

**Death Valley National Park
Maintenance Division
Water System Operations
Death Valley, Ca 92328
June of 2018
Consumer Confidence Report
Furnace Creek Water System**

Dear Water System Customer:

Safe and reliable drinking water supplies are one of the most important resources we have available to us. Here at the National Park Service Death Valley Water System Operations we're committed to providing safe drinking water supplies to our customers that meets or exceeds the standards of quality. In an effort to keep our customers thoroughly informed about the quality of our water supplies, we provide this annual report. The following water quality information can be used for future reference in addressing any questions that you may have regarding your drinking water.

The Furnace Creek Community water supply is collected from three wells located one mile east of the two million gallon tank on the alluvial fan. The system capacity is approximately one million gallons per day. Source water is 86 degrees. Tap water will often exceed 100 degrees because of the intense heat penetration through the ground to the pipes during hot weather.

The water is considered moderately mineralized consisting of sodium, calcium and magnesium, salts and bicarbonate, sulfates, fluoride, arsenic and chloride. The water is considered high silica water in which amorphous silica and magnesium silicate deposits could create serious problems by fouling surfaces of water handling equipment. This type of silica scale is very tenacious and difficult to remove.

Specific water quality data relating to system water supplies can be found in Table 1 of this report. All water naturally contains a variety of dissolved mineral and organic substances and the California Department of Health Services has adopted drinking water standards that establish limits that may affect health or aesthetic qualities of water.

The California Department of Health Services (DHS) sets the drinking water standards and has determined that fluoride is a health concern at certain exposure levels. Fluoride occurs naturally in combination with other elements such as, sodium fluoride (NaF) or sodium silicofluoride (Na²SiF). All fluoride compounds dissociate to yield fluoride ion when the compounds come in contact with water. Studies dating back to the early 20th century have confirmed that drinking water containing fluoride ion concentrations greater than 2.0 mg/L have caused dental fluorosis. Dental fluorosis is when the enamel of human teeth becomes mottled or discolored. The degree of

discoloration increases with the increase of fluoride in the water. The DHS has set the drinking water standard for fluoride at 2.0 parts per million (2 ppm) to protect against the risk of adverse health effects. Drinking water that meets this standard is associated with little or none of this risk and should be considered safe. Arsenic levels have been reduced to a Maximum Contaminate Level (MCL) of 10 parts per billion (10 ug/l) and it is our goal to exceed these levels.

In cooperation with the Department of Health Services, Division of Drinking Water, the National Park Service in Death Valley has a Reverse Osmosis Water Treatment Plant for the Furnace Creek water system to address the Fluoride and Arsenic regulations. Reverse Osmosis reduces the dissolved solids in the water by a filtration process that uses pressure to force the water through a membrane, retaining the solute (high total dissolved solids) on one side and allowing the pure solution to pass to the other side. By applying a pressure in excess of the Osmotic pressure a clean pure product can be achieved. All tests to date have proved our R.O. Plant exceeds requirements set by the California State Department of Health.

Samples of water are collected twice monthly for bacterial testing by the Inyo County Health Department. All water supplied to the public is disinfected with chlorine. This insures all harmful bacteria are removed. Water is tested daily for chlorine residuals to continuously monitor and control chlorine performance and to also alert personnel if problems occur.


We would like to encourage managers, landlords, employers, schools, etc to distribute this water quality report to individuals who may be non-billed water users to assure the broadest distribution of this information possible. The National Park Service will provide additional copies at no charge. Again, we would like to restate our commitment towards providing safe drinking water to all our customers. If you have any questions please contact us at the Cow Creek Maintenance offices during regular business hours: Monday through Friday 7:00 am to 3:30 p.m. at (760) 786-3264.

Table 1

Terms and abbreviations used below:

- **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
- **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 are set by the U.S. Environmental Protection Agency.
- **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 (MCLGs) as is economically and technologically. Secondary MCLs are set to protect odor, taste, and appearance of drinking water.
- **Regulatory Action Level (AL):** The concentration of a contaminant which, when exceeded, triggers treatment or other requirements that a water system must follow.
- **NA:** not applicable **ND:** not detectable **PPB:** parts per billion **PPM:** parts per million
- **mg/L:** milligrams per liter **pCi/l:** picocuries per liter **ug/L:** micrograms per liter

Thomas Buck
Water Treatment Supervisor



Death Valley National Park / Furnace Creek Water System

Inorganic Chemicals / Metals		MCL	RAW	FINAL	
Aluminum	ppm	0.002	ND	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Antimony	ppm	0.006	ND	ND	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic	ppm	0.01	25	0.007	Erosion of natural deposits; Runoff from orchards; Runoff from glass and electronics production wastes
Barium	ppm	2	ND	ND	Discharge of drilling wastes; Discharge from metal refineries; Erosion of natural deposits
Beryllium	ppm	0.004	ND	ND	Discharge from metal refineries and coal-burning factories; Discharge from electrical, aerospace, and defense industries
Boron	ppb	NR	930	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Cadmium	ppm	0.005	ND	ND	Corrosion of galvanized pipes; Erosion of natural deposits; Discharge from metal refineries; Runoff from waste batteries and paints
Chromium	ppm	0.1	ND	ND	Discharge from steel and pulp mills; Erosion of natural deposits
Copper	ppm	1.3	ND	ND	Corrosion of household plumbing systems; Erosion of natural deposits; Leaching from wood preservatives
Cyanide	ppm	0.15	ND	ND	Discharge from steel/metal factories; Discharge from plastic and fertilizer factories
Fluoride	ppm	2	3.7	1.2	Erosion of natural deposits; Water additive which promotes strong teeth; Discharge from fertilizer and aluminum factories
Lead	ppm	0.015	ND	ND	Corrosion of household plumbing systems; Erosion of natural deposits
Manganese	ppb	50	ND	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Mercury	ppm	0.002	ND	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Nickel	ppm	0.001	ND	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Potassium	ppm	NR	9.9	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Selenium	ppm	0.05	ND	ND	Discharge from petroleum and metal refineries; Erosion of natural deposits; Discharge from mines
Silver	ppm	0.001	ND	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Thallium	ppm	0.002	ND	ND	Leaching from ore-processing sites; Discharge from electronics, glass, and drug factories
Vanadium	ppm	0.003	ND	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland
Zinc	ppb	0.05	ND	ND	Erosion of natural deposits; Discharge from refineries and factories; Runoff from landfills; Runoff from cropland

Nitrate / Nitrite

Nitrate	ppm	10	ND	ND	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits
Nitrite	ppm	1	ND	ND	Runoff from fertilizer use; Leaching from septic tanks, sewage; Erosion of natural deposits

Radiological

Gross Alpha emitters	pCi/L	15	10	5	Erosion of natural deposits
Radium	ppb	5	0.2	0	Erosion of natural deposits

Regulated SOC's

All tested SOC's results were non detectible

Regulated VOC's

All tested VOC's results were non detectible

Secondary / GP

Bicarbonate Alkalinity	ppm	NR	340	122
Calcium	ppm	NR	36	12
Chloride	ppm	500	33	11
Hardness (Total) as CaCO ₃	ppm	NR	170	56
Magnesium	ppb	50	20	7
pH	ppm	6.5-8.5	7.7	7.6
Sodium	ppm	500	150	50
Sulfate	ppm	500	160	53
Total Dissolved Solids	ppm	1000	600	190

Microbiological Contaminants

Total Coliform	P/A	P	P	A	Naturally present in the environment
Total Coliform Monthly %	%	5%	0%	0%	Naturally present in the environment
Fecal Coliform	P/A	P	A	A	Human and animal fecal waste
E. Coli	P/A	P	A	A	Human and animal fecal waste

Disinfectants and Disinfection Byproducts

Chlorine	ppm	4	0	0.9	Water additive used to control microbes
Haloacetic Acid (HAA5)	ppb	50	NT	ND	Disinfectant By-Product
Total Trihalomethanes (THM5)	ppb	80	NT	ND	Disinfectant By-Product
Turbidity	NTU	1	0.35	0.1	Soil runoff

MCL **Maximum Contaminant Level**

RAW	Source of Water
Final	Finished Water that is available for the consumer
ND	No Detection
NR	No Regulation
NT	Not Tested
NTU	Nephelometric Turbidity Units / Clarity of the water
P/A	Presence / Absence
pCi/L	Picocuries per Liter / standard measure for the intensity of radioactivity / one trillionth of one curie
ppm	Parts per million / milligrams per liter / mg/L
ppb	Parts per billion / micrograms per liter / ug/L

Any questions relating to analytical measurements can be answered easily from information obtained from the internet.
