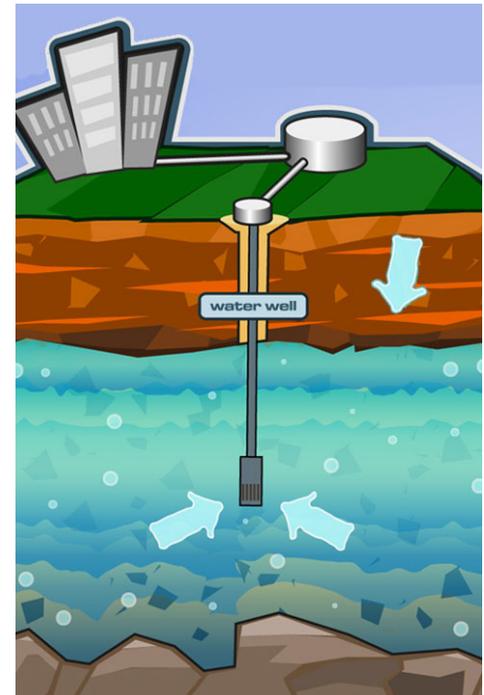


# 2013 Drinking Water Quality Report

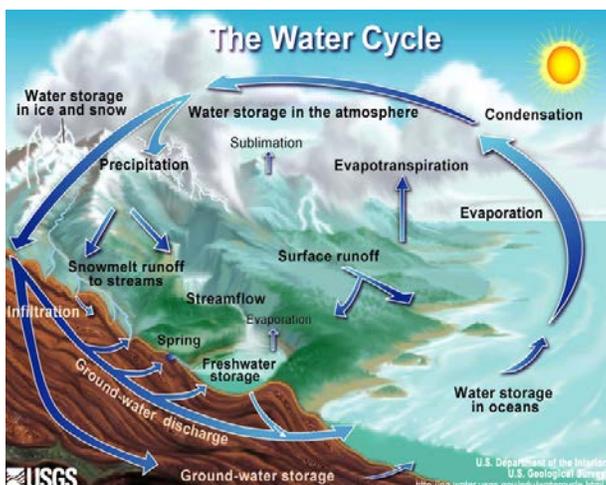
## Special points of interest:

- Where our drinking water comes from
- Who ensures our drinking water is safe
- What standards are used for drinking water compliance
- Potential contamination sources
- The Earth's water cycle
- Contact names and numbers for questions or concerns

The 65th Medical Operations Squadron, Bioenvironmental Engineering Flight (BE), informs consumers annually about the quality of their drinking water from the previous year. Lajes Field has seven groundwater wells, and multiple storage reservoirs which supply our potable water system. Four wells extract water from the same deep aquifer which meets the demand requirements for the entire installation. The Civil Engineering Utilities shop, along with BE, ensure compliance with the Final Governing Standards for Portugal (FGS-P). In order to ensure the water is safe to drink, this standard limits the amount of certain contaminants in water. 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 for infections. These people should seek advice about drinking water from their healthcare providers. The Portuguese Environmental Final Governing Standards guidelines are an appropriate means to lessen the risk of infections by *Cryptosporidium* and other microbial contaminants.



## The Water Cycle...



To many of us water is something we take for granted; we fail to realize how important water really is. It is the blood that must continually be moving to ensure our planet's survival. Water is constantly being cycled between the atmosphere, the ocean and land. This cycling is a very important process that helps sustain life on Earth. As water evaporates, vapors rise and condense into clouds. The clouds move over the land and precipitation falls in the form of rain, ice or snow. Water fills streams and rivers, and eventually flows back into the oceans where evaporation starts the process again. Water states (solid, liquid or gas) are determined mostly by temperature. Although water continuously changes state from solid to liquid to gas, the amount of water on Earth remains constant. The rise of earth's temperatures will continue to intensify during the 21st century. Notably, though, this doesn't mean increased precipitation across the board. In places where it's already dry, it's going to get drier, increasing the probability of drought. Good water conservation practices are key.

## 2013 Drinking Water Quality Report

### Acronyms and Definitions Used in This Report

Milligrams per Liter (mg/L) – amount of contaminant per liter of water.  
Micrograms per Liter (µg/L) – amount of contaminant per liter of water.  
Max Contaminant Limit (MCL) - the highest level of a contaminant that is allowed in drinking water.  
Millisievert per year (mSv/yr) - unit for measuring radiation absorbed by the body.  
Becquerel per Liter (Bq/L) –unit for activity of radiation per liter of water  
Micro-Siemens per centimeter (µS/cm) – Units of conductivity in water

**Table 1: Chemicals (Including Metals)**

Contaminant of Concern	Result	Max Contaminant Limit [MCL]	Below MCL?
Bromate	3.29 µg/L	10.0 µg/L	✓
Bromoform	0.75-3.47 µg/L	80 µg/L	✓
Chloroform	0.76 µg/L	80 µg/L	✓
Copper	0.033-2.2 mg/L	90% of samples below 1.3 mg/L	No
Colony count at 22 °C	17-95 Col./mL	No MCL	N/A
Colony count at 37 °C	13-30 Col./mL	No MCL	N/A
Conductivity	302-666 µS/cm	2500 µS/cm	✓
Enterococci	0 Col./100mL	0 Col.100mL	✓
Dibromochloromethane	0.37-3.45 µg/L	80 µg/L	✓
Fluoride {F}	0.47 mg/L	1.5 mg/L	✓
Iron*	0.0005-0.22 mg/L	0.2 mg/L	No
Lead	0.0007-0.059 mg/L	90% of samples below 0.025 mg/L	✓
Manganese*	0.003-0.45 mg/L	0.05 mg/L	No
Magnesium	4 mg/L	No MCL	N/A
Oxidizability	1.4 mg/L	5 mg/L	✓
Turbidity	0.7 NTU	4 NTU	✓
Total Organic Carbon	0.45-0.44 mg/L	No MCL	N/A
Sodium	85 mg/L	200 mg/L	✓
Sulfites	15 mg/L	200 mg/L	✓
Nitrate {NO <sub>3</sub> }, as N	0.3-3.16 mg/L	10 mg/L	✓
Trihalomethanes, Total {TTHM}	1.1-9.18 ug/L	80 ug/L	✓
Calcium	26 mg/L	No MCL	N/A
pH	6.7-8.3 Unitless	No MCL	N/A
Total Hardness	79-81.4 mg/L	No MCL	N/A
Alkalinity	120 mg/L	No MCL	N/A
Total dissolved solids	440 mg/L	No MCL	N/A
Langelier Index	(-1.2) to (-1) Unitless	No MCL	N/A

\*National Secondary Drinking Water Regulations (NSDWRs or secondary standards) are non-enforceable guidelines regulating contaminants that may cause cosmetic effects (such as skin or tooth discoloration) or aesthetic effects (such as taste, odor, or color) in drinking water. EPA recommends secondary standards to water systems but does not require systems to comply.

**Table 2: Radiologicals**

Contaminant of Concern	Result	Max Contaminant Limit [MCL]	Below MCL?
Total alpha	0.15 Bq/L	0.5 Bq/L	✓
Total beta	0.18 Bq/L	1 Bq/L	✓
Radium (Ra-226)	0.11 Bq/L	No MCL	N/A
Radium (Ra-228)	0.173-0.29 Bq/L	No MCL	N/A

\* From January 2013 to December 2013, the drinking water for Lajes Field was sampled for all contaminants required within the Federal Governing Standard for Portugal. If they were not detected for that analysis they were not listed in this drinking water report. All contaminants that are not detected by lab analysis are not reported.

## What standards are used for drinking water compliance

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 Safe Drinking Water Hotline (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 materials and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

In order to ensure that tap water is safe to drink, Lajes Field follows the primary guidelines outlined by the Final Governing Standards – Portugal (FGS-P), which limits the amount of certain contaminants in water provided by public water systems.

## Lead and Copper in Drinking Water

Bioenvironmental Engineering (BE) Flight collects lead and copper samples from base housing, Youth Center, Child Development Center, high school, elementary school, and the dorms. These samples were collected to determine the contribution of faucet fixtures and household pipes and/or solder to the lead and copper levels in tap water.

Minimal traces of lead and copper will always be present in said components; therefore, samples are taken twice a year to ensure the maximum contaminant level (MCL) is not being exceeded. Lead levels for 2013 have shown to be very minute and cause no risk to health. When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for a few seconds before using water for drinking or cooking.

In July 2013 BE collected 20 water samples from seven locations as required by the FGS-P. Slightly elevated levels of copper were discovered in 4 of 20 water samples. Repeating the sampling effort and providing 2 additional samples from the entry point of the distribution system, was required per the FGS-P. All samples have been recollected and the system is now in 100% compliance with the FGS-P. The main sources of copper exposure in drinking water are from home plumbing, brass faucets linings, and valves that may contribute copper to drinking water. While long term exposure to high levels of copper can cause stomach and intestinal distress, liver or kidney damage, low exposures such as that measured during the July 2013 sampling event poses no health risk.

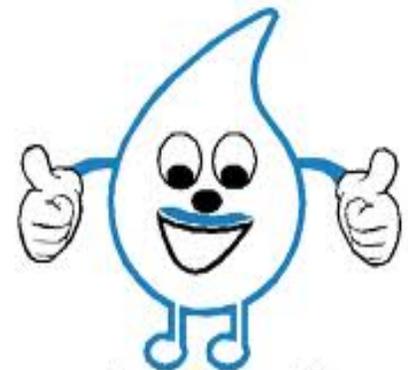
If a spigot in your home hasn't been used for several hours you may flush copper from the water lines by running the water for 15 to 30 seconds, or until the water reaches a steady temperature. Do this before using for drinking or cooking. Do not boil water to remove copper. Boiling water will NOT reduce copper levels.

You do not need to look for alternative sources of water. The Lajes Field water supply is a trusted source of water and in full compliance.

## How you can help conserve water

- **Turn off the faucet in your bathroom while you brush your teeth.**
- **Take shorter showers.**
- **Don't let the water run constantly while you're washing or rinsing dishes.**
- **Clean sidewalks and driveways with a broom—not the water-hose.**
- **Water your lawn in the early morning to avoid evaporation.**
- **Repair dripping faucets.**
- **Run your washer machine and dishwasher only when they are full**
- **Teach your kids about water conservation to ensure a future generation that uses water wisely.**

Make it a family effort to reduce next month's water usage! Visit [www.epa.gov/watersense](http://www.epa.gov/watersense) for more information



**got water?**  
Do your part, be water smart!

## Contact information:

We are available to answer any questions or concerns you may have. If you would like additional copies of this report, please contact Bioenvironmental Engineering Flight at DSN 535-6206.

Informação disponível em língua português no departamento ambiental.

Tel: 535-3143 (Sra. Susana Simoes or Sr. Tome Carvalho).