



## ISA AIR BASE, BAHRAIN 2024 DRINKING WATER CONSUMER CONFIDENCE REPORT



### Is our water safe to drink?

Yes. Isa Air Base (IAB) Bahrain's drinking water system provides water that is safe and Fit for Human Consumption (FFHC) as determined by the Installation Commanding Officer's Record of Decision and as routinely confirmed by laboratory sampling results (received monthly, quarterly, and semi-annually). We are proud to support the Navy's commitment to provide safe and reliable drinking water to our service members and their families. This annual Consumer Confidence Report includes general and mandatory information to educate everyone about our water source(s), treatment processes, standard requirements, and other details to help assure you that our water is safe to drink.

IAB manages the Navy overseas drinking water system with five locations: Logistics Support Area (LSA), Flight Line, Fuel Farm, and Patriot (PAT) Sites V and VI. The IAB ROWPU product water is in conformance with all water quality MCLs, falls under a strict monitoring program through the PWD Bahrain Environmental Division, and meets all requirement for designation as FFHC (Fit For Human Consumption) (FFHC) (i.e. safe for drinking, cooking, bathing, showering, dishwashing and maintaining oral hygiene).

- a. Bottled water is designated as FFHC for all consumptive uses.
- b. ROWPU product water is designated as FFHC for all consumptive uses.
- c. Trucked water from the ROWPU serving outlying locations is designated as FFHC for all consumptive uses; however, until means of sourcing ROWPU water directly to consumer is attainable bottled water shall be used for drinking purposes.
- d. ROWPU treated product water distributed within LSA water distribution system is designated as FFHC for all consumptive uses. However, until means of sourcing ROWPU product water directly to consumer is attainable bottled water shall be used for drinking purposes.

Personnel at NAVCENT DET IAB and outlying areas have been notified of acceptable uses of each water source as listed above.

Our drinking water fully complies with the Department of Defense's (DoD) Bahrain Final Governing Standards (FGS), which are derived from the U.S. DoD Overseas Environmental Baseline Guidance Document (OEBGD), U.S. Environmental Protection Agency (EPA) and Bahrain drinking water standards. When Bahrain and U.S. standards differ, the most protective requirement is adopted into the FGS. A detailed list of constituents found in our drinking water is included in this report, along with a comparison to the maximum levels considered safe for the general public by these standards.

### Where does our water come from and how is it treated?

IAB purchases treated water from the Kingdom of Bahrain Electricity & Water Authority (EWA). The city water comes from the ocean and is treated at the Al Dur Power and Water Company, a multi-stage flash distillation plant. Water received from the Al Dur Power and Water Company is transferred through pipes from Royal Bahraini Air Force. The received water is stored in two underground tanks and six above ground raw water tanks which is further treated at the IAB facility. Two RO plants are operated on alternate days using single-stage Reverse Osmosis (RO) and approved process chemicals prior to purification. Disinfection of the water is achieved by chlorination and UV radiation. Finished water is stored in eight secured and controlled access tanks at the facility for direct distribution to various outlets throughout IAB water distribution network and transferred by trucks to service outlying location.

## Why are there contaminants in drinking water?

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. IAB's drinking water source is distilled; however, distillation is not 100% effective in removing all contaminants because: 1) droplets of un-vaporized liquid can be carried with the steam prior to distillation, and 2) some contaminants have boiling points similar to water and will be vaporized and condensed with the distilled water. In order to ensure that tap water is safe to drink, regulations limit the amount of certain contaminants in water provided by public water systems.

Due to this, some contaminants may be present in drinking water, such as:

- **Microbial contaminants**, such as viruses and bacteria, that may come from wildlife, sewage treatment plants, septic systems, and livestock.
- **Disinfection by-products**, such as chlorine and chloramine used to remove pathogens from the water.
- **Pesticides and herbicides**, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- **Inorganic contaminants**, naturally occurring 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.
- **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.

The presence of contaminants does not necessarily indicate that water poses a health risk. In order to ensure that tap water is safe to drink, regulations limit the amount of certain contaminants in water provided by public water systems. Regular sampling is conducted to detect the limits of contaminants in the water system. If the results are above regulatory levels, you will be notified by Email and Public Notification. You can learn more about contaminants and any potential health effects by visiting the EPA's Drinking Water Standards web site: <https://www.epa.gov/sdwa/how-epa-regulates-drinking-water-contaminants#standards>

## Source water assessment

In March 2022, Naval Facilities Engineering Systems Command (NAVFAC) together with the Navy and Marine Corps Force Health Protection Command (NMCFHPC) conducted a comprehensive sanitary survey of the IAB drinking water system. This survey, conducted every three years, provides an evaluation of the adequacy of the drinking water source, facilities, equipment, operation and maintenance for producing and distributing safe drinking water. NAVFAC's Public Works Department (PWD) Bahrain is continually improving the drinking water system based on the recommendations in the report.

## Some people must use special precautions

There are people who 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/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 EPA's Safe Drinking Water webpage, [www.epa.gov/safewater/sdwa](http://www.epa.gov/safewater/sdwa)

### Additional Information for Iron

Iron is regulated as a secondary contaminant by USEPA, because it may cause discolored water or aesthetic effects in drinking water, such as unpleasant odor or taste. Exceeding a secondary standard may cause people to stop using the water even though the water is actually safe to drink. Secondary standards are set to provide public water systems guidance on removing these chemicals to levels that are below what most people will find noticeable. Activities taken to reduce the iron concentration in IAB drinking water include flushing the distribution system to remove settled particulates and removing iron fittings. Information on iron in drinking water and the steps you can take to minimize exposure is available from the USEPA Safe Drinking Water website, [www.epa.gov/safewater/sdwa](http://www.epa.gov/safewater/sdwa)

### Additional Information for 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. PWD IAB is responsible for providing high-quality drinking water but cannot control the variety of materials used in plumbing components in your water system. You share the responsibility for protecting yourself and your team from the lead in your distribution plumbing system. You can take steps to reduce lead risk. Before drinking tap water, flush your pipes for several minutes by running your tap, taking a shower, doing laundry or a load of dishes. You can also use a filter certified by an American National Standards Institute accredited certifier to reduce lead in drinking water. If you are concerned about lead in your water and wish to have, your water tested, contact [Mr. Sean Suk at email: [seung.h.suk.civ@us.navy.mil](mailto:seung.h.suk.civ@us.navy.mil)]. Information on lead in drinking water and steps you can take to minimize exposure is available from the EPA Safe Drinking Water website: <http://www.epa.gov/safewater/lead>

Exposure to lead in drinking water can cause serious health effects in all age groups. Infants and children can have decreases in IQ and attention span. Lead exposure can lead to new learning and behavior problems or exacerbate existing learning and behavior problems. The children of women who are exposed to lead before or during pregnancy can have increased risk of these adverse health effects. Adults can have increased risks of heart disease, high blood pressure, kidney or nervous system problems.

Lead service line inventory was completed in APR 2024. If you need more information about lead service line inventory, please contact Mr. Sean Suk at email: [seung.h.suk.civ@us.navy.mil](mailto:seung.h.suk.civ@us.navy.mil)

Table 1 below shows the results of lead samples taken in 2024.

**Table 1**

Contaminant	EPA's Action Level	EPA's MCLG (Goal)	Your water	Range of Result	Number of sample above AL	Typical Source
Lead	10ppb	0ppb	N/D	<5	None	Corrosion of household plumbing
Copper	1.3ppm	1.3ppm	0.072ppm	(0.005-0.077)	None	Corrosion of household plumbing

## Water Quality Data Table

Table 2 below lists the drinking water contaminants and relevant sampling data collected during the 2024 calendar year (unless otherwise noted). The presence of contaminants in the water does not necessarily indicate that the water poses a health risk. All contaminants detected in IAB's drinking water are below the MCLs allowed by FGS, DoD, and EPA applicable requirements.

**Table 2**

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Your Water	Units	Sample Date	Violation	Typical Source
<b>Inorganic Components</b>							
Sodium	N/A	N/A	20	mg/L	24-JUL-2024	NO	Erosion of natural deposits; Leaching
Boron	N/A	N/A	0.84	mg/L	24-JUL-2024	NO	Erosion of natural deposits; Leaching
Silica	N/A	N/A	ND	mg/L	24-JAN-2024	NO	Erosion of natural deposits; Leaching
Calcium	N/A	N/A	12	mg/L	24-JUL-2024	NO	Erosion of natural deposits; Leaching
Magnesium	N/A	N/A	0.64	mg/L	21-APR-2024	NO	Erosion of natural deposits; Leaching
Sulfate	250	N/A	0.76	mg/L	21-APR-2024	NO	Runoff/leaching from natural deposits
Potassium	N/A	N/A	0.40	mg/L	24-JUL-2024	NO	Erosion of natural deposits; Leaching
Salinity	N/A	N/A	N/D	mg/L	27-OCT-2024	NO	Erosion of natural deposits; Leaching
Chlorides	N/A	N/D	23	mg/L	24- JUL -2024	NO	Erosion of natural deposits; Leaching
<b>Note: All other Inorganic Compounds, Organic Compounds, Pesticides, PCBs, Total Trihalomethanes and Radionuclides, Lead, and Total Coliforms were not detected</b>							

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Level Detected (Average)	Range of Detections	Violation	Typical Source
<b>Disinfectant Residual and Disinfectant By-Products</b>						
Chlorine (ppm)	4.0	4.0	0.59	(0.5-0.6)	NO	Drinking water disinfectant added for treatment
Total Trihalomethanes (TTHM; ppb)	N/A	80	26.25	10-32	NO	By-products of drinking water disinfectant

Contaminants	MCLG or MRDLG	MCL, TT, or MRDL	Level Detected (Average)	Range of Detections	Violation	Typical Source
<b>Disinfectant Residual and Disinfectant By-Products</b>						
Haloacetic Acids (HAA; ppb)	N/A	60	31	22-41	NO	By-products of drinking water disinfectant

<b>Unit Descriptions</b>	
Term	Definition
mg/L	milligrams per liter, or ppm: parts per million
N/A	Not Applicable
N/D	Not Detected( <i>e.g.</i> , below PQL) PQL = Practical Quantitation Limit of the best method

<b>Important Drinking Water Definitions</b>	
Term	Definition
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.
TT	Treatment Technique. A required process intended to reduce the level of a contaminant in drinking water.
Variances and Exemptions	EPA permission not to meet an MCL or a treatment technique under certain conditions.
MRDLG	Maximum residual disinfection level goal. 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 contaminants.
MRDL	Maximum residual disinfectant level. The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.
Action Level (AL)	The concentration of contamination, which, if exceeded triggers treatment or other requirements that water system must follow.

### Violation(s) or Exceedance(s)/Missed Sampling Events:

There were no violations, exceedances, or missed sampling events noted during the year 2024 for any test parameters for IAB.

## Points of Contact

If you have any questions regarding this report or about the drinking water processes, please contact:

**Sean Suk**

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A copy of this CCR and previous year reports are available at:  
<https://cnreurfcent.cniv.navy.mil/Operations-and-Management/Water-Quality-Information/>