Year 2023 Water Quality Report

Fort Irwin routinely monitors for constituents in the drinking water according to Federal and State laws. Fort Irwin would like to present to you a summary of last year's sampling results. This document also explains the results and provides contact information. If you have questions concerning this report contact: Fort Irwin, DPW Environmental Division, Water Manager: 760-380-3749.

It is important to Fort Irwin that the customers be informed about water quality on the Installation.

MUY IMPORTANTE

Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo 'o hable con alguien que lo entienda bien.

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Water Quality Monitoring

It is important to keep customers informed about the water quality and services delivered over the past year. Fort Irwin’s goal is to provide a safe and dependable supply of drinking water. Fort Irwin completed construction of a new water treatment plant, Irwin Water Works (IWW), in 2016. All water provided at Fort Irwin is treated at IWW and is fully potable.

This report covers the requirement for a Consumer Confidence Report (CCR). Last year, we conducted more than 10,000 tests for 96 different contaminants. This report covers monitoring from 1 January 2023 through 31 December 2023.

The State allows us to monitor some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of the data presented in this report, though representative, is more than one year old.

Should Customers be Concerned?

In order to ensure that tap water is safe to drink, United States Environmental Protection Agency (USEPA) and the California, State Water Resources Control Board, Division of Drinking Water (DDW) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. These limits are called Maximum Contaminant Levels (MCL). MCL's are set at very stringent levels. To understand the risk of possible health effects described for regulated contaminants, customers should know that a person would have to drink 2 liters of water every day at the MCL level during a lifetime to have a one-in-a-million chance of having the described health issues. DDW regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.

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 about contaminants and potential health effects can be obtained by calling the EPA's safe drinking water hotline at 1-800-426-4791 or at their web site www.epa.gov/safewater/.

Microbial contaminants are not a significant concern in Fort Irwin's 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 of infections. These people should seek advice about drinking water from their health care providers. USEPA/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 Safe Drinking Water Hotline (1-800-426-4791).

On 28 December 2015, under the third Unregulated Contaminant Monitoring Rule (UCMR3), Fort Irwin collected data for chemicals that are suspected contaminants in drinking water. Testing was completed for perfluorinated alkyl substances (PFAS) which included perflourooctanesulfonic acid (PFOS) and perfluorooctanoic acid (PFOA). All testing results obtained were absent of PFOS/PFAS. On 21 February 2021, the US Army Public Health Center, collected additional data for PFOS and PFOA. All testing results obtained were absent of PFOS/PFAS. Fort Irwin will continue routine monitoring of PFOS/PFAS.

Fort Irwin's Water Source and Treatment

The source of our water is groundwater that comes from a combination of three sources located at Fort Irwin: 1) Bicycle Lake Basin, located approximately 2 miles northeast of the cantonment area adjacent to Barstow Road; 2) Langford Lake Basin, located approximately 2 miles southeast of the cantonment area adjacent to

Langford Lake Road; and 3) Irwin Basin, located underneath the cantonment area. These aquifers are very similar to underground lakes bordered by the rising bedrock surrounding each basin and form the hills visible on the surface. Fort Irwin pumped about 466 million gallons of water out of the ground last year. All of Fort Irwin's water was treated at the IWW. Fort Irwin's water system provides water to approximately 16,000 customers daily.

More information is available in our source water assessment that was completed by the U.S. Geological Survey in 1997, *"Ground Water Hydrology and Water Quality of Irwin Basin at Fort Irwin and the National Training Center, California"* (https://pubs.usgs.gov/wri/1997/4092/report.pdf). The assessment was conducted by US Geological Survey Information Services (USGS-IS). The address of the USGS-IS is Box 25286, Federal Center, Denver, CO 80255. Source water assessments for Langford Lake and Bicycle Lake Basins are not available.

A copy of the Irwin Basin Assessment can be viewed at the Drinking Water Division, District 13 - San Bernardino, 464 West 4th Street, Suite 437, San Bernardino, CA 92401. You may request a summary of the assessment be sent to you by contacting the DDW District Engineer at (909) 383- 4328.

System Improvements

Fort Irwin continues to complete improvements to the water system designed to further protect public health and to continue to improve the water system's capabilities to protect property during emergencies. Examples include water storage tanks inspections using a diver conducted in June 2024. We are currently working on improving the system treatment efficiency in IWW to recover more our valuable water.

Fort Irwin has also contracted with the United States Geological Survey (USGS) to conduct surveys of potential water resources. This effort will take many years. But the final products will identify future water resources for development.

Water Conservation

Conserving water at Fort Irwin is as important to the installation as breathing the air. Without water, there is no Fort Irwin. Fort Irwin is supported by our own water wells located above underground aquifers or basins. Results from environmental engineering reports show a finite supply of available water in these basins. Our basins are replenished by the small amount of rain Fort Irwin receives annually. Fort Irwin pumps out much more water than received in rainfall which results in an overdraft, more being pumped out than replenished.

Alternative means to acquire water to meet Fort Irwin's requirements would be very expensive. Fort Irwin is very reliant on you, the consumer, to conserve this natural resource. Below are some main tips on how to conserve water and help extend our water supply on Fort Irwin. Other conservation tips can be found at http://www.bewaterwise.com/.

- **Call in water breaks.** If you have a water leak, or notice a water problem, please call the appropriate number on Fort Irwin to report it:
    - Water/leaks found outside: **(760) 386-7906**, Jacobs (CH2MHILL).

    - Indoor leaks in Housing: **(855) 646-6420**, Residential Communities Initiative (RCI) (Housing office).
    - Indoor leaks in Cantonment: Either https://armymaintenance.com/arma or **(760) 386-3539**, High Desert Support Services (HDSS).

- **Don't pre-rinse your dishes.** Check to see if you dishwasher can clean dishes without pre-rinsing them. Most new dishwashers don't require pre-rinsing.
- **Reuse clean household water.** Collect all the water that is wasted while waiting for the hot water to reach your faucet or showerhead by filling a plant waterer or jug. Use this to water your houseplants or outdoor planters. Do the same with water that is used to boil eggs and steam vegetables.
- **Shorten your shower time by one minute.** Cut back on your shower time and you will save big time on water use. Or limit your showers to 5 minutes. This not only saves water but energy as well.
- **Turn the water off.** Minimize faucet use when shaving, brushing teeth and washing dishes. If your faucets or showerheads are leaking, call the housing office to report it.
- **Use a car wash that recycles water.** The car wash on Fort Irwin recycles water. Or if you wash your car at home use a nozzle that shuts off when not in use.
- **Wash only full loads of laundry** in your washing machine or full loads of dishes in your dishwasher. You'll not only save our water, but conserve energy as well.

Definitions

On the following pages are table containing summarized results of our monitoring. To understand these terms, Fort Irwin has provided the following definitions:

- Disinfection Byproducts - Results from adding chlorine to the water to kill or suppress bacteria and other harmful organics. When chlorine is added it reacts with the organic material forming byproducts that the USEPA and CA DDW believe are harmful.
- Maximum Contaminant Level (MCL) - The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.
- Maximum Contaminant Level Goal (MCLG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLG's are set by the U.S. Environmental Protection Agency (USEPA).
- Micro Siemens per cm (µS/cm) - A unit used to measure the conductivity of water. µS/cm can also be related to parts per million (ppm) in water in a proportional ratio. The higher µS/cm the more ions that are present in the

water. The SI unit of conductivity is Siemens per centimeter (S/cm), and one microsiemens per centimeter is equal to 0.000001 Siemens per centimeter.

- Non-Detects (ND) - Laboratory analysis indicates that the constituent is not present at or above the minimum detection limit for the analytical method.
- Nephelometric Turbidity Unit (NTU) - Nephelometric turbidity units are a measure of the clarity of water. Turbidity in excess of 5 NTU is just barely noticeable to the average person.
- Parts per billion (ppb) or Micrograms per liter (µg/L) - One part per billion corresponds to one minute in 2,000 years, or a single penny in $10,000,000.
- Parts per million (ppm) or Milligrams per liter (mg/L) - One part per million corresponds to one minute in two years, or a single penny in $10,000.
- Public Health Goal (PHG) - The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.
- Regulatory Action Level (AL) - The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Sources of Contaminants

Source 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:

- Inorganic contaminants, such as salts and metals, that can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Microbial contaminants, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Organic Chemical contaminants, including synthetic and volatile organic chemicals that are by- products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, and septic systems.
- Pesticides and Herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff, and residential uses.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production and mining activities

Water Quality Sampling Results

The following tables present the results of our monitoring for the calendar year 2023. These results are representative of the water provided today. In reading the tables, compare the MCL column to the Average Level Detected column.

Microbial Monitoring

Microbial Monitoring is conducted on a weekly basis on Fort Irwin. This monitoring uses the coliform bacteria as an indicator for all microbial contaminants. Coliform is used because it is present in the environment, it is more resistant than other bacteria and it is easy to detect. Table 1 has the results from bacteria monitoring. The positive result was resolved.

Table 1 – Microbial Monitoring

Analyte	Unit	Drinking Water		Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Source of Contamination
		Highest Number of Positive Results in a Month	Number of Months exceeding MCL			
Total Coliform Bacteria	Positive Samples per month*	1	0	More than 1 positive sample in a month	No Positive	Naturally present in the environment

Note: *A positive total coliform result on 06/13/2023. The positive result was attributed to a contaminated faucet. After cleaning and disinfection no further positive results were encountered.

Lead and Copper

Fort Irwin tests for lead and copper at selected taps in our water system. Results from the lead and copper testing indicate the corrosiveness of water. Lead and copper are leached from the plumbing inside the buildings. After you go on a long vacation, it is a good idea to run the tap for a few minutes to flush the water lines. Table 2 contains the result from monitoring of lead and copper. Compare the 90% level to the Action Level (AL). Analytes did not exceed ALs.

Table 2 – Lead and Copper Monitoring

Analyte	Unit	Drinking Water			Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Source of Contamination
		Maximum Detected	90 % Level*	Sites Tested			
Lead (Pb)	µg/L	ND	ND	35	AL = 15	2	Internal corrosion of household water plumbing systems
Copper (Cu)	mg/L	ND	ND	35	AL = 1.3	0.17	

Notes:

All results for lead and copper are from 2021.

*90% or more of the monitoring results were below this result.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. 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.

Regulated and Non-Regulated Contaminants

Fort Irwin is required each year (or other period) to test for certain contaminants the USEPA and CA DDW are concerned about. Fort Irwin tests our water for other indicators that allow us to provide the best water possible. Table 3 contains the monitoring results from 2023 and previous years. No analytes exceeded MCLs.

Table 3 – Regulated and Non-regulated Contaminants

Analyte	Unit	Drinking Water		Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Source of Contamination
		Range Detected	Average			
USEPA and State Regulated						
Arsenic (As)	µg/L	2.0 – 4.1	2.7	10	0.004	Erosion of natural occurring deposits
Boron (B)*	µg/L	750 – 1,100	885	None	1000	Erosion of natural occurring deposits
Chloride (Cl)	mg/L	60 – 280	127.2	250	None	Natural occurring
Fluoride (F)	mg/L	1.2 – 2.2	1.6	4	4	Erosion of natural occurring deposits, Can promote strong teeth;
Haloacetic Acids (HAA5)	µg/L	ND – 4.9	2.45	60	None	Disinfection byproducts
Dibromoacetic Acid	µg/L	ND – 3.6	1.8	None	None	Part of HAA5
Dichloroacetic Acid	µg/L	ND – 1.2	0.6	None	None	Part of HAA5
Monobromoacetic Acid	µg/L	ND	ND	None	None	Part of HAA5
Monochoroacetic Acid	µg/L	ND	ND	None	None	Part of HAA5
Trichloroacetic Acid	µg/L	ND	ND	None	None	Part of HAA5
Nitrate (NO_3) as Nitrogen (ppm)	mg/L	1.2 – 4.8	3.01	10	10	Runoff and leaching from fertilizer use; leaching from septic tanks and sewer systems; erosion of natural deposits
Sodium (Na)	mg/L	120 – 190	144	250	None	"Sodium" refers to the salt present and is generally naturally occurring.
Sulfate (SO_4)	mg/L	86 – 160[21]	126[21]	250	None	Erosion of natural occurring deposits
Specific Conductance	µS/cm	170 – 220	197.1	1600	None	Substances that form ions when in water
Total Dissolved Solids (TDS)	mg/L	110 – 160	144.1	500	None	Erosion of natural occurring deposits
Total Trihalomethanes (TTHM)	µg/L	12 – 42	27	80	None	Disinfection byproducts
Bromo-dichloromethane	µg/L	ND – 2.5	1.25	None	None	Part of TTHM
Bromoform	µg/L	9.9 – 29	19.5	None	None	Part of TTHM

Analyte	Unit	Drinking Water		Maximum Contaminant Level (MCL)	Maximum Contaminant Level Goal (MCLG)	Source of Contamination
		Range Detected	Average			
Chloroform	µg/L	ND – 0.96	0.48	None	None	Part of TTHM
Dibromo-chloromethane	µg/L	1.7 – 9.8	5.8	None	None	Part of TTHM
Turbidity	NTU	0.1 – 0.67	0.19	5	None	Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.
Water Quality Indicators (Not Regulated)						
Alkalinity, Total	mg/L as CaCO3	120 – 190	144	None	None	Erosion of natural occurring deposits
Bicarbonate (HCO_3)	mg/L as CaCO3	120 – 180	142	None	None	Part of Alkalinity
Carbonate (CO_3)	mg/L as CaCO3	ND – 11	5.5	None	None	Part of Alkalinity
Calcium (Ca)	mg/L	4.7 – 70	27.3	None	None	Erosion of natural occurring deposits
Hardness, Total	mg/L as CaCO3	22 – 220	89	None	None	The sum of polyvalent cations, generally magnesium and calcium. Usually naturally occurring.
pH		8.0 – 8.5	8.2	None	None	Low pH: bitter metallic taste; corrosion High pH: slippery feel; soda taste; deposits
Silica, Total	mg/L	20 – 88	57.6	None	None	Erosion of natural occurring deposits, interferes with treatment

Notes:

* The babies of some pregnant women who drink water containing boron in excess of the goal level (MCLG) may have an increased risk of developmental effects, based on studies in laboratory animals.

Italicized numbers indicate the year of the data ([17] for 2017). If no number, the data is from 2023.

For more information, contact:

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