Drinking Water Quality Report 2018

For the period of January 1 through December 31, 2018

LA DWP Los Angeles Department of Water & Power

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QUALITY IN EVERY DROP

Director Message, Razmik Manoukian

For over a century, LADWP has been the steward of our City's water system and supply. It is a responsibility we take very seriously. Every day, we import raw water, purify it and deliver it to your tap 24-hours a day – all for less than half a penny per gallon. It is our duty to maintain the value of this precious resource, and to comply with increasing state and federal water quality mandates to protect every drop of water we deliver. In 2018, LADWP tested for over 200 constituents in the water and performed more than 120,000 tests on samples taken throughout the City - not just for regulatory compliance, but also for research and operational improvements.

We are proud of our success in water quality, especially with our continued progress on several large water quality initiatives. Over the last 20 years, LADWP has actively improved the water quality for our customers by removing large uncovered reservoirs such as Encino, Lower Stone, Silverlake and Hollywood out of service; covering distribution reservoirs such as Santa Ynez, Elysian and Upper Stone; building the new Headworks Reservoir, installing a state-of-the-art Dr. Pankaj Parekh Ultraviolet Disinfection Facility and deployed 96 million shade balls on the Los Angeles Reservoir. The latest water quality Improvement project is the Los Angeles Reservoir Ultraviolet Disinfection Plant project which is currently under construction. These projects were a massive undertaking which resulted in excellence in water quality.

This report summarizes the results of the water quality tests conducted in 2018 and provides specific information about the quality of water served in our neighborhoods. You will see that most constituents have not been detected in our water sources and those that are (see tables I-IV on pages 11-15), are safely within the regulatory limits for drinking water. We are proud to bring pure, clean, refreshing tap water to all our customers across the city – at home, at work and in our neighborhood parks every day.

At LADWP, we are committed to customer service. If you have any questions about your water quality or seek advice on how to improve water quality at your home or workplace, please do not hesitate to call our Water Quality Customer Care Line at (213) 367-3182.

MANAGING OUR WATER RESOURCES

A Message from Richard F. Harasick, LADWP Senior Assistant General Manager, Water System

Compared to previous years, the last two have been good for Los Angeles in terms of water resources. The Eastern Sierra snowpack, the main water source for the Los Angeles Aqueduct, is in very good shape for a change. The above average snowfall and the rains have made for a spectacular spring, and will help sustain our water needs well into the rest of the year.

We have gone from one extreme to the next; from parched dry conditions to more water than we can handle just like in 2017. It is important to remember that one good rainy season does not necessarily mean we will always enjoy an overabundance of water in the future.

That is why LADWP continues to focus on L.A.'s water future, employing long-term resource planning and management no matter the situation. Our goal in 2019 will be to get the water windfall to the right storage or treatment facility, thus ensuring a sustainable and resilient water supply for the years to come.

With our abundant rainfall, stormwater capture in L.A. County, which includes the LADWP service territory, stood at 113 percent of normal for the water year October 1, 2018 to May 1, 2019. That's approximately 23.5 billion gallons of water, enough to supply over 24,000 L.A. households annually. Through our stormwater capture infrastructure, rain barrels and cisterns, Los Angeles has been carefully harnessing this precious resource to recharge our local aquifers and help reduce our reliance on imported purchased water.

LADWP is also rising to meet the challenges of future water supplies with the ultimate sustainability endeavor. The city of Los Angeles' recent announcement to recycle 100 percent of all wastewater by 2035 will require major infrastructure investment to move advanced treated pure water from the Hyperion Water Treatment Plant to additionally replenish our groundwater aquifers. This large capital improvement project represents another Mulholland moment, a game-changer at par with building another aqueduct. Its completion will be a leap for Los Angeles towards water independence.

To kick start that effort a wastewater ozone demonstration project at the Donald C. Tillman Plant in the San Fernando Valley is in progress to begin advanced wastewater treatment operations. This is the initial phase of an effort to replenish L.A.'s groundwater in the San Fernando Valley. This pure water will be conveyed to the Hansen Spreading Grounds where it will percolate through the soil. Once ready it will be pumped through existing groundwater wells, treated again and placed back into the distribution system.

There is no better and smarter way to manage our water resources than through water conservation. L.A. residents have truly made this a way of life and our city's per capita water use as of fiscal year 2017-18 is 112 gallons. Ours is one of the lowest of any major U.S. city and lower than it was in 1970, despite a population increase of more than one million people. LADWP has been working closely with our elected officials, other city departments, and customers to reduce water use across all sectors. The city's goal is to reduce water use by 25 percent by 2025, and 30 percent by 2035. We continue to encourage conservation through rebates and incentives for water-saving measures and devices. Furthermore, we are finding ways to conserve within our own system and operations. As an example, LADWP's Water Loss Task Force has been deploying strategies to reduce water losses in our distribution system.

Our professional forefathers undertook the complex and monumental task of constructing the Los Angeles Aqueduct to bring reliable, fresh, quality water to Los Angeles. LADWP staff today are just as committed to fulfill that goal, innovating and adopting modern solutions to operational and resource challenges. We remain steadfast in our resolve to ensure the reliability and sustainability of water for our customers and the entire city of Los Angeles.

WHERE DOES L.A. GET THE WATER IT NEEDS?

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 the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the State Water Resources Control Board (SWRCB) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. SWRCB regulations also establish limits for contaminants in bottled water that 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. 2019¸ 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. EPA's Safe Drinking Water Hotline (800) 426-4791.

IMPORTANT NOTICE

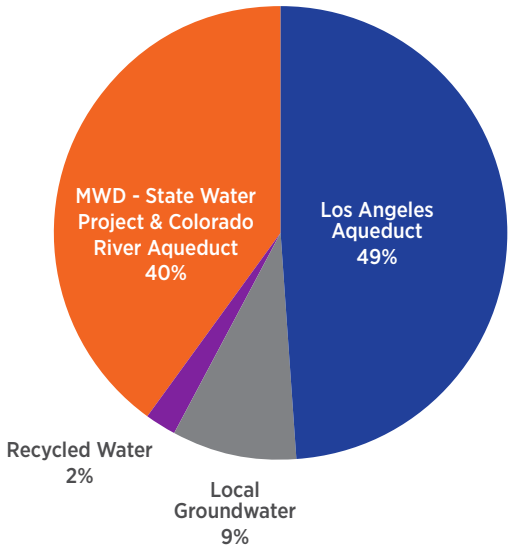
Precautions for the Special Needs Population

There are certain health conditions for which additional precautions on environmental exposures, including drinking water, would be advisable. Elderly customers and infants can be particularly at risk from infection as well as those with weakened immune systems including individuals living with HIV/AIDS or other immune system disorders, those who may have undergone chemotherapy or those who have received organ transplants.

Customers concerned with these types of health challenges should seek advice from their health care providers about drinking tap water. Contact U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791, or visit www.epa.gov for free guidelines on how to reduce the risk of infection by Cryptosporidium and other microbial contaminants.

L.A.'S WATER SOURCES IN 2018

2018 Water Sources



REGULATORY COMPLIANCE

Regulatory Compliance How do we measure up?

LADWP works around the clock to ensure that the drinking water we deliver to our customers is of the highest quality and meets all safety requirements. Highly trained, certified treatment operators monitor our water treatment operations continuously, thereby helping meet federal and state standards for drinking water. In 2018, we tested for more than 200 constituents in the water and performed more than 120,000 tests on samples taken throughout our water system.

Notice of Violations of Drinking Water Regulations

Water quality is LADWP's highest priority. Staff works to ensure treatment protocols are followed year round at each of the city's water treatment facilities. Unfortunately, LADWP was issued one citation in 2018 for violating the surface water treatment rule. This violation was reported in the 2017 annual drinking water report. LADWP addressed the citation and put measures in place to prevent this type of occurrence in the future. LADWP received no additional violations in 2018.

Notification Levels Established for Two Fluorinated Compounds

On July 13, 2018, the California State Water Resources Control Board, Division of Drinking Water (SWRCB-DDW) issued health-based drinking water Notification Levels (NLs) for Perfluorooctanoic acid (PFOA) and Perfluorooctane sulfonic acid (PFOS). PFOA and PFOS are compounds that have been used in consumer products to make materials stain-resistant, water-proof, and non-stick. They are also used on surface coatings for paper, cardboard packaging, carpets, furniture, leather, fire-retardant foams, cookware, and equipment lubricants.

The NL issued is a health-based advisory level, not a regulatory level, established by SWRCB-DDW for chemicals that may present health risks but have yet to go through a Health Hazard Assessment. A Health Hazard Assessment is part of the process required to formally adopt a Maximum Contaminant Level (MCL) and includes rigorous research and data analysis by the State Office of Environmental Health.

The NLs for PFOA and PFOS have been set at 14 parts per trillion (ppt) and 13 ppt, respectively. A ppt is equivalent to one ounce in 7.5 billion gallons of water. An NL requires a public water supplier to notify SWRCB-DDW and its governing bodies if drinking water tests exceed the level and recommends customer notification.

Health consequences for exposure to significant levels of PFOA and PFOS may include liver toxicity, cancer risks, and immunotoxicity. Human exposure to PFOA and PFOS are primarily through consumer products, food, indoor and outdoor air, and dust. There is potential for exposure via ingestion of drinking water, particularly in former PFC manufacturing areas. Major U.S. manufacturers voluntarily phased out production of PFOS between 2000 and 2002, and subsequently for PFOA in 2006 due to toxicological concerns.

LADWP tested for PFOA, PFOS, and other PFC's in its source water and distribution system in 2013-2014, well after phased out production of these compounds as part of U.S. EPA's Unregulated Contaminant Monitoring Rule 3 (UCMR3).

During UCMR3 over 38 samples were collected from 11 different monitoring locations. Results for all samples were below laboratory detection levels utilizing advanced U.S. EPA certified test methods for these compounds and well below the NLs for PFOA and PFOS. LADWP continues monitoring for PFOA, PFOS, and other PFC's, including testing of local groundwater sources.

LADWP has a comprehensive water quality monitoring program to help ensure the safety of our water supply. Our water meets or exceeds all State and Federal drinking water standards established by the SWRCB-DDW and the U.S. EPA.

SWRCB-DDW has results of statewide testing for PFOA and PFOS on its website: https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/PFOA_PFOS.html

Additional Reference Websites:

https://www.epa.gov/ground-water-and-drinking-water/drinking-water-health-advisories-pfoa-and-pfos

https://www.atsdr.cdc.gov/pfas/docs/pfas_fact_sheet.pdf

LEAD AND DRINKING WATER IN L.A.

Lead is commonly found throughout our environment – in the air, soil, and in homes with old lead-based paints. Fortunately, lead is not found in any of the city's water sources. LADWP has participated in the federal Lead and Copper Rule (LCR) sampling program since 1991 and has taken steps to eliminate lead containing materials in our distribution system. Los Angeles has and continues to be in compliance with the lead and copper regulation, based on residential sampling. In addition, LADWP is improving its corrosion control plan to further minimize lead exposure at the tap.

LADWP most recently conducted LCR residential sampling in 2018. To find the LCR results, see Table I (cont'd) on page 12.

The LCR sampling program focuses on single family residences which were built from 1982 to 1987 that have copper pipes plumbed with lead solder. Customers with qualifying homes that participate in the sampling program will get their tap water tested for lead and copper at no cost. Customers who think their home may qualify can participate in LADWP's next round of LCR sampling are asked to contact us at (213) 367-3182.

In Los Angeles, the main source of lead in drinking water is household plumbing, primarily in homes built before 1986 where lead solder was used to join copper pipes. In 1986, federal law restricted the use of lead in lead-based solder to 0.2% and in pipes and pipe fittings used to serve drinking water to 8%. This helped reduce the amount of lead at the tap inside homes. In 2010, California law further restricted the amount of lead in pipes and pipe fittings to 0.25%, which again reduced the amount of lead at the tap inside homes. The amount of time water remains stagnant in home plumbing will affect how much lead could potentially leach into the tap water. The longer water remains motionless in the pipes, the more likely higher levels of lead will leach into drinking water. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is also available from the Safe Drinking Water Hotline or at www.epa.gov/lead.

Voluntary Lead Testing of Drinking Water at California Public and Private K-12 Schools

In January 2017, the SWRCB-DDW amended LADWP's domestic water supply permit to include a new voluntary program to test for lead in drinking water at California public and private K-12 schools within its service area. Schools interested in participating in this program can find out more information on www.ladwp.com/waterquality under Water Quality in The News, Lead Testing for Los Angeles Schools. Written requests will be accepted until November 1, 2019.

As of December 2018, LADWP has received and processed 24 requests from schools. No school had lead levels above the action level of 15 parts per billion. The breakdown of the samples results are as follows:

Total Samples Tested: 57

Non-Detect Results: 48

Above Action level: 0

Maximum Result: 3.5 µg/L

Average Result: 0.22 µg/L

If you have any questions regarding this program, please contact us at (213) 367-3182.

AB 746 Requires Lead Testing in California Public K-12 Schools

Effective January 1, 2018, California Assembly Bill 746 requires community water systems to test for lead in drinking water at California public K-12 schools within their service area by July 1, 2019. This law compliments the existing optional lead testing in schools program that began early last year. Under the new lead testing program, all public K-12 schools must participate in lead testing unless they can show that their school was constructed or their plumbing was replaced after December 31, 2009, and that they have conducted equivalent lead testing after January 1, 2009 and posted the results on their website.

Since the effective date, LADWP has established a schedule for four rounds of testing to complete sampling for 103 schools within our service area. LADWP has contacted and sent out testing kits to public K-12 schools within its service area. In 2018, three schools were tested. The results are included below. No school had lead levels above the action level of 15 parts per billion. All remaining schools should be tested by July 2019. If you have any questions regarding this new program, please contact us at (213) 367-3182.

Total Samples Tested: 11

Non-Detect Results: 5

Above Action level: 0

Maximum Result: 3.6 µg/L

Average Result: 1.24 µg/L

Assessment Programs for Surface and Groundwater Sources

Purchased Supplies:

The Metropolitan Water District (MWD) receives and treats water from the State Water Project and the Colorado River that is then delivered to Los Angeles customers. Three of the five MWD treatment plants: F.E. Weymouth, Robert B. Diemer and Joseph Jensen, supply water to the Los Angeles area. MWD tests its water for nearly 400 constituents and performs about 250,000 water quality tests per year on samples gathered from its vast distribution system. Analysis of these samples is undertaken at MWD's state-of-the art water quality laboratory. Results from MWD are provided to LADWP and are included in the report on Tables I, II and III.

Safeguarding Our Surface Water

Administered by the State Water Resources Control Board, Division of Drinking Water (SWRCB-DDW), the Surface Water Treatment Rule (SWTR) is a set of drinking water regulations that establish specific treatment requirements for surface water to reduce the risk of waterborne diseases.

The last update to the SWTR is the Long Term 2 Enhanced Surface Water Treatment Rule (LT2). This rule protects treated water reservoirs from microbiological contamination by requiring one of three actions: 1) covering, 2) removing from service, or 3) providing additional treatment. In March of 2009, LADWP executed a Compliance Agreement for LT2 with SWRCB-DDW for six uncovered reservoirs: Los Angeles, Upper Stone Canyon, Santa Ynez, Ivanhoe, Silver Lake, and Elysian. Based on the agreement LADWP has met the requirements for five of the six reservoirs. The Los Angeles Reservoir is the only remaining reservoir awaiting regulatory compliance.

The Los Angeles Reservoir will be brought into compliance with the LT2 through a combination of shade balls and construction of a new ultraviolet (UV) disinfection plant. The "shading" of the reservoir was completed in 2015 with nearly 96 million shade balls deployed. The new UV treatment facility will disinfect water leaving the Los Angeles Reservoir to satisfy the LT2 water quality regulation. Construction began in June 2017 and will be completed by the December 2020 compliance date set by the SWRCB-DDW.

Go to www.ladwp.com/waterquality to learn more about water quality projects and issues.

WATER QUALITY SERVICE AREAS IN LOS ANGELES

San Fernando Valley Communities

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

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

Western Los Angeles Communities

Sources: Los Angeles Aqueduct and MWD State Water Project

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

Eastern Los Angeles Communities

Sources: MWD State Water Project and Colorado River Aqueduct

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

Central Los Angeles Communities

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

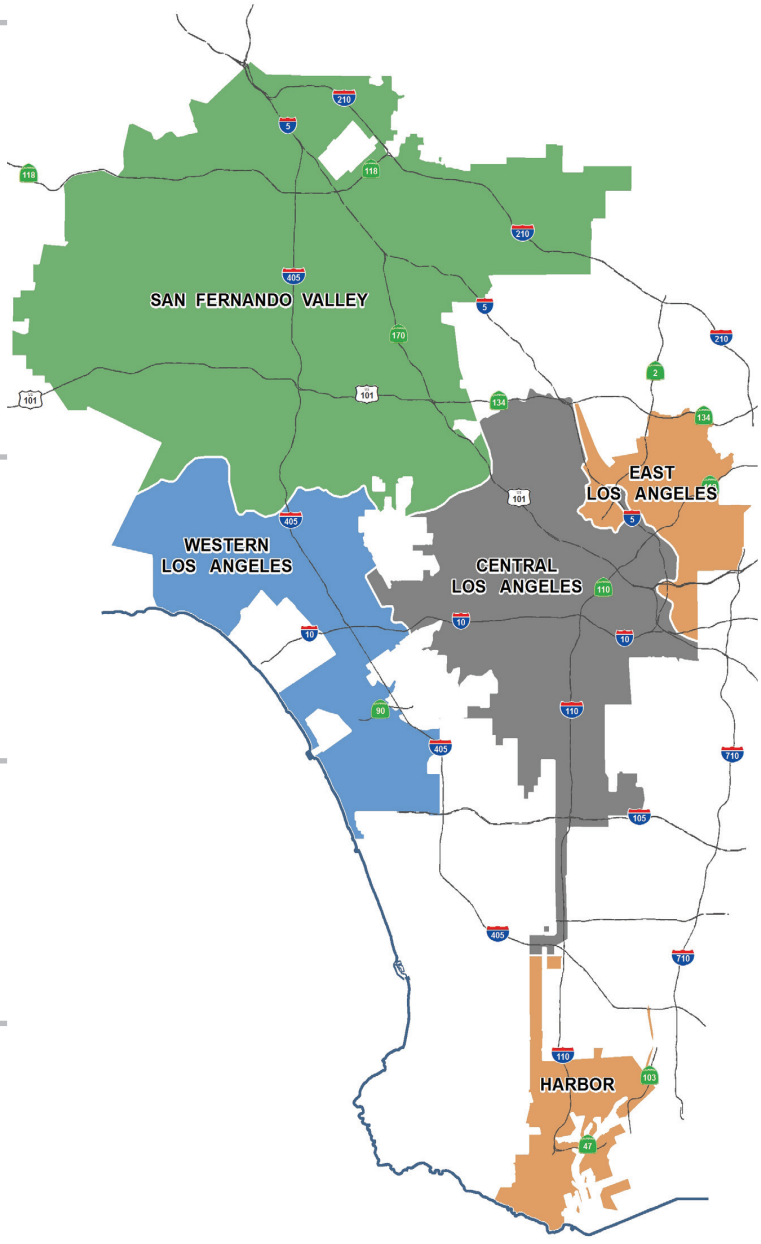
Baldwin Hills	Hyde Park	Park La Brea
Chinatown	Koreatown	Rancho Park
Country Club Park	L.A. City Strip*	Silverlake
Crenshaw	Little Tokyo	Watts
Griffith Park	Los Feliz	West Hollywood*
Hancock Park	Mid City	Westlake
Hollywood	Mt. Olympus	

Harbor Communities

Sources: MWD State Water Project and Colorado River Aqueduct

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

*Portions of



Sources of drinking water fluctuate throughout the area due to operational needs and source water availability

2018 DRINKING WATER QUALITY MONITORING RESULTS

Tables I, II, and III list the results of water tests performed by the LADWP and MWD from January to December 2018. LADWP tests for over 200 substances. These tables include only substances with values that are detected.

How to Read the Tables

The substances 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 the MWD Jensen Plant columns.
- For Central Los Angeles Area – water test results are under the Los Angeles Aqueduct Filtration Plant and the Southern Combined Wells columns.
- For Western Los Angeles Area – water test results are under the Los Angeles Aqueduct Filtration Plant columns.
- For Harbor/Eastern Los Angeles Area – water test results are under MWD, Weymouth, Diemer, and Jensen Plants columns.

Some substances are reported on a citywide basis as required by the SWRCB-DDW.

Abbreviations and Footnotes

ACU = apparent color unit

CFU/mL = colony-forming unit per milliliter

< = less than the detection limit for reporting purposes

µg/L = micrograms per liter (equivalent to ppb)

µS/cm = microSiemens per centimeter

mg/L = milligrams per liter (equivalent to ppm)

NTU = nephelometric turbidity units

NA = not applicable

NR = not reported

NT = not tested

NUM/100 mL = number per 100 milliliter

% = percentage

pCi/L = picoCuries per liter

TON = threshold odor number

Unregulated Contaminants Monitoring Rule

The Unregulated Contaminant Monitoring Rule (UCMR) is a special program developed by the U.S. EPA that requires public water systems to survey up to 30 selected contaminants of emerging concerns (CECs) once every five years. Results indicate that most of the contaminants were not detected at the very low minimum reporting levels required by the U.S. EPA for UCMR3 analyses. Of the contaminants that were detected (see Table IV on page 15) chlorate and strontium were in insignificant but expected concentrations.

LADWP routinely tests for and detects chlorate in the distribution system. Chlorate is a disinfection byproduct of chlorination. Although it is unregulated, the SWRCB-DDW has set a notification level of 800 mg/l. UCMR3 test results for chlorate were much lower, ranging from not detected to 296 mg/l.

Terms Used in the Tables

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.

Federal Action Level (AL): Concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow. ALs are set by U.S. Environmental Protection Agency (U.S. EPA).

Federal Minimum Reporting Level (MRL): Minimum concentration of a contaminant which can be detected in drinking water using analytical methods established by the U.S. EPA. Data reported in Table IV reflect MRLs.

Maximum Contaminant Level Goal (MCLG): 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. EPA.

Maximum Residual Disinfectant Level (MRDL): 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): Level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the beneficial use of disinfectants to control microbial contaminants. MRDLGs are set by U.S. EPA.

Notification Level (NL): Health-based advisory level established by SWRCB-DDW for chemicals in drinking water that lack 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): 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).

Secondary Maximum Contaminate Level (SMCL): Highest level a constituent allowed in drinking water that may affect the taste, odor or appearance. SMCLs are set by the U.S. EPA.

State Detection Limit (DLR): A detected contaminant at or above its detection level for reporting purposes. DLRs are set by the SWRCB-DDW. Data reported in Tables I through III reflect DLRs.

State Maximum Contaminant Level (MCL): Highest level of a contaminant 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. For certain contaminants, compliance with MCL is based on the average of all samples collected throughout the year.

Treatment Technique (TT): 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 (cloudiness in water) and microbial contaminants from surface water. High turbidities may be indicative of poor or inadequate filtration.

TABLE I

Calendar Year 2018 Water Quality Monitoring Results

Health-based Primary Drinking Water Standards (MCLs)
Substances Detected in Treated Water

Substances	Major Sources in Drinking Water	Units	Meets Primary Standard (YES / NO)	State Primary Standard MCL	State PHG	Los Angeles Aqueduct Filtration Plant		Northern Combined Wells		Southern Combined Wells		MWD Weymouth Plant		MWD Diemer Plant		MWD Jensen Plant	
						Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Aluminum	Erosion of natural deposits; residue from surface water treatment processes	µg/L	YES	1000	600	<50	<50	<50	<50	<50	<50	105 (a)	<50 - 220	124 (a)	<50 - 310	< 50 (a)	<50 – 75
Arsenic	Erosion of natural deposits	µg/L	YES	10	0.004	3(a)	<2 – 3	<2	<2 – 2	<2	<2 - 2	<2	<2	<2	<2	<2	<2
Barium	Erosion of natural deposits	µg/L	YES	1000	2000	<100	<100	<100	<100	<100	<100	118	<100 - 118	117	<100 - 117	<100	<100
Bromate (b)	By-product of ozone disinfection; formed under sunlight for chlorinated water	µg/L	YES	10	0.1	1 (a)	<1 – 3	2	<1 – 3	2	<1 – 3	5 (a)	<1 - 10	2 (a)	<1 - 4.7	5.2 (a)	<1 - 6.4
Fluoride	Erosion of natural deposits; water additive that promotes strong teeth	mg/L	YES	2	1	0.7	0.7-0.8	0.7	0.6-0.7	0.7	0.6-0.7	0.7	0.6 - 0.9	0.7	0.6 - 0.9	0.7	0.4 - 0.8
Gross Alpha Particle Activity (c)	Naturally present in the environment	pCi/L	YES	15	0	<3	<3	4	<3 - 4	4	<3 – 4	<3	<3	<3	<3	<3	<3 – 3
Gross Beta Particle Activity (c)	Naturally present in the environment	pCi/L	YES	50	0	4	<4-5	<4	<4-4	<4	<4 – 5	<4	<4	<4	<4	<4	<4
Heterotrophic Plate Count Bacteria	Naturally present in the environment	CFU/ mL	YES	TT	none	<1	<1	<1	<1	<1	<1	<1	<1 - 1	<1	<1 - 1	<1	<1
Nitrate (as N)	Erosion of natural deposits; runoff and leaching from fertilizer use	mg/L	YES	10	10	<0.4	<0.4	1	0.7-2	1	1-2	<0.4	<0.4	<0.4	<0.4	0.5	0.5
Nitrate + Nitrite (as N)	Erosion of natural deposits; runoff and leaching from fertilizer use	mg/L	YES	10	10	<0.4	<0.4	1	1 – 2	1	1 – 2	NR	NR	NR	NR	NR	NR
Total Organic Carbon (TOC)	Erosion of natural deposits	mg/L	YES	TT	none	1.6	1.5 - 1.8	1.3	1.0- 1.8	1.3	1.0-1.6	2.4 (a)	2.1 - 2.8	2.4 (a)	2.1 - 2.7	2.6 (a)	2.0 - 2.6
Trichloroethylene (TCE)	Discharge from metal degreasing sites and other factories	µg/L	YES	5	1.7	<0.5	<0.5	<0.5	<0.5 – 0.9	<0.5	<0.5 – 1	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Turbidity (d)	Soil runoff	NTU	YES	TT = 1	none	0.17	NA	NA	NA	NA	NA	0.06	NA	0.07	NA	0.06	NA
		%		TT = 95% of samples ≤0.3 NTU		100%						100%		100%		100%	
Uranium (c)	Erosion of natural deposits	pCi/L	YES	20	0.43	3	2 – 4	3	1 – 4	3	2– 4	<1	<1	<1	<1	<1	<1 - 1

(a) Values reflect Highest Running Annual Average (HRAA). HRAA is the highest of all Running Annual Averages (RAAs) in the reported calendar year. RAA is a calculated average of all samples collected within the previous 12-month period, which may include test data from the previous calendar year. HRAA may be higher than the range, which is based on the test data in the reported calendar year.

(b) Bromate is formed in water treated with ozone in the presence of bromide. Bromate has also been found in water treated with chlorine in some uncovered reservoirs in LADWP that have elevated bromide levels and are exposed to sunlight. MWD tests for bromate at its Diemer and Jensen Filtration Plants, which use ozone. Weymouth Plant has tested for bromate for less than 12-month period and so RAA is not calculated. All LADWP distribution reservoirs are now shielded with flexible covers or shade balls to minimize bromate formation.

(c) Radiological monitoring is performed in cycles of various frequencies in LADWP for treated sources water and at the blend points. Monitoring for Gross Alpha Particle Activity is performed in six year cycle and was conducted in 2016. Monitoring of Combined Radium-226 and Radium-228 is performed in three year cycle and was conducted in 2016. Monitoring of Gross Beta Particle Activity, Strontium-90, Tritium and Uranium is performed annually. MWD conducted all radiological monitoring in 2017.

(d) Turbidity is a measure of the cloudiness of 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 (included in this table) at water filtration plants is less than or equal to 0.3 NTU in at least 95 percent 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 to report the highest single measurement in the calendar year as well as the lowest monthly percentage of measurements that are less than or equal to 0.3 NTU.

TABLE I (CONT'D)

Calendar Year 2018 Water Quality Monitoring Results

Health-based Primary Drinking Water Standards (MCLs)
Substances Detected in Treated Water and Reported on City-Wide Basis

Substances	Major Sources in Drinking Water	Units	Meets Primary Standard (YES/NO)	State Primary Standard MCL or (MRDL)	State PHG / (MRDLG)	Average	Range
Bromate (uncovered reservoirs)	By-product of ozone disinfection; formed under sunlight for chlorinated water	µg/L	YES	10	0.1	HRAA = 2 (a)	Range = <1 – 3
Chlorine Residual, Total	Drinking water disinfectant added for treatment	mg/L	YES	(4)	(4)	HRAA = 2.0 (a)	Range = 1.8 – 2.1
Copper (at-the-tap) AL = 1300 (e)	Internal corrosion of household water plumbing systems	µg/L	YES	TT	300	90th Percentile value = 329	Number of samples exceeding AL = 0 out of 103
Fluoride	Erosion of natural deposits; water additive that promotes strong teeth	mg/L	YES	2	1	Average = 0.7	Range = 0.2 - 0.9
Haloacetic Acids (Five) (HAA5)	By-product of drinking water disinfection	µg/L	YES	60	none	HLRAA = 15 (f)	Range = 3 – 22
Lead (at-the-tap) AL = 15 (e)	Internal corrosion of household water plumbing systems	µg/L	YES	TT	0.2	90th Percentile value = 5.2	Number of samples exceeding AL = 1 out of 103
Total Coliform Bacteria	Naturally present in the environment	% Positives	YES	≤5% of monthly samples are coliform positive	0	Highest monthly % positive samples = 1.5%	Range = % positive samples 0% – 1.3%
Total Trihalomethanes (TTHM)	By-product of drinking water chlorination	µg/L	YES	80	none	HLRAA = 38 (f)	Range = 9 – 46

(a) Values reflect Highest Running Annual Average (HRAA). HRAA is the highest of all Running Annual Averages (RAAs) in the reported calendar year. RAA is a calculated average of all samples collected within the previous 12-month period, which may include test data from the previous calendar year. HRAA may be higher than the range, which is based on the test data in the reported calendar year.

(e) At-the-tap monitoring of lead and copper is conducted as required by the federal Lead and Copper Rule. A system is out of compliance if the federal Action Level is exceeded in more than 10 percent of all samples collected at the customers' tap. The most recent monitoring was conducted in 2018. Although the City's treated water has little or no detectable lead, studies were conducted and corrosion control implementation started. A small corrosion control facility utilizing zinc orthophosphate (temporarily out of service for upgrades) has been in operation in the Watts area since the 1990's. Corrosion control was introduced to the Western Los Angeles area in 2010 and to the Hollywood area in 2015. The results of the corrosion control study will be available in 2019.

(f) The federal Stage 2 Disinfectants/Disinfection Byproducts Rule (Stage 2 D/DBPR) requires compliance monitoring and reporting for total trihalomethanes (TTHM) and five haloacetic acids (HAA5) based on Locational Running Annual Averages (LRAAs) of established monitoring locations. The Highest Locational Running Annual Averages (HLRAAs) of all LRAAs in the current calendar year for TTHM and HAA5 are reported.

TABLE II

Calendar Year 2018 Water Quality Monitoring Results

Aesthetic-based Secondary Drinking Water Standards (SMCLs)
Substances Detected in Treated Water

Substances	Major Sources in Drinking Water	Units	Meets Secondary Standard (YES/NO)	State SMCL or Federal (SMCL)	Los Angeles Aqueduct Filtration Plant		Northern Combined Wells		Southern Combined Wells		MWD Weymouth Plant		MWD Diemer Plant		MWD Jensen Plant	
					Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Aluminum	Erosion of natural deposits; residue from some surface water treatment processes	µg/L	YES	200	<50	<50	<50	<50	<50	<50	105 (a)	<50 - 220	124 (a)	<50 - 210	< 50 (a)	<50 – 75
Chloride	Runoff / leaching from natural deposits; seawater influence	mg/L	YES	500	34	24 - 46	39	28 - 45	39	30- 49	96	96 - 97	94	92 - 95	56	54 - 57
Color, Apparent (unfiltered)	Naturally-occurring organic materials	ACU	YES	15	3	3 – 4	3	3 - 4	3	3 – 4	<1	<1 -1	<1	<1 - 1	<1	<1 - 1
Odor	Naturally-occurring organic materials	TON	YES	3	<1	<1	<1	<1	<1	<1	3	3	2	1 - 4	2	1 - 4
pH	Naturally-occurring dissolved gases and minerals	Unit	YES	(6.5 - 8.5)	7.6	7.3 - 7.9	8.1	7.4 - 8.4	8.1	7.6-8.4	8.1	8.1 - 8.2	8.1	8.1	8.5	8.4 - 8.5
Specific Conductance	Substances that form ions when in water; seawater influence	µS/cm	YES	1600	348	290 - 400	518	360- 560	518	450 - 620	954	897 - 1010	906	852 - 961	436	428 - 444
Sulfate (as SO_4)	Runoff / leaching from natural deposits	mg/L	YES	500	28	17- 34	74	42 - 88	74	62 - 104	213	190 - 236	199	178 - 220	44	43 - 46
Total Dissolved Solids (TDS)	Runoff / leaching from natural deposits	mg/L	YES	1000	201	164 - 232	415	241 - 338	415	276 - 376	596	553 - 639	565	523 - 607	242	239 - 244
Turbidity (g)	Soil runoff	NTU	YES	5	<0.1	<0.1	0.1	<0.1 – 0.2	0.1	<0.1 – 0.2	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1

(a) Values reflect Highest Running Annual Average (HRAA). HRAA is the highest of all Running Annual Averages (RAAs) in the reported calendar year. RAA is a calculated average of all samples collected within the previous 12-month period, which may include test data from the previous calendar year. Hence, HRAA may be higher than the range, which is based on the test data in the reported calendar year.

(g) The Secondary Maximum Contaminant Level for turbidity of treated water in the distribution system is 5 NTU at the entry points to the distribution system.

TABLE III

Calendar Year 2018 Water Quality Monitoring Results

Unregulated Drinking Water Substances Detected in Treated Water

Substances	Major Sources in Drinking Water	Units	Los Angeles Aqueduct Filtration Plant		Northern Combined Wells		Southern Combined Wells		MWD Weymouth Plant		MWD Diemer Plant		MWD Jensen Plant	
			Average	Range	Average	Range	Average	Range	Average	Range	Average	Range	Average	Range
Alkalinity, Total (as $CaCO_3$)	Erosion of natural deposits	mg/L	97	86 - 112	117	90 - 131	117	107 - 139	112	107 - 117	106	99 - 114	72	68 - 76
Ammonia + Chloramines (as N)	Drinking water disinfectant added for treatment	mg/L	0.5	0.4 - 0.5	0.5	0.3 - 0.6	0.5	0.4 - 0.6	NA	NA	NA	NA	NA	NA
Bicarbonate Alkalinity (as $CaCO_3$)	Naturally-occurring dissolved gas; erosion of natural deposits	mg/L	119	105 - 137	143	110 - 159	143	131 - 169	NA	NA	NA	NA	NA	NA
Boron NL = 1000	Erosion of natural deposits	µg/L	408	321 - 513	270	145 - 304	270	203 - 304	130	130	130	130	140	140
Bromide	Runoff / leaching from natural deposits; seawater influence	µg/L	45	22 - 89	79	47 - 90	79	72 – 97	NA	NA	NA	NA	NA	NA
Calcium	Erosion of natural deposits; natural hot springs	mg/L	24	21 - 26	43	28 - 48	43	38 - 57	63	57 - 69	58	52- 65	20	19 - 21
Chromium, Hexavalent	Industrial discharge; erosion of natural deposits	µg/L	<0.1	<0.1	0.4	<0.1 – 0.6	0.4	0.3– 0.7	<1	<1	<1	<1	<1	<1
Hardness, Total (as $CaCO_3$)	Erosion of natural deposits	mg/L	88	72 - 97	159	111 - 175	159	145 - 204	254	233 - 274	240	219 - 262	89	84 - 94
Lithium	Erosion of natural deposits	µg/L	84	39 - 118	41	10 - 67	41	27 - 51	NA	NA	NA	NA	NA	NA
Magnesium	Erosion of natural deposits	mg/L	7	5 - 9	12	10 - 14	12	12 - 14	24	23 - 26	23	21 - 25	9.7	9.5 - 9.9
Phosphate (as PO_4)	Erosion of natural deposits, agricultural run-off	µg/L	38	<31 – 83	70	52 – 89	70	58 – 89	NA	NA	NA	NA	NA	NA
Potassium	Erosion of natural deposits	mg/L	4	4	4	3 - 4	4	3 - 4	4.7	4.4 - 5.0	4.4	4.0 - 4.8	2.4	2.4 - 2.5
Silica (as SiO_2)	Erosion of natural deposits	mg/L	16	15 – 18	17	15 - 18	17	16 - 19	NA	NA	NA	NA	NA	NA
Sodium	Erosion of natural deposits	mg/L	37	29 - 42	40	28 - 44	40	28 - 47	98	94 - 103	92	86 - 98	46	45 - 46
Temperature	Natural seasonal fluctuation	°C	20	18 - 26	22	15 - 32	22	15 - 32	NA	NA	NA	NA	NA	NA
Total Coliform	Naturally present in the environment	NUM/ 100mL	<1	<1 - 1	<1	<1 – 2	<1	<1 – 1	NA	NA	NA	NA	NA	NA
Vanadium NL = 50	Erosion of natural deposits	µg/L	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3	<3

TABLE IV Calendar Year 2018 Water Quality Monitoring Results

The Third U.S. EPA Unregulated Contaminant Monitoring Rule (UCMR3)
Substances Detected In Treated Water

Substances	Units	Meets MCL or NL (YES / NO)	State Primary Standard MCL or (NL)	State PHG or Federal (MCLG)	Los Angeles Aqueduct Filtration Plant		Northern Combined Wells		Southern Combined Wells	
					Average	Range	Average	Range	Average	Range
1,1-Dichloroethane (1,1-DCA)	µg/L	YES	5	3	<0.03	<0.03	<0.03	<0.03 – 0.04	<0.03	<0.03 – 0.04
1,4-Dioxane	µg/L	YES	(1)	NA	<0.07	<0.07	0.4	<0.07 – 0.9	0.4	<0.07 – 0.9
Bromochloromethane	µg/L	NA	NA	NA	<0.06	<0.06	<0.06	<0.06 – 0.1	<0.06	<0.06 – 0.9
Chlorate	µg/L	YES	(800)	NA	<20	<20	130	<20 – 296	130	<20 – 186
Chlorodifluoromethane	µg/L	NA	NA	NA	0.18	<0.08 – 0.7	<0.08	<0.08 – 0.4	<0.08	<0.08 – 0.14
Chromium, Hexavalent (CrVI)	µg/L	YES	10	0.02	0.2	0.1 – 0.4	1	0.2 – 1.6	1	<0.03 – 3.3
Chromium, Total (Total Cr)	µg/L	YES	50	(100)	0.2	<0.2 – 0.4	1	0.2 – 1.5	1	<0.2 – 3.2
Molybdenum	µg/L	NA	NA	NA	5	3 – 7	7	3 – 9	7	3 – 10
Strontium	µg/L	NA	NA	4,000 (h)	242	225 – 279	432	255 – 550	432	259 – 934
Vanadium	µg/L	YES	(50)	NA	1.6	1 – 2	2.2	1.4 – 3.3	2.2	<0.2 – 2.7

(h) Health-based Advisory Level recommended by U.S. EPA.

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General Information

This annual Drinking Water Quality Report (also known as a Consumer Confidence Report) is required by the California State Water Resources Control Board, Division of Drinking Water (SWRCB-DDW) and is prepared in accordance with their guidelines. The report is available online at www.ladwp.com/waterqualityreport. Copies may be requested by calling (213) 367-3182.

LADWP, the largest municipal utility in the nation, was established more than 100 years ago. The utility now provides reliable and safe water and electric service to the city's more than 4 million residents and businesses. LADWP is governed by Board of Water and Power Commissioners, appointed by the Mayor and confirmed by the City Council. The Board meets regularly on the second and fourth Tuesdays of each month at 10:00 a.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/board or by calling (213) 367-1351.

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

For questions regarding this report, call the Water Quality hotline at (213) 367-3182.

THIS MESSAGE IS FOR NON-ENGLISH SPEAKING LADWP CUSTOMERS

This report contains important information about your drinking water. If you have any questions regarding this report, ask someone to translate it for you.

Spanish

Este informe contiene información importante sobre su agua potable. Si tiene alguna pregunta sobre este informe, por favor pídale a alguien que lo traduzca por usted.

Arabic

"هذا ألتقرير يحتوي على معلومآ ت مهمّة تتعلق بمياه ألشفة (أو ألشرب). ترجم ألتقرير , أو تكلم مع شخص يستطيع أن يفهم ألتقرير."

Armenian

Այս հաշվետվությունը պարունակում է կարևոր տեղեկատվություն ձեր խմելու ջրի մասին: Թարգմանե՛ք այն, կամ խոսե՛ք որևէ մեկի հետ, ով հասկանում է դրա բովանդակությունը:

Croatian

Ovo izvješće sadrži važne informacije o vašoj vodi za piće.
Neka ga neko prevede ili razgovarajte s nekim tko ga je u stanju pročitati.

Chinese

此份有關您的飲用水質報告，內有重要資料和訊息。假如您對此報告有任何疑問，請找人為您翻譯及解釋清楚。

Farsi (Persian)

این اطلاعیه شامل اطلاعات مهمی راجع به آب آشامیدنی است. اگر نمیتوانید این اطلاعات را بزبان انگلیسی بخوانید لطفا از کسی که میتواند یاری بگیرید تا مطالب را برای شما به فارسی ترجمه کند.

French

Cé rapport contient des information importantes concernant votre eau potable. Veuillez traduire, ou parlez avec quelqu' un qui peut le comprendre.

German

Dieser Bericht enthält wichtige Information über Ihr Trinkwasser. Bitte übersetzen Sie ihn oder sprechen Sie mit jemandem, der ihn versteht.

Gujarati

આ અહેવાલ આપના પીવાના પાણી વિશે અગત્યની માહિતી ધરાવે છે. તેનું ભાષાંતર કરો, અથવા તે સમજતું હોય તેવી કોઈ વ્યક્તિ સાથે વાત કરો.

Greek

Η κατοθεν αναφορα παρουσιαζη σπουδαιες πληροφορειες για το ποσιμο νερο σας. Πρακακλω να το μεταφρασετε η να το σξολειασετε με καποιον που το καταλαβαινη απολητως.

Hebrew

הדו"ח הזה מכיל מידע חשוב לגבי מי השתייה שלך
תרגם את הדו"ח או דבר עם מישהו שמבין אותו

Hindi

यह सूचना महत्वपूर्ण है ।
कृपा करके किसी से :सका अनुवाद करायें ।

Hungarian

Ez a jelentés fontos információt tartalmaz az Ön által fogyasztott ivóvízről. Fordítsa le, vagy beszéljen valakivel, aki megérti

Italian

Questo rapporto contiene informazioni inportanti che riguardano la vostra aqua potabile. Traducetelo, o parlate con una persona qualificata in grado di spiegarvelo.

Japanese

この情報は重要です。
翻訳を依頼してください。

Khmer (Cambodian)

របាយការណ៍នេះមានពត៌មានសំខាន់អំពីទឹកបរិភោគ ។ សូមបកប្រែឬពិគ្រោះជាមួយអ្នកដែលមើលយល់របាយការណ៍នេះ ។

Korean

이 안내는 매우 중요합니다.
본인을 위해 번역인을 사용하십시요.

Polish

Ta broszura zawiera wazne informacje dotyczace jakosci wody do picia. Przetlumacz zawartosc tej broszury lub skontaktuj sie z osoba ktora pomoze ci w zrozumieniu zawartych informacji.

Portuguese

Este relatório contém informações importantes sobre a água que você bebe. Traduza-o ou converse a respeito dele com alguém que entenda o documento.

Russian

Этот отчет содержит важную информацию о вашей питьевой воды. Переведите его или поговорите с тем, кто это понимает.

Serbian

Овај извештај садржи важне информације о вашој води за пиће.
Нека га неко преведе или разговарајте са неким ко може да га прочита.

Tagalog

Mahalaga ang impormasyong ito. Mangyaring ipasalin ito.

Thai

รายงานนี้ประกอบด้วยข้อมูลที่สำคัญเกี่ยวกับน้ำดื่มของคุณ หากคุณไม่สามารถเข้าใจเนื้อหา โปรดพูดคุยกับผู้ที่เข้าใจเนื้อหาในรายงานนี้

Urdu

اس رپورٹ میں آپ کے پینے کے پانی کے بارے میں اہم معلومات ہے۔ اس کا ترجمہ کریں، یا کسی ایسے شخص سے بات کریں جو اسے سمجھ سکے۔

Vietnamese

Chi tiết này thật quan trọng.
Xin nhờ người dịch cho quý vị.