2012 Edwards AFB Contest Winners
Eve Maramba and Griey Grier, Branch Elementary School

2012 Edwards AFB Consumer Confidence Report

2012 Consumer Confidence Report (CCR)

Annual Water Quality Report
Edwards AFB, CA
Main Base

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

Delivering A Clean and Safe Water Supply

This is an annual report on the water quality delivered by Edwards Air Force Base (EAFB). The Bioenvironmental Engineering Flight tests the drinking water quality for many constituents as required by state and federal regulations. This report shows the results of our monitoring for the period of 1 January – 31 December 2012.

We are pleased to deliver our 2012 Consumer Confidence Report, which shows your water meets or exceeds all of the United States Environmental Protection Agency (EPA) health standards and all drinking water requirements outlined by USAF, state, and federal standards.

The Journey of Your Water

The EAFB Main Base Drinking Water System draws water from two sources:

1. On-base ground water wells.
2. Surface water supplied by the Antelope Valley East Kern (AVEK) Water Agency.

We have nine on-base groundwater wells supplying the EAFB Main Base Drinking Water System. The water from these wells travels to a booster station where it is chlorinated. We add chlorine to maintain microbial control as the water travels through our system. The water is then pumped into the base distribution system.

In addition to the groundwater wells, the EAFB Main Base Drinking Water system receives water from the Antelope Valley East Kern (AVEK) Water Agency through a water main to blend with the well water to ensure the supply meets all drinking water requirements outlined by USAF, state and federal standards. The water we receive from the AVEK Water Agency is supplied in finished drinking water quality form (this water line serves other AVEK customers such as the city of Boron). The AVEK Water Agency supply is primarily from the California Aqueduct, a surface water source. As a water wholesaler, the AVEK Water Agency published its 2012 Water Quality Report earlier this year, which is located at http://www.avek.org/quality.html

WATER SAMPLING

SrA Tamondong and SrA Travis from Bioenvironmental Engineering sample the water system to ensure the highest quality

TEAMWORK

Civil Engineering and Bioenvironmental Engineering work hand in hand to bring you safe and quality water

Sources of Drinking Water

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the USEPA's 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.

Contaminants that may be present in source water include:

- *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 resulting from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- *Pesticides and herbicides* that may come from a variety of sources such as agriculture, urban stormwater runoff, and septic systems.
- *Organic chemical contaminants,* including synthetic and volatile organic chemicals that are byproducts 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 resulting from oil and gas production and mining activities.

Water Monitoring Results Summary

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Department of Public Health (Department) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

Tables 1 – 5 list all of the primary drinking water standard contaminants that were detected during the most recent sampling for the constituent. The presence of these contaminants in the water does not necessarily indicate that the water poses a health risk. The California Department of Public Health Services requires us to monitor certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year. Some of the data, though representative of the water quality, is more than one-year old. **NOTE: Terms and abbreviations used in this report are located on the final page of this report.**

TABLE 1

DETECTION OF COLIFORM BACTERIA

1 JAN – 31 DEC 2012

Parameter and Units of Measure	Highest No. of Detection	MCL[1]	PHG (MCLG)	Typical source of Bacteria
Coliform, Total	0	No more than 1 positive monthly sample	0	Naturally present in the environment
Coliform, Fecal or *E.coli*	0	A routine sample and a repeat sample are total coliform positive, and one of these is also fecal coliform or *E. coli* positive	0	Human and animal fecal waste

TABLE 2

LEAD AND COPPER

SEPTEMBER 2012

Parameter and Units of Measure	Samples Collected	90th% Level Found	Sites Exceeding AL	AL	PHG (MCLG)	Typical Source of Contaminant
Lead (ppm)	30	0.00116	0	15	0.2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (ppm)	30	0.546	0	1.3	0.3	

TABLE 3

SODIUM AND HARDNESS

1 JAN – 31 DEC 2012

Parameter and Units of Measure	Highest Average Level Detected	Range of Levels Detected	MCL	PHG (MCLG)	Major Sources in Drinking Water
Hardness (ppm)	84.5	48 - 112	None	n/a	It is the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.
Sodium	68.43	46.9 - 146	None	n/a	Released naturally through mineral deposits

TABLE 4

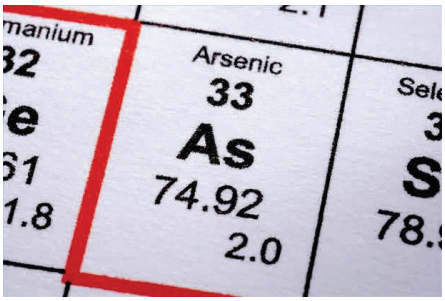
PRIMARY DRINKING WATER STANDARD

1 JAN – 31 DEC 2012

Parameter and Units of Measure	Highest Average Level Detected	Range of Levels Detected	MCL	PHG (MCLG)	Major Sources in Drinking Water
Arsenic (ppb)	4.06	ND – 9.83	10	0.004	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppb)	18.91	ND – 44.6	1000	1000	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Gross Alpha (pCi/l)	9.56	3.63 - 9.56	15	0	Erosion of Natural Deposits
Uranium (pCi/L)	9.08	N/A	20	0.43	
Fluoride (ppm)	0.63	ND - 0.63	2.0	1.0	Erosion of natural deposits; water additive; discharge from fertilizer and aluminum plants
Nitrate (as NO_3) (ppm)	0.288	ND - 0.288	45	45	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Total Trihalomethanes (ppb)	56.2	ND - 117	80	n/a	By-product of drinking water disinfection
Total Haloacetic Acids (ppb)	11.6	ND – 36.3	60	n/a	
Selenium	0.3025	ND – 1.3	50	30	Discharge from petroleum, glass, and metal refineries; erosion of natural deposits; discharge from mines and chemical manufacturers; runoff from livestock lots (feed additive)
Perchlorates (ppb)	ND	ND	6	6	Perchlorate is an inorganic chemical used in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries.
Aluminum (ppb)	22.98	ND – 78.3	1000	600	Erosion of natural deposits; residue from some surface water treatment processes

TABLE 5 SECONDARY DRINKING WATER STANDARD 1 JAN – 31 DEC 2012					
Parameter and Units of Measure	**Highest Average Level Detected**	**Range of Levels Detected**	**MCL**	**PHG (MCLG)**	**Major Sources in Drinking Water**
Sulfate (ppm)	74.68	51.6 - 168	500	n/a	Runoff/leaching from natural deposits; industrial wastes
Chloride (ppm)	29.27	4.95 – 89.8	500	n/a	
Specific Conductance (µS/cm)	472.25	341 - 834	1600	n/a	Substances that form ions when in water; seawater influence
Total Dissolved Solids (ppm)	296.13	217 - 515	1000	n/a	Runoff/leaching from natural deposits
Color (units)	12.875	1 - 58	15	n/a	Naturally-occurring organic materials

Arsenic



The water in the EAFB drinking-water system is a blend of EAFB well water and AVEK water. This method is referred to as arsenic blending and was approved by the California Department of Public Health (CDPH) in January 2006. We do this to ensure compliance with the EPA-established standard of 10 ppb for arsenic.

While your drinking water meets the federal and state standard for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Source Water Assessment

The Civil Engineering (CE) Department at EAFB produced the 2003 Source Water Assessment, completed 18 June 2003, and it is on file in the CE office (661-277-5000). Possible contaminating activities for the wells surveyed in this assessment include nearby abandoned wells, storm drainage discharge, above ground water storage tanks, and nearby roads. The health risks from these activities are diminished through weekly monitoring of the potable water system. AVEK also provides a Source Water Assessment for the water it distributes. This is a new state requirement and lists the Physical Barrier Effectiveness, Inventory of Possible Contaminating Activities, Vulnerability Ranking, Assessment Map, Assessment Summary, and Public Notification procedures. The AVEK Source Water Assessment is located at http://www.avek.org/quality.html.

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. USEPA/Centers for Disease Control (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).

For more information about this report or when town hall meetings are announced, contact:
412th Aerospace Medicine Squadron/Bioenvironmental Engineering Flight (661-277-3272)
or 412th Test Wing/Public Affairs (661-277-8707)
http://water.epa.gov/drink/index.cfm

TERMS USED IN THIS REPORT	
Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency. **Maximum Contaminant Level (MCL)**: The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water. **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 are set by the U.S. Environmental Protection Agency (USEPA). **ND**: not detectable at testing limit **ppm**: parts per million or milligrams per liter (mg/L) **ppb**: parts per billion or micrograms per liter (ug/L) **pCi/L**: picocuries per liter (a measure of radiation) **Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.	**Primary Drinking Water Standards (PDWS)**: MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements. **Secondary Drinking Water Standards (SDWS)**: MCLs for contaminants that affect taste, odor, or appearance of the drinking water. Contaminants with SDWSs do not affect the health at the MCL levels. **90th Percentile Level**: The level of lead and copper at which 90% of drinking water samples taken in a system are below. This level is compared with the MCL for lead and copper to determine system compliance. **Level Detected:** Laboratory analytical result for a contaminant; this value is evaluated against an MCL or AL to determine compliance **Range:** The range of the highest and lowest analytical values of a reported contaminant.