



2021 Annual Drinking Water Quality Report (Consumer Confidence Report)

LAJES FIELD, PORTUGAL

This report contains important information about your drinking water. If you do not understand it, please have someone explain or translate it for you.

Este relatório contém informações importantes sobre sua água potável. Se você não entender, por favor, peça a alguém que explique ou traduza para você.

Introduction

We are pleased to present this year's Annual Drinking Water Quality Report (Consumer Confidence Report – CCR) as required by Air Force Instruction 48-144, *Drinking Water Surveillance Program*, and the Final Governing Standards for Portugal (FGS-P). This report provides an overview of last year's (2021) drinking water quality and details about where your water comes from, what it contains, and how it compares to standards set by regulatory agencies. We hope this report will raise your understanding of drinking water issues and awareness our need to protect your drinking water sources. Our goal is to provide you with a safe, quality, and reliable drinking water supply. We are committed to providing you with this information because informed customers are the best allies.

Water Sources

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, which 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 storm water runoff, industrial or domestic waste water discharges, oil and gas production, mining, or farming.

- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water 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 storm water runoff, and septic systems.
 - Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.
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Where do we get our drinking water?

Lajes Field operates one potable water system. This system is defined as a Public Water System (PWS) according to the FGS-P. The Air Force water distribution at Lajes Field is supplied by eight active wells. Seven wells are located off-base between the nearby communities of Lajes and Fontinhas, well 8 is located within the base boundary.

Drinking Water and Your Health

All 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 on contaminants and potential health effects can be obtained by calling BE at DSN 479-2220 (0049-6371-46-2220). 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/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 (800-426-4791).

Is there Lead in my Water?

Although we regularly test lead levels in your drinking water, it is possible that lead and/or copper levels at your home are higher because of materials used in your plumbing. If present, elevated levels of lead can cause serious 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. Ramstein AB, Lajes Environmental, and Lajes Utilities are 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 and copper 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 at 1-800-426-4791 or <http://www.epa.gov/safewater/lead>.

A Final Word on Water Quality

Your water quality team at Lajes Field works around the clock to provide safe, dependable water at every tap. But they can only ensure the success of today's mission if everyone contributes. Tomorrow's success will depend on all of us, working together, to protect our vital water resources.

Remember, the water we use does not quickly return to the aquifer, but is, for the most part "consumed" by our actions. The military installation (Lajes Field) and many nearby villages draw water from the same aquifer. Conservation is therefore essential to protect our water supply.

You should also consider ways you can reduce your water consumption, i.e. don't let the water run while brushing your teeth, take a shower vs. a bath. There are numerous ways to save our most valuable natural resource for us and the future of our children. If you have ideas to reduce usage and contamination of this valuable resource submit it to the Ramstein AB Drinking Water Quality Working Group via Lajes Field IDMTs. These efforts will help protect the future water supply by reducing the overall consumptive use.

Customer Reviews Welcome

We are available to address any questions or concerns you may have. Housing residents should contact the Housing Office with any water concerns. Dorm residents should contact their building manager.

For more information on this report or base drinking water quality, please call BE at DSN 479-2220 (0049-6371-462220) or the 86 CES Environmental Management Flight at DSN 480-7712.

About the Following Pages

The following tables list all of the drinking water contaminants that we detected during the calendar year of this report. Although more than **90 contaminants** were tested, only those substances listed below were detected in our water. All sources of drinking water contain some naturally occurring contaminants. The FGS-P requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants do not vary significantly from year to year, or the system is not considered vulnerable to this type of contamination.

Definitions and Abbreviations

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

Average: Regulatory compliance with some Maximum Contaminant Levels (MCLs) are based on running annual average of monthly samples.

Maximum Contaminant Level: The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the Maximum Contaminant Level Goal (MCLG) as feasible using the best available treatment technology.

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.

Maximum Residual Disinfectant Level (MRDL): The highest level of disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): 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.

millirems per year (mrem/year): a measure of radiation absorbed by the body.

Million Fibers per Liter (MFL): a measure of the presence of asbestos fibers that are longer than 10 micrometers.

Nephelometric Turbidity Units (NTU): Measurement of the clarity, or turbidity, of water.

Picocuries per Liter (pCi/L): Measurement of the natural rate of disintegration of radioactive contaminants in water (also beta particles).

pH: Measurement of acidity/basicity with 7.0 being neutral.

parts per million (ppm): One part substance per million parts water, or milligrams per liter.

parts per billion (ppb): One part substance per billion parts water, or micrograms per liter.

parts per trillion (ppt): One part substance per trillion parts water, or nanograms per liter.

Running Annual Average (RAA): Average results for the most recent four quarters.

Secondary Maximum Contaminant Level (SMCL): Recommended level for a contaminant that is not regulated and has no MCL.

Treatment Technique: A required process intended to reduce the level of a contaminant in drinking water.

How to Read the Data Tables

Starting with a substance, read across. Year sampled is 2021. MCL shows the highest level of substance (contaminant) allowed. MCLG is the goal level for that substance (this may be lower than what is allowed). Average Amount Detected represents the measured amount (less is better). Range tells the highest and lowest amounts measured. A 'Yes' under Compliance Achieved means the amount of substance met government requirements. Typical Source tells where the substance usually originates. Unregulated substances are measured, but maximum allowed contaminant levels have not been established by the government.

Water Quality Results

Residual Disinfectants	Unit of Measure	MRDL	MRDLG	Average Level	Minimum Level	Maximum Level	Violation	Typical Source
Free Available Chlorine	mg/L	4	4.0	0.34	0.09	0.58	No	Water additives used to control microbes
Contaminant	Unit of measure	MCLG	MCL	Level Found	Violation		Typical Source	
Total Coliform	# of Positives	0	5.0%	0	No		Naturally present in the environment	
Barium	mg/L	2.0	2.0	0.0088	No		Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits	

Contaminant	Unit of measure	MCLG	MCL	Level Found	Violation	Typical Source
Nitrate	mg/L	10	10	4.8	No	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
Nitrite	mg/L	1	1	<0.03	No	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
Total Trihalomethanes	mg/L	0.080	0.080	0.0015	No	By-products of drinking water chlorination

Lead and Copper	Units	MCLG	MCL	Level Found	90th Percentile	# Sites Over AL	Violation	Typical Source
Lead	mg/L	0	0.015	0.043	0.0002	0	Yes	Corrosion of household plumbing systems; erosion of natural deposits.
Copper	mg/L	1.3	1.3	5.7	0.01	0	Yes	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems.

Violations

Bromate			
<p>A life time of drinking bromate at higher levels has an increased lifetime cancer risk of 2 in 10,000. Some people who ingested large amounts of bromate had gastrointestinal symptoms such as nausea, vomiting, diarrhea and abdominal pain. Some individuals who ingested very high concentrations of bromate also experienced adverse effects in kidney, nervous system, and hearing loss. However, these people were exposed to bromate levels thousands of times the amount stated in the FGS-P.</p>			
Violation Type	Violation Begin	Violation End	Violation Explanation
MCL	28 June 2019	TBD	<p>BE performed sampling of Lajes Field drinking water system for Bromates on 28 June 2019. Bromate levels from this monitoring event were found to be in exceedance of the 0.01 mg/L (equivalent to ppm) of the MCL. Water sampling results from Lajes Field Air Base are compared to the FGS-P criteria of 0.01mg/L. Bromate is a byproduct of the water treatment disinfection process and we believe the exceedance of Bromate is due to the high level of free available chlorine (FAC) in the water system for CY2019.</p> <p>While not over the MCL of 4 mg/L, the levels of FAC were greater than the FGS-P recommended limits of 0.2-0.6 mg/L. Working with Lajes Field CE Environmental personnel, we have reduced the level of FAC to the recommended level for the installation. Also, we have put a process in place to verify the FAC to be in the recommended limits before collecting the water samples to analyze for Bromate. We followed this procedure/method in our last sampling event and the Bromate results were all “non-detected”.</p> <p>In an effort to provide statistical data and/or provide a data trend, the BE office will continue to sample for Bromate on a quarterly basis. This also serves as a precautionary measure to detect any changes in Bromate levels more expediently. This is not driven by regulatory requirement.</p> <p>Violation ends when four consecutive quarterly samples have a resulting running average below the MCL.</p> <p>Due to COVID-19 quarterly sampling objective was not met for CY20.</p> <p>Due to issues with Lisbon customs, the vials broken or were emptied. Therefore, we did not meet the CY21 requirement and must continue with quarterly sampling.</p>

Lead

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. Lajes AB 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>.

Violation Type	Violation Begin	Violation End	Violation Explanation
MCL	31 July 2020	TBD	<p>BE performed sampling of the Lajes Air Base drinking water system for Lead on 31 July 2020. Lead levels from this monitoring event were found to be in exceedance of the 1.3 mg/L (equivalent to ppm) of the MCL. Lead is a byproduct of corrosion of household plumbing systems; erosion of natural deposits.</p> <p>Due to the exceedance, BE will collect additional water samples every six months. Violations will end with two consecutive six month monitoring periods with no exceedances.</p> <p>Due to issues with Lisbon customs, the correct amount of samples for Lead were not collected. Therefore, we did not meet the CY21 requirement and must continue with semi-annual sampling.</p>

Copper

If present, elevated levels of copper can cause serious health problems, especially for pregnant women and young children. Copper in drinking water is primarily from materials and components associated with service lines and home plumbing. Lajes AB 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 copper exposure by flushing your tap for 30 seconds to 2 minutes before using water for drinking or cooking. If you are concerned about copper in your water, you may wish to have your water tested. Information on copper 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>.

Violation Type	Violation Begin	Violation End	Violation Explanation
MCL	9 June 2021	TBD	<p>BE performed sampling of the Lajes Air Base drinking water system for Lead on 9 June 2021. Copper levels from this monitoring event were found to be in exceedance of the 0.01 mg/L (equivalent to ppm) of the MCL. Copper is a byproduct of corrosion of household plumbing systems; erosion of natural deposits.</p> <p>Due to the exceedance, BE will collect additional water samples every six months. Violations will end with two consecutive six month monitoring periods with no exceedances.</p> <p>Due to issues with shipping, the correct amount of samples for Copper were not collected. Therefore, we did not meet the CY21 requirement and must continue with semi-annual sampling.</p>
