

2018

ANNUAL DRINKING WATER QUALITY REPORT

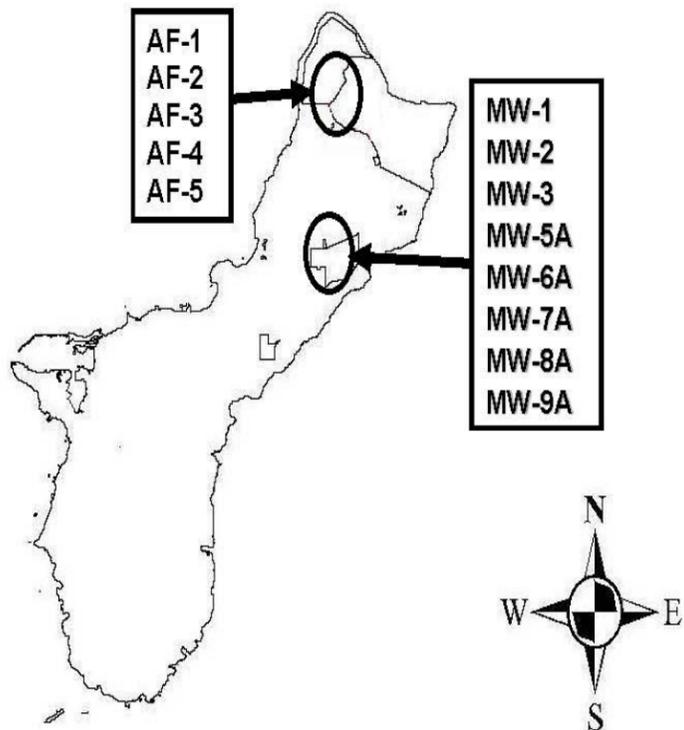
2018 ANDERSEN AIR FORCE BASE

WATER QUALITY REPORT

This is the 2018 annual report on the quality of Andersen Air Force Base drinking water. The *Consumer Confidence Report Rule* of the federal Safe Drinking Water Act (SDWA) requires this information be provided to the public. This report includes information on the source of our water and health risks associated with any contaminants that were found. This report contains technical language required by the United States Environmental Protection Agency (USEPA), designed to further public understanding about public water systems and potential hazards.

The Andersen Air Force Base Water System

Andersen Air Force Base provides drinking water to all base housing and facilities derived from the Northern Guam Lens Aquifer, which is a groundwater source underlying the northern portion of Guam. Groundwater is pumped from the under-ground aquifer into the water distribution system by thirteen (13) wells (see map below).



Water Quality Reporting

Results of regular monitoring are an indicator of whether or not your drinking water meets health standards.

For the year 2018, the Andersen Air Force Base Water System met all primary drinking water quality standards. We are proud to report that we did not violate any Maximum Contaminant Level or any other water quality standards. All safe drinking water reports, along with supporting laboratory reports were submitted on time as required by the Guam Environmental Protection Agency.



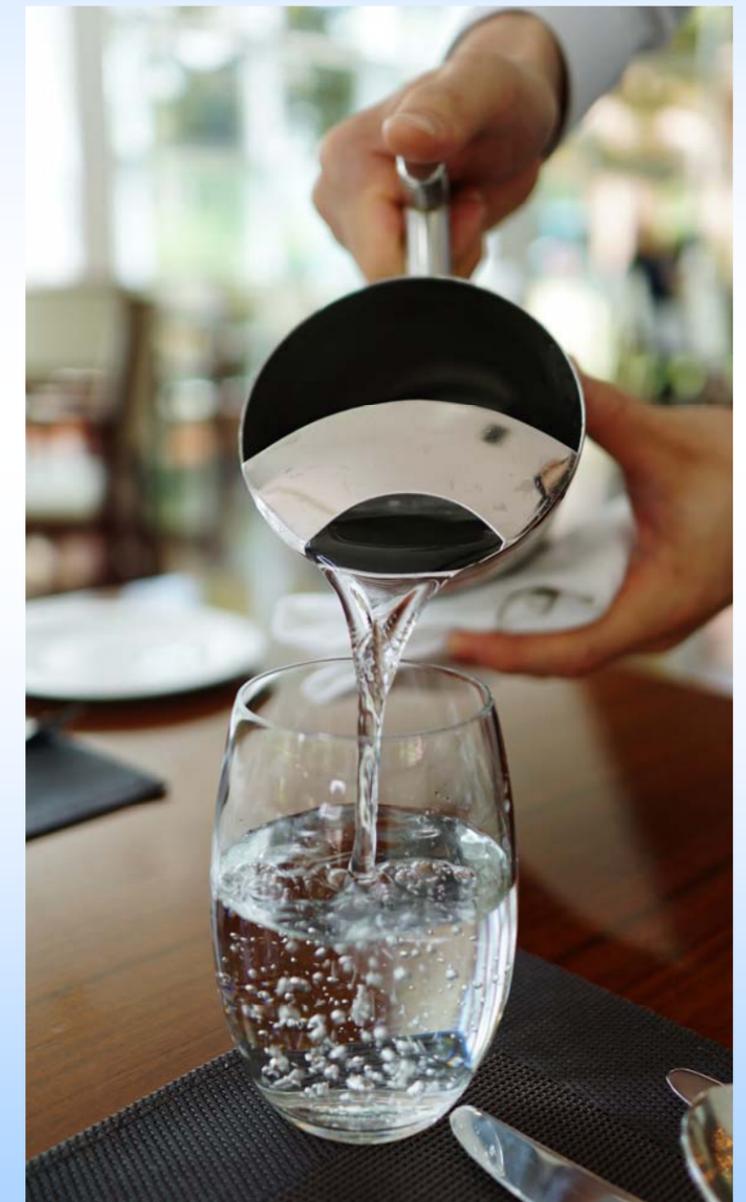
How Can You Report a Water Quality Complaint?

Should you notice that your water is discolored, has a funny taste, or if you have any concerns about your drinking water, we strongly encourage you to contact Bioenvironmental Engineering at (671) 366-7166. Arrangements can be made to have your water sampled and analyzed to ensure that it is safe to drink.

How Can You Obtain Additional Information?

Team Andersen is committed to ensuring the quality of Andersen Air Force Base drinking water to the highest standards possible. Public queries and additional information regarding this report can be obtained by contacting the Andersen Public Affairs Office at (671) 366-4202. This report can be accessed on the Andersen Air Force Base web page by 1 July 2019. Printed copies of this report can be obtained at the base library, or at the Bioenvironmental Engineering Office. For electronic copies, please contact Bioenvironmental Engineering at (671) 366-7166.

PWS ID No. GU-0000009



DEPARTMENT OF THE AIR FORCE
36TH MEDICAL OPERATIONS SQUADRON
ANDERSEN AIR FORCE BASE

Why are contaminants found in Drinking Water?

The sources of drinking water (both tap water and bottled water) include 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:

- **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 stormwater runoff, industrial or domestic wastewater discharges, 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.

Drinking water, including bottled water, may reasonably be expected to contain at least 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 by calling the EPA's Safe Drinking Water Hotline (1-800-426-4791).

Water Quality Monitoring

In order to ensure that tap water is safe to drink, EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits to contaminants in bottled water, which must provide the same protection for public health.

The *National Primary Drinking Water Regulations* sets limits for contaminants in drinking water and standards for water treatment that primarily safeguard health. These regulations also require us to monitor your drinking water for specific contaminants on a regular basis. Bioenvironmental Engineering and the Water and Fuels Maintenance Shop at Andersen Air Force Base routinely monitor chlorine and fluoride levels in drinking water on a daily basis.

Health Precautions

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemo-therapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly and infants can be particularly at risks from infections. 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 (1-800-426-4791).

WATER QUALITY MONITORING RESULTS

The following data presented in these tables are the results of monitoring for the reporting period of 1 January 2018 — 31 December 2018. Andersen Air Force Base monitors for some contaminants less than once per year because the levels do not change frequently. Therefore, some of the reported water quality data may be more than one year old. Contaminants that are not present on table were below the detection levels specified in 40 CFR 141.151(d). Detection of contaminants in drinking water does not necessarily indicate that water poses a health risk. If you would like a complete listing of the Andersen AFB Water System test results, or if you have questions or require additional information about this water quality report, please contact the Bioenvironmental Engineering office at (671) 366-7166.

PRIMARY STANDARDS - MANDATORY HEALTH-RELATED STANDARDS ESTABLISHED BY GEPA/USEPA									
DISINFECTION BYPRODUCTS AND DISINFECTANT RESIDUALS									
Contaminant	Unit	MCL	MCLG	Range		Violation	Sample Date	Typical Source	Location(s) Detected
				Low	High				
Total Trihalomethanes (TTHMs)	ppb	80	n/a <i>Note 1</i>	6.22	18.5	No	8/7/2018	Byproduct of drinking water disinfection	Det 2 Building 32, NWF Building 61235, WRM Building 51104
Chlorine	Unit	MRDL	MRDLG	Your Water	Range	Violation	Sample Date	Typical Source	Location(s) Detected
	ppm	4	4	0.99 <i>Note 2</i>	0.09-3.5	No	2018	Drinking water standards added to control microbes	Within the distribution system

INORGANIC CHEMICALS									
Contaminant	Unit	MCL	MCLG	Range		Violation	Sample Date	Typical Source	Location(s) Detected
				Low	High				
Fluoride	ppm	4	4	nd	0.990	No	8/22/2017	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories	Booster Station 2, Booster Station 3
Barium	ppm	2	2	nd	0.005	No	8/22/2017	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits	Booster Station 2, Booster Station 3, Building 61207 NWF Storage Tank
Nitrate	ppm	10	10	0.927	1.51	No	8/28/2018	Runoff from fertilizer use; leaching from septic tanks, sewage; Erosion of natural deposits	Booster Station 2, Booster Station 3, Building 9060 Storage Tank, Building 61207 NWF Storage Tank

SPECIAL MONITORING FOR SODIUM									
Contaminant	Unit	MCL	MCLG	Range Low	Range High	Violation	Sample Date	Typical Source	Location(s) Detected
Sodium	ppm	n/a	n/a	19.6	33.5	No	8/8/2017	Salt water intrusion from aquifer/salt water interface	Booster Station 2, Booster Station 3, Building 9060 Storage Tank, Building 61207 NWF Storage Tank

RADIONUCLIDES									
Contaminant	Unit	MCL	MCLG	Range Low	Range High	Violation	Sample Date	Typical Source	Location(s) Detected
Alpha emitters	pCi/L	15	0	nd	4.00	No	2017	Erosion of natural deposits	Booster Station 2
Radium 226	pCi/L	5 <i>Note 3</i>	0 <i>Note 3</i>	nd	1.80	No	2017	Erosion of natural deposits	Booster Station 2, Booster Station 3, Building 61207 NWF Storage Tank
Radium 228				nd	nd				
Uranium	µg/L	30	0	nd	1.00	No	2017	Erosion of natural deposits	Building 61207 NWF Storage Tank

SYNTHETIC ORGANIC CHEMICALS									
Contaminant	Unit	MCL	MCLG	Range		Violation	Sample Date	Typical Source	Location(s) Detected
				Low	High				
Di(2-ethylhexyl) phthalate	ppb	6	0	nd	0.001	No	8/22/2017	Discharge from rubber and chemical factories	Building 9060 Storage Tank

LEAD AND COPPER									
Contaminant	Unit	AL	MCLG	Your Water	Number of Samples Exceeding AL	Violation	Sample Date	Typical Source	Location(s) Detected
Lead	ppb	15 <i>Note 4</i>	0	nd	0 out of 20	No	Aug-16	Corrosion of household plumbing system, erosion of natural deposits	Within the distribution system

RADON									
Contaminant	Unit	MCL	MCLG	Range		Violation	Sample Date	Typical Source	Location(s) Detected
				Low	High				
Radon	pCi/L	ne	ne	86	660	No	8/19/2013	Naturally occurring gas	Booster Station 2, Booster Station 3, Building 9060 Storage Tank, Building 61207 NWF Storage Tank

We have detected radon in the finished water supply, as seen in the 2013 Radon Data Summary above. There is currently no federal regulation for radon levels. Radon is a radioactive gas that you cannot see, taste, or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will in most cases be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. You should pursue radon removal for your home if the level of radon in your air is 4 pCi/L or higher. There are simple ways to fix radon problem that are not too costly. For additional information call your state radon program or call EPA's Radon Hotline (800-505-RADON).

VIOLATION

In January 2019, AAFB received notice that the water disinfection chemical used by the water treatment system to treat water at AAFB Northwest Field Annex is not approved by the Guam Environmental Protection Agency, for reasons that the product, "Pool Time Chlorination Tabs (3-in-1 Formula)" is not approved for use in potable water systems. AAFB immediately removed all water treated with the product. At no time was the water deemed unsafe to drink; Guam EPA and AAFB concluded that the use of the tabs would not result in any adverse health effects. A Public Notification was released on 15 January 2019. The chlorination issue has been resolved and the Guam EPA has returned the AAFB Water System to compliance.

Lead in Drinking Water

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. Bioenvironmental Engineering at Andersen Air Force Base 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 2 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, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

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 Disinfection Level (MRDL): The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for the 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 disinfectants to control microbial contamination.

ABBREVIATIONS:

n/a: not applicable
nd: not detected (contaminant levels are below detection capabilities)
ne: not established
ppb: parts per billion or micrograms per liter (µg/L)
ppm: parts per million or milligrams per liter (mg/L)
pCi/L: picoCuries per liter

Note 1: Although there is no collective MCLG for this group, there are individual MCLGs for some of the individual contaminants. **HAA:** monochloroacetic acid (70ppb), dichloroacetic acid (zero), tri-chloroacetic acid (20 ppb) **THM:** bromodichloromethane (zero), bromoform (zero), dibromo-chloromethane (60 ppb).

Note 2: Chlorine result is based on the highest calculated Running Annual Average (RAA).

Note 3: The combined radium (total radium-226 and radium-228, pCi/L) MCL and MCLG are 5 and 0 respectively.

Note 4: The AL is exceeded if the concentration of more than 10 percent of tap water samples collected (the "90th percentile" level) is greater than 1.3 ppm for copper and 15 ppb for lead.