2023 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

The Bioenvironmental Engineering (BE) Flight is pleased to present this year's Annual Drinking Water Quality Report (Consumer Confidence Report – CCR) for Lajes Field as required by Department of the Air Force Instruction 48-144, *Drinking Water Surveillance Program*, and the Final Governing Standards for Portugal (FGS-P), published in 2017. This report provides an overview of the 2023 drinking water quality from 1 January 2023 through 31 December 2023, 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 raise your awareness of 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. In order to ensure that tap water is safe to drink, the Final Governing Standard for Portugal prescribes regulations which limit the amount of certain contaminants in water provided by public water systems. Food and Drug Administration regulations establish limits for contaminants in bottled water which must provide the same protection for public health.

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 wastewater 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.

- Per- and Polyfluoroalkyl Substances (PFAS): a group of thousands of man-made chemicals used in a variety of industries and consumer products around the globe since the 1940s.

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, and one well is located within the base boundary. Additionally, surface water is being utilized on base as of August 2023.

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 314-479-2220 (+49-6371-46-2220). Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 are more susceptible to risk of infection. These people should seek advice about drinking water from their health care providers. The Environmental Protection Agency (EPA) and Center for Disease Control (CDC) published guidelines on appropriate means to lessen the risk of infection from Cryptosporidium and other microbial contaminants and are available from the Safe Drinking Water Hotline (1-800-426-4791).

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. Lajes Field 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 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.

What is PFAS?

What are per- and polyfluoroalkyl substances and where do they come from?

Per- and polyfluoroalkyl substances (PFAS) are a group of thousands of man-made chemicals. PFAS have been used in a variety of industries and consumer products around the globe, including in the U.S., since the 1940s. PFAS have been used to make coatings and products that are used as oil and water repellents for carpets, clothing, paper packaging for food, and cookware. They are also contained in some foams such as aqueous film-forming foam, or AFFF, used for fighting petroleum fires at airfields and in industrial fire suppression processes. PFAS compounds are persistent in the environment, and some are persistent in the human body – meaning they do not break down and they can accumulate over time.

Is there a regulation for PFAS in drinking water?

In May 2016, the Environmental Protection Agency (EPA) established a lifetime health advisory (LHA) level at 70 parts per trillion (ppt) for individual or combined concentrations of perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS). Both compounds are types of PFAS. On 10 April 2024, the EPA published new drinking water standards for certain PFAS under the Safe Drinking Water Act (SDWA). AF is reviewing the EPA's new rule now and will incorporate these standards into future sampling and analysis efforts.

Out of an abundance of caution, DoD pursued PFAS testing and response actions beyond EPA SDWA requirements. In 2020, the DoD established a policy to monitor drinking water for 17 PFAS compounds at all service owned and operated water systems. If results confirmed the drinking water contained PFOA and PFOS at individual or combined concentrations greater than 70ppt, water systems quickly took action to reduce exposures. While not a SDWA requirement, in 2023, DoD improved upon its 2020 PFAS drinking water monitoring policy by expanding the list of PFAS compounds monitored to 29, implementing continued monitoring of systems with detectable PFAS, and requiring initial mitigation planning actions.

Has Lajes Field tested its water for PFAS?
Yes, in December 2023 samples were collected from the entry points to the distribution system.

Below MDL
We are informing you that PFAS were not detected in your water system. Drinking water testing results were below the Method Detection Limit (MDL) for all 29 PFAS compounds covered by the sampling methods, including PFOA and PFOS. In accordance with current DoD policy, the water system will be resampled every two years for your continued protection.

A Final Word on Water Quality

Your water quality team at Lajes Field with support from BE at Ramstein AB 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 Lajes Field Drinking Water Quality Working Group via the Independent Duty Medical Technicians (IDMTs) at DSN 314-535-6150. 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 Ramstein BE flight at DSN 314-479-2220 (0049-6371-462220) or the 765 CES Environmental Management Flight at DSN 314-535-6557.

About the Following Pages

The table below lists all 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. If this changes, and levels are elevated, increased monitoring frequency will occur in accordance with the FGS-P.

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 (MCL): 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 (MCLG): 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.
Milligrams per liter (mg/L): unit of measurement for concentration by weight of a substance in the water.
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.
Minimum Detection Limit (MDL): a detection limit for the lab to be able to detect the chemical of concern in the water.
Nephelometric Turbidity Units (NTU): Measurement of the clarity, or turbidity, of water.
Non-Detect (N.D.): a measurement used when the sample result was below the detection capabilities of the lab.
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 with7.0 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.
Total Trihalomethanes (TTHM): a set of chemicals that are disinfection byproducts.
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. The year sampled is 2023 (January through December). MCL shows the highest level of 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 'No' under Violation means the amount of the 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.

Missed Sampling Parameters

BE is required to sample over 90 chemicals for three water plants and several more locations across the installation. Depending on the parameter, samples are required monthly, quarterly, annually or greater. This leads to over 250 samples collected annually. Sometimes, sampling parameters can be missed for several different reasons, from miscommunication with ordering the sampling kits, the language barrier when communicating with a host nation lab, broken sampling bottles that cannot be analyzed after collection, or human error. For 2023, the samples that were missed were due to the drinking water system switching to surface water for a source of drinking water. The surface water has new requirements that were unable to be sampled in the fourth quarter. If there was an increased risk due to missing any samples, this would have been communicated within 30 days of missing the parameter. Below is a list of sampling parameters that were missed in 2023.

Parameter	Frequency	Missed Frequency	Increased Risk?
Iron	Baseline (new water source)	2023	No
Aluminum	Baseline (new water source)	2023	No
Ammonium	Baseline (new water source)	2023	No
Barium	Annual	2023	No
Beryllium	Annual	2023	No
Thallium	Annual	2023	No

Water Quality Results

Residual Disinfectants	Unit of Measure	MRDL	MRDLG	Average Level	Minimum Level	Maximum Level	Violation	Typical Source
Free Available Chlorine	ppb	4000	4000	290	10	670	No	Water additives used to control microbes

Contaminant	Unit of Measure	MCLG[2]	MCL	Level Found	Violation	Typical Source
Total Coliform	# of Positives	0	5% of Monthly Samples	0	No	Naturally present in the environment
E. Coli	# of Positives	0	Any Positive	0	No	Contamination from sewage or animal waste
Chloroform (TTHM)	Sum, mg/L	0.07	-	N.D.	No	By-products of drinking water chlorination
Bromodichloromethane (TTHM)	Sum, mg/L	0	-	N.D.	No	By-products of drinking water chlorination
Dibromochloromethane (TTHM)	Sum, mg/L	0.06	-	0.00052	No	By-products of drinking water chlorination
Tribromomethane (TTHM)	Sum, mg/L	0	-	0.0095	No	By-products of drinking water chlorination
Total TTHMs	mg/L	N/A	0.08	0.0101	No	By-products of drinking water chlorination
Arsenic	mg/L	0.01	0.01	0.0014	No	Runoff from fungicides, herbicides and insecticides in agriculture
Boron	mg/L	N/A	1	0.107	No	Naturally occurring in the environment
Calcium	mg/L	N/A	100	57	No	Naturally occurring in the environment from calcium containing rocks and minerals

Contaminant	Unit of Measure	MCLG[2]	MCL	Level Found	Violation	Typical Source
Fluoride	mg/L	1.5	1.5	0.581	No	Naturally occurring mineral in the soil
Nitrate	mg/L	10	10	4	No	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
Magnesium	mg/L	N/A	50	4	No	Naturally occurring in the environment
Mercury	mg/L	0.001	0.001	0.0000203	No	From atmospheric deposition (rain, snow, etc.) runoff
Sodium	mg/L	N/A	200	144	No	Naturally present in the environment
Sulfate	mg/L	N/A	250	29.8	No	Runoff from mines, smelters, and mills
Total Nitrite/Nitrate	mg/L	50	50	4	No	Runoff from fertilizer use; leaking from septic tanks, sewage; erosion of natural deposits
Uranium	mg/L	0.03	0.03	0.0000051	No	Naturally occurring radioactive material
Copper	mg/L	2	2	0.002	No	Erosion of natural deposits; leaching from wood preservatives; corrosion of household plumbing systems
Chloride[1]	mg/L	N/A	250	273.8	No	Naturally occurring in the environment

Notes:

1: Chloride is considered an indicator parameter. An indicator parameter as defined by the FGS-P is used to demonstrate no negative change in the water quality. While chloride exceeded the MCL, the other indicator parameters were well below the MCL, therefore it was deemed that no negative water quality changes have occurred. There is no health risk with chloride exceeding the MCL and a public notification was not required.

2: Each individual TTHM and HAA5 have an MCLG, but the MCL is for the sum of all TTHMs and HAA5s respectively. There is no violation for exceeding an MCLG.

Violations

In 2023, there were no violations identified for the Lajes Field water system.