	0.0074	0.060	No	By-product of drinking water chlorination.
Per-and Polyfluoroalkyl Substances (PFAS)**						
Perfluoro-n-hexanoic acid (PFHxA)	ppt	0.81	-	50***	No	Persistent man-made chemicals in the environment.
Perfluoro-n-octanoic acid (PFOA)	ppt	0.55	-	50***	No	Persistent man-made chemicals in the environment.

Notes:
CFAS monitors for many contaminants, only those detected during laboratory analysis are listed above.
* Residual Chlorine - Maximum Residual Disinfectant Level.
** All other PFAS were not detected. See Appendix for a full list of the eighteen PFAS analyzed.
*** Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers. The EPA Health Advisory level is 70 ppt for PFOA and PFOS.

Abbreviations and Definitions:
MCL: Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water.
MRDL: Maximum Residual Disinfectant Level. The level of a disinfectant added for water treatment measured at the consumer's tap.
mg/L: milligrams per Liter.
ppt: parts per trillion, or nanograms per Liter
- : dash is one sample per water source based on sampling plan; no separate High and Low values.

TABLE VI
MAEBATA ORDNANCE – DRINKING WATER CONSTITUENTS DETECTED IN 2020

Contaminant	Unit of Measurement	Detected Level		Standard (MCL/ MRDL)	Violation?	Possible Sources of Contamination
		High	Low		Yes / No	
INORGANIC CONTAMINANTS						
Barium	mg/L	0.017	-	2.0	No	Erosion of natural deposits.
Nitrate (as Nitrogen)	mg/L	0.6	0.3	10	No	Runoff from fertilizer and erosion of natural deposits.
Sodium	mg/L	9.6	-	200	No	Erosion of natural deposits.
DISINFECTANTS & DISINFECTION BYPRODUCTS						
Residual Chlorine	mg/L	0.98	0.68	4.0*	No	Disinfectant added for water treatment.
Total Trihalomethanes	mg/L	0.0290	0.0280	0.080	No	By-product of drinking water chlorination.
Halo Acetic Acids	mg/L	0.0200	0.0180	0.060	No	By-product of drinking water chlorination.
Per-and Polyfluoroalkyl Substances (PFAS)**						
Perfluoro-n-heptanoic acid (PFHpA)	ppt	0.50	-	50***	No	Persistent man-made chemicals in the environment.
Perfluoro-n-hexanoic acid (PFHxA)	ppt	1.3	-	50***	No	Persistent man-made chemicals in the environment.
Perfluoro-n-octanoic acid (PFOA)	ppt	3.5	-	50***	No	Persistent man-made chemicals in the environment.

Notes:
CFAS monitors for many contaminants, only those detected during laboratory analysis are listed above.
* Residual Chlorine - Maximum Residual Disinfectant Level.
** All other PFAS were not detected. See Appendix for a full list of the eighteen PFAS analyzed.
*** Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers. The EPA Health Advisory level is 70 ppt.

Abbreviations and Definitions:
MCL: Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water.
MRDL: Maximum Residual Disinfectant Level. The level of a disinfectant added for water treatment measured at the consumer's tap.
mg/L: milligrams per Liter.
ppt: parts per trillion, or nanograms per Liter
- : dash is one sample per water source based on sampling plan; no separate High and Low values.

TABLE VII
YOKOSE FUEL TERMINAL – DRINKING WATER CONSTITUENTS DETECTED IN 2020

Contaminant	Unit of Measurement	Detected Level		Standard (MCL/ MRDL)	Violation?	Possible Sources of Contamination
		High	Low		Yes / No	
INORGANIC CONTAMINANTS						
Barium	mg/L	0.011	-	2.0	No	Erosion of natural deposits.
Nitrate (as Nitrogen)	mg/L	1.3	1.1	10	No	Runoff from fertilizer and erosion of natural deposits.
Sodium	mg/L	10.0	-	200	No	Erosion of natural deposits.
DISINFECTANTS & DISINFECTION BYPRODUCTS						
Residual Chlorine	mg/L	0.66	0.25	4.0*	No	Disinfectant added for water treatment.
Total Trihalomethanes	mg/L	0.0260	0.0240	0.080	No	By-product of drinking water chlorination.
Halo Acetic Acids	mg/L	0.0140	0.0110	0.060	No	By-product of drinking water chlorination.
Per-and Polyfluoroalkyl Substances (PFAS)**						
Perfluoro-n-octanoic acid (PFOA)	ppt	2.0	-	50***	No	Persistent man-made chemicals in the environment.

Notes:
CFAS monitors for many contaminants, only those detected during laboratory analysis are listed above.
* Residual Chlorine - Maximum Residual Disinfectant Level.
** All other PFAS were not detected. See Appendix for a full list of the eighteen PFAS analyzed.
*** Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers. The EPA Health Advisory level is 70 ppt.

Abbreviations and Definitions:
MCL: Maximum Contaminant Level. The highest level of a contaminant allowed in drinking water.
MRDL: Maximum Residual Disinfectant Level. The level of a disinfectant added for water treatment measured at the consumer's tap.
mg/L: milligrams per Liter.
ppt: parts per trillion, or nanograms per Liter
- : dash is one sample per water source based on sampling plan; no separate High and Low values.

Table VIII Complete PFAS Results for CFAS Main Base Water System Distribution Zones

Per- and Polyfluoroalkyl Substances	PFAS	Health Advisory (HA) Level	Hirase	Nimitz Park	Dragon Vale	Fiddlers Green	Tategami	Jajima	Dry Dock 2
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	NA	ND	ND	ND	ND	ND	ND	ND
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	NA	ND	ND	ND	ND	ND	ND	ND
Hexafluoropropylene oxide dimer acid	GenX	NA	ND	ND	ND	ND	ND	ND	ND
4,8-dioxa-3H-perfluorononanoic acid	ADONA	NA	ND	ND	ND	ND	ND	ND	ND
N-ethylperfluoro-1-octanesulfona midoacetic acid	EtFOSAA	NA	ND	ND	ND	ND	ND	ND	ND
N-methylperfluoro-1-octanesulfona midoacetic acid	MeFOSAA	NA	ND	ND	ND	ND	ND	ND	ND
Perfluoro-1-butane sulfonic acid	PFBS	NA	ND	ND	ND	ND	ND	ND	1.5
Perfluorohexane sulfonic acid	PFHxS	NA	ND	ND	ND	ND	ND	ND	ND
Perfluoro-n-decanoic acid	PFDA	NA	ND	ND	ND	ND	ND	ND	ND
Perfluoro-n-dodecanoic acid	PFDoA	NA	ND	ND	ND	ND	ND	ND	ND
Perfluoro-n-heptanoic acid	PFHpA	NA	ND	ND	ND	ND	ND	ND	ND
Perfluoro-n-hexanoic acid	PFHxA	NA	0.52	0.73	0.55	0.57	0.40	0.51	0.69
Perfluoro-n-nonanoic acid	PFNA	NA	ND	ND	ND	ND	ND	ND	ND
Perfluoro-n-octanoic acid	PFOA	50	0.40	0.66	0.42	0.53	0.41	0.51	2.5
Perfluoro-n-tetradecanoic acid	PFTeDA	NA	ND	ND	ND	ND	ND	ND	ND
Perfluoro-n-tridecanoic acid	PFTrDA	NA	ND	ND	ND	ND	ND	ND	ND
Perfluoro-n-undecanoic acid	PFUdA	NA	ND	ND	ND	ND	ND	ND	ND
Perfluorooctane sulfonic acid	PFOS	50	ND	ND	ND	ND	ND	ND	1.6

Notes:

Units are in parts per trillion (ppt), equivalent to nanograms per liter (ng/L).

NA: Not applicable.

ND: Not detected above laboratory detection limits.

Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers. The EPA Health Advisory level is 70 ppt for PFOA and PFOS.

The Main Base water purveyor is the Sasebo City Waterworks Bureau.

Table IX Complete PFAS Results for Other CFAS Water Systems

Per- and Polyfluoroalkyl Substances	PFAS	Health Advisory (HA) Level	Akasaki	Hario Housing	Hario Shima	Iorizaki	Maebata	Yokose
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	NA	ND	ND	ND	ND	ND	ND
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	NA	ND	ND	ND	ND	ND	ND
Hexafluoropropylene oxide dimer acid	GenX	NA	ND	ND	ND	ND	ND	ND
4,8-dioxa-3H-perfluorononanoic acid	ADONA	NA	ND	ND	ND	ND	ND	ND
N-ethylperfluoro-1-octanesulfona midoacetic acid	EtFOSAA	NA	ND	ND	ND	ND	ND	ND
N-methylperfluoro-1-octanesulfona midoacetic acid	MeFOSAA	NA	ND	ND	ND	ND	ND	ND
Perfluoro-1-butane sulfonic acid	PFBS	NA	ND	ND	ND	ND	ND	ND
Perfluorohexane sulfonic acid	PFHxS	NA	ND	ND	ND	ND	ND	ND
Perfluoro-n-decanoic acid	PFDA	NA	ND	ND	ND	ND	ND	ND
Perfluoro-n-dodecanoic acid	PFDoA	NA	ND	ND	ND	ND	ND	ND
Perfluoro-n-heptanoic acid	PFHpA	NA	ND	0.75	ND	ND	0.50	ND
Perfluoro-n-hexanoic acid	PFHxA	NA	0.49	1.6	0.42	0.81	1.3	ND
Perfluoro-n-nonanoic acid	PFNA	NA	ND	ND	ND	ND	ND	ND
Perfluoro-n-octanoic acid	PFOA	50	0.44	3.2	ND	0.55	3.5	2.0
Perfluoro-n-tetradecanoic acid	PFTeDA	NA	ND	ND	ND	ND	ND	ND
Perfluoro-n-tridecanoic acid	PFTrDA	NA	ND	ND	ND	ND	ND	ND
Perfluoro-n-undecanoic acid	PFUdA	NA	ND	ND	ND	ND	ND	ND
Perfluorooctane sulfonic acid	PFOS	50	ND	0.35	ND	ND	ND	ND

Notes:

Units are in parts per trillion (ppt), equivalent to nanograms per liter (ng/L).

NA: Not applicable.

ND: Not detected above laboratory detection limits.

Japan promulgated a water quality safety guideline of 50 ppt for PFAS in drinking water in April 2020 applicable to our host nation suppliers. The EPA Health Advisory level is 70 ppt for PFOA and PFOS.

The water purveyor for Akasaki, Hario Housing, Harioshima, Iorizaki and Maebata is the Sasebo City Waterworks Bureau. The water purveyor for Yokose is the Sakai City Waterworks Bureau.