Kings Bay Community Water System 2020 Consumer Confidence Report

The Kings Bay Community Water System is owned and operated by Naval Submarine Base (SUBASE) Kings Bay and supplies the water needs of housing, training and submarine support activities.

The Water Source

Three (3) artesian wells draw groundwater from the Upper Floridan Aquifer located on SUBASE Kings Bay to supply drinking water.

Drinking water can come from a number of sources including rivers, lakes, streams, ponds, reservoirs, springs and wells. Groundwater from "confined" aquifers such as the Upper Floridan is considered to be among the best water available to consumers.

How We Produce Water

The SUBASE Kings Bay Water System provides treated water 24 hours every day. Water is treated to remove contaminants by membrane filtration, aeration, chlorination and fluoridation.

Ensuring Safe Water

To insure that tap water is safe to drink, EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. EPA also requires a cross connection control program be established and implemented to prevent unprotected or improper connections to water distribution systems that could result in potential contamination or pollution to the water system. Bottled water is regulated by the U. S. Food and Drug Administration and must provide the same protection for public health as public water supplies. Drinking water and bottled water may reasonably be expected to contain 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 at:
EPA Safe Drinking Water Hotline (800) 426-4791
Or on-line at www.epa.gov/safewater.

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 SUBASE Kings Bay tested its water for PFAS?

Yes. In November 2020 samples were collected from the water treatment plant.

We are pleased to report that drinking water testing results were below the Method Reporting Limit (MRL) for all 18 PFAS compounds covered by the sampling method, including PFOA and PFOS. This means that PFAS were not detected in your water system. In accordance with DoD policy, the water system will be resampled every three years for your continued protection.

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

The Water Treatment Plant

The Water Treatment Plant was historically upgraded to a state of the art treatment plant that alleviates trihalomethanes (THMs) of concern in the water chlorination process. With over ten successful years of operations we continue with excellent results in reducing THMs as shown in table 2.

Potential Contaminants

Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. SUBASE results are shown in Table 5.

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. SUBASE results are shown in Tables 1, 3 and 4.

Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses. SUBASE results are shown in Table 2.

Organic chemical contaminants, including synthetic and volatile organic chemicals (VOCs), which are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff and septic systems. SUBASE results are shown in Table 2 and are only those which are byproducts of the water disinfection process.

Radioactive contaminants, which can be naturally occurring or be the results of oil and gas production and mining activities. SUBASE results are shown in Table 6.

Vulnerability to Contaminants

Some people may be more susceptible to contaminants in drinking water than the general population. People with compromised immune systems (such as those undergoing chemotherapy), have had organ transplants, have HIV/AIDS, or other immune system disorders, may have increased risk to infection. 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 microbial contaminants are available from:

EPA Safe Drinking Water Hotline: (800) 426-4791
Or on-line at www.epa.gov/safewater.

Drought Conditions in Georgia

The GA EPD does not currently have any drought response restrictions in place. However, everyone must continue to follow the non-drought outdoor water use requirements as provided in the SUBASE Outdoor Watering Instruction 11330.1B CH-2. In summary, outdoor watering may take place on an odd/even numbered address schedule with watering occurring before 10:00 am and after 4:00 pm.

Coastal Georgia also has an additional set of issues besides drought. High withdrawal rates in some areas have resulted in saltwater intrusion into water resources used along the coast. This is already causing restrictions on growth and greater regulation of groundwater supplies along the coast which SUBASE is subject to just as local communities are.

SUBASE is complying with Presidential Executive orders mandating reductions for water usage at all facilities. The goal is to reduce usage by 2% per year through 2025. We have exceeded this ambitious goal, but the help of every person at SUBASE is needed to continue to meet it.

There are many simple ways to be efficient in use of water in daily activities. Let's use them and reap the benefits. One good information source for water savings at home is: https://epd.georgia.gov/water-conservation

Testing to Keep You Safe

The water we provide is constantly tested. Each year, more than 4,500 tests are run to ensure safe, high quality potable water for our customers. This report provides you with the information you need to know about the sources of SUBASE's drinking water, what is in it and how it compares to regulatory agency standards. All plant operators and lab technicians hold state certifications. The Safe Drinking Water Act (SDWA) requires all water systems to provide their customers with an annual water quality report such as this. The tests reported here are from January 1 through December 31, 2020 except for a few tests as noted in this report that are not done annually. Your SUBASE Kings Bay Water Department is committed to providing you with clean and safe water. We are pleased to report again this year our water meets the standards of the SDWA without any exceptions.

TABLE 1 Inorganic Contaminants Detected In Water Distributed to Customers

Parameter	Copper	Chlorine	Fluoride
Units	ppb	ppb	ppb
Sample Date	2020	2020	2020
MCL / [SMCL]	1,300	4/[2]	4
MCLG	1,300	n/a	4
Highest Level Detected	63	1.78	0.65
Range of Detections	11-63	0.51-1.78	0.57-0.65

Possible Sources of Contaminant– Copper & Fluoride: Erosion of natural deposits; Fluoride is an additive that promotes strong teeth. Chlorine is an additive used to control microbes.

TABLE 2 Detected Organic Contaminants

Parameter	Units	Sample Date	MCL	MCLG	Kings Bay Results[1]	Range of Detections	Violation (Yes/No)
TTHMs[1]	ppb	2020	80	n/a	64.62	54.32-80.96	No [1,2]
HAA5s[1]	ppb	2020	60	n/a	20.47	17.8-26.88	No [1,2]
TTHMs[1] Site 2	ppb	2020	80	n/a	55.46	48.0—62.2	No [1,2]
HAA5s[1] Site 2	ppb	2020	60	n/a	17.73	15.7-19.78	No [1,2]

Likely Source of contamination– By-Product of drinking water chlorination

1. Total Trihalomethanes (TTHMs) and Total Haloacetic Acids (HAA5s) is the sum of detected concentrations of individual byproducts which form because chlorine, which is used for disinfection, also reacts with low concentrations of organic materials present in the raw water. The data are evaluated by averaging the current quarter result with the previous three quarters to obtain a Four Quarter Running Average (4QRA). A violation occurs when the 4QRA exceeds the MCL.

2. Trihalomethane Health Effects: Some individuals who drink water containing Trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys or central nervous systems and may have an increased risk of getting cancer. As can be seen in the table, our results are very much lower than the applicable standard.

Table 3: Unregulated Inorganic Monitoring Results [1]

Parameter	Units	Sample Date	SMCL	MCLG	Kings Bay Results[1]	Range of Detections	Violation (Yes/No)
Sodium	ppb	2020	n/a	n/a	17.0	n/a	No

Likely Source of contamination– Erosion of natural deposits

1. Based on this value Kings Bay's water has 4.02 mg of sodium per 8 oz. serving. This is provided for individuals on sodium restricted diets.

Table 4: Lead and Copper (Tap Water) Monitoring Results **

Parameter	Sample Date	Action Level	MCLG	90th Percentile	Sites Exceeding AL	Violation (Yes/No)
Lead (ppb)	7/2020	15	0	Not Detected	0 of 10	No
Copper (ppb)	7/2020	1300	1300	44	0 of 10	No

Likely Source of contamination– Corrosion of household plumbing systems; Erosion of natural deposits

USEPA and Georgia EPD have asked that we inform you about the health effects of lead as outlined below:

If present at elevated levels, lead can cause serious health problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The Kings Bay Community Water System 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, or steps you can take to minimize exposure is available from the Safe Drinking Water Hotline (800) 426-4791 or at https://www.epa.gov/ground-water-and-drinking-water/basic-information-about-lead-drinking-water.

Table 5: Bacteriological Monitoring Results [1]

Biological Parameter (Present/Absent)	Units	Sample Date	MCL	MCLG	Kings Bay Results	Violation (Yes/No)	Likely Source of Contamination
Total Coliform	No. of Detections	2020	0	0	0	No	Natural presence in the environment
Fecal Coliform		2020	0	0	0	No	Warm blooded animals

1. Thirty sample points routinely tested at Kings Bay. Ten points are sampled each month with a total of 127 regular and special tests in 2020.

Table 6: Radionuclides Table**

Parameter	Units	Sample Date	MCL	MCLG	Kings Bay Results	Range of Detections	Violation (Yes/No)	Likely Source of Contamination
Alpha Emitters	pCi/l	2018	15	0	<3	n/a	No	Erosion of natural deposits
Radium 226	pCi/l	2018	5	0	<1	n/a	No	
Radium 225	pCi/l	2018	5	0	<1	n/a	No	

pCi/l: = *picoCuries per liter is a measure of the amount of radioactivity in a sample.* **Testing is required every 5 years.

Definitions of Terms and Abbreviations in this Report

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 a 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.*

Secondary Maximum Contaminant Level (SMCL): *reasonable goals for drinking water quality. Exceeding SMCLs may adversely affect odor or appearance, but there is no known risk to human health.*

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 microbiological 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 disinfectants to control microbial contaminants.*

N/A: *Not Applicable.*

N/D: *Not Detected. The contaminant was not detected*

ppb or µg/l: *parts per billion or micrograms per liter (µg/l) (Note that one ppb is equivalent to one second in 32 years)*

ppm or mg/l: *parts per million or milligram per liter (mg/l) (Note that one ppm is equivalent to one second in 12 days)*

pCi/l: *picoCuries per liter is a measure of the amount of radioactivity in a sample.*