Los Angeles Department of Water & Power

2009 Annual Water Quality Report

It really is that good!

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1 Beginning of L.A. Aqueducts

Lee Vining Intake

The beginning of the Los Angeles Aqueducts. Water is collected from creeks in the Mono Basin and the Owens River in the Owens Valley and then carried to the City of Los Angeles by the Los Angeles Aqueducts, which operate completely by gravity, making clean hydroelectric energy along the way.

A Message to Our Customers

In 2009, the 200 billion gallons of water supplied to the City's 4.1 million residents met or surpassed all health-based drinking water standards. These standards are set by the U.S. Environmental Protection Agency (USEPA) and the State of California Department of Public Health (CDPH) Drinking Water Program.

Year after year, LADWP proves that it has what it takes to provide the City of Los Angeles with high-quality, low cost drinking water. It's no easy task to achieve such high quality water. Hundreds of employees and countless hours are spent protecting our water sources, managing state-of-the-art water treatment processes, maintaining and operating our facilities, and vigilantly monitoring and testing the water we serve. We continuously strive to surpass the legal requirements and do so in an effective and affordable way for our customers.

In 2009, LADWP collected over 25,000 water samples across the city, and performed more than 240,000 water quality tests—not just for compliance, but also for research and operational improvements. We tested for over 200 different contaminants throughout the year including both, regulated contaminants such as arsenic, chromium, lead, and disinfection by-products, as well as unregulated contaminants of concern such as sodium and boron.

This report summarizes the results of the water quality tests conducted in 2009 and provides specific information about the quality of water served in your neighborhood. You will see that most contaminants have not been detected in our water sources and those that are (see tables I-IV), are safely within the regulatory limits for drinking water.

James B. McDaniel

Senior Assistant General Manager - Water

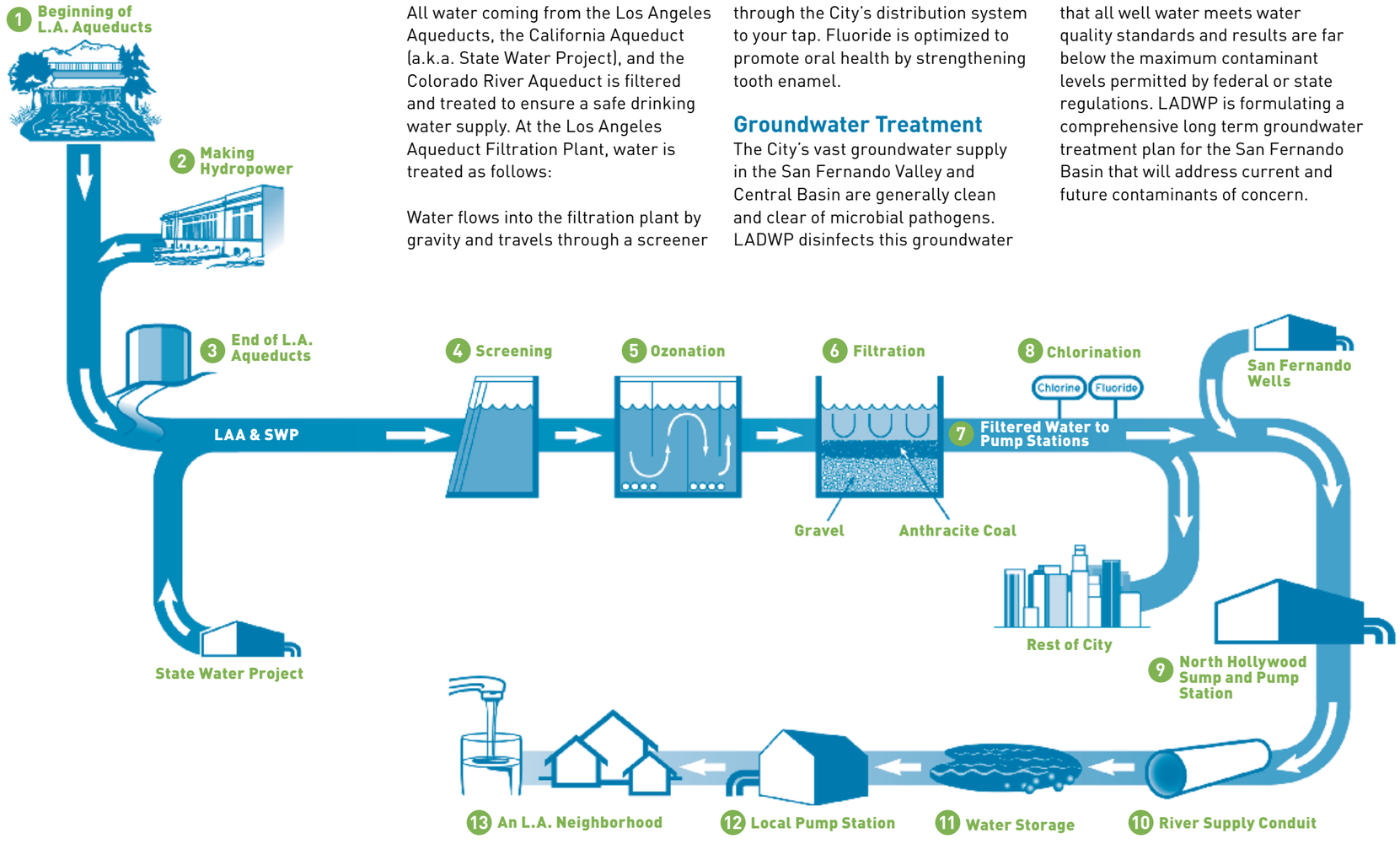
Dr. Pankaj Parekh

Director of Water Quality

The Journey of a Drop of a Water

From the Mountains to Your Tap...

A drop of melted snow trickles into a stream and gathers strength as it travels down mountains and into streams and rivers in a land of blue skies. This is where City of Los Angeles drinking water comes from. To most people, the journey water takes to get to their business or residence is a mystery. The photos in this report will reveal the mystery by sharing snapshots of where a drop of water travels before it splashes over your baby's head at bathtime or streams into your water bottle before your evening walk. Because, when it's all said and done, **it really is that good!**



Water Treatment Processes

Surface Water Treatment

LADWP water comes from four very different water sources—three are from surface water sources like lakes and rivers, and the other is groundwater from local wells and springs. The taste and appearance of surface water can vary seasonally and groundwater generally contains more minerals. All these factors make for different tasting water. Despite these variations, LADWP water meets all drinking water standards for health and aesthetics.

All water coming from the Los Angeles Aqueducts, the California Aqueduct (a.k.a. State Water Project), and the Colorado River Aqueduct is filtered and treated to ensure a safe drinking water supply. At the Los Angeles Aqueduct Filtration Plant, water is treated as follows:

Water flows into the filtration plant by gravity and travels through a screener to remove environmental debris such as twigs and dead leaves. The process injects ozone, a super-charged oxygen molecule and a powerful disinfecting agent into the water to destroy bacteria and other impurities that affect taste, odor and color. Treatment chemicals are quickly dispersed into the water to make fine particles called floc. A six-foot-deep filter (crushed coal over gravel) removes the flock and previously added chemicals. Chlorine added during the final step ensures lasting disinfection and protects the water as it travels through the City's distribution system to your tap. Fluoride is optimized to promote oral health by strengthening tooth enamel.

Groundwater Treatment

The City's vast groundwater supply in the San Fernando Valley and Central Basin are generally clean and clear of microbial pathogens. LADWP disinfects this groundwater with chlorine as a safeguard against microorganisms and adds optimal amounts of fluoride to promote oral health. In December, 2009, the federal Ground Water Rule went into effect. This regulation now requires all water agencies across the country to disinfect groundwater sources, a standard practice that LADWP has had for decades.

Because of man-made contaminants found in San Fernando Valley groundwater wells, LADWP continuously monitors and ensures that all well water meets water quality standards and results are far below the maximum contaminant levels permitted by federal or state regulations. LADWP is formulating a comprehensive long term groundwater treatment plan for the San Fernando Basin that will address current and future contaminants of concern.

Making Hydropower

2 San Francisquito Power Plant 1
Water generates electricity as it passes through the hydroelectric plant

Water Quality News and Updates

Safeguarding Our Surface Water

The Surface Water Treatment Rule (SWTR), administered by CDPH, is a drinking water regulation designed to help safeguard reservoir supplies from microbiological contamination that may occur when rain runoff from nearby hillsides and slopes enters the water. In Los Angeles, SWTR applied to four open water reservoirs – Lower Stone Canyon, Encino, and Upper and Lower Hollywood.

LADWP successfully met the compliance deadlines and treatment requirements for all four open reservoirs that were subject to SWTR. Upper and Lower Hollywood Reservoirs were successfully removed in July 2001 and replaced with two 30 million gallon buried tanks. New support facilities were successfully commissioned to serve filtered water from Encino Reservoir in January, 2006 and Lower Stone Canyon Reservoir in September, 2008.

The latest drinking water regulation related to the treatment of surface water is the Long Term 2 Enhanced Surface Water Treatment Rule (LT2). This rule requires that LADWP cover or remove from service the remaining six uncovered distribution reservoirs, or provide additional treatment to achieve prescribed inactivation or removal of viruses, Cryptosporidium, and Giardia by April 1, 2009 or be in compliance with a state-approved schedule to meet the same requirements. The six reservoirs are Los Angeles, Upper Stone Canyon, Santa Ynez, Ivanhoe, Silver Lake, and Elysian Reservoirs.

On April 1, 2008, LADWP notified CDPH that it is fully committed to complying with the new regulations and requested an extension of the April 1, 2009 deadline. LADWP submitted an interim operations plan, a schedule for the required reservoir improvements, and executed a Compliance Agreement with CDPH on March 31, 2009. LADWP is working diligently to bring all reservoirs into compliance as quickly as possible and will provide the public with project updates in the annual water quality report. The estimated cost to modify the six reservoirs is $1.65 billion.

LT2 improves on the SWTR by requiring further protection of open distribution reservoirs from microbial pathogens like Cryptosporidium and Giardia. In preparation for compliance with this rule, LADWP has been routinely monitoring its water sources for microbial pathogens since 2005. Cryptosporidium and Giardia are occasionally detected in very low numbers in some of our reservoirs and in the L.A. Aqueduct and we are fully committed to achieving compliance with the LT2. To further educate our customers on this topic, we have included a statement from CDPH regarding Cryptosporidium.

3 End of LA Aqueducts

The Cascades
Seen along Interstate 5, this is the terminus (end) of the Aqueducts. Water flows over the "steps" to release some of the water's energy.

"Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes Cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised persons are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water."

Water Quality Team Regulatory Affairs

Among the employees responsible for the maintenance and compliance of the City's drinking water, is a little known group of highly trained and educated water quality experts. Known as the LADWP Regulatory Affairs Unit, this elite group knows everything there is to know about the implementation and adherence to all drinking water regulations to protect our water quality. They field hundreds of calls each year from customers and provide input to management about everything water quality.

A diverse group of employees, the unit includes chemists, biologists, environmental specialists, and environmental engineers who work closely with State and County public health departments on ongoing and emerging public health issues related to water quality. They implement

4 Screening

Los Angeles Aqueduct Filtration Plant (LAAFP) Inlet Structure
Water flows through the inlet of the LAAFP, where large pieces of debris or algae are removed by screens.

5 Ozonation

Ozone Contact Chamber, LAAFP
Water is exposed to ozone gas, a disinfectant that prepares the water for filtration.

6 Filtration

Anthracite Coal Filters, LAAFP
Water passes through 60 inches of anthracite coal filters, which remove particles as small as microns.

City Water Sources

San Fernando Valley Communities
Sources: Los Angeles Aqueduct, local groundwater, and MWD State Water Project.

Arleta
Canoga Park
Chatsworth
Encino
Granada Hills
Hollywood Hills
Lake View Terrace
Mission Hills
North Hills
North Hollywood
Northridge
Olive View
Pacoima
Panorama City
Porter Ranch
Reseda
Sherman Oaks
Studio City
Sun Valley
Sunland
Sylmar
Tarzana
Toluca Lake
Tujunga
Valley Village
Van Nuys
Warner Center
West Hills
Winnetka
Woodland Hills

Western Los Angeles Communities
Sources: Los Angeles Aqueduct and MWD State Water Project.

Bel Air Estates
Beverly Glen
Brentwood
Castellamare
Century City
Cheviot Hills
Culver City*
Mar Vista
Pacific Palisades
Palisades Highlands
Palms
Playa del Rey
Sawtelle
Venice
West Los Angeles
Westchester
Westwood

Eastern Los Angeles Communities
Sources: MWD State Water Project and Colorado River Aqueduct.

Atwater Village
Boyle Heights
Cypress Park
Eagle Rock
Echo Park
El Sereno
Glassell Park
Highland Park
Lincoln Heights
Montecito Heights
Monterey Hills
Mt. Washington

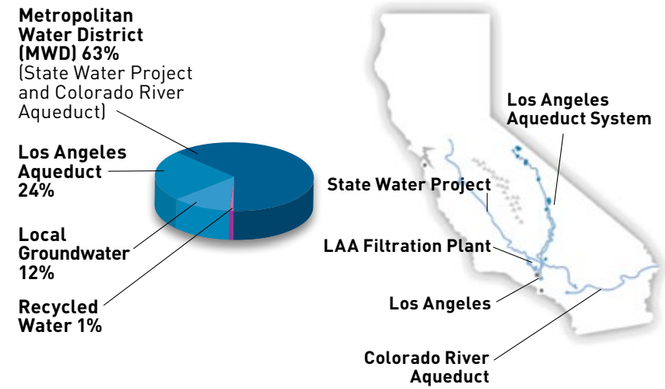
Central Los Angeles Communities
Sources: Los Angeles Aqueduct, MWD State Water Project, and local groundwater.

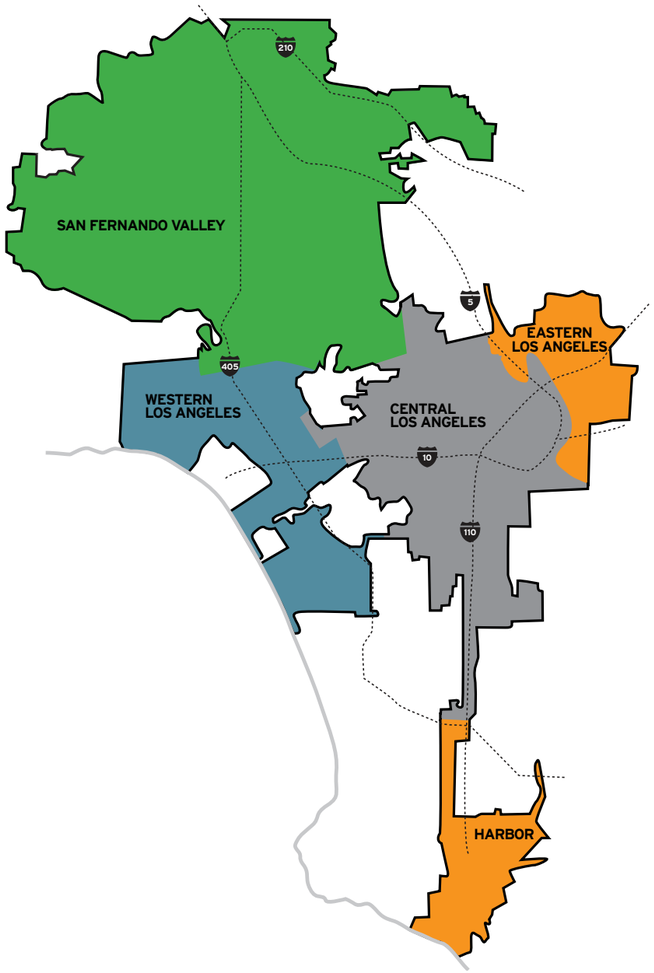
Baldwin Hills
Chinatown
Country Club Park
Crenshaw
Griffith Park
Hancock Park
Hollywood
Hyde Park
Koreatown
L.A. City Strip*
Little Tokyo
Los Feliz
Mid City
Mt. Olympus
Park La Brea
Rancho Park
Silverlake
Watts
West Hollywood*
Westlake

Harbor Communities
Sources: MWD State Water Project and Colorado River Aqueduct.

East San Pedro (Terminal Island)
Harbor City
Harbor Gateway*
L.A. City Strip*
San Pedro
Wilmington

* parts of





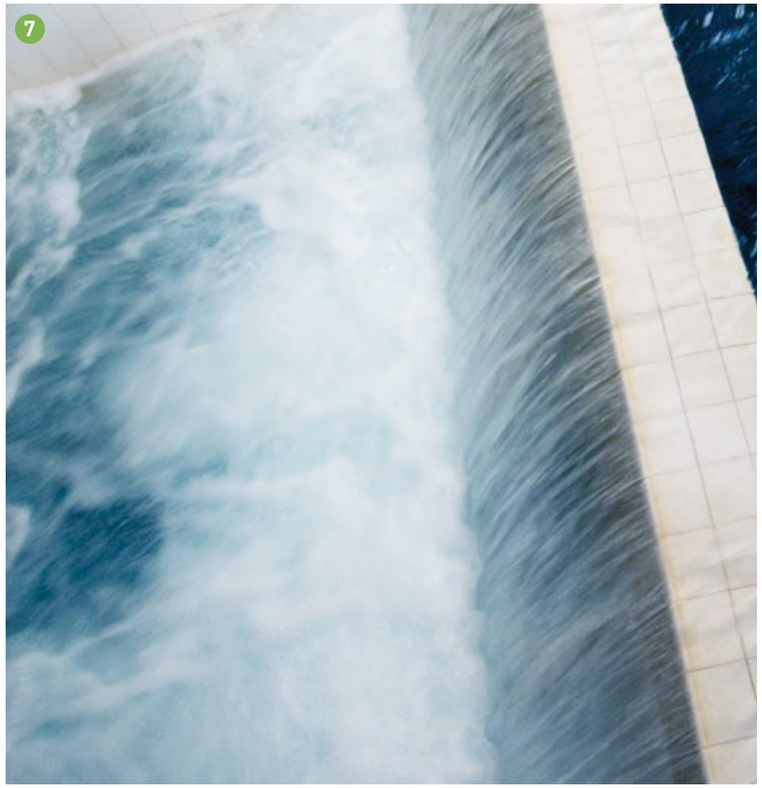
new regulations as well as perform annual and multi-year compliance activities for the City of Los Angeles including: Residential Lead and Copper monitoring; the Watershed Sanitary Survey of the Owens Valley and Mono Basin; system-wide changes to improve water quality, and the updating of water quality data and statistics at ladwp.com. The team works continuously to find new ways to improve water quality above and beyond what is currently required by law.

As LADWP customers themselves, the Regulatory Affairs group has a first-hand understanding of the importance of water quality in our daily lives. It takes a team to complete the various jobs related to water quality.

A Better Understanding of Radon

Radon is a naturally occurring radioactive gas that is not a significant issue in most of California. In 2009, very low levels of radon were detected in some of our water supplies that serve the Central Los Angeles area (see Table III on page 12). There is no established drinking water standard or monitoring requirement for radon. In general, radon entering a home through tap water is a very small contributor to radon in indoor air. Although the radon levels were well below what the EPA currently considers as standard, the EPA has asked us to share the following general information with you to help you better understand radon.

"Radon is a radioactive gas that you can't see, taste, or smell. It is found throughout the U.S. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can also get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water is, in most cases, a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer.
If you are concerned about radon in your home, test the air in your home. Testing is inexpensive and easy. Fix your home if the level of radon in your air is 4 picoCuries per liter of air (pCi/L) or higher. There are simple ways to fix a radon problem that aren't too costly. For additional information, call your State radon program or call EPA's Radon Hotline (800-SOS-RADON)."



7 Filtered Water to Pump Stations

Filter Weir
Water from each of the 24 filters combine at the Filter Weir before leaving the Filtration Plant.

8 Chlorination

Chlorination Station
Chlorinator controls the amount of chlorine added to protect against bacteria and pathogens as water travels through the distribution system.

Report for All Water Quality Areas

Tables I-IV list the results of water tests performed by LADWP and MWD from January to December 2009. LADWP tests for over 200 contaminants. These tables include only contaminants with values that are equal to or greater than the limit of detection.

How to Read the Tables

The constituents/contaminants found in the water served in your area are listed as follows:

- For **San Fernando Valley Area** – water test results are under the Los Angeles Aqueduct Filtration Plant, the Northern Combined Wells, and MWD Jensen Filtration Plant columns
- For **Western Los Angeles Area** – water test results are under the Los Angeles Aqueduct Filtration Plant column
- For **Central Los Angeles Area** – water test results are under the Los Angeles Aqueduct Filtration Plant and the Southern Combined Wells columns
- For **Harbor/Eastern Los Angeles Area** – water test results are under the MWD Jensen, Weymouth, and Diemer Filtration Plants columns

Some constituents/contaminants detected are reported on a citywide basis as required by the California Department of Public Health.
The unregulated contaminants reported on an area-wide basis are included for additional information on the water served in your area.

Shade Balls Minimize Bromate in City Reservoirs

LADWP continues to minimize bromate levels in open reservoirs, keeping them within regulatory requirements. A creative short-term intervention LADWP recently implemented was the use of "shade balls" to decrease the formation of Bromate. In 2008, shade balls were used to shade the water surfaces of Elysian and Ivanhoe Reservoirs. As a result, bromate levels have been consistently well below the current drinking water standard of 10 parts per billion.

In the long term, LADWP intends to permanently cover or replace all remaining uncovered reservoirs by 2022 as required by the LT2 regulation (please see Safeguarding our Surface Water, page 4). Meanwhile, all water served to our customers continues to meet all public health standards.

Public Health Goals Report

Prepared once every three years, the Public Health Goals Report focuses on drinking water contaminants found at levels above a California Public Health Goal (PHG). A PHG is a level identified as having no adverse health effects. PHGs are not strict standards, but are used in the regulatory process to establish a drinking water standard for contaminants that are currently

9 North Hollywood Sump and Pump Station

Well Water Blending
Water flows by gravity from the LAAFP to the North Hollywood Pump Station. Well water from the San Fernando Valley mixes with the aqueduct water in the North Hollywood Sump before it is sent by large pumps to the central city.

Table I

Calendar Year 2009 Water Quality Monitoring Results

Health-Based Primary Drinking Water Standards (MCLs) Constituents/Contaminants Detected in Treated Water

Constituents/ Contaminants	Units	Los Angeles Aqueduct Filtration Plant		Northern Combined Wells		Southern Combined Wells		MWD Weymouth Filtration Plant		MWD Diemer Filtration Plant		MWD Jensen Filtration Plant		State and Federal Primary Standard (MCL) or [MRDL]	Meet Primary Standard?	State PHG or Federal (MCLG) or [MRDLG]	Major Sources in Our Drinking Water
		Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average				
Aluminum	µg/L	<50	<50	<50	<50	<50	<50	110-240	160 (a)	100-230	170 (a)	<50-100	76 (a)	1000	YES	600	Erosion of natural deposits; residue from surface water treatment processes
Arsenic	µg/L	2-5	4 (a)	<2-3	2	<2-3	2	<2-3	2 (a)	<2-3	2 (a)	3-4	3 (a)	10	YES	0.004	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium	µg/L	<100	<100	<100	<100	<100-116	<100	110-140	120	120-140	130	<100	<100	1000	YES	2000	Erosion of natural deposits
Bromate (a, b)	µg/L	<5-13	<5 (a)	NA	NA	NA	NA	NA	NA	NA	NA	<5-12	7 (a)	10	YES	0.1	By-product of ozone disinfection; formed under sunlight
Gross Alpha Particle Activity (c)	pCi/L	4	4	5 -5.2	5	<3-5	5	<3-8	5	4-9	6	<3-9	3	15	YES	(0)	Naturally present in environment
Gross Beta Particle Activity (c)	pCi/L	7	7	<4-4	4	<4-5	4	<4-10	4	<4-6	4	<4-5	<4	50	YES	(0)	Naturally present in environment
Nitrate (as NO_3)	mg/L	<2-3	2	<2-22	9	<2-16	9	4-8	8	4-8	8	11-19	16	45	YES	45	Erosion of natural deposits; runoff and leaching from fertilizer use
Nitrate + Nitrite (as N)	mg/L	<0.4-0.7	0.5	0.4-3	2	<0.4-4	2	<0.4	<0.4	<0.4	<0.4	<0.4	<0.4	10	YES	10	Erosion of natural deposits; runoff and leaching from fertilizer use
Tetrachloroethylene (PCE)	µg/L	<0.5	<0.5	<0.5-2	<0.5	<0.5-0.8	0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	YES	0.06	Discharge from factories, dry cleaners, auto shops (metal degreaser)
Trichloroethene (TCE)	µg/L	<0.5	<0.5	<0.5-5	1	<0.5-2	1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	5	YES	1.7	Discharge from metal degreasing sites and other factories
Turbidity (d)	NTU	0.6	100%	NA	NA	NA	NA	0.06	100%	0.06	100%	0.06	100%	TT	YES	none	Soil runoff
Uranium (c)	pCi/L	3-4	3	2-4	4	<1-5	4	2-3	3	3-4	3	1.6-2	2	20	YES	0.5	Erosion of natural deposits

Health-Based Primary Drinking Water Standards (MCLs) Constituents/Contaminants Detected in Treated Water and Reported on City-Wide Basis

Constituents/Contaminants	Units	Range	Average	State and Federal Primary Standard (MCL) or [MRDL]	Meet Primary Standard ?	State PHG or Federal (MCLG) or [MRDLG]	Major Sources of Contaminants in Our Drinking Water
Bromate (f)	µg/L	Range = <5-8	City-wide Average = <5	10	YES	0.1	By-product of ozone disinfection; formed under sunlight
Copper (at-the-tap) AL = 1300 (e)	µg/L	number of samples exceeding AL = 0 out of 110	90th Percentile value = 576	TT	YES	300	Internal corrosion of household water plumbing systems
Fluoride	mg/L	Range = 0.7-0.9	Average = 0.8	2	YES	1	Erosion of natural deposits; water additive that promotes strong teeth
Lead (at-the-tap) AL = 15 (e)	µg/L	number of samples exceeding AL = 3 out of 110	90th Percentile value = 5.6	TT	YES	0.2	Internal corrosion of household water plumbing systems
Chlorine Residual, Total	mg/L	Range = 1.7 - 1.9	Average = 1.8 (a)	[4]	YES	[4]	Drinking water disinfectant added for treatment
Total Coliform Bacteria	% Positives	Range: 0 – 0.5% Coliform positive samples	Average = 0.2% Coliform positive samples	5% of monthly samples are coliform positive	YES	(0)	Naturally present in the environment
Total Haloacetic Acids (HAA5)	µg/L	Range = 2-98	City-wide Average = 29 (a)	60	YES	none	By-product of drinking water disinfection
Total Trihalomethanes (TTHM)	µg/L	Range = 14-106	City-wide Average = 61 (a)	80	YES	none	By-product of drinking water chlorination

Table II

Calendar Year 2009 Water Quality Monitoring Results

Aesthetic-Based Secondary Drinking Water Standards (SMCLs) Constituents/Contaminants Detected in Treated Water

Constituents/ Contaminants	Units	Los Angeles Aqueduct Filtration Plant		Northern Combined Wells		Southern Combined Wells		MWD Weymouth Filtration Plant		MWD Diemer Filtration Plant		MWD Jensen Filtration Plant		State and Federal Secondary MCL	Meet Secondary Standard?	Major Sources in Our Drinking Water
		Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average			
Aluminum	µg/L	<50	<50	<50	<50	<50	<50	110-240	160 (a)	100-230	170 (a)	<50-100	76 (a)	200	YES	Erosion of natural deposits; residue from some surface water treatment processes
Chloride	mg/L	48-71	60	40-64	48	24-63	48	89-100	98 (a)	89-99	97 (a)	77-82	79 (a)	500	YES	Runoff/leaching from natural deposits; seawater influence
Color (unfiltered)	ACU	3	3	3-5	3	3-7	3	1-2	2 (a)	1-2	2 (a)	1-2	2(a)	15	YES	Naturally-occurring organic materials
Manganese NL = 500	µg/L	<20	<20	<20	<20	<20-51	<20	<20	<20	<20	<20	<20	<20	50	YES	Leaching from natural deposits
Odor	TON	<1	<1	<1-1	<1	<1-1	<1	2	2	2	2	2	2	3	YES	Naturally occurring organic materials
Specific Conductance	µS/cm	432-527	488	448-754	648	448-797	648	850-1100	1000 (a)	880-1100	1000 (a)	570-610	590 (a)	1600	YES	Substances that form ions when in water; seawater influence
Sulfate	mg/L	39-54	47	41-150	104	41-150	104	180-260	240 (a)	190-250	240 (a)	56-70	66 (a)	500	YES	Runoff/leaching from natural deposits
Total Dissolved Solids (TDS)	mg/L	242-311	274	260-501	400	275-511	400	510-660	620 (a)	530-640	610 (a)	310-340	330 (a)	1000	YES	Runoff/leaching from natural deposits
Turbidity (g)	NTU	0.1	0.1	0.1-0.3	0.1	<0.1-0.5	0.1	0.05-0.06	0.06 (a)	0.04-0.05	0.05 (a)	0.04-0.05	0.04 (a)	5	YES	Soil runoff
Zinc	µg/L	<50	<50	<50	<50	<50-1000	<50	<50	<50	<50	<50	<50	<50	5000	YES	Run off/leaching from natural deposit

Abbreviations and Footnotes

mg/L = milligrams per liter (equivalent to ppm)
µg/L = micrograms per liter (equivalent to ppb)
ng/L = nanograms per liter (equivalent to ppt)
pCi/L = picoCuries per liter
% = percentage
µS/cm = microSiemens per centimeter
NTU = nephelometric turbidity unit
TON = threshold odor number
CFU = colony-forming unit
ACU = apparent color unit
< = less than
NA = not applicable
NT = not tested
HRAA = highest running annual average

(a) Values reflect Highest Running Annual Average (HRAA). HRAA is the highest of all Running Annual Averages (RAAs). RAA is a calculated average of all the samples collected within twelve months period.

(b) Bromate is tested in water treated with ozone. Bromate has also been found in chlorinated treated water of some LADWP reservoirs exposed to sunlight. Metropolitan Water District of Southern California (MWD) only tests bromate at Jensen Filtration Plant.

(c) Radiological monitoring is performed in cycles of various periods of time. LADWP performed all radiological testing in 2009 for samples collected at Los Angeles Aqueduct Filtration Plant, Northern Combined Wells blend points, and Southern Combined Wells blend points. MWD performed all radiological testing in 2008 for samples collected at Weymouth, Diemer, and Jensen Filtration Plants.

(d) Turbidity is a measure of the cloudiness of the water and is a good indicator of water quality and filtration performance. High turbidity can hinder the effectiveness of disinfectants. The Primary Drinking Water Standard for turbidity level at water filtration plants is less than or equal to 0.3 NTU in at least 95% of the measurements taken in any month and shall not exceed 1.0 NTU at any time. The reporting requirement for treatment plant turbidity is: report the highest single measurement in the calendar year and the lowest monthly percentage of measurements that are less than or equal to 0.3 NTU.

(e) At-the-tap monitoring of lead and copper is conducted every three years as required by the Lead and Copper Rule. LADWP performed at-the-tap testing in 2009. A system is out of compliance if the Regulatory Action Level is exceeded in the 90th percentile of all samples at the customers' tap. Although the City's treated water has little, if any, detectable lead, studies were conducted and corrosion control is scheduled for implementation.

(f) Values reflect annual range and average of samples collected from six open reservoirs: Elysian, Ivanhoe, Los Angeles, Santa Ynez, Silver Lake, and Upper Stone.

(g) Values reflect testing at entry to distribution system.

10 River Supply Conduit

Water Travels through the City

Water from the pump station is carried through a 78" water main to Ivanhoe Reservoir in the Silver Lake area of the City.

unregulated, and are used to revise standards for regulated contaminants. While PHGs are based solely on health effects, primary drinking water standards are based on health effects, technical feasibility and cost.

The report includes health effects from exposure to the contaminant, the relative risk associated with each contaminant, the best available treatment technology to remove or reduce the contaminant down to the PHG, and the cost associated with such treatments. For Los Angeles, the contaminants in water that pose the highest risks are arsenic and disinfection by-products. By prioritizing water quality improvements on contaminants that pose the greatest risks to health, LADWP effectively and efficiently achieves the highest risk reduction at the lowest cost.

LADWP's 2009 Public Health Goals report was completed in July 2010 and can be downloaded from www.ladwp.com or mailed to customers upon request.

continued on page 14

Water Storage 11

Ivanhoe Reservoir

Shade balls filling the reservoir will protect the water from sunlight as the water travels onto nearby neighborhoods.

Table III Calendar Year 2009 Water Quality Monitoring Results

Unregulated Drinking Water Constituents/Contaminants Detected in Treated Water

Constituents/Contaminants	Units	Los Angeles Aqueduct Filtration Plant		Northern Combined Wells		Southern Combined Wells		MWD Weymouth Filtration Plant		MWD Diemer Filtration Plant		MWD Jensen Filtration Plant		Major Sources in Our Drinking Water
		Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	
Alkalinity	mg/L	92 - 106	100	102 - 176	146	100 - 200	146	100 - 130	120 (a)	98 - 120	120 (a)	84 - 93	90 (a)	Erosion of natural deposits
Bicarbonate (as HCO_3)	mg/L	112 - 129	122	124 - 215	178	124 - 244	178	NT	NT	NT	NT	NT	NT	Naturally-occurring dissolved gas; erosion of natural deposits
Boron NL = 1000	µg/L	264 - 420	355	161 - 374	272	108 - 374	272	120 - 140	140 (a)	120-140	140 (a)	190-220	200 (a)	Erosion of natural deposits
Bromide	µg/L	35 - 67	50	24 - 55	45	22 - 88	45	NT	NT	NT	NT	NT	NT	Runoff/leaching from natural deposits; seawater influence
Calcium	mg/L	26 - 30	28	26 - 77	60	29 - 82	60	54 - 76	68 (a)	56 - 75	68 (a)	27 - 33	31 (a)	Erosion of natural deposits; natural hot springs
Chromium, Hexavalent	µg/L	<1	<1	<1 - 3	<1	<1 – 4	<1	<1	<1	<1	<1	<1	<1	Industrial discharge; erosion of natural deposits
Dibromomethane	µg/L	<0.5	<0.5	<0.5-0.7	<0.5	<0.5	<0.5	NT	NT	NT	NT	NT	NT	Industrial discharge
Hardness, Total (as $CaCO_3$)	mg/L	104 - 118	110	103 - 276	214	113 - 279	214	230 - 310	280 (a)	240 - 300	280 (a)	120 - 130	130 (a)	Erosion of natural deposits
Heterotrophic Plate Count Bacteria (HPC)	CFU/mL	NT	NT	NT	NT	NT	NT	<1 - 2	<1	<1 - 1	<1	<1 - 20	<1	Naturally present in the environment
Magnesium	mg/L	9 - 11	9	9 - 20	16	9 - 22	16	23 - 30	27 (a)	23 - 29	27 (a)	11 - 12	13 (a)	Erosion of natural deposits
Methyl Ethyl Ketone (MEK, 2-Butanone)	µg/L	<5 - 9	<5	<5	<5	<5	<5	NT	NT	NT	NT	NT	NT	Industrial discharge
N-Nitrosodimethylamine (NDMA) NL=10	ng/L	<2	<2	<2	<2	<2	<2	<2 - 3	<2	<2	<2	<2 - 5	3	By-product of chloramination
pH	Unit	7.3-7.8	7.5	7.2-7.8	7.5	7.2-7.9	7.5	7.8-8.0	7.9	7.8-8.0	7.9	8.1-8.3	8.2	Naturally-occurring dissolved gases and minerals
Phosphate (as PO_4)	µg/L	49 - 60	55	17 - 110	89	26 - 362	89	NT	NT	NT	NT	NT	NT	Erosion of natural deposits, agricultural run-off
Potassium	mg/L	3 - 4	4	3 - 4	4	3 - 5	4	4 – 5	5 (a)	4 - 5	5 (a)	2 - 4	3 (a)	Erosion of natural deposits
Radon (c)	pCi/L	<100	<100	175 - 176	176	143 - 506	176	<100	<100	<100	<100	<100	<100	Decay of natural deposits
Silica (as SiO_2)	mg/L	14 - 20	16	15 - 22	20	19 - 23	20	NT	NT	NT	NT	NT	NT	Erosion of natural deposits
Sodium	mg/L	50 - 56	53	38 - 55	49	43 - 65	49	84 - 100	99 (a)	86 - 100	98 (a)	66 - 74	68 (a)	Erosion of natural deposits
Total Organic Carbon (TOC)	mg/L	1 - 2	2	0.4 - 1	0.9	<0.3 - 1	0.9	1.9 – 2.4	2	2 - 3	2	1 - 2	2	Erosion of natural deposits
Vanadium NL = 50	µg/L	<3	<3	<3 - 7	<3	<3 - 4	<3	<3 - 4	3	<3 - 3	3	6 - 7	6	Erosion of natural deposits

Commonly Used Terms

Compliance: A drinking water standard based on the health risk (primary standards) and aesthetic (secondary standards) exposure of a contaminant to consumers. For example, bacteria and nitrate have strict limits that must be met at all times due to the acute effects they can cause. Other standards, like small amounts of disinfection by-products and man-made chemicals, have standards that are based on a lifetime of exposure because the risk to consumers is very low. Compliance with most standards is based on an average of samples collected within a year. This allows for some fluctuation above and below the numerical standard, while still protecting public health.

Detection Limit for Reporting Purpose (DLR): DLR means the designated minimum level at or above which any analytical finding of a contaminant in drinking water resulting from monitoring required under Title 22 Code of Regulations shall be reported to the California Department of Public Health (CDPH).

Maximum Contaminant Level (MCL): MCL is the highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the Public Health Goals (PHGs) or Maximum Contaminant Level Goals (MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect odor, taste, and appearance of drinking water. For certain contaminants, compliance with the MCL is based on the average of all samples collected throughout the year.

Maximum Contaminant Level Goal (MCLG): MCLG is 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 (USEPA).

Maximum Residual Disinfectant Level (MRDL): MRDL is 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): MRDLG is 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. MRDLGs are set by the USEPA.

Notification Level (NL): NL is the Health-based advisory levels established by CDPH for chemicals in drinking water that lack maximum contaminant levels (MCLs).

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): PHG is 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, Office of Environmental Health Hazard Assessment (OEHHA).

Regulatory Action Level (AL): AL is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. ALs are set by the USEPA.

Treatment Technique (TT): TT is a required process intended to reduce the level of a contaminant in drinking water. For example, the filtration process is a treatment technique used to reduce turbidity (the cloudiness in water) and microbial contaminants from surface water. High turbidities may be indicative of poor or inadequate filtration.

Table IV Calendar Year 2009 Water Quality Monitoring Results

Drinking Water Disinfection By-Products Reported on Area-Wide Basis

Constituents/ Contaminants	Units	Central Los Angeles		San Fernando Valley		Western Los Angeles		Harbor / Eastern Los Angeles		Major Sources in Our Drinking Water
		Range	Average	Range	Average	Range	Average	Range	Average	
Bromodichloromethane (BDCM)	µg/L	4 - 30	12	5 - 42	14	3 - 44	22	2 - 26	12	By-product of chlorine/ chloramine disinfection
Bromoform	µg/L	2 – 24	8	1 - 42	12	1 - 36	12	4 - 23	6	By-product of chlorine/ chloramine disinfection
Chlorate NL = 800	µg/L	118 - 295	172	54 - 863	465	176 - 978	571	ND - 74	47	By-product of chlorine disinfection
Chloroform	µg/L	2 - 23	7	2 - 28	7	2 - 43	17	1 - 25	10	By-product of chlorine/ chloramine disinfection
Dibromochloromethane (DBCM)	µg/L	6 - 41	17	6 - 50	23	5 - 45	27	6 - 41	14	By-product of chlorine/ chloramine disinfection
Dibromoacetic Acid (DBAA)	µg/L	<1 - 16	7	<1 - 23	9	3 - 23	13	<1 - 19	4	By-product of chlorine/ chloramine disinfection
Dichloroacetic Acid (DCAA)	µg/L	<1 - 20	8	<1 - 28	7	2 - 49	18	<1 - 13	6	By-product of chlorine/ chloramine disinfection
Monobromoacetic Acid (MBAA)	µg/L	<1 - 3	1	<1 - 5	1	<1 -5	2	<1 - 4	<1	By-product of chlorine/ chloramine disinfection
Monochloroacetic Acid (MCAA)	µg/L	<2 - 3	<2	<2 - 6	<2	<2 - 9	3	<2 - 3	<2	By-product of chlorine/ chloramine disinfection
Trichloroacetic acid (TCAA)	µg/L	<1 - 7	3	<1 - 10	2	<1 - 51	9	<1 - 9	4	By-product of chlorine/ chloramine disinfection

continued from page 11

Impact of Public Water System Contaminants

Lead Exposure from Plumbing Materials

LADWP monitors lead contents in source water and the distribution system and has not found detectable amounts. 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 lead service lines and home plumbing. The LADWP 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 in the pipes 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. This water can be collected and used to water plants. 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.

Pharmaceutical and Personal Care Products

Very low levels of pharmaceutical and personal care products (PPCPs) are increasingly being detected in U.S. drinking water supplies. PPCPs include medicines, shampoos, soaps, detergents, lotions, and perfumes. Currently, neither the state or federal government require LADWP to test for PPCPs. However, as a forward looking utility, LADWP conducts its own monitoring for these compounds.

In 2009, LADWP tested its source and treated waters for PPCPs. The amount of PPCPs detected was so minute that no adverse health effect from exposure has been reported. LADWP continues to study the issue with several other utilities and the Water Research Foundation. Customers can do their part by disposing unwanted medications into a waste receptical—not down a toilet or drain.

12 Local Pump Station

Fletcher Pump Station
Additional chlorine is added before large pumps send the water to L.A. neighborhoods, east of Ivanhoe Reservoir.

13 An L.A. Neighborhood

The Journey Ends
Water passes through the interior plumbing of a home to be used for many purposes, including drinking, cooking, bathing, laundry, toilet flushing and as an eco-friendly alternative to bottled water.

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About This Report

The 2009 Water Quality Report was prepared by the Los Angeles Department of Water and Power (LADWP). This report is required by the California Department of Public Health (CDPH) and was prepared in accordance with CDPH guidelines. It was prepared, printed and mailed to you at a cost of 35 cents.

Contact Information

LADWP, the largest municipal utility in the nation, was established more than 100 years ago to provide a reliable and safe water and electric supply to the City's 4 million residents and businesses.

LADWP is governed by a five-member Board of Water and Power Commissioners, appointed by the Mayor and confirmed by the City Council. The Board meets regularly on the first and third Tuesdays of each month at 1:30 p.m. Meetings are held at:

Los Angeles Department of Water and Power
111 North Hope Street, Room 1555H
Los Angeles, CA 90012-2694

The meeting agenda is available to the public on the Thursday prior to the week of the meeting. You can access the Board agenda at www.ladwp.com or by calling (213) 367-1351.

For general information about LADWP, call 1-800-DIAL DWP (1-800-342-5397) or visit www.ladwp.com.

For questions regarding water quality, call the LADWP Water Quality Customer Services Group at (213) 367-3182.

For questions regarding this report, please call Dr. Langford Book at (213) 367-3199.

Want to know more about your drinking water and related regulations?

Los Angeles Department of Water and Power	www.ladwp.com
California Department of Public Health (CDPH)	www.cdph.ca.gov
U.S. Environmental Protection Agency (USEPA)	www.epa.gov

This report is printed on recycled paper.

This Message for Non-English Speaking Customers

This report contains important information about your drinking water. If you have any questions regarding this report, please contact us at (800) 342-5397.

Spanish

Este informe contiene información importante sobre su agua potable. Si tiene alguna pregunta sobre este informe, por favor comuníquese con nosotros llamando al (800) 342-5397.

Russian

В этом отчете содержится важная информация о вашей питьевой воде. Если у вас есть вопросы по этому отчету, вы можете позвонить по телефону (800) 342-5397.

Farsi

این گزارش حاوی اطلاعات مهمی در مورد آب آشامیدنی شماست. چنانچه سوالی در مورد این گزارش دارید لطفا با شماره تلفن (800)342-5397 با ما تماس بگیرید.

Japanese

この報告書には皆さんの飲料水に関する重要な情報が含まれています。この報告書に関して何かご質問があれば(800) 342-5397 までお問い合わせください。

Armenian

Այս զեկույցը պարունակում է կարեւոր տեղեկութիւններ ձեր խմելու ջուրի մասին: Այս խնդրի մասին որեւէ հարցում ունենալու պարագային կարող էք հեռաձայնել մեզ՝ (800) 342-5397 հեռախօսահամարով:

Arabic

يحتوي هذا التقرير على معلومات هامة عن مياه الشرب في لوس انجلوس.
إذا كان لديك أسئلة عن هذا التقرير نرجو الاتصال بنا
على الرقم (800) 342-5397 .

Korean

이 보고서는 여러분의 수돗물에 관한 중요한 정보를 포함하고 있습니다. 이 보고서에 관해 질문이 있으시면, **(800) 342-5397** 로 연락 주십시오.

Chinese

本報告包含有關您的飲用水的重要資訊，您對本報告如有任何疑問，請致電：(800) 342-5397。

Vietnamese

Báo cáo này có tin tức quan trọng về nguồn nước uống của quý vị. Nếu quý vị có thắc mắc về báo cáo này, xin liên lạc với chúng tôi tại số (800) 342-5397.

Thai

รายงานนี้ประกอบด้วยข้อมูลสำคัญเกี่ยวกับน้ำดื่มของท่าน ถ้าหากท่านมีคำถามใดๆเกี่ยวกับรายงานนี้ กรุณาติดต่อเราได้ที่ (800) 342-5397

Los Angeles Department of Water & Power
2009 Annual Water Quality Report
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