



2016

# Water Quality REPORT

702-267-5900

[HendersonKnowsH2O.org](http://HendersonKnowsH2O.org)



*A Place To Call Home*

## Why you are receiving a Water Quality Report

The City of Henderson's 2016 Water Quality Report provides you with detailed information about your drinking water. Drinking water quality varies from city to city, depending on the condition of the source water from which it is drawn and the treatment it receives. Henderson residents and businesses enjoy some of the highest quality drinking water in the nation. Your drinking water not only comes from a safe and high quality source, the Colorado River, but also goes through a multiple-step treatment process and thousands of laboratory tests before ever reaching your tap. The City of Henderson is required by the Environmental Protection Agency to provide the information contained in this report to each and every Henderson resident and business, so that you may be better informed about your drinking water. You may contact the City of Henderson Department of Utility Services' Customer Care Center at 702-267-5900 or visit [HendersonKnowsH2O.org](http://HendersonKnowsH2O.org) for additional information about your drinking water.

## How your drinking water is treated

The City of Henderson operates a water treatment plant that supplies approximately 15 percent of the community's drinking water. The remaining water is supplied by the Southern Nevada Water Authority, from either the Alfred Merritt Smith or River Mountains Water Treatment Facility, and is delivered to your home or business by the City of Henderson. All three facilities treat the water to meet extremely high standards using a sophisticated filtration and disinfection process. This report contains the results of water quality monitoring, sampling and analysis from all three water treatment facilities, and from Henderson's water distribution system, for the year 2015. All regulated contaminants were within safe and allowable limits.

## Assessment of your water source

The federal Safe Drinking Water Act was amended in 1996 and requires states to develop and implement source water assessment programs to analyze existing and potential threats to the quality of public drinking water throughout the state. A summary of the City of Henderson's susceptibility to potential sources of contamination was initially provided by the State of Nevada in 2003. The summary of this source water assessment may be accessed online at [HendersonKnowsH2O.org](http://HendersonKnowsH2O.org). Information pertaining to the findings of the source water assessment is available for viewing in person at Henderson City Hall, 240 S. Water St., Henderson, NV 89015. Please call 702-267-2500 for an appointment. Additional information about the Nevada Source Water Assessment Program may be found at [ndep.nv.gov](http://ndep.nv.gov).



## Where your water comes from

All of the water we use in the City of Henderson comes from the Colorado River. It begins as snow in the Colorado Rockies, then melts and travels down the Colorado River, through the Grand Canyon and into Lake Mead. As the water makes its journey through canyons, rivers and reservoirs, it picks up natural elements like calcium and magnesium that give our water its hardness and taste.



## Southern Nevada Water Resources

In 1922 the Colorado River Compact divided the water supply of the Colorado River amongst seven adjacent states. Four upper states – Colorado (52 percent), Utah (23 percent), Wyoming (14 percent), and New Mexico (11 percent) – received 7.5 million acre-feet (maf) to share. Three lower states – California (59 percent), Arizona (37 percent), and Nevada (4 percent) – also received 7.5 maf to share. The total apportionment to all states is 15 maf.

Nevada is limited to our annual Colorado River apportionment of 0.3 maf to be drawn from Lake Mead each year.

Nearly 90 percent of all the water supplied to Southern Nevada communities comes from Lake Mead via the Colorado River. The remaining 10 percent comes from a deep groundwater aquifer beneath the Las Vegas Valley.



## Drought

As the drought affecting many western states across the U.S. continues, Lake Mead water levels are projected to decline further during the 2016 calendar year. The Southern Nevada Water Authority (SNWA) completed construction of the third raw water intake at Lake Mead in September 2015. The new intake ensures a continuous and reliable supply of water to the valley at a depth 140 feet deeper than the previous intake. SNWA has begun construction of the Low Lake Pumping Station that will further ensure water supply to the valley should lake levels fall below 1,000 feet.

## Water Conservation

Southern Nevada is one of the driest communities in the country. Many years of record drought have shown us just how vulnerable our limited water resources can be. We must all work together to preserve our community's water supply so we can meet our future water demands.

Almost 70 percent of our water supply is used outdoors to irrigate landscaping. The most effective impact you can make on water conservation is to reduce outdoor use. One way is to install desert landscaping, which requires 55 gallons less water per square foot per year than grass.

The City's Department of Utility Services has always done its share of being "green" and set an example when it comes to conservation. The City of Henderson's water reclamation facilities supply highly treated wastewater to golf courses throughout Henderson. By providing this reclaimed water to the golf courses, no additional water from Lake Mead has to be used.



## Lead and Copper

The City of Henderson's public water system does not have lead pipes or service laterals. Some Henderson homes built prior to 1989 may have copper pipes with lead solder joints, after which it was banned in residential construction. Lead and copper in drinking water is mainly due to the corrosion of customer household plumbing systems that contain these metals.

Our community's water comes from the Colorado River and it contains naturally occurring minerals that make it "hard" and less corrosive to piping materials. Additionally, a corrosion inhibitor called zinc orthophosphate is added to the water to help prevent metal that may be present in plumbing fixtures from leaching into the drinking water.

The Department of Utility Services conducts a lead and copper testing program every three years on tap water samples collected from participating residences that meet the sampling criteria. The results of this testing have remained below the limits set by the Environment Protection Agency since the test program began.



## What your drinking water may contain

There is no such thing as naturally pure water. In nature, all water contains some impurities, also known as contaminants. A contaminant is any substance other than H<sub>2</sub>O. Your 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 water poses a health risk. Sources of drinking 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 can collect substances from the presence of animals or human activity. Contaminants that may be present in source water include:

**Microbial Contaminants**, such as viruses and bacteria, which may come from septic systems, agricultural livestock operations, wastewater treatment plants 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 stormwater runoff, and residential uses.

**Organic Chemical Contaminants**, including synthetic and volatile organic chemicals, which are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, and septic systems.

**Radioactive Contaminants**, which can be naturally occurring or be the result of oil and gas production and mining activities.

## Important health information

People who have HIV/AIDS, are undergoing chemotherapy or organ transplant, take steroids, or for another reason have a weakened immune system may be more vulnerable to contaminants in their drinking water. These immunocompromised individuals should talk to their health care provider about special precautions they may need to take with their drinking water. For more information contact the Environmental Protection Agency's Safe Drinking Water Hotline at 800-426-4791.

Cryptosporidium, a naturally occurring organism found in many source waters around the world, can cause gastrointestinal distress. The City of Henderson and the Southern Nevada Water Authority test for Cryptosporidium in both source and treated water supplies, and employ proven disinfection processes to eliminate the health threat from your drinking water. The Environmental Protection Agency and Centers for Disease Control and Prevention have jointly published guidelines on how to lessen the risk from Cryptosporidium and other microbial contaminants. This document is available online at [epa.gov](http://epa.gov).

The following water quality analysis specifies what regulated contaminants were found in your drinking water; the levels at which they were found and how those levels compare to prescribed limits for those contaminants; and the likely source of each contaminant.

## How we know your drinking water is safe

To ensure that your drinking water is safe, the Environmental Protection Agency and Nevada Division of Environmental Protection prescribe regulations which limit the levels of certain contaminants that may be present.

Your drinking water is monitored for over 90 regulated contaminants through thousands of tests conducted on water samples collected from all three water treatment facilities, and from throughout Henderson's water distribution system. Only those regulated contaminants that were detected are included in the water quality analysis. All regulated contaminants that were detected are below the prescribed limits.

Your water is also monitored for many unregulated contaminants. Unregulated contaminants are those that don't yet have a drinking water standard set by the EPA. The purpose of monitoring for these contaminants is to help the EPA decide whether the contaminants should have a standard. If you would like additional information on the next round of unregulated sampling, view the American Water Works Association's fact sheet at [drinktapp.org](http://drinktapp.org).

Henderson UCMR Test Results: in compliance with the Unregulated Contaminant Monitoring Rule (UCMR), these results represent levels of monitored contaminants in the treated water supply, based on 2015 data.				CITY OF HENDERSON DISTRIBUTION SYSTEM		
UNREGULATED CONTAMINANTS	UNIT	MCL (EPA Limit)	MCLG (EPA Goal)	RANGE	AVERAGE	POSSIBLE SOURCES OF CONTAMINATION
Chlorate <sup>(1)</sup>	ppb	N/A	N/A	N/D - 140	75	Agriculture defoliant or desiccant; by-product of disinfection; and used in production of chlorine dioxide
Chromium (Total) <sup>(1)</sup>	ppb	100 <sup>(2)</sup>	100 <sup>(2)</sup>	0.3 - 0.4	0.3	See chromium-6 for source information; the amount measured when analyzing "total chromium" is the sum of all its valence states
Chromium-6 <sup>(1)</sup>	ppb	N/A	N/A	0.04 - 0.06	0.05	Naturally occurring element; used in making steel and other alloys; chromium 6 forms are used for chrome plating, dyes and pigments, leather tanning and wood preservation
Molybdenum <sup>(1)</sup>	ppb	N/A	N/A	4.8 - 5.1	5	Naturally occurring element found in ores and present in plants, animals and bacteria
Strontium <sup>(1)</sup>	ppm	N/A	N/A	1.2 - 1.3	1.2	Naturally occurring element
Vanadium <sup>(1)</sup>	ppb	N/A	N/A	1 - 2	2	Naturally occurring element

(1) Monitoring for this contaminant was conducted to comply with the Unregulated Contaminant Monitoring Rule (UCMR) set by the U.S. EPA Safe Drinking Water Act. Per the rule, monitoring is conducted within the Distribution System only. Unregulated contaminant monitoring helps the U.S. EPA to determine where certain contaminants occur and whether the Agency should consider regulating those contaminants in the future. With the exception of Chromium (Total), these contaminants have no MCLs or MCLGs.

(2) Monitoring for this regulated contaminant was performed under the UCMR3 at lower detection limits than are required under current monitoring rules. Monitoring for Chromium (Total), in conjunction with UCMR3 Assessment Monitoring, is required under the authority provided in Section 1445 (a)(1)(A) of the SDWA.

# Water quality analysis

Analysis of regulated contaminants detected in Henderson drinking water from January 1 to December 31, 2015. All detected contaminants were within safe and allowable limits.

REGULATED CONTAMINANTS	UNIT	MCL (EPA Limit)	MCLG (EPA Goal)	CITY OF HENDERSON WATER TREATMENT FACILITY <sup>(1)</sup>		ALFRED MERRITT SMITH WATER TREATMENT FACILITY <sup>(1)</sup>		RIVER MOUNTAINS WATER TREATMENT FACILITY <sup>(1)</sup>		POSSIBLE SOURCES OF CONTAMINATION
				RANGE	AVERAGE	RANGE	AVERAGE	RANGE	AVERAGE	
Alpha Emitters	pCi/L	15	0	6.3 - 6.3	N/A	4.5 - 6.6	5.7	5.2 - 5.4	5.3	Erosion of natural deposits of certain minerals that are radioactive and may emit a form of radiation known as alpha radiation
Arsenic	ppb	10	0	1 - 2	2	1 - 2	2	2 - 2	2	Erosion of natural deposits
Barium	ppm	2	2	0.1 - 0.1	0.1	0.1 - 0.1	0.1	0.1 - 0.1	0.1	Erosion of natural deposits; discharge from metal refineries; discharge of drilling wastes
Beta Particles and Photon Emitters	pCi/L	50 <sup>(2)</sup>	0	N/D <sup>(3)</sup>	N/A	3.5 - 3.5 <sup>(3)</sup>	N/A	3.2 - 3.2 <sup>(3)</sup>	N/A	Decay of natural and man-made deposits of certain minerals that are radioactive and may emit a form of radiation known as photons and beta radiation
Bromate	ppb	10	0	N/A		2 - 16 <sup>(4)</sup>	8 <sup>(5)</sup>	6 - 14 <sup>(4)</sup>	9 <sup>(5)</sup>	By-product of drinking water disinfection with ozone
Cyanide, Free <sup>(6)</sup>	ppb	200	200	N/D	N/D	N/D - 6	N/D	N/D	N/D	Discharge from steel/metal factories; discharge from plastic and fertilizer factories
Di(2-ethylhexyl) Adipate	ppb	400	400	N/D	N/D	N/D	N/D	N/D - 0.2	N/D	Discharge from chemical factories
Nitrate (as Nitrogen)	ppm	10	10	0.6 - 0.7	0.6	0.4 - 0.7	0.5	0.4 - 0.7	0.5	Runoff from fertilizer use; leaching from septic tanks, sewage; erosion of natural deposits
Radium 226 and 228, combined	pCi/L	5	0	N/D	N/D	N/D - 0.6	0.2	N/D - 0.4	0.1	Erosion of natural deposits
Selenium	ppb	50	50	2 - 3	2	2 - 2	2	2 - 3	2	Discharge from petroleum refineries; erosion of natural deposits; discharge from mines
Thallium	ppb	2	0.5	N/D	N/D	N/D	N/D	N/D - 0.3	N/D	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Turbidity	NTU	95% of the samples <0.3 NTU <sup>(14)</sup>	N/A	100% of the samples were below 0.3 NTU. The maximum NTU was 0.23 on May 9, 2015.		100% of the samples were below 0.3 NTU. The maximum NTU was 0.18 on April 15, 2015.		100% of the samples were below 0.3 NTU. The maximum NTU was 0.13 on April 16, 2015.		Soil runoff
Uranium	ppb	30	0	5 - 5	N/A	4 - 5	4	4 - 4	4	Erosion of natural deposits

## SAMPLES COLLECTED IN CITY OF HENDERSON DISTRIBUTION SYSTEM<sup>(1)</sup>

Copper <sup>(6)</sup>	ppm	1.3 <sup>(7)</sup> (Action Level)	1.3	0.07 - 0.81	0.61 (90th% value)		Corrosion of household plumbing systems; erosion of natural deposits
Fluoride	ppm	4.0	4.0	0.7 - 0.8	0.7		Erosion of natural deposits; water additive <sup>(8)</sup>
Free Chlorine Residual	ppm	4.0 <sup>(10)</sup> (MRDL)	4.0 <sup>(10)</sup> (MRDLG)	N/D - 1.6	0.8 <sup>(5)</sup>		Water additive used to control microbes
Haloacetic Acids	ppb	60	N/A <sup>(11)</sup>	3 - 25	LRAA <sup>(12)</sup> 25		By-product of drinking water disinfection
Lead <sup>(6)</sup>	ppb	15 <sup>(7)</sup> (Action Level)	0	N/D - 9.5	2.5 (90th% value)		Corrosion of household plumbing systems; erosion of natural deposits
Total Coliforms	percent positive per month	5%	0	0 - 1.6%	0.4%		Naturally present in the environment
Total Trihalomethanes	ppb	80	N/A <sup>(11)</sup>	37 - 80 <sup>(13)</sup>	LRAA <sup>(12)</sup> 79		By-product of drinking water disinfection

### Footnotes:

- Some Safe Drinking Water Act (SDWA) regulations require monitoring from the distribution system, while other SDWA regulations require monitoring at the entry points to the distribution system (Alfred Merritt Smith WTF, River Mountains WTF, and Henderson WTF).
- The actual MCL for beta particles is 4 mrem/year. The U. S. Environmental Protection Agency (USEPA) considers 50 pCi/L to be the level of concern for beta particles.
- Annual testing not required, data is from 2011.
- Maximum levels greater than the MCL are allowable as long as the running annual average (RAA) does not exceed the MCL.
- This value is the highest running annual average (RAA) reported in 2015. Reports are filed quarterly.
- Samples are from the City of Henderson customers' taps. Annual monitoring not required, data from 2013.
- Lead and copper are regulated by a Treatment Technique (TT) that requires systems to control the corrosiveness of their water. If more than 10% of tap-water samples exceed the action level, water systems must take additional steps. For copper the action level is 1.3 ppm, and for lead it is 15 ppb.

(8) Cyanide was analyzed as total cyanide, which includes free cyanide.

(9) By state law, the Southern Nevada Water Authority (SNWA) and the City of Henderson are required to fluoridate the municipal water supply.

(10) Chlorine is regulated by MRDL, with the goal stated as a MRDLG.

(11) No collective MCLG but there are MCLGs for some of the individual contaminants. Haloacetic Acids: dichloroacetic acid (0), trichloroacetic acid (300 ppb); Trihalomethanes: bromodichloromethane (0), bromoform (0), dibromochloromethane (60 ppb).

(12) This value is the highest locational running annual average (LRAA) reported in 2015. Reports are filed quarterly.

(13) Maximum values at or above the MCL are acceptable as long as the LRAA does not exceed the MCL. Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems of the liver, kidneys or central nervous system, and may have an increased risk of cancer.

(14) Turbidity is regulated by a Treatment Technique (TT) requirement - 95% of all samples taken after filtration each month must be less than 0.3 NTU. Maximum turbidity cannot exceed 1.0 NTU.

### DEFINITIONS:

**Action Level:** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

**Disinfection by-product (DBP):** A substance created by the chemicals or processes used to destroy potentially harmful microorganisms.

**Maximum Contaminant Level (MCL):** 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.

**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 a 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.

**Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.

**Millirem (mrem):** One-thousandth of a rem (roentgen-equivalent-man), which is a unit of absorbed radiation dose that is adjusted for the biological effects equal to one rad of 250 kilovolt roentgen rays (dental x-rays require less than 100 kilovolts).

**N/A:** Not applicable.

**N/D:** Not detected. Does not equate to zero, but refers to an amount below analytical reporting limits.

**Nephelometric Turbidity Unit (NTU):** A measurement of water's clarity.

**Part per billion (ppb):** A unit used to describe the levels of detected contaminants. Equivalent to 1 cent in \$10 million.

**Part per million (ppm):** A unit used to describe the levels of detected contaminants. Equivalent to 1 cent in \$10,000.

**Picocuries per liter (pCi/L):** A measure of the radioactivity in water. Low levels of radiation occur naturally in many water systems, including the Colorado River.

**Running annual average:** Based on the monitoring requirements, the average of 12 consecutive monthly averages or the average of four consecutive quarters.

**Turbidity:** A measure of water clarity, which serves as an indicator of the treatment facility's performance.



*A Place To Call Home*

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[HendersonKnowsH2O.org](http://HendersonKnowsH2O.org)

Este reporte contiene informacion importante sobre la calidad del agua en su comunidad. Traduzcalo o hable con alguien que lo entiende bien. Si necesita ayuda con esto, llame nuestro Centro del Cuidado del cliente en 702-267-5900 para la ayuda.