



## SOURCES OF WATER

During 2016, approximately 63 percent of the water served by the District was either treated or banked surface water, and the remaining 37 percent was groundwater extracted from District wells. The District purchases its treated and banked surface water from the Antelope Valley-East Kern Water Agency (AVEK). AVEK gets its water from the Sacramento River/San Joaquin Delta via the State Water Project.

The water from AVEK is treated at their Quartz Hill Water Treatment Plant. The treatment plant receives water by gravity from the State Water Project. Screening and metering are provided at the head of the plant, followed by treatment chemical addition, flash mixing, tapered energy flocculation, clarification utilizing traveling bridges for sediment removal, and dual media filters. Chlorine is added during the final step to keep the water safe as it travels to your tap. The plant is capable of producing 65 million gallons per day, enough to serve the needs of 280,000 people. AVEK's banked surface water and the District's groundwater are also disinfected with chlorine for the same reason.

The State Water Resources Control Board updated the source water assessment in 2006 for the State Water Project, AVEK's water source. The assessment evaluates the vulnerability of water sources to contamination and helps determine whether more protective measures are needed. Water supplies from the Sacramento-San Joaquin River Delta are most vulnerable to contamination from municipal, industrial and agricultural activities. Also influencing the quality of water pumped from the Delta is the impact of the estuarial nature of the Delta and the naturally occurring salt-water intrusion which is dependent to a large extent on the inflow from the contributing rivers. A copy of the complete assessment can be obtained by contacting AVEK by phone at (661) 943-3201.

An assessment of the District groundwater wells was completed in March 2010. The wells in the Lancaster and Desert View Highlands areas are considered vulnerable to various contaminating activities including the following: dry cleaners, high density housing, sewer collection/septic systems, agriculture, automobile gas stations/repair and body shops, chemical processing/storage, above ground storage tanks, and other commercial/industrial activities. A copy of the complete assessment may be viewed at: State Water Resources Control Board, Division of Drinking Water, Los Angeles Office, 500 North Central Avenue, Suite 500, Glendale CA 91203, or by phone at (818) 551-2004.



## TO OUR CUSTOMERS

Each year, the Los Angeles County Waterworks Districts (District) provides this report to inform you, our customers, about the quality of the water you drink. We are proud to report that in 2016, your water met or surpassed all health-based drinking water standards.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (USEPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

We welcome your thoughts and suggestions to improve our service and delivery of the earth's most precious resource. Please visit our website, [www.lacwaterworks.org](http://www.lacwaterworks.org), or attend our Board meetings. They are typically held every Tuesday at the Kenneth Hahn Hall of Administration in Los Angeles.

Thank you for taking the time to read our annual water quality report. We look forward to another year of providing you with safe, reliable water.

Este reporte contiene información importante sobre la calidad de su agua potable durante el año civil 2016. Si usted no comprende esta información, por favor pida a alguien que se la traduzca o comuníquese con Lisset Cardenas al teléfono (626) 300-3384.

## PUBLIC PARTICIPATION AND CONTACT INFORMATION

The regular meetings of the Los Angeles County Board of Supervisors are held every Tuesday at 9:30 a.m. in the Board's Hearing Room located 500 West Temple Street, Room 381B, Kenneth Hahn Hall of Administration in Los Angeles. On Tuesdays following a Monday holiday, the meetings begin at 1:00 p.m.

For questions or comments regarding water quality or this report, please contact Mr. Bing Hua at (626) 300-3337. To view this report on the internet, please visit our website at [www.lacwaterworks.org](http://www.lacwaterworks.org).

# Waterworks District No. 40, Antelope Valley, Regions 4 & 34



## ANNUAL WATER QUALITY REPORT

Water testing performed in 2016



# DRINKING WATER & YOUR 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 water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the U.S. Environmental Protection Agency's (USEPA) Safe Drinking Water Hotline (1-800-426-4791).

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 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:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, that 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, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

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 from 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).



## Look for leaky or broken sprinkler heads

Saves 20+ gallons per head every 10 minutes



## Plant drought resistant trees and plants

Saves 30-60 gallons per 1,000 square feet each time



## Install drip-irrigation

Saves 15 gallons each time you water



## Check toilets for leaks

Saves 30-50 gallons per day per toilet



## Wash only full loads of clothes

Saves 15-45 gallons per load



## Run dishwasher when full instead of half full

Saves 5-15 gallons per load



## Use a broom to clean outdoor areas

Saves 8-18 gallons per minute



## Water plants early in the AM or at night

Saves 25 gallons each time you water



## Use mulch on soil surface

Saves 20-30 gallons per 1,000 square feet each time



## Fill the bathtub halfway or less

Saves 12 gallons per person



## Turn off water when brushing teeth or shaving

Saves 10 gallons per person per day



## Install aerators on bathroom faucets

Saves 1.2 gallons per person per day



## Adjust sprinkler to water plants, not your driveway

Saves 12-15 gallons each time you water



## Cover the swimming pool when not in use

Reduce the amount of make-up water needed by 30-50%



## Set mower blade to 3" to encourage deeper roots

Saves 16-50 gallons per day



## Install a high-efficiency toilet (1.28 gallons per flush)

Saves 19 gallons per person per day



## Install a water-efficient shower head

Saves 1.2 gallons per minute or 10 gallons per 10 minute shower



## Take five minute showers

Saves 12.5 gallons with a water efficient showerhead

## LEAD & COPPER

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. The District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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/lead>

# HEXAVALENT CHROMIUM

California's hexavalent chromium MCL became effective on July 1, 2014. Operations have been adjusted to make sure your drinking water meets the new state standard for hexavalent chromium. The District started to blend groundwater from high concentration wells with groundwater from lower concentration wells and/or surface water from AVEK.

# SAMPLING RESULTS

During the past year, your water is tested for chemical, physical, radiological and bacteriological parameters. We also test for additional organic and inorganic chemicals that are not regulated. The tables included in this report list all the substances that were detected. The presence of these substances in the water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented in this table are from the testing performed last year. The State allows us to monitor for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

# Table Definitions

**90th Percentile:** Out of every 10 homes sampled, 9 were at or below this level.

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

**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. MCLGs are set by the U.S. Environmental Protection Agency.

**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 contaminants.

**Primary Drinking Water Standard (PDWS):** MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**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.

**ppb:** parts per billion (micrograms per liter)      **N/A:** Not applicable  
**ppm:** parts per million (milligrams per liter)      **ND:** Non-detect  
**µS/cm:** MicroSiemens per centimeter      **NL:** Notification level  
**NTU:** Nephelometric turbidity unit      **pCi/L:** PicoCuries per liter  
**TON:** Threshold Odor Number  
**\*\* HAA5, chlorine, TTHMs, color, odor, turbidity and pH were measured within the distribution system**

PRIMARY DRINKING WATER STANDARDS								
SUBSTANCE (UNIT OF MEASURE)	MCL [MRDL]	PHG [MCLG]	GROUNDWATER			AVEK AVERAGE LEVEL (2016)		TYPICAL SOURCE
			YEAR SAMPLED	RANGE LOW-HIGH	AVERAGE LEVEL	Quartz Hill Plan	Water Bank	
Aluminum (ppm)	1	0.6	2014 - 2016	ND - 0.077	ND	ND	ND	Erosion of natural deposits; residue from some surface water treatment processes
Arsenic (ppb)	10	0.004	2014 - 2016	ND-11.2	4.6	ND	3.9	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Chlorine** (ppm)	[4.0] as Cl <sub>2</sub>	MRDLG = 4 as Cl <sub>2</sub>	2016	0.42 - 1.04	0.9	1.03	N/A	Drinking water disinfectant added for treatment
Chromium (ppb)	50	[100]	2014 - 2016	ND - 19.2	9.4	ND	2.9	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2	1	2014 - 2016	0.15 - 1.43	0.45	ND	0.22	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	15	[0]	2014 - 2016	0.5 - 10.2	ND	N/A	2.6	Erosion of natural deposits
Haloacetic Acids** [HAA5] (ppb)	60	N/A	2016	2.9 - 35	26.7	12.0	N/A	Byproduct of drinking water disinfection
Hexavalent Chromium (ppb)	10	0.02	2014 - 2016	ND -14.5	7.3	ND	3.4	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits.
Nitrate as N (ppm)	10	10	2016	ND -5.2	1.2	ND	3.8	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Total Coliform Bacteria [Total Coliform Rule] (% positive samples)**	5.0% of monthly samples are positive	0	2016	0% - 1.1%	0.1%	N/A	N/A	Naturally present in the environment
Total Trihalomethanes** [TTHMs] (ppb)	80	N/A	2016	12.9 - 126	71.8	60	N/A	Byproduct of drinking water disinfection
Uranium (pCi/L)	20	0.43	2014 - 2016	0 - 6.7	1.1	N/A	2.5	Erosion of natural deposits



## LEAD AND COPPER

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG	90TH% LEVEL	SITES ABOVE AL/ TOTAL SITES	TYPICAL SOURCE
Copper (ppm)	2016	1.3	0.3	0.5	0/58	Internal corrosion of household plumbing system; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2016	15	0.2	ND	0/58	Internal corrosion of household plumbing system; discharge from industrial manufactures; erosion of natural deposits

## SECONDARY DRINKING WATER STANDARDS

SUBSTANCE (UNIT OF MEASURE)	MCL [MRDL]	PHG [MCLG]	GROUNDWATER			AVEK AVERAGE LEVEL (2016)		TYPICAL SOURCE
			YEAR SAMPLED	RANGE LOW-HIGH	AVERAGE LEVEL	Quartz Hill Plan	Water Bank	
Aluminum (ppb)	200	0.6	2014 - 2016	ND - 77	7	ND	ND	Erosion of natural deposits; residue from some surface water treatment processes
Chloride (ppm)	500	N/A	2016	3.5 - 79.9	24.1	130	53	Runoff/leaching from natural deposits; seawater influence
Color** (units)	15	N/A	2016	0 - 15	<5	<5	<5	Naturally-occurring organic materials
Iron (ppb)	300	100	2014 - 2016	0 - 421	55	ND	17	Leaching from natural deposits; industrial wastes
Manganese (ppb)	50	N/A	2014 - 2016	0 - 74	4	ND	ND	Leaching from natural deposits
Odor** (TON)	3	N/A	2016	<1	<1	<1	N/A	Naturally-occurring organic materials
Specific Conductance (µS/cm)	1600	N/A	2014 - 2016	178 - 1030	476	530	629	Runoff/leaching from natural deposits; seawater influence
Sulfate (ppm)	500	N/A	2014 - 2016	12 - 238	49	54	54	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	500	N/A	2014 - 2016	124 - 720	312	350	344	Runoff/leaching from natural deposits
Turbidity** (NTU)	5	N/A	2016	0 - 8.1	0.08	0.07	0.27	Soil runoff
Zinc (ppm)	5	N/A	2014 - 2016	ND - 58	1.5	0.5	ND	Runoff/leaching from natural deposits; industrial wastes

## OTHER PARAMETERS

SUBSTANCE (UNIT OF MEASURE)	GROUNDWATER			AVEK AVERAGE LEVEL (2016)	
	YEAR SAMPLED	RANGE LOW-HIGH	AVERAGE LEVEL	Quartz Hill Plan	Water Bank
Bicarbonate Alkalinity (ppm)	2014 - 2016	ND - 188	104	64	156
Calcium (ppm)	2014 - 2016	5 - 98	27	18	57
Hardness (ppm)	2014 - 2016	14 - 320	85	110	167
Magnesium (ppm)	2014 - 2016	0 - 21	4	15	7
pH** (units)	2016	6.1 - 8.6	7.4	7.1	7.7
Sodium (ppm)	2014 - 2016	16 - 150	55	81	47
Total Alkalinity (ppm)	2014 - 2016	65 - 188	107	52	127

## REVISED TOTAL COLIFORM RULE (RTC)

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2016. All water systems are required to comply with the state Total Coliform Rule. Beginning April 1, 2016, all water systems are also required to comply with the federal Revised Total Coliform Rule. The new federal rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and E. coli bacteria). The U.S. EPA anticipates greater public health protection as the new rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. If found, these must be corrected by the water system.

## ARSENIC

While your drinking water meets the federal and state standards for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency 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.

## NITRATE

Nitrate in drinking water at levels above 10 mg/L is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 10 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider.