2019 ANNUAL WATER QUALITY REPORT

DESERT HILLS WATER SYSTEM
PWS ID: 04-07-026

Our Mission: To Serve Your Water Needs

The Town of Cave Creek is dedicated to protecting the environment while bringing you quality water at a fair price.

Our staff works hard to bring you refreshing water every time you pour a glass.

We start with a natural fresh water source. We regularly sample and analyze water before it enters our system. We conduct quality control checks as water leaves our plant and wells.

Finally, we routinely check water quality at selected locations throughout our system to ensure the highest possible quality.

Our Mark of Excellence

We are once again proud to present to you our annual water quality report. We have dedicated ourselves to producing drinking water that meets or exceeds state and federal drinking water standards. We continually strive to adopt new and better methods of delivering the best quality drinking water to you. As regulations and drinking water standards change, it is our commitment to you to incorporate these changes system-wide in an expeditious and cost-effective manner.

As new challenges to drinking water safety emerge, we will be vigilant in maintaining our objective of providing quality drinking water at a fair price. If you have any health concerns relating to the information in this report, we encourage you to contact your health care provider.

We hope you find this report informative and useful. It is our pleasure to serve you.

What's Inside

This report outlines the processes involved in delivering to you the highest quality drinking water available.

This report answers these important questions:

Where does my water come from?

What is in my drinking water?

We will also provide information on other available resources that will answer questions about water quality and potential health effects.

Where Does My Water Come From?

The Desert Hills Water System is supplied by a combination of groundwater and surface water. We operate three groundwater wells that provide around 45% of the Desert Hills water supply. The remaining water comes from a connection to the Cave Creek Water System, which supplies treated surface water. Groundwater is pumped from the Southern Section of the Carefree Sub-Basin, which is a small, shallow, unproductive dissected alluvial plain in the far Northern region of the Phoenix AMA. The sub-basin is underlain by volcanic rock and water generally moves to the west-southwest.

The Cave Creek Water System treats surface water delivered by the Central Arizona Project Canal. This water is principally Colorado River water delivered from Lake Havasu via the CAP Canal. Cave Creek water is drawn from the CAP Canal downstream of Lake Pleasant; therefore, the actual water delivered can be a mix of Colorado River water and Lake Pleasant water. The water is delivered to the Cave Creek Water Treatment Plant via a 12-mile transmission main from the CAP Canal. The Cave Creek Water Treatment Plant utilizes a coagulation/direct filtration process to produce potable water. In November 2019, new membrane treatment units were added to the plant to help with overall water quality.

Notice of Source Water Assessment

In 2004 the Arizona Department of Environmental Quality completed a source water assessment for the groundwater wells and renewable surface water sources used by the Town of Cave Creek. The assessment was concerned that the groundwater wells could not be relied upon to provide a reliable long-term water source. Accordingly, wells are not being used as part of the Town's drinking water supply.

continued from page 1

While the Town is currently nor using our groundwater wells, a number of residents have private wells. Residents can help protect the sources by properly recycling household and automotive chemicals, and limiting pesticide and fertilizer use.

For more information, please call our Customer Service Center at 480-488-6600 or visit the ADEQ's Source Water Assessment and Protection Unit website at www.azdeq.gov/environ/water/dw/swap.html

Special Health Information

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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. EPA/CDC (Centers for Disease Control and Prevention) 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).

Share This Report

Landlords, businesses, schools, hospitals and other groups are encouraged to share this important water quality information with water users at their location who are not billed customers of the Desert Hills Water System and therefore do not receive this report directly.

Substances Expected to be in Drinking Water

To ensure that tap water is safe to drink, U.S. EPA prescribes regulations limiting the amount of certain contaminants in water provided by public water systems. U.S. Food and Drug Administration regulations establish limits for contaminants in bottled water, which 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 these contaminants does not necessarily indicate that the water poses a health risk.

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 can acquire naturally occurring minerals, radioactive material, and substances resulting from the presence of animals or from human activity.

Substances That May be in Source Water

- Microbial contaminants, such as viruses and bacteria, which may come from septic systems, sewage treatment plants, agricultural livestock operations, or wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or may 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 may also come from gas stations, urban storm water runoff, and septic systems.
- Radioactive contaminants, which can be naturally occurring or may be the result of oil and gas production and mining activities.

For more information about contaminants and potential health effects, please call the U.S. EPA's Safe Drinking Water Hotline at 800-426-4791 or website at www.epa.gov/home/epa-hotlines.

What's in My Water?

For your information, we have compiled a list below showing what substances were detected in our drinking water during 2019. All of the substances listed below were less than the Maximum Contaminant Levels (MCLs) set by USEPA, and we feel it is important that you know exactly what was detected and how much of the substance was present.

How to Read This Table

Extensive monitoring is conducted to ensure that your water meets water quality standards. The results of our monitoring are reported in the following table. For help with interpreting this information, please see the "Definitions" section.

Starting with **Substance**, read across. **Year Sampled** is 2019 or years prior.

- **MCLG** is the goal level for that substance (this may be lower than what is allowed).
- **MCL** shows the highest level of substance allowed.
- **Highest Amount Detected** is the the highest amount found.
- **Range of Detections** notes the highest and lowest amounts found.
- **Compliance Achieved:** A **Yes** under this category means the amount of the substance is below government requirements.
- **Typical Source** notes where the substance usually originates.

Unregulated substances are measured, but maximum contaminant levels have not been established by the government.

Water Quality Data

We routinely monitor for contaminants in your drinking water according to Federal and State laws. The State of Arizona requires us to monitor for certain contaminants less than once per year because the concentrations of these contaminants are not expected to vary significantly from year to year, or the system is not considered vulnerable to this type of contamination. Some of our data, though representative, may be more than one year old.

These tables show the results of our monitoring for the period of January 1 to December 31, 2019 unless otherwise noted.

Microbiological Contaminants

Contaminant	MCL	MCLG	Unit	Result	Violation (Yes or No)	Sample Date	Likely Source of Contamination
Total Coliform Bacteria for Systems that collects>40 samples per month	No more than 5% of monthly samples can be positive	0	Absent or Present	Absent	No	2019	Naturally present in the environment
Total Coliform Bacteria for Systems that collects<40 samples per month	No more than 1 positive monthly sample	0	Absent or Present	Absent	No	2019	Naturally present in the environment
Fecal coliform and E. Coli	A routine sample & a repeat sample are total coliform positive, & one is also fecal coliform or *E. coli positive*	0	Absent or Present	Absent	No	2019	Human and animal fecal waste

Turbidity

	TT Requirement	Level Found	Violation (Yes or No)	Sample Date	Likely Source of Contamination
Turbidity	Maximum 1.0 NTU for any single Measurement	Highest single measurement: 0.44 NTU	No	Date: March 2019	Soil Runoff
	In any month, at least 95% of samples must be less than 0.3 NTU	Lowest monthly percentage of samples meeting TT standard for our technology: 0.14 NTU	No	Month: November 2019	

Lead and Copper

Contaminant	AL	ALG	Units	90th Percentile	Number of Sites over AL	Violation (Yes or No)	Sample Date/Year	Likely Source of Contamination
Copper	1.3	1.3	ppm	0.17	0	No	8/17/2017	Corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead	15	0	ppb	5	0	No	8/17/2017	Corrosion of household plumbing systems, erosion of natural deposits

Disinfectants

	MRDL	MRDLG	Units	Level Detected & Range	Violation (Yes or No)	Sample Date/Year	Source
Chlorine	4	4	ppm	1 to 1.1	No	RAA	Water additive used to control microbes

Disinfection Byproducts

Contaminant	MCL	MCLG	Units	Range	Highest RAA	Violation (Yes or No)	Sample Date/Year	Likely Source of Contamination
Haloacetic Acids (HAA)	60	N/A	ppb	10 to 33.6	18	No	2019	By-product of drinking water disinfection
Total Trihalomethanes (TTHM)	80	N/A	ppb	33.5 to 90.1	54	No	2019	By-product of drinking water disinfection

Total Organic Carbon

Contaminant	Compliance Factor (measurements should not be lower than this factor)	Lowest Running Annual Average (compliance factor)	Running Annual Average Range for the Year (compliance factor)	Violation (Yes or No)	Sample Date/Year	Likely Source of Contamination
Total Organic Carbon (TOC)	1.0	0.89	1.00	Yes	2019	Naturally present in the environment

Inorganic Contaminants

Contaminant	MCL	MCLG	Units	Level Detected/ Range	Violation (Yes or No)	Sample Date	Likely Source of Contamination
Antimony	6	6	ppb	0 to 1	No	2018	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic * Effective January 23, 2006 the MCL is now 10 ppb.	50*	0	ppb	7.2 to 9.8	No	2019	Erosion of natural deposits; runoff from orchards; runoff from glass and electronics production wastes
Asbestos	7	7	MFL				Decay of asbestos cement water mains; erosion of natural deposits
Barium	2	2	ppm	0.062	No	2019	Discharge of drilling wastes; discharge from metal refineries; erosion of natural deposits
Beryllium	4	4	ppb	0-1	No	2018	Discharge from metal refineries and coal-burning factories; discharge from electrical, aerospace, and defense industries
Cadmium	5	5	ppb	0-.05	No	2018	Corrosion of galvanized pipes; erosion of natural deposits; discharge from metal refineries; runoff from waste batteries and paints
Chromium	100	100	ppb	2.6	No	2019	Discharge from steel and pulp mills; erosion of natural deposits
Cyanide	200	200	ppb	0-25	No	2018	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Fluoride	4	4	ppm	0.32	No	2019	Erosion of natural deposits; water additive which promotes strong teeth; discharge from fertilizer and aluminum factories
Mercury (inorganic)	2	2	ppb	0-0.2	No	2018	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills; runoff from cropland
Nitrate (as Nitrogen)	10	10	ppm	2.3 to 2.5	No	2019	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Nitrite (as Nitrogen)	1	1	ppm				Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Selenium	50	50	ppb	0 to 30	No	2018	Discharge from petroleum and metal refineries; erosion of natural deposits; discharge from mines
Thallium	2	0.5	ppb	0 to 1	No	2018	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories

Synthetic Organic Contaminants, Including Pesticides and Herbicides

Contaminant	MCL	MCLG	Units	Level Detected/ Range	Violation (Yes or No)	Sample Date	Likely Source of Contamination
2,4-D	70	70	ppb	0 to 0.1	No	2018	Runoff from herbicide used on row crops
2,4,5-TP (Silvex)	50	50	ppb	0 to 0.02	No	2018	Residue of banned herbicide
Alachlor	2	0	ppb	0 to 0.1	No	2018	Runoff from herbicide used on row crops
Atrazine	3	3	ppb	0 to 0.05	No	2018	Runoff from herbicide used on row crops
Benzo (a) pyrene (PAH)	200	0	ppt	0 to 20	No	2018	Leaching from linings of water storage tanks and distribution lines
Carbofuran	40	40	ppb	0 to 0.5	No	2018	Leaching of soil fumigant used on rice and alfalfa
Chlordane	2	0	ppb	0 to 0.1	No	2018	Residue of banned termiticide
Dalapon	200	200	ppb	0 to 0.1	No	2018	Runoff from herbicide used on rights of way
Di (2-ethylhexyl) adipate	400	400	ppb	0 to 0.6	No	2018	Discharge from chemical factories
Di (2-ethylhexyl) phthalate	6	0	ppb	0.62	No	2019	Discharge from rubber and chemical factories
Dibromochloropropane	200	0	ppt	0 to 20	No	2018	Runoff/leaching from soil fumigant used on soybeans, cotton, pineapples, and orchards
Dinoseb	7	7	ppb	0 to 0.2	No	2018	Runoff from herbicide used on soybeans and vegetables
Diquat	20	20	ppb	0 to 0.4	No	2018	Runoff from herbicide use
Endothall	100	100	ppb	0 to 5	No	2018	Runoff from herbicide use
Endrin	2	2	ppb	0 to 0.1	No	2018	Residue of banned insecticide
Epichlorohydrin	TT	0	N/A		No		Discharge from industrial chemical factories; an impurity of some water treatment chemicals
Ethylene dibromide	50	0	ppt	0 to < 10	No	2018	Discharge from petroleum refineries
Glyphosate	700	700	ppb	0 to 6	No	2018	Runoff from herbicide use
Heptachlor	400	0	ppt	0 to < 10	No	2018	Residue of banned temiticide
Heptachlor epoxide	200	0	ppt	0 to < 10	No	2018	Breakdown of heptachlor
Hexachlorobenzene	1	0	ppb	0 to 0.05	No	2018	Discharge from metal refineries and agricultural chemical factories
Hexachlorocyclo pentadiene	50	50	ppb	0 to 0.05	No	2018	Discharge from chemical factories
Lindane	200	200	ppt	0 to < 10	No	2018	Runoff/leaching from insecticide used on cattle, lumber, gardens
Pentachlorophenol	1	0	ppb	0	No	2018	Discharge from wood preserving factories
Toxaphene	3	0	ppb	0	No	2018	Runoff/leaching from insecticide used on cotton and cattle

Volatile Organic Contaminants

Contaminant	MCL	MCLG	Units	Level Detected/ Range	Violation (Yes or No)	Sample Date	Likely Source of Contamination
Benzene	5	0	ppb	< 0.5	No	5/4/2019	Discharge from factories; leaching from gas storage tanks and landfills
Carbon tetrachloride	5	0	ppb	< 0.5	No	5/4/2019	Discharge from chemical plants and other industrial activities
Chlorobenzene	100	100	ppb	< 0.5	No	5/4/2019	Discharge from chemical and agricultural chemical factories
o-Dichlorobenzene	600	600	ppb	< 0.5	No	5/4/2019	Discharge from industrial chemical factories
p-Dichlorobenzene	75	75	ppb	< 0.5	No	5/4/2019	Discharge from industrial chemical factories
1,2-Dichloroethane	5	0	ppb	< 0.5	No	5/4/2019	Discharge from industrial chemical factories
1,1-Dichloroethylene	7	7	ppb	< 0.5	No	5/4/2019	Discharge from industrial chemical factories
cis-1,2-Dichloroethylene	70	70	ppb	< 0.5	No	5/4/2019	Discharge from industrial chemical factories
trans-1,2-Dichloroethylene	100	100	ppb	< 0.5	No	5/4/2019	Discharge from industrial chemical factories
Dichloromethane	5	0	ppb	< 0.5	No	5/4/2019	Discharge from pharmaceutical and chemical factories
1,2-Dichloropropane	5	0	ppb	< 0.5	No	5/4/2019	Discharge from industrial chemical factories
Ethylbenzene	700	700	ppb	< 0.5	No	5/4/2019	Discharge from petroleum refineries
Styrene	100	100	ppb	< 0.5	No	5/4/2019	Discharge from rubber and plastic factories; leaching from landfills
Tetrachloroethylene	5	0	ppb	< 0.5	No	5/4/2019	Discharge from factories and dry cleaners

Contaminant	MCL	MCLG	Units	Level Detected/ Range	Violation (Yes or No)	Sample Date	Likely Source of Contamination
1,2,4-Trichlorobenzene	70	70	ppb	< 0.5	No	5/4/2019	Discharge from textile-finishing factories
1,1,1-Trichloroethane	200	200	ppb	< 0.5	No	5/4/2019	Discharge from metal degreasing sites and other factories
1,1,2-Trichloroethane	5	3	ppb	< 0.5	No	5/4/2019	Discharge from industrial chemical factories
Trichloroethylene	5	0	ppb	< .05	No	5/4/2019	Discharge from metal degreasing sites and other factories
Toluene	1	1	ppm	< 0.5	No	5/4/2019	Discharge from petroleum factories
Vinyl Chloride	2	0	ppb	< 0.3	No	5/4/2019	Leaching from PVC piping; discharge from chemical factories
Xylenes	10	10	ppm	< 0.5	No	5/4/2019	Discharge from petroleum factories; discharge from chemical factories

Unregulated Contaminants

Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted.

Contaminant	MCL	MCLG	Units	Level Detected/ Range	Violation (Yes or No)	Sample Date	Likely Source of Contamination
	N/A	N/A			N/A		
	N/A	N/A			N/A		
	N/A	N/A			N/A		

Secondary Contaminants

Secondary standards are non-enforceable guidelines for contaminants that may cause cosmetic effects or aesthetic effects in drinking water. EPA recommends these standards but does not require water systems to comply.

Contaminant	Secondary Standard	MCLG	Units	Level Detected/ Range	Violation (Yes or No)	Sample Date	Likely Source
Aluminum	0.05 to 0.2	N/A	ppm		N/A		
Color	15	N/A	color units		N/A		
Corrosivity	noncorrosive	N/A	N/A		N/A		
Foaming Agents	0.5	N/A	ppm		N/A		
Iron	0.3	N/A	ppm		N/A		
Manganese	0.05	N/A	ppm		N/A		
Odor	3	N/A	threshold odor number		N/A		
pH	6.5 to 8.5	N/A	ppm	7.4 to 7.5	N/A	2019	
Silver	0.10	N/A	ppm		N/A		
Sodium	N/A	N/A	ppm	92	N/A	8/15/2019	
Sulfate	250	N/A	ppm		N/A		
Total Dissolved Solids	500	N/A	ppm		N/A		
Zinc	5	N/A	ppm		N/A		

Health Effects Information About the Above Tables

Nitrate in drinking water at levels above 10 ppm is a health risk for infants of less than six months of age. High nitrate levels in drinking water can cause blue baby syndrome. Nitrate levels may rise quickly for short periods-of-time because of rainfall or agricultural activity. If you are caring for an infant, and detected nitrate levels are above 5 ppm, you should ask advice from your health care provider.

If **arsenic** is less than the MCL, your drinking water meets EPA's standards. EPA's standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. EPA continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and is linked to other health effects such as skin damage and circulatory problems.

Infants and young children are typically more vulnerable to **lead** in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about elevated lead levels in your home's water, you may wish to have your water tested. Flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the EPA *Safe Drinking Water Hotline* at 1-800-426-4791.

Violations

The following violations were received by our water system or were ongoing in the calendar year 2019

Type/Description	Compliance Period
Disinfection Byproducts Precursor Treatment Technique violation Quarter 1,2 and 3 in 2019, the Town's removal ratio was below the 1% Running Annual Average Corrective Action: The Town has installed a new filter system in November 2019 and since then has returned to compliance	Samples are taken monthly, and submitted quarterly all 2019
Monitoring Violation DBP Quarterly Report The Town without knowledge did not submit the DBP Quarterly Report within the 10 days after the monitoring period. Corrective Action: The Town now has procedures and reminders in place for all reporting's to be completed	4th quarter 2019

An explanation of the violation(s) in the above table, the steps taken to resolve the violation(s) and any required health effects information are required to be included with this report. (Copies of Public Notices are available upon request)

Definitions of Terms Used in This Report

• **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.
• **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.
• **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.
• **MRDLG (Maximum Residual Disinfectant 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.
• **TT (Treatment Technique):** A required process intended to reduce the level of a contaminant in drinking water.
• **AL (Action Level):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.
• **ND:** None detected.
• **pCi/L (Picocuries per liter):** Measurement of the natural rate of disintegration.
• **ppb – (Parts per billion):** One part substance per billion parts water (or micrograms per liter).
• **ppm – (Parts per million):** One part substance per million parts water (or milligrams per liter).
• **Grains/gallon:** A measure of concentration used to express total hardness by most water softening manufacturers.
• **TTHM - (Total Trihalomethanes):** consist of chloroform, bromodichloromethane, dibromochloromethane, and bromoform.
• **HAA5- Five Haloacetic Acids:** consist of monochloroacetic acid, dichloroacetic acid, trichloroacetic acid, bromoacetic acid, and dibromoacetic acid.

Home Water Treatment Units

If you install a home treatment system such as a water softener or reverse osmosis system to improve taste or odor, remember to follow the manufacturer's instructions on operation and maintenance. Failure to perform maintenance can result in reduced water quality. We recommend contacting the manufacturer of your treatment system for maintenance instructions or assistance. Additional information about home treatment systems is available from the Arizona Water Quality Association at 480-947-9850 or by writing to 6819 E. Diamond St., Scottsdale, AZ 85257.

Town of Cave Creek
37622 N. Cave Creek Road
Cave Creek, Arizona 85331

Este informe contiene informaciòn muy impotante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien. 480-488-6620.

For more information about this report, or for any questions relating to your drinking water, please call customer service at 480-488-6620.

TIPS TO CONSERVE WATER

Water conservation measures are an important first step in protecting our water supply. Such measures not only save the supply of our source water, but can also save you money by reducing your water bill.

Conservation measures you can use inside your home include:
• Fix leaking faucets, pipes, toilets, etc.
• Replace old fixtures; install water-saving devices in faucets, toilets and appliances.
• Wash only full loads of laundry.
• Do not use the toilet for trash disposal.
• Take shorter showers.
• Do not let the water run while shaving or brushing teeth.
• Soak dishes before washing.
• Run the dishwasher only when it's full.

You can conserve outdoors as well:
• Water the lawn and garden in the early morning or evening.
• Use mulch around plants and shrubs.
• Repair leaks in faucets, hoses and irrigation systems.
• Use water-saving nozzles.
• Use water from a bucket to wash your car, and save the hose for rinsing.