

2016 Annual Water Quality Report (for water quality in 2015)



U.S. ARMY GARRISON—HAWAII

Aliamanu Military Reservation



The Safe Drinking Water Act requires all community water systems to provide an annual Consumer Confidence Report (CCR) to their customers. CCRs provide drinking water quality information, including information on the origin of the drinking water and any detected contaminants.

U.S. Army Garrison-Hawaii is providing this report as a service to the community in conjunction with this requirement.

How does the CCR work?

An essential part of the CCR is the water quality table on page 3 showing the level of each substance detected during 2015. There are three columns on the table which should be given special attention: the maximum contaminant level (MCL), the level detected, and whether a violation

occurred. The Environmental Protection Agency (EPA) set MCLs for a number of substances which may be found in drinking water. All of the substances listed in the table are below the MCLs set by the EPA. U.S. Army Garrison-Hawaii continues to provide some of the cleanest and safest drinking water available in Hawaii.

What is the source of the water?

Drinking water for Aliamanu Military Reservation (AMR) is supplied by the Pearl Harbor Water System. The drinking water is obtained from three ground water sources: Waiawa Shaft, Red Hill Tunnel, and Halawa Shaft.

The ground water filters naturally as it travels from the surface to an aquifer located below the ground. Once the water is pumped back up from the aquifer, it is chlorinated and fluoridated. Both additives are required under Army standards. Chlorine is used as a disinfectant and fluoride is used to promote strong teeth in children.

The water is then piped into the distribution system. The susceptibility of the AMR water system to contamination has been evaluated under the Hawaii Source Water Assessment Program. The results of the Assessment, dated March 2004, are available for review by contacting the Directorate of Public Works, Environmental Division at (808) 656-7221.

In order to ensure that tap water is safe to drink, the 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 the contaminants in bottled water, which must provide the same protection for public health.

Red Hill Information:

In January 2014, a fuel release from Tank #5 at the Red Hill Bulk Fuel Storage Facility was reported. As a proactive measure, the Navy has been conducting testing at the Red Hill Shaft above

what is required by regulation for several years. The table on page 4 shows the levels of concentrations of detected contaminants at Red Hill Shaft for 2015. All concentrations are below applicable EPA and State regulatory and action levels and the drinking water is safe. The Navy will continue to conduct this voluntary testing and data will be included in future Water Quality Reports.

THE FOLLOWING PAGES WILL DESCRIBE THE CONTAMINANTS AND THE RESULTS OF THE DRINKING WATER SAMPLING THAT OCCURRED IN 2015.

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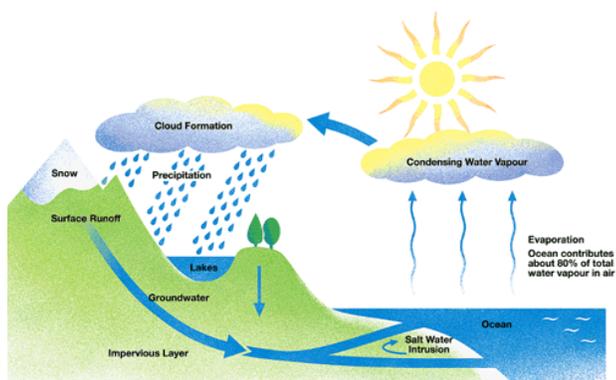
Where Do Potential Ground Water Quality Problems Come From?

As water percolates through the ground, it dissolves naturally-occurring minerals. Substances resulting from the presence of

animal or human activity can also be introduced to the ground water or the distribution system. 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 Safe Drinking Water Hotline (1-800-426-4791).

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 as indicated in the contaminant summary below.



<http://www.sawater.com.au/SAWater/Education/OurWaterSystems/The+Water+Cycle.htm>

Contaminant Categories

Microbial contaminants, such as viruses and bacteria, that 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

Lead Facts

Note: 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. The Aliamanu 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 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>.

Important Health Information

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons 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. EPA/Center for Disease Control 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). Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses.) You can do this by posting this notice in a public place or distributing copies by hand or mail.

Water Quality Table for Aliamanu Military Reservation

The tables below list all of the drinking water contaminants detected during calendar year 2015 unless otherwise indicated. Results of samples in the tables below identify low levels of contaminants detected below EPA limits. The presence of these contaminants does not necessarily indicate that the water poses a health risk.

Contaminants in the Distribution System (units of measurement)	MCL	MCLG	Level Found	Sample Date	Likely Source of Contaminant	Violation
Microbial						
Total Coliform	Two or more positive samples / month	0	1 positive sample ¹	12/8/2015	Naturally present in the environment	NO

Contaminants in the Distribution System (units of measurement)	MCL	MCLG	Average Level Detected	Range of Detection (multiple samples only)	Likely Source of Contaminant	Violation
Inorganic						
Copper (ppm) ²	AL=1.3	1.3	0.06 ³ (2014)	0 ⁴ (2014)	Corrosion of household plumbing systems; erosion of natural deposits	NO
Fluoride ⁵ (ppm)	4	4	0.29	0.08-0.59	Water additive, which promotes strong teeth	NO
Disinfectant & Disinfection Byproducts						
Residual Chlorine (ppm)	MRDL=4	MRDLG=4	0.60	0.24-1.49	Water additive used to control microbes	NO
Total Trihalomethanes (ppb)	80	N/A	3.2	2.0-4.4	By-product of drinking water chlorination	NO

Contaminants in the Source Water (units of measurement)	MCL	MCLG	Highest Level Detected	Range of Detection (multiple samples only)	Likely Source of Contaminant	Violation
Inorganic						
Chromium (Total) (ppb)	100	100	2.2	ND-2.2 (2014)	Naturally-occurring	NO
Fluoride (ppm)	4	4	0.62	ND-0.62	Erosion of natural deposits; water additive which promotes strong teeth	NO
Nitrate (ppm)	10	10	2.1	0.55-2.1	Runoff from fertilizer use; erosion of natural deposits	NO
Unregulated⁶						
1,4-dioxane (ppb)	N/A	N/A	0.35	ND-0.35 (2013)	Synthetic industrial chemical	N/A
Chlorate (ppb)	N/A	N/A	37	ND-37 (2013)	Disinfection byproduct	N/A
Chromium-6 (ppb)	100	100	2.3	0.93-2.3 (2013)	Naturally-occurring	N/A
Dieldrin (ppb)	N/A	N/A	0.02	ND-0.02 (2014)	Residue of banned insecticide	N/A
Sodium (ppm)	N/A	N/A	55	26-55	Naturally-occurring	N/A
Strontium (ppb)	N/A	N/A	260	40-260 (2013)	Naturally-occurring	N/A
Sulfate (ppm)	N/A	N/A	46	ND-46	Naturally-occurring	N/A
Vanadium (ppb)	N/A	N/A	32	14-32	Naturally-occurring	N/A

Red Hill Shaft-2015 Voluntary Testing

Contaminants (units)	MCL (Allowed)	MCLG (Goal)	DOH EAL	Highest Level Detected	Range of Detection	Violation
Lead (ppb)	AL = 15	0	5.6	0.253	ND-0.253	NO
Toluene (ppb)	1000	1000	40	0.99 Tb	ND-0.99 Tb	NO
TPH-d (ppb)	N/A	N/A	100	17 J	ND-17 J	NO

Table Definitions, Abbreviations, and Notes

Table Definitions:

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

B - Analyte was present in the associated method blank.

DOH EAL - Department of Health Environmental Action Level. Risk-based levels published by DOH for compounds that do not have promulgated MCL values.

HD - The chromatographic pattern was inconsistent with the profile of the reference fuel standard.

J - Analyte was detected at a concentration below the limit of quantitation and above the detection limit. Reported value is estimated.

MCL - Maximum Contaminant Level - 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.

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 disinfectants to control microbial contamination.

Tb - Analyte was present in the associated trip blank.

TPH-d - Total Petroleum Hydrocarbons as Diesel.

Table Abbreviations:

pCi/L - picocuries per liter.

ppb - parts per billion or micrograms per liter (µg/L)

ppm - parts per million or milligrams per liter (mg/L)

ppt - parts per trillion or nanograms per liter (ng/L)

ND - not detected at testing limits.

N/A - not applicable.

Table Notes:

- All repeat samples were negative.
- The state and EPA require water systems to monitor certain contaminants less than once per year because the concentrations

are not expected to vary significantly from year to year. The date of the last sample collected is as indicated.

- In accordance with EPA and State regulations, this number represents the 90th percentile value of the samples collected.
- The number of samples above the action level.
- Fluoride is added to the water system to help promote healthy teeth in children. The target level is 0.6-0.8 ppm.
- The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

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Summary of Results

Many different water samples are collected and analyzed for various contaminants throughout the year. The number and frequency of sampling events depends upon federal and state requirements. The water quality table on page 3 lists all of the drinking water contaminants detected during calendar year 2015. All of the substances listed in the table are below the MCLs set by the EPA. Contaminants not present in the drinking water or analyzed below detection limits are not included in the table. Remember, the presence of contaminants does not necessarily indicate that the water poses a health risk.

This CCR is posted on the web at:

<http://www.garrison.hawaii.army.mil/sustainability/Documents/DW/AMR.pdf>

THE DIRECTORATE OF PUBLIC WORKS DOES NOT HAVE ROUTINE PUBLIC MEETINGS ABOUT THE WATER SYSTEM. IF YOU HAVE QUESTIONS REGARDING THE WATER SYSTEM OR WATER QUALITY PLEASE CONTACT THE DPW ENVIRONMENTAL DIVISION, SAFE DRINKING WATER PROGRAM AT (808) 656-7221.