

# 2012 Annual Water Quality Report (for water quality in 2011)



U. S. A R M Y G A R R I S O N — H A W A I I

## Tripler Army Medical Center (TAMC)



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 2011. 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?** The Tripler Army Medical Center (TAMC) Water Treatment Plant (WTP) is located south of the installation boundary. Two Army-owned 16-inch basal-aquifer wells located at the WTP, extend to a depth of 286 feet. Two electrically powered pumps operate alternately to pump water out of the wells. The water is treated with chlorine prior to entering the distribution system.

The distribution system is broken down into two main loops: the upper loop and the lower loop. Each loop is served by its own 500,000-gallon storage tank. The lower loop serves water to the hospital, the Veterans Administration Facility and their supporting facilities. The upper loop serves water to the housing areas. Once water enters the distribution system, its first stop is the lower 500,000 gallon storage tank, where the water is treated with fluoride. The water from

the lower tank goes to the lower loop and is pumped to the upper 500,000 gallon storage tank. From the upper storage tank, the water flows to each housing facility on the installation.

Chlorine and fluoride are added to the water as required under Army Standards. Chlorine is used as a disinfectant and fluoride is used to promote strong teeth in children.

The susceptibility of the Tripler Army Medical Center 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) 656-3104.

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.

### Special points of interest:

- A ROUTINE SANITARY SURVEY WAS COMPLETED BY THE STATE OF HAWAII, DEPARTMENT OF HEALTH LAST YEAR. CORRECTIONS WERE COMPLETED THIS YEAR. SEE PAGE 4 FOR MORE DETAILS
- THE FOLLOWING PAGES WILL DESCRIBE THE CONTAMINANTS AND THE RESULTS OF THE DRINKING WATER SAMPLING THAT OCCURRED IN 2011.

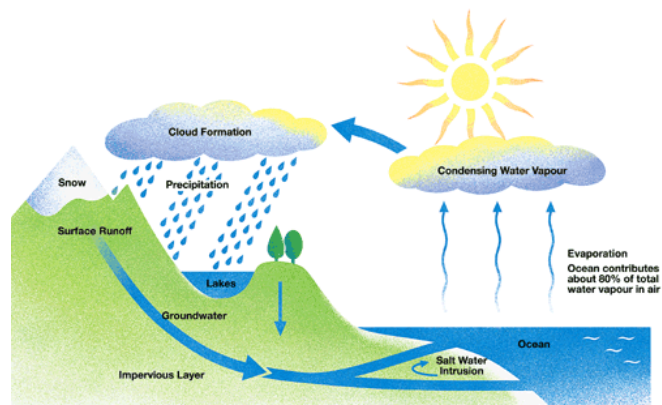
### Inside this Report

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## Where Do Potential Ground Water Quality Problems Come From?

As water percolates through the ground, it dissolves naturally-occurring minerals.



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

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 Drink-

ing 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.

## 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 agricul-

ture, 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

## 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.

## 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 TAMC 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>.

# Water Quality Table for Tripler Army Medical Center

The tables below list all of the drinking water contaminants detected during calendar year 2011 unless otherwise indicated. 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    | Average Level Detected | Range of Detection (multiple samples) | Likely Source of Contaminant                | Violation |
|----------------------------------------------------------------|--------|---------|------------------------|---------------------------------------|---------------------------------------------|-----------|
| <b>Inorganic</b>                                               |        |         |                        |                                       |                                             |           |
| Fluoride <sup>1</sup> (ppm)                                    | 4      | 4       | 0.77                   | 0.70-0.85                             | Water additive, which promotes strong teeth | NO        |
| <b>Organic</b>                                                 |        |         |                        |                                       |                                             |           |
| Residual Chlorine (ppm)                                        | MRDL=4 | MRDLG=4 | 0.58                   | 0.02-0.96                             | Water additive used to control microbes.    | NO        |
| Total Trihalomethanes <sup>2</sup> (ppb)                       | 80     | 0       | 2.3 (2009)             | No Range (2009)                       | By-product of drinking water disinfection   | NO        |

| Contaminants in the Source Water (units of measurement)                                                                     | MCL | MCLG | Average Level Detected | Range of Detection (multiple samples) | Likely Source of Contaminant           | Violation |
|-----------------------------------------------------------------------------------------------------------------------------|-----|------|------------------------|---------------------------------------|----------------------------------------|-----------|
| <b>Inorganic</b>                                                                                                            |     |      |                        |                                       |                                        |           |
| Nitrate as Nitrogen (ppm)                                                                                                   | 10  | 10   | 0.44                   | N/A                                   | Runoff from fertilizer use             | NO        |
| Chromium <sup>2</sup> (ppb)                                                                                                 | 100 | 100  | 3* (2009)              | 2-3 (2009)                            | Erosion of natural deposits            | NO        |
| <b>Radionuclides<sup>2</sup> - data was collected during four consecutive quarters beginning in 2006 and ending in 2007</b> |     |      |                        |                                       |                                        |           |
| Gross Beta <sup>3</sup> (pCi/L)                                                                                             | 50  | 0    | ND                     | ND – 4.7                              | Decay of natural and man-made deposits | NO        |
| <b>Unregulated<sup>4</sup></b>                                                                                              |     |      |                        |                                       |                                        |           |
| Sodium <sup>2</sup> (ppm)                                                                                                   | N/A | N/A  | 43* (2009)             | No Range (2009)                       | Naturally occurs                       | N/A       |
| Sulfate (ppm)                                                                                                               | N/A | N/A  | 12                     | N/A                                   | Naturally occurs, affects taste        | N/A       |

## Table Definitions, Abbreviations, and Notes

### Table Definitions:

**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.

### Table Abbreviations:

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

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

N/A - not applicable

ND - not detected

### Table Notes:

1. Fluoride is added to the water system to help promote healthy teeth in children. The target level is 0.6-0.8.
2. 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.

3. The MCL for beta particles is 4mrem/year. EPA considers 50pCi/L to be the level of concern for beta particles.
4. 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.

\* Represents the highest detected level and not the average since these samples were collected on the same date, but from more than one sampling location.

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 MICHELLE LYMAN, DPW ENVIRONMENTAL DIVISION, AT (808) 656-3104.

## 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 2011. 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 this table. Remember, the presence of contaminants does not necessarily indicate that the water poses a health risk.

**United States Army  
Garrison – Hawaii**  
DPW Environmental Division  
(IMPC-HI-PWE)  
947 Wright Avenue, Wheeler  
Army Airfield  
Schofield Barracks, HI 96857  
(808) 656-3104

**Tripler Army  
Medical Center**  
Preventive Medicine  
1 Jarrett White Road  
Honolulu, Hawaii 96859-5000  
(808) 433-9938

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This CCR is posted on the web at: <http://www.garrison.hawaii.army.mil/sustainability/DrinkingWater.aspx>

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## Sanitary Survey

On May 10, 2011, the State of Hawaii, Department of Health conducted a routine sanitary survey of the Tripler Army Medical Center Water System. A sanitary survey reviews the water system's facilities, operation and maintenance practices, and records to determine if a water system is operating in an effective and safe manner. There were 5 significant deficiencies noted during the survey. All deficiencies were corrected in 2011 except for two significant deficiencies, which include:

- Installing new access hatch covers for Building 242 Storage Tank and Building 600 Storage Tank. The original hatch covers did not have turned down sides over the curb according to American Water Works Association (AWWA) recommendations.

New access hatch covers which meet AWWA recommendations were installed in January 2012.

Note: A Significant Deficiency is a deficiency that may cause, or have the potential to cause the introduction of contamination to finished water

## Water Conservation

As the population in Hawaii grows, more and more freshwater is used for everyday activities like drinking, taking showers, washing clothes, etc. Help us conserve the island's fresh water resource for future generations by following some of these helpful tips from the EPA.

### Shower Power!

**Challenge:** A full bath tub requires about 70 gallons of water, while taking a five-minute shower uses 10 to 25 gallons.

**Solution:** If you take a bath, stopper the drain immediately and adjust the temperature as you fill the tub.

To see other helpful tips, visit the EPA's website at

[http://www.epa.gov/watersense/our\\_water/be\\_the\\_change.html#tabs-1](http://www.epa.gov/watersense/our_water/be_the_change.html#tabs-1).