2020 Annual Consumer Confidence Report Naval Station, Guantanamo Bay (NSGB)

WATER SOURCE AND TREATMENT

We are pleased to provide you with the 2020 Annual Drinking Water Quality Report. This report is designed to inform you about the quality of water and services we deliver to you every day. NSGB's goal is to provide to you a safe and dependable supply of drinking water.

Our drinking water source is sea water drawn from Guantanamo Bay, approximately 220 feet out into the bay from the seawater holding tank. The surface water is turned into drinking water through a process called reverse osmosis (RO) which is the application of pressure to a concentrated solution that causes the passage of a liquid from the concentrated solution to a weaker solution across a semi-permeable membrane. The membrane allows the passage of water (solvent); but does not allow the passage of the dissolved solids (solutes), including salts. The RO plant is currently capable of producing approximately 1.6 million gallons per day. Water produced from the RO plant is transferred to water storage tanks before final processing through the water treatment plant (WTP3). WTP3 adds additional lime to make the water less corrosive and adds necessary minerals (calcium) to the water. WTP3 also adds fluoride which has been shown clinically to reduce tooth decay. At the treatment plant, water is held in large storage tanks before entering the distribution system to the customer's tap.

MONITORING REQUIREMENTS

NSGB routinely monitors for contaminants in your drinking water according to the Environmental Final Governing Standards for Cuba (FGS) and CNICINST 5090 Series. Except where indicated otherwise, this report is based on the results of our monitoring for the period of January 1 to December 31, 2020. This report shows our water quality results and what they mean. If you have any questions about the quality of water at NSGB or would like more information on the Overseas Drinking Water Program, please contact Public Works Department, Environmental Division at X-5625 or X-5627.

POTENTIAL CONTAMINANTS

The sources of drinking water (both tap water and bottled water) include oceans, 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 and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

1. Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
2. 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.
3. Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban stormwater runoff, and residential uses.
4. 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.
5. Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

To ensure that tap water is safe to drink, the United States Environmental Protection Agency (EPA) prescribes regulations, which limit 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.

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 Naval Station Guantanamo Bay tested its water for PFAS?

Yes. In October 2020 samples were collected from the system's Point of Entry (POE) at water plant #3 located on Skyline Dr.

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.

INFORMATION ON BACTERIOLOGICAL TESTING

Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially harmful, waterborne pathogens may be present or that a potential pathway exists through which contamination may enter the drinking water distribution system. NSGB collects 10 routine coliform samples each month (120 tests/year) at designated housing and facilities throughout the installation. On March 22, 2020, two routine samples tested positive for Coliform triggering a level 1 assessment IAW the Revised Total Coliform Rule. A Level 1 Assessment was conducted later in March and was unable to identify sanitary defects that could provide a pathway of entry for microbial contamination. NSGB uses chlorine to effectively prevent bacteriological contamination throughout the water system. Chlorine levels in both samples collected on March 22nd were sufficient to eliminate Coliform bacteria.

For more information on coliform testing, please visit the following EPA website: https://www.epa.gov/dwreginfo/revised-total-coliform-rule-and-total-coliform-rule.

INFORMATION ON 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. When your water sits 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. Routine sampling for lead is conducted in accordance with the Lead and Copper Rule and the Lead in Priority Areas (LIPA) Program.

VULNERABLE RESIDENTS

Drinking water (including bottled water) may reasonably be expected to contain at least small amounts of contaminants. Their presence does not necessarily indicate that 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. People who are immunocompromised should seek advice about drinking water from their health care providers, EPA, the Center for Disease Control and Prevention (CDC) for 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) or visit*: https://www.epa.gov/ground-water-and-drinking-water/forms/contact-us-about-ground-water-and-drinking-water*

TERMS AND ABBREVIATIONS

You may find unfamiliar terms and abbreviations in the tables below and throughout the document. To help you better understand these terms we've provided the following definitions:

AL: Action Level. The concentration of a contaminant which, if exceeded, triggers further treatment or other procedures that the water system must follow to lower the level.

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.

MCL: Maximum Contaminant Level. The highest level of a contaminant that is allowed in drinking water (by regulation).

mg/L: milligrams per liter; equivalent to parts per million.

µg/L: micrograms per liter; equivalent to parts per billion

ND: Not detectable. A value below the detectable limit by the lab test procedure.

NPDWR: National Primary Drinking Water Regulations: legally enforceable standards that apply to public water supply systems. Primary standards aim at protecting drinking water quality by setting limits on the levels of specific contaminants that can adversely affect public health and are known or anticipated to occur in public water systems.

NSDWR: National Secondary Drinking Water Regulations: non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply.

NTU: Nephelometric Turbidity Units: a measure of the clarity of water. Turbidity is measured with an instrument called a nephelometer, which measures the intensity of light scatted by suspended matter in the water. Turbidity in excess of 5 NTU is just noticeable to the average person.

Total coliforms: a group of related bacteria that are naturally present in the environment and are not harmful to humans (with few exceptions). EPA considers total coliforms a useful indicator of other pathogens for drinking water. Total coliforms are used to determine the adequacy of water treatment and the integrity of the distribution system.

Treatment Technique: a required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A measure of the cloudiness of water. We measure turbidity because it is a good indicator of the effectiveness of the water treatment system.

TABLE 1. NPDWR (Enforceable)

Contaminant	Sampling Size	Units	MCL	Level Detected (or Range)	Violation (Yes/No)	Typical source of Contaminant
A. ORGANICS						
Total Trihalomethane (TTHM)	AV-52 6 LP BEQ	mg/L	0.080	0.01211 - 0.04961	**No**	by-product of disinfection by chlorination
HaloAceticAcid5 (HAA5)	AV-526 LP BEQ	mg/L	0.060	0.00089 – 0.01012	No	by-product of disinfection by chlorination
Toluene	Water Plant #3 (Bldg 815)	µg/L	1000	0.20	No	
B. SYNTHETIC ORGANICS						
Endrin	Water Plant #3 (Bldg 815)	µg/L	2	0.0069	No	Pesticide usage
Lindane	Water Plant #3 (Bldg 815)	µg/L	0.2	0.0071	No	Pesticide usage
Methoxychlor	Water Plant #3 (Bldg 815)	µg/L	40	0.0068	No	Pesticide usage
Toxaphene	Water Plant #3 (Bldg 815)	µg/L	3	0.12	No	Pesticide usage
Dalapon	Water Plant #3 (Bldg 815)	µg/L	200	0.90	No	Pesticide usage
Diaquat	Water Plant #3 (Bldg 815)	µg/L	20	0.37	No	Pesticide usage
Endothall	Water Plant #3 (Bldg 815)	µg/L	100	1.8	No	Pesticide usage
Glyphosate	Water Plant #3 (Bldg 815)	µg/L	700	5.5	No	Pesticide usage
Di(2-ethylhexyl) adipate	Water Plant #3 (Bldg 815)	µg/L	400	5.0	No	Pesticide usage
Oxamyl	Water Plant #3 (Bldg 815)	µg/L	200	0.57	No	Pesticide usage
Simazine	Water Plant #3 (Bldg 815)	µg/L	4	0.60	No	Pesticide usage
Di(2-Ethylhexyl) phthalate	Water Plant #3 (Bldg 815)	µg/L	6	5.0	No	Pesticide usage
Picloram	Water Plant #3 (Bldg 815)	µg/L	500	0.090	No	Pesticide usage
Dinoseb	Water Plant #3 (Bldg 815)	µg/L	7	0.18	No	Pesticide usage
Hexachlorocyclopentadiene	Water Plant #3 (Bldg 815)	µg/L	50	0.019	No	Pesticide usage
Carbofuran	Water Plant #3 (Bldg 815)	µg/L	40	0.28	No	Pesticide usage
Atrazine	Water Plant #3 (Bldg 815)	µg/L	3	0.90	No	Pesticide usage
Alachlor	Water Plant #3 (Bldg 815)	µg/L	2	1.5	No	Pesticide usage
Heptachlor	Water Plant #3 (Bldg 815)	µg/L	0.4	0.0060	No	Pesticide usage
Heptachlor Epoxide	Water Plant #3 (Bldg 815)	µg/L	0.2	0.0052	No	Pesticide usage

Contaminant	Sampling Site	Units	MCL	Levels Detected	Violations (Yes/No)	Typical Source of Contaminant
2,4-D	Water Plant #3 (Bldg 815)	µg/L	70	0.095	No	Pesticide usage
Silvex (2,4,5-TP)	Water Plant #3 (Bldg 815)	µg/L	50	0.090	No	Pesticide usage
Hexachlorobenzene	Water Plant #3 (Bldg 815)	µg/L	1	0.0063	No	Pesticide usage
Benzo[a]pyrene	Water Plant #3 (Bldg 815)	µg/L	0.2	0.15	No	Incomplete burning of materials
Pentachlorophenol	Water Plant #3 (Bldg 815)	µg/L	1	0.038	No	Pesticide usage
PCBs	Water Plant #3 (Bldg 815)	µg/L	0.5	0.093	No	Dielectric coolant/fluid
1,2-Dibromo-3-Chloropropane	Water Plant #3 (Bldg 815)	µg/L	0.2	0.017	No	Pesticide usage
Ethylene Dibromide (EDB)	Water Plant #3 (Bldg 815)	µg/L	0.02	0.011	No	Pesticide usage
Chlordane (technical)	Water Plant #3 (Bldg 815)	µg/L	2	0.053	No	Pesticide usage
C. INORGANICS						
Copper	Residential units	mg/L	AL = 1.3	0.0010 – 0.5600	No	corrosion of plumbing; erosion of natural deposits
Lead	Residential units	mg/L	AL = 0.015	0.00050 – 0.00061	No	corrosion of plumbing; erosion of natural deposits
Fluoride	Water Plant #3 (Bldg 815)	mg/L	4	0.2 – 0.95	No	water treatment additive to prevent tooth decay; erosion of natural deposits
Nitrate	Water Plant #3 (Bldg 815)	mg/L	10	0.40	No	run-off from fertilizer use; erosion of natural deposits
Nitrite	Water Plant #3 (Bldg 815)	mg/L	1	0.4	No	run-off from fertilizer use; erosion of natural deposits
Arsenic	Water Plant #3 (Bldg 815)	mg/L	0.01	0.000077	No	Natural and manmade sources
Barium	Water Plant #3 (Bldg 815)	mg/L	2	0.0030	No	Natural and manmade sources
Cadmium	Water Plant #3 (Bldg 815)	mg/L	0.005	0.00050	No	Natural and manmade sources
Chromium	Water Plant #3 (Bldg 815)	mg/L	0.1	0.00011	No	Natural and manmade sources
Cyanide	Water Plant #3 (Bldg 815)	mg/L	0.2	0.0040	No	Natural and manmade sources
Mercury	Water Plant #3 (Bldg 815)	mg/L	0.002	0.000011	No	Natural and manmade sources
Nickel	Water Plant #3 (Bldg 815)	mg/L	0.1	0.010	No	Natural and manmade sources
Selenium	Water Plant #3 (Bldg 815)	mg/L	0.05	0.00058	No	Natural and manmade sources
Sodium	Water Plant #3 (Bldg 815)	mg/L	160	130	No	Natural and manmade sources

Contaminant	Sampling Site	Units	MCL	Levels Detected	Violations (Yes/No)	Typical Source of Contaminant
Antimony	Water Plant #3 (Bldg 815)	mg/L	0.006	0.00011	No	Natural and manmade sources
Beryllium	Water Plant #3 (Bldg 815)	mg/L	0.004	0.0020	No	Natural and manmade sources
Thallium	Water Plant #3 (Bldg 815)	mg/L	0.002	0.000057	No	Natural and manmade sources
Silver	Water Plant #3 (Bldg 815)	mg/L	0.1	0.0080	No	Natural and manmade sources
Sulfate	Water Plant #3 (Bldg 815)	mg/L	250	4.0	No	Natural and manmade sources
D. MICROBIALS						
Total Coliform Bacteria	Residential Units/Water Storage Tanks	No. of Positive Samples	No more than 1 Positive Sample /Month	2 Positive Total Coliform*	No	Naturally present in the environment; indicator species for potential distribution line contamination
Turbidity	Reverse Osmosis Plant Product Water	NTU	Less than 0.3 NTUs	0.1 – 0.40	No	Breakdown of natural minerals and deposits, soil runoff; indicator of filter efficiency

* 2 positive tests triggered a Level 1 Assessment subsequent test results were negative.

TABLE 1. NPDWR (Enforceable)

Contaminant	Sampling Site	Units	MCL	Levels Detected	Violations (Yes/No)	Typical Source of Contaminant
Sodium	Water Plant #3	mg/L	250	130	n/a	breakdown of natural minerals and deposits
Chlorides	Water Plant #3	mg/L	250	140 - 220	n/a	breakdown of natural minerals & deposits
Iron	Water Plant #3	mg/L	0.3	0.00 – 0.08	n/a	water distribution pipe corrosion
Sulfate	Water Plant #3	mg/L	250	4.0	n/a	run-off from fertilizer use; erosion of natural deposits
Total Dissolved Solids	Water Plant #3	mg/L	500	312 - 466	n/a	breakdown of natural minerals and deposits
Sodium	Water Plant #3	mg/L	250	130	n/a	breakdown of natural minerals and deposits