



# CONSUMER CONFIDENCE REPORT

1 Jan 11 – 31 Dec 11  
Aviano Air Base, Italy

## Introduction

This is the annual report on the quality of drinking water delivered by Aviano Air Base (AB). Under the “Consumer Confidence Reporting Rule” of the Federal Safe Drinking Water Act (SDWA), community water systems are required to report this water quality information to the consuming public. This report presents information on the source of our water, its chemical/biological makeup and the health risks associated with any contaminants. It also contains extensive technical language required by the Environmental Protection Agency (EPA), which is designed to further public understanding about public water systems and potential hazards across the country. Air Force Instruction, 48-144, *Safe Drinking Water Surveillance Program*, requires overseas installations to also prepare a water quality report that can be modeled after the CCR. This year’s report covers results from drinking water surveillance conducted during calendar year 2011.

Sources of drinking 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: (A) Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife. (B) Inorganic contaminants, such as salts and metals, which can be naturally-occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming. (C) Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses. (D) 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 storm water runoff, and septic systems. (E) Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the EPA prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. In addition, Italian Final Governing Standards (IFGS) prescribe limits on contaminants, some of which may be more stringent than those set by the EPA. At Aviano, we are required to analyze for and meet the most stringent requirements of both the EPA and the IFGS. The Food and Drug Administration regulations establish limits for contaminants in bottled water, which must provide the same protection for public health. Drinking water, including bottled water, may reasonably be expected to contain 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) or by visiting the following website <http://www.epa.gov/safewater/index.html>.

**We continually monitor the drinking water for contaminants of concern. Our water is safe to drink.** However, as with any water supply, 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. This report is also available in Italian.

## **Where does my on base water come from?**

Aviano AB's drinking water in 2011 was supplied through six wells: Wells # 1, 2, 3, 4, Z2, and Z3. These six wells provided all the water for Aviano AB Areas A, C, D, E, and F/G.

Groundwater, not under the influence of surface water, is the primary source of water for each well system. The water from these on-base wells is disinfected with chlorine at the well head before being distributed to the respective base areas. Additionally, wells 2, 3, Z2, and Z3 also have granular activated carbon treatment systems installed to remove potential organic chemicals.

## Additional Acronyms/Terms/Concepts/Definitions Used In This Report

Below is a listing of acronyms and terms used in this Consumer Confidence Report:

AL	Action Level
CCR	Consumer Confidence Report
DoD produced water	Any water used for drinking where the raw water is extracted by DoD
EPA	Environmental Protection Agency
GAC	Granular Activated Carbon
IFGS	Italian Final Governing Standards, a compilation of US EPA and Italia/EU environmental standards
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.
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. Values are published in Chapter 3 of the Final Governing Standards-Italy.
MDL	Minimum Detection Limit. This is the lowest concentration of a contaminant that an analytical method is able to detect in a water sample
mg/L	milligrams per liter; a unit of measure equivalent to parts per million (ppm)
ppm	parts per million; a unit of measure equivalent to a single penny in \$10,000
Range	The range of the highest and lowest analytical values of a reported contaminant. For example, the range of reported analytical detections for an unregulated contaminant may be 10.1 mg/L (lowest value) to 13.4 mg/L (highest value). EPA requires this range to be reported.
SDWA	Safe Drinking Water Act; Federal law which sets forth drinking water regulations
90th Percentile Rule	The 90th percentile rule is a mathematical calculation that determines what sample value represents the 90th percentile. For example, 10 samples are collected, the highest sample value would be thrown out and the next highest would represent the 90th percentile. This 90th percentile is then compared to the AL to evaluate the distribution system materials.

## Monitoring Our Drinking Water

Aviano AB's drinking water is managed by two base agencies: The 31st Civil Engineering Squadron Utilities section maintains/operates the drinking water supply and distribution system. The 31st Aerospace Medicine Squadron Bioenvironmental Engineering (BE) Flight monitors the quality of the drinking water provided to on-base consumers and addresses any health related concerns.

At Aviano AB, BE monitors the contaminant groups in the following table using EPA-certified laboratories and EPA approved methods. Column 2 of the table specifies the monitoring frequency for these contaminant groups. To ensure your drinking water is of the highest quality, BE monitors for microbiological contaminants, lead and copper, inorganic contaminants, synthetic organic contaminants, volatile organic contaminants, radionuclides, asbestos and total trihalomethanes.

**Analyte Groups and Monitoring Frequency Table**

Analyte/Contaminant Group	Monitoring Frequency
Microbiological contaminants	Weekly
Lead	Semiannually*
Copper	Semiannually*
Inorganic Contaminants	Annually
Synthetic Organic Contaminants	Four quarters over a 3 year period during the most likely period of their presence.
Volatile Organic Contaminants (VOCs)	Quarterly*
Radionuclides (Gross Alpha Activity)	Sampled for four consecutive quarters every 4 years
Asbestos	Once every 9 years
Total Trihalomethane (TTHM) Potential	Annually
Desethylatrazine (DEA)	Once every 3 years
Nitrite/Nitrate	Annually

\*Note: The monitoring frequency may be reduced annually after 1 year of no detection

### Compliance with the National Primary Drinking Water Regulations

The contaminants presented in Table 1-6 are those that were found in concentrations greater than the laboratory Minimum Detection Limit (MDL). The monitoring results include the highest detected level along with the range of detected values. The tables also show the MCL and/or AL as published in the IFGS. **Note:** The tables only show contaminants that were detected in the water. Aviano monitors for dozens of additional regulated contaminants, but laboratory analysis did not detect them and they are not reported here. For information on the full suite of chemicals analyzed, contact BE.

## Results Tables - Detected Contaminants

The following pages present results of parameters detected in our water systems  
1 Jan 11 – 31 Dec 11

<b>Table 1. Pesticides</b>								
<b>Contaminant</b>	<b>Highest Level</b>	<b>Range of Detected Levels</b>	<b>IFGS Limit</b>	<b>Units</b>	<b>MCL</b>	<b>MCLG</b>	<b>Unit of Measure</b>	<b>Source of Constituent</b>
Desethylatrazine (DEA)	0.1	<0.025-0.1	0.1	µg/L	N/A	N/A	µg/L	Breakdown product from herbicide used on row crops

**Notes:**

DEA was detected at Well 1, 3, and 4, at concentrations lower than IFGS limit. DEA was detected at Well 2 at the IFGS limit. EPA does not require analysis for DEA. However, according to the EPA, DEA is considered to be comparable in toxicity to atrazine, which has an MCL and MCLG of 0.3 µg/L.

**What happened?**

The DEA we are detecting is most likely the breakdown product of atrazine, a component of herbicides used on row crops used historically in the surrounding agricultural area. Atrazine is not used on Aviano AB.

**What is being done?**

Aviano AB has installed granular activated charcoal (GAC) treatment towers at wells 2/3/Z2, Z3 to lower the levels of DEA in our water. We have incorporated DEA quarterly sampling at Wells 1 through 4 to monitor the levels.

<b>Table 2. Other Organic Parameters</b>	
<b>Note:</b> All other organic compounds not listed above (such as: benzene, styrene, toluene, trichloroethylene, vinyl chloride, etc) were monitored in 2011 and all levels were below both the EPA MCL and the IFGS.	

Table 3. Inorganic Contaminants									
Contaminant	EPA MCLG	EPA MCL	Highest Level	Range	Units	Frequency	FGS Limit	Exceeded Standard?	Likely Source of Contamination
Nitrate	10	10	5.4	4.5-5.4	mg/L	Quarterly	10	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite	1	1	0.19	<0.03-0.19	mg/L	Quarterly	0.15	Yes	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Total Nitrite and Nitrate	10	10	6.0	4.9-6.0	mg/L	Annually	10	No	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Table 4. Other Inorganic Parameters
<p><b>Notes:</b> Nitrite was detected at Well 2 at concentrations higher than IFGS limit. However, follow-up sampling showed levels of Nitrite below the MDL.</p> <p><b>What happened?</b> The Nitrite we are detecting is most likely from increased runoff from fertilizer used on row crops, which is used historically in the surrounding agricultural area.</p> <p><b>What is being done?</b> Aviano AB has a granular activated charcoal (GAC) treatment tower at Well 2 to lower the levels of contaminants in our water. The GAC filtration at Well 2 is scheduled to be replaced in 2012 to help prevent future exceedances. All other inorganic compounds not listed above (such as: antimony, barium, beryllium, cadmium, chromium, cyanide, fluoride, mercury, nickel, selenium, thallium, etc) were below MCL as required by both the EPA and the IFGS for all wells. Asbestos was monitored in 2011 for all wells, per sampling requirement of every 9 years; results were below MDL.</p>

<b>Table 5. Lead and Copper Rule</b>						
<b>Contaminant</b>	<b>Distribution System</b>	<b>90th percentile</b>	<b>Units</b>	<b>Sampling date</b>	<b>FGS Action Level</b>	<b>Exceeded standard?</b>
Lead	Area A1/A2 (19 faucets sampled)	0.019	mg/L	Apr 11 & Sept 11	0.015	Yes*
Copper	Area A1/A2 (19 faucets sampled)	0.052	mg/L	Apr 11 & Sept 11	1.3	No
Lead	Area F/G (21 faucets sampled)	0.006	mg/L	Apr 11 & Sept 11	0.015	No
Copper	Area F/G (21 faucets sampled)	0.1	mg/L	Apr 11 & Sept 11	1.3	No
Lead	Area D/E (5 faucets sampled)	0.012	mg/L	Apr 11 & Sept 11	0.015	No
Copper	Area D/E (5 faucets sampled)	0.85	mg/L	Apr 11 & Sept 11	1.3	No
Lead	Area C (5 faucets sampled)	0.015	mg/L	Apr 11 & Sept 11	0.015	No
Copper	Area C (5 faucets sampled)	0.036	mg/L	Apr 11 & Sept 11	1.3	No
* Lead in drinking water can be linked to the use of lead parts, pipes or solder in service lines. The natural corrosivity of the water causes metals to leach from the service lines when left sitting in the pipe for greater than six hours. 7 of 50 samples on the base exceeded the AL for lead; however, no additional health risk is expected. Repeat sampling shows flushing water for 60 seconds reduced levels of lead in drinking water to acceptable levels. The lead exceedance has been identified to CES.						

## **What is Being Done To Ensure Our Water Continues to Meet Standards?**

### **Water Treatment**

The use of chlorine to disinfect the water and use of GAC treatment ensures our water is potable and meets the standards. Well 2 (Areas F/G) has three GAC treatment towers; Well 3 (Areas D/E) has two GAC treatment towers; Well Z2 (Areas F/G) has two GAC treatment towers. Well 1 exceeded the AL for lead and 31 CES is designing a GAC treatment process to remedy the situation. Well 2 exceeded the MCL for Nitrite and 31 CES is programming for the replacement of the GAC filter media. The other treatment processes are functioning properly and sampling results show they effectively reduce contaminants of concern in the water to below applicable MCLs.

**Public Participation**

Aviano AB holds a quarterly Environmental, Safety and Occupational Health Working Group where drinking water issues and concerns are discussed. Personnel can also contact BE directly for drinking water quality information.

**Contact Person**

This CCR was prepared by the BE office. Public queries and additional information can also be obtained by contacting the Aviano Public Affairs (31 FW/PA) at 632-7555. Please contact BE by phone, Commercial: 0434-30-5532 or DSN: 632-5532, if you have any questions.