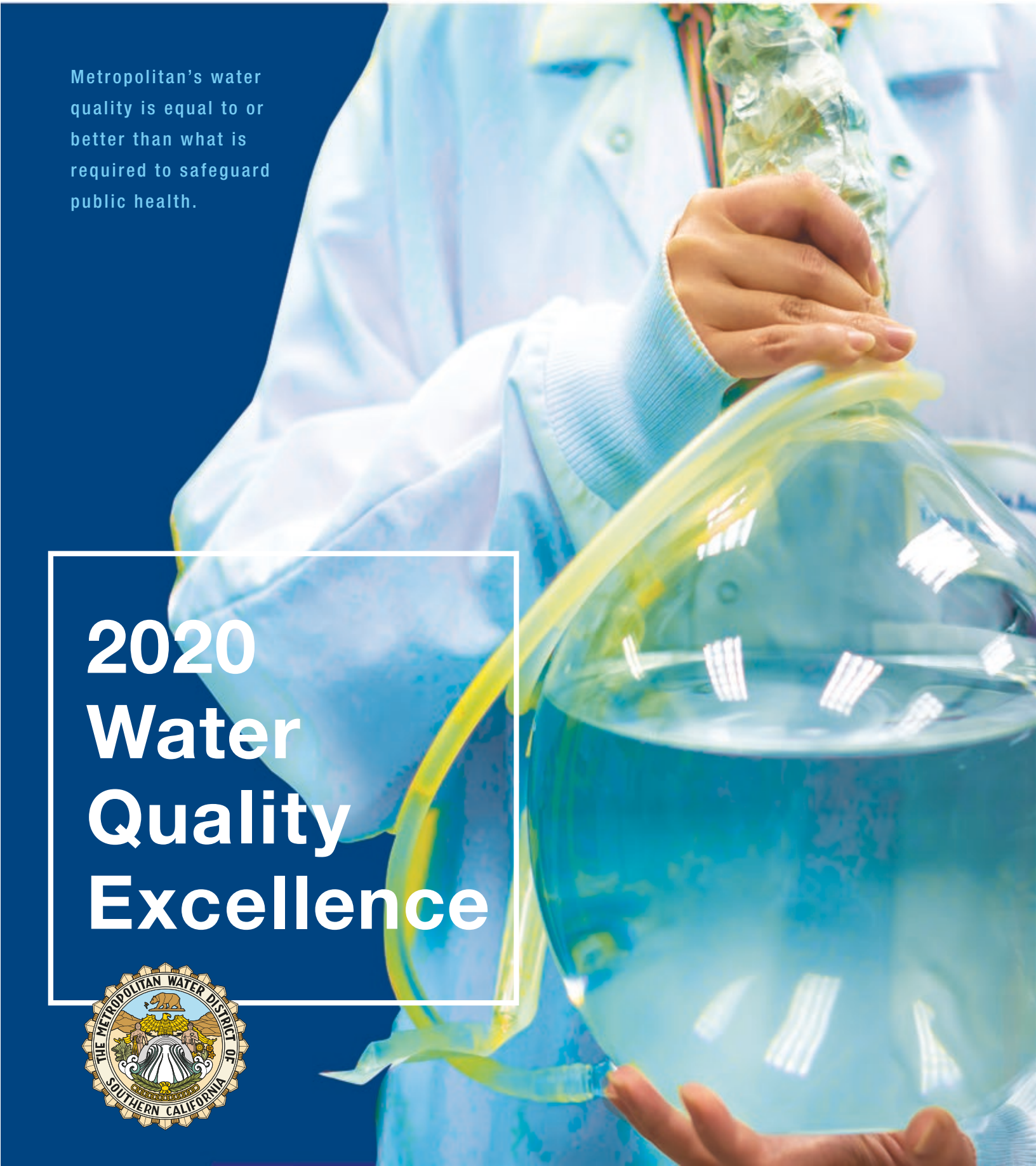
Annual Drinking Water Quality Report

Covering the reporting period of January - December 2019

Metropolitan's water quality is equal to or better than what is required to safeguard public health.



2020 Water Quality Excellence

» On the cover: Microbiology staff uses the sterile buffer water in this six-liter round bottom flask for rinsing down membrane filtration samples for bacterial analysis.

Metropolitan is a regional wholesaler that provides water for 26 member public agencies to deliver—either directly or through their sub-agencies— to 19 million people living in Los Angeles, Orange, Riverside, San Bernardino, San Diego and Ventura counties. Metropolitan imports water from the Colorado River and Northern California to supplement local supplies, and helps its members develop increased water conservation, recycling, storage and other resource-management programs.

Colorado River water is conveyed via Metropolitan's 242-mile Colorado River Aqueduct from Lake Havasu on the California-Arizona border, to Lake Mathews near Riverside. Water supplies from Northern California are released from Lake Oroville and drawn from the crossroads of the Sacramento and San Joaquin rivers. They are transported in the State Water Project's 444-mile California Aqueduct and serve urban and agricultural customers in the San Francisco Bay Area, as well as Central and Southern California.

» Above: Metropolitan uses liquid chromatography and tandem mass spectrometry to analyze emerging constituents of concern that might be regulated in the future.

A Letter from the General Manager

On behalf of the Metropolitan Water District of Southern California, I am pleased to present this Annual Drinking Water Quality Report, which provides a summary of water quality and monitoring data for 2019.

As I submit this report, the COVID-19 pandemic has demonstrated the importance of delivering a safe and reliable water supply to the 19 million people in Metropolitan's service area – water that can be used for crucial life-saving functions. To that end, Metropolitan tests its water for over 400 constituents and performs nearly 200,000 water quality tests annually on samples gathered throughout its vast distribution system. Metropolitan's Water Quality Laboratory analyzes these samples to ensure that Metropolitan's delivered water meets or surpasses all state and federal drinking water standards. A core feature of this report is a detailed table that begins on page 10 and provides testing results. Additionally, a Reader's Guide helps explain the data reported.

Metropolitan remains a national leader in providing safe drinking water that meets increasingly stringent standards. Per- and polyfluoroalkyl substances (PFAS) were a growing nationwide issue in 2019. This family of over 7,800 chemicals has been used in products that resist or repel heat, oil, stains and water. The two types of PFAS of greatest concern in the U.S., perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS), have not been detected in Metropolitan's imported or treated water supplies. Metropolitan has recently detected low levels of perfluorohexanoic acid (PFHxA) in our source and treated waters, but this PFAS is not acutely toxic or carcinogenic and is not currently regulated in California or at the federal level.

To learn about other water quality and supply issues, visit Metropolitan's website at mwdh2o.com and go to the "About Your Water" section. You may also contact Dr. Mic Stewart, Metropolitan's manager of water quality, at (213) 217-5696 or mstewart@mwdh2o.com.

I trust you will find this report to be informative.

Sincerely,

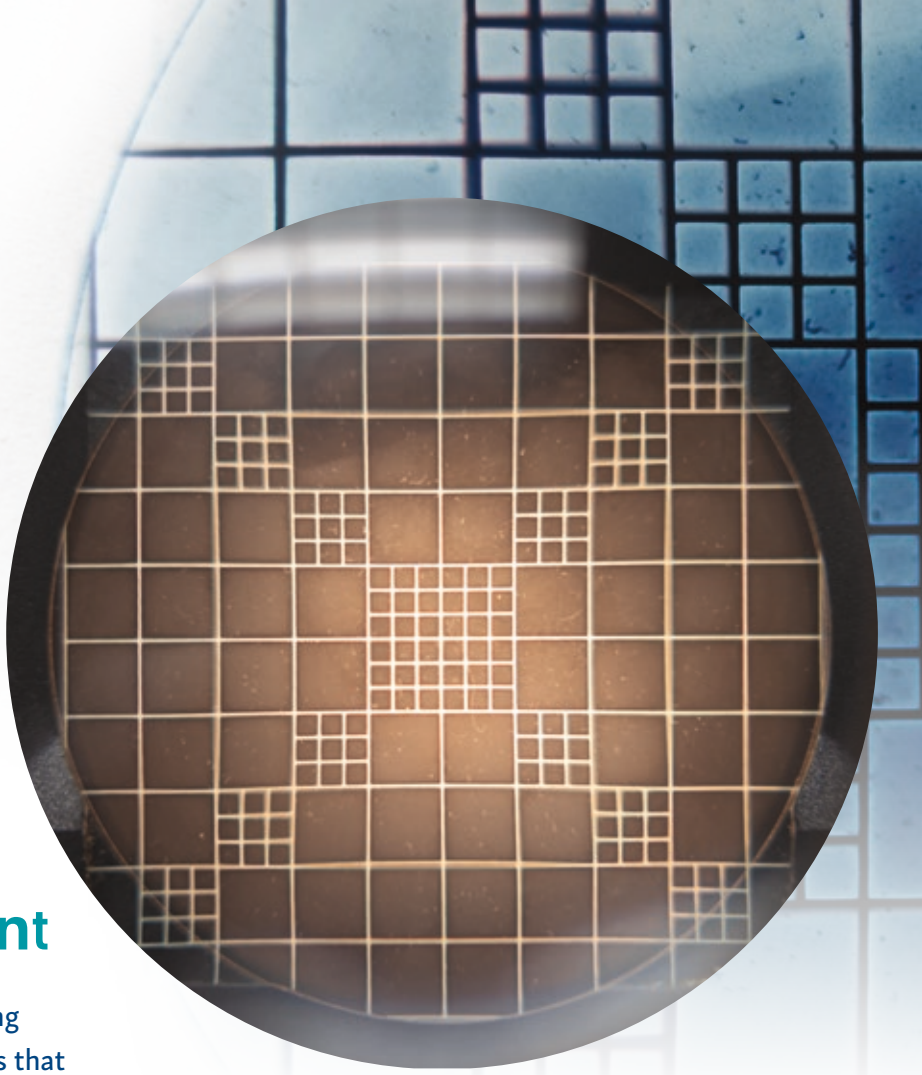
Jeffrey Kightlinger
GENERAL MANAGER

Drinking Water and Your Health

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.

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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by visiting the U.S. Environmental Protection Agency's website at **www.epa.gov/ground-water-and-drinking-water**.

» Chemistry staff examine analytical standards to ensure they meet specifications.



Contaminants That May Be Present

Water agencies are required to use the following language to discuss the source of contaminants that may reasonably be expected to be found in drinking water, including tap water and bottled water.

Contaminants that may be present in sources of drinking water include:

MICROBIAL CONTAMINANTS, such as viruses and bacteria, that may come from wastewater 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural applications and septic systems

» Grid lines on magnified colony counter aid microbiologists in counting colonies of bacteria that may occasionally be present in samples.

RADIOACTIVE CONTAMINANTS that can be naturally occurring or be the result of oil and gas production and mining activities

To ensure that tap water is safe to drink, the U.S. Environmental Protection Agency and the State Water Resources Control Board, Division of Drinking Water, prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. California Department of Public Health and U.S. Food and Drug Administration regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

» Staff divers perform reservoir maintenance as part of Metropolitan's source water protection efforts.

Protecting Water Quality at the Source

Source water protection is an important issue for all of California. Large water utilities are required by the Division of Drinking Water to conduct an initial source water assessment, which is then updated through watershed sanitary surveys every five years. Watershed sanitary surveys examine possible sources of drinking water contamination and recommend actions to better protect these source waters. The most recent surveys for Metropolitan's source waters are the Colorado River Watershed Sanitary Survey – 2015 Update, and the State Water Project Watershed Sanitary Survey – 2016 Update.

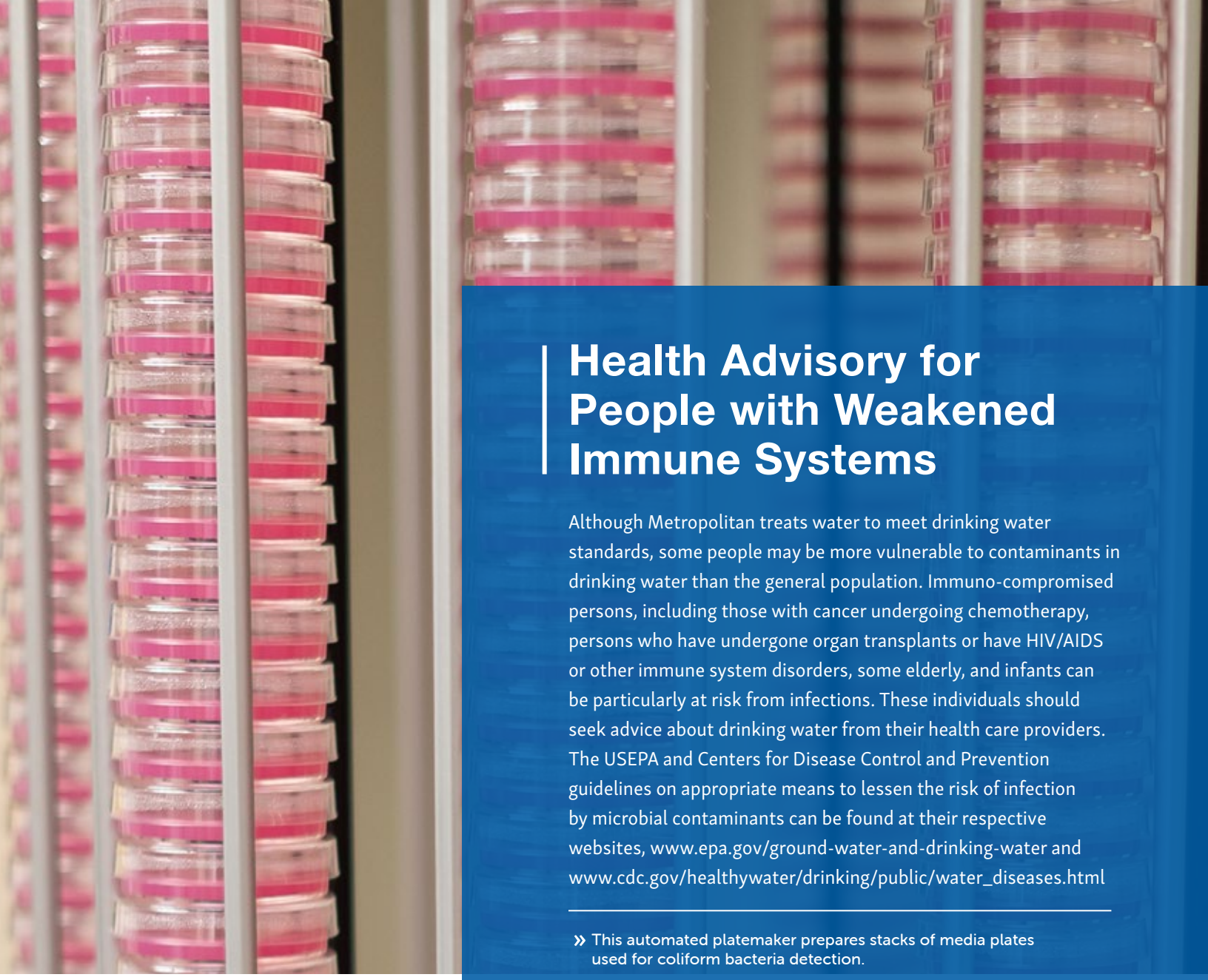
Source waters used by Metropolitan— the Colorado River and State Water Project — each have different water quality challenges. Both are exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires and other watershed-related factors that could affect water quality. Treatment to remove specific contaminants can be more expensive than measures to protect water at the source, which is why Metropolitan and other water agencies invest resources to support improved watershed protection programs.

PFAS

Per- and polyfluoroalkyl substances (PFAS) are a family of more than 7,800 chemicals widely used in products that resist heat, oils, stains and water. They are not currently regulated in California or at the federal level. Two types of PFAS – perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) – are the most commonly used, studied and regulated PFAS in the U.S.

The health effects of PFOA and PFOS continue to be studied. According to the International Agency for Research on Cancer,

» Instruments like this automated extractor help look for PFAS in water samples in ever-smaller amounts, making it possible to detect compounds in the parts-per-trillion range.



Health Advisory for People with Weakened Immune Systems

Although Metropolitan treats water to meet drinking water standards, some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, including those with cancer undergoing chemotherapy, persons who have undergone organ transplants or have HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These individuals should seek advice about drinking water from their health care providers. The USEPA and Centers for Disease Control and Prevention guidelines on appropriate means to lessen the risk of infection by microbial contaminants can be found at their respective websites, www.epa.gov/ground-water-and-drinking-water and www.cdc.gov/healthywater/drinking/public/water_diseases.html

» This automated platemaker prepares stacks of media plates used for coliform bacteria detection.

PFOA is a possible human carcinogen. High concentrations in the body of PFOA and PFOS have also been linked to high cholesterol, thyroid and liver disease, lower birth rates, decreased response to vaccines, decreased fertility and pregnancy-induced hypertension.

After being generated elsewhere, PFAS have entered the water cycle through landfills; sites where the chemicals were used in manufacturing; treated wastewater discharge; and facilities where the chemicals were used in firefighting training, like airports and military bases.

Metropolitan has been monitoring its water supplies for the presence of PFAS since 2013. The two types of PFAS of greatest concern in the U.S., PFOA and PFOS, have not been detected in Metropolitan's imported or treated water supplies.

Metropolitan has recently detected in its supplies low levels of perfluorohexanoic acid (PFHxA), which is not acutely toxic or carcinogenic. No other PFAS have been detected in Metropolitan supplies. See the table on page 12 for results.

PFOA and PFOS have, however, been detected in groundwater wells in the region. Metropolitan is working with its member agencies to build understanding about how PFAS have affected the region's water supplies to ensure Southern California continues to have safe, reliable water.

State and federal lawmakers and regulators are moving toward stricter standards and guidelines for the detection, public notification and removal of PFOA and PFOS in drinking water. Other PFAS chemicals may be considered for future regulations.

Readers' Guide to the Water Quality Table

The cornerstone of the water quality report is a table that lists the results of year-round monitoring for nearly 400 constituents. Only the constituents that are found in the water monitored by Metropolitan above the state detection limit for reporting are listed in the table.

Metropolitan met all primary drinking water standards in 2019.

» Water Quality chemists teaming up to test water samples for emerging constituents of concern.

By reading the table on pages 10 through 12 from left to right, you will learn the level of a constituent found in Metropolitan's water and how that compares with the allowable state and federal limits. You will also see the measured range and average of the constituent and where it likely originated. The questions and answers on this and the following page, lettered A through I, will explain the important elements of the table. The letters correspond to row and column headings on the water quality table.

A. What are the sources of water Metropolitan delivers?

Metropolitan imports water from Northern California through the Sacramento-San Joaquin Delta via the State Water Project, and from the Colorado River through its Colorado River Aqueduct. The table shows the percentage of the total water delivered by Metropolitan that is from the State Water Project. The remainder is from the Colorado River.

B. What is in my drinking water?

Your water may contain different types of chemicals (organic and inorganic), microscopic organisms (e.g., bacteria, algae, protozoa, and viruses) and radioactive materials (radionuclides), many of which are naturally occurring. Health agencies require monitoring for these constituents because at certain levels they could result in short- and long-term health risks. The column marked "Parameter" lists the constituents found in the water from Metropolitan's treatment plants.

C. How are constituents reported?

"Units" describe how a constituent is reported. Usually constituent levels are measured in extremely low quantities such as parts per million, parts per billion and, in some cases, parts per trillion. Even small concentrations of certain constituents can be a health concern. That is why regulatory standards are set at extremely low levels for certain constituents.

D. What are the maximum allowed levels for constituents in drinking water?

Regulatory agencies have maximum contaminant levels (MCLs) for constituents so that drinking water is safe and looks, tastes and smells good. A few constituents have the letters "TT" (treatment technique) in the MCL column because they do not have a numerical MCL. Instead, they have certain treatment requirements that have to be met to reduce their levels in drinking water. One of the constituents, total chlorine residual, has an MRDL (maximum residual disinfectant level) instead of an MCL.

The MRDL is the level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap. While disinfectants are necessary to kill harmful microbes, drinking water regulations protect against too much disinfectant being added. Another constituent, turbidity, has a requirement that 95 percent of the measurements taken must be below a certain number. Turbidity is a measure of the cloudiness of the water. Metropolitan monitors turbidity because it is a good indicator of the effectiveness of our filtration system.

E. Why are some of the constituents listed in the section labeled "Primary Standards" and others in the "Secondary Standards" section?

Primary standards are developed for the purpose of protecting the public from possible health risks associated with exposure to health-compromising constituents. In general, no health hazard is reasonably expected to occur when levels of a constituent are below a primary MCL.

Constituents that are grouped under the secondary standards section can affect the aesthetics (e.g., appearance, taste and smell) of water. These substances are not reasonably expected to have any potential health-related impacts unless they also have a primary standard. Some constituents (e.g., aluminum) have two different MCLs, one to protect against health-related impacts, and another to protect against non-health-related impacts.

F. What are Public Health Goals (PHGs) and Maximum Contaminant Level Goals (MCLGs)?

PHGs and MCLGs are targets or goals set by regulatory agencies for the water industry. They define a constituent level in the water that does not pose any known or expected risk to health. Often, it is not possible to remove or reduce constituents to the level of PHGs and MCLGs because it is technologically impossible or the cost for treatment is so expensive that it would make tap water unaffordable. That is why PHGs and MCLGs are considered goals to work toward, and not realistic standards that can be enforced. Similar goals exist for Maximum Residual Disinfectant Level Goals (see MRDLG, page 11, Abbreviations and Definitions).

G. How do I know how much of a constituent is in my water and if it is at a level that is safe?

With a few exceptions, regulatory requirements are considered satisfied if the average amount of a constituent found in tap water over the course of a year is no greater than the MCL. Some constituents do have special rules, described in the footnotes to the water quality table. These constituents do not have a numerical MCL, but instead a required treatment technique that when satisfied is listed in the column for the treatment plant effluent and distribution system (Column "H" of the table). The highest and lowest levels measured over a year are shown in the range. Requirements for safety, appearance, taste and smell are based on the average levels recorded and not the range.

Water agencies have specific procedures to follow if a constituent is found at levels higher than the MCL and considered a potential threat to public health. Information is shared immediately with the regulatory agencies. The regulatory agencies will determine when and how this information is shared with the public.

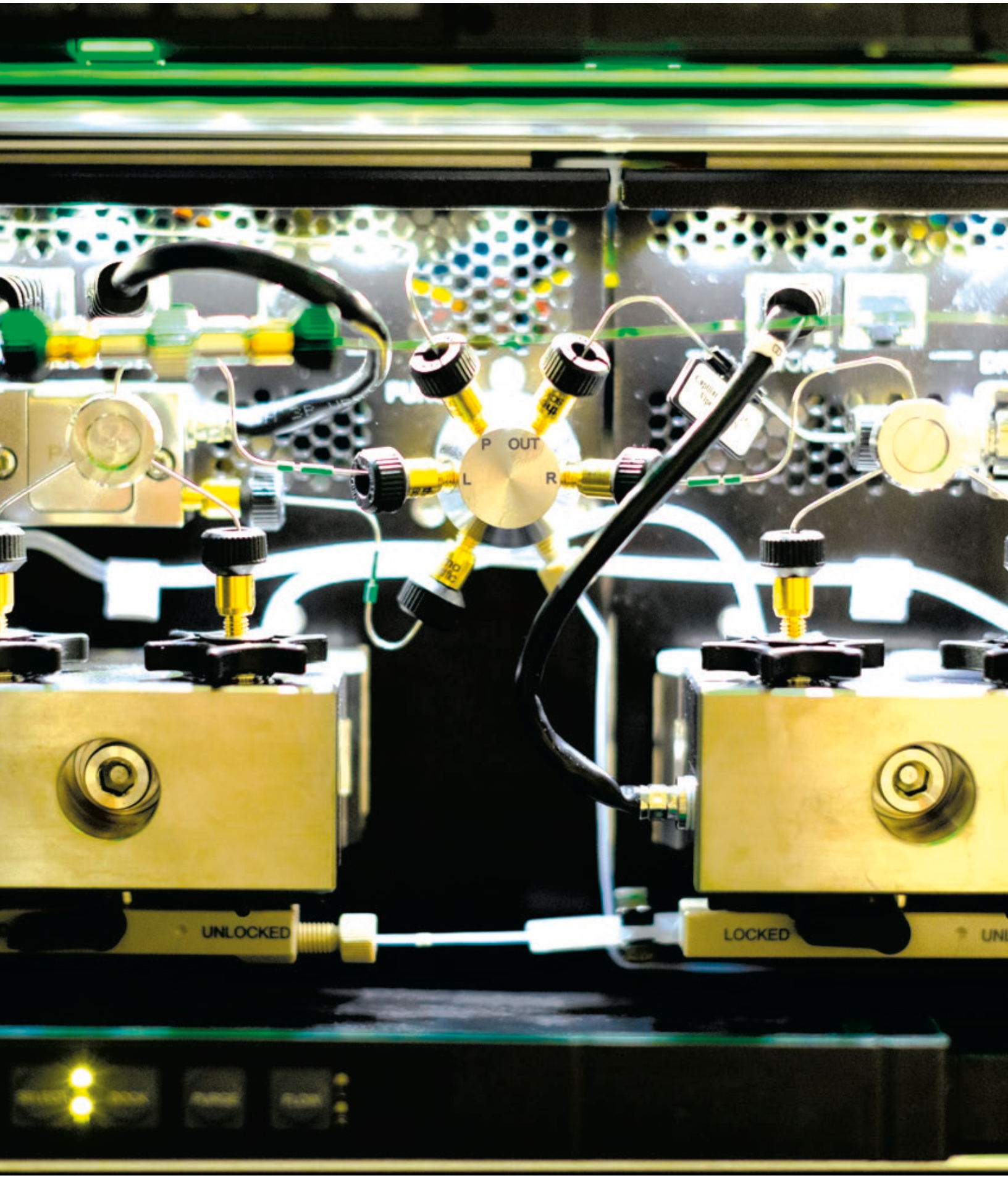
H. What are the areas served by each of Metropolitan's treatment plants and its distribution system?

Metropolitan operates five water treatment plants, and the monitoring results for the supplies delivered by each of the plants are listed. Typically, the F.E. Weymouth Water Treatment Plant serves parts of Los Angeles County, the San Gabriel Valley and areas of Orange County. The Robert B. Diemer Water Treatment Plant also provides treated water to areas of Orange County and coastal Los Angeles. The Joseph Jensen Water Treatment Plant supplements local water supplies in the San Fernando Valley, Ventura County and central Los Angeles. The Robert A. Skinner Water Treatment Plant serves western Riverside County, Moreno Valley and San Diego County. Finally, the Henry J. Mills Water Treatment Plant also serves western Riverside County and Moreno Valley.

I. How do constituents get into the water supply?

The most likely source for each constituent is listed in the last column of the table. Some constituents are natural and come from the environment, others come from cities and farms, and some result from the water disinfection process itself. Some chemicals have found their way into California's water supplies, making water treatment more difficult. Certain industrial processes — like dry cleaning, fireworks and rocket fuel manufacturing — have left constituents in the environment, as has the use of certain fertilizers and pesticides. Many of these chemicals have since been banned from use.

» Internal pump assembly of a liquid chromatograph used to analyze unregulated chemical constituents, such as PFAS, in water at trace levels.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2019 Water Quality Table

	B	C	D	F	G	H					I
						Treatment Plant Effluents and Distribution System					
	Parameter	Units	State and Federal MCL	PHG	Range Average	Diemer Plant	Jensen Plant	Mills Plant	Skinner Plant	Weymouth Plant	Major Sources in Drinking Water
A	**Percent State Water Project**	%	NA	NA	Range **Average**	0 - 100 64	100	100	6 - 100 54	0 - 100 68	NA
E	**PRIMARY STANDARDS** - Mandatory Health-Related Standards										
	CLARITY										
	Combined Filter Effluent (CFE) Turbidity[a]	NTU %	TT	NA	Highest **% ≤ 0.3**	0.05 100	0.06 100	0.06 100	0.07 100	0.04 100	Soil runoff
	MICROBIOLOGICAL[b]										
	Total Coliform Bacteria[c]	% Positive Monthly Samples	5.0	MCLG = 0	Range **Average**	*Distribution Systemwide: 0.0 – 0.2* *Distribution Systemwide: 0.0*					Naturally present in the environment
	Heterotrophic Plate Count (HPC) Bacteria[d]	CFU/mL	TT	NA	Range **Median**	ND - 1 ND	ND - 64 ND	ND - 1 ND	ND - 1 ND	ND - 1 ND	Naturally present in the environment
	ORGANIC CHEMICALS										
	Toluene	ppb	150	150	Range **Average**	ND	ND	ND	ND	0.6	Discharge from petroleum and chemical refineries
	INORGANIC CHEMICALS										
	Aluminum[e]	ppb	1,000	600	Range **Highest RAA**	ND - 65 124	ND - 290 58	ND - 94 ND	ND - 94 51	ND - 110 122	Residue from water treatment process; runoff and leaching from natural deposits
	Fluoride[f]	ppm	2.0	1	Range **Average**	0.1 - 0.9 *Distribution Systemwide: 0.1 – 0.9* 0.7 *Distribution Systemwide: 0.7*	0.4 - 0.8	0.1 - 0.9	0.3 - 0.8 0.7	0.6 - 0.9 0.7	Runoff and leaching from natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
	Nitrate (as Nitrogen)	ppm	10	10	Range **Average**	0.5	0.5	0.6	ND	0.5	Runoff and leaching from fertilizer use; septic tank and sewage; runoff and leaching from natural deposits
	RADIONUCLIDES[g]										
	Gross Alpha Particle Activity	pCi/L	15	MCLG = 0	Range **Average**	ND	ND – 3 ND	ND	ND – 4 ND	ND	Runoff/leaching from natural deposits
	Gross Beta Particle Activity	pCi/L	50	MCLG = 0	Range **Average**	ND	ND	ND	ND – 5 ND	ND	Decay of natural and man-made deposits
	Uranium	pCi/L	20	0.43	Range **Average**	ND	ND – 1 ND	ND	ND – 3 ND	ND	Runoff/leaching from natural deposits
	DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS[h]										
	Total Trihalomethanes (TTHM) (Plant Core Locations and Distribution System)	ppb	80	NA	Range **Highest LRAA**	16 - 30 *Distribution Systemwide: 12 – 56* 24 *Distribution Systemwide: 28*	12 - 21 17	12 - 36 25	14 - 30 23	14 - 31 27	Byproduct of drinking water chlorination
	Sum of Five Haloacetic Acids (HAA5) (Plant Core Locations and Distribution System)	ppb	60	NA	Range **Highest LRAA**	2.2 - 8.9 *Distribution Systemwide: ND – 13* 5.5 *Distribution Systemwide: 9.0*	2.0 - 5.0 3.4	1.9 - 9.0 9.0	2.3 - 11 7.4	ND - 9.0 6.0	Byproduct of drinking water chlorination
	Bromate[i]	ppb	10	0.1	Range **Highest RAA**	ND - 5.9 2.0	1.6 - 8.4 5.6	ND - 7.3 3.6	ND - 10 2.8	ND - 8.1 1.9	Byproduct of drinking water ozonation
	Total Chlorine Residual	ppm	MRDL=4.0	MRDLG=4.0	Range **Highest RAA**	*Distribution Systemwide: 0.5 – 2.9* *Distribution Systemwide: 2.4*					Drinking water disinfectant added for treatment
	Total Organic Carbon (TOC)	ppm	TT	NA	Range **Highest RAA**	1.8 - 2.6 2.4	2.0 - 2.5 2.3	1.5 - 3.0 2.2	2.0 - 2.7 2.4	1.7 - 2.6 2.4	Various natural and man-made sources; TOC is a precursor for the formation of disinfection byproducts

	B	C	D	F	G	H					I
						Treatment Plant Effluents and Distribution System					
	Parameter	Units	State (Federal) MCL	PHG	Range Average	Diemer Plant	Jensen Plant	Mills Plant	Skinner Plant	Weymouth Plant	Major Sources in Drinking Water
E	**SECONDARY STANDARDS** - Aesthetic Standards										
	Aluminum[e]	ppb	200	600	Range **Highest RAA**	ND - 65 124	ND - 290 58	ND - 94 ND	ND - 94 51	ND - 110 122	Residue from water treatment process; runoff/leaching from natural deposits
	Chloride	ppm	500	NA	Range **Average**	53 - 58 56	62	38 - 44 41	68 - 78 73	46 - 55 50	Runoff/leaching from natural deposits; seawater influence
	Color	Color Units	15	NA	Range **Average**	ND - 1 ND	1 - 2 2	ND - 1 ND	ND - 2 1	ND - 1 ND	Naturally-occurring organic materials
	Iron	ppb	300	NA	Range **Average**	ND	ND	ND	ND	243	Leaching from natural deposits; industrial wastes
	Odor Threshold[j]	TON	3	NA	Range **Average**	ND - 1 ND	ND - 1 ND	ND	1	1	Naturally-occurring organic materials
	Specific Conductance	µS/cm	1,600	NA	Range **Average**	508 - 521 514	471 - 505 488	299 - 343 321	576 - 644 610	435 - 503 469	Substances that form ions in water; seawater influence
	Sulfate	ppm	500	NA	Range **Average**	89 - 93 91	56 - 62 59	24 - 39 32	90 - 108 99	65 - 81 73	Runoff/leaching from natural deposits; industrial wastes
	Total Dissolved Solids (TDS)[k]	ppm	1,000	NA	Range **Average**	296 - 312 304	280 - 286 283	163 - 196 180	330 - 379 354	244 - 289 266	Runoff/leaching from natural deposits

Abbreviations and Definitions

Average Result based on arithmetic mean

CFE Combined Filter Effluent

CFU Colony-Forming Units

HAA5 Sum of five haloacetic acids

HPC Heterotrophic Plate Count

LRAA **Locational Running Annual Average**; highest LRAA is the highest of all Locational Running Annual Averages calculated as average of all the samples collected within a 12-month period.

MCL **Maximum Contaminant Level** - 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.

MCLG **Maximum Contaminant Level Goal** - The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. Environmental Protection Agency (USEPA).

MRDL **Maximum Residual Disinfectant Level** - The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

MRDLG **Maximum Residual Disinfectant Level Goal** - The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA Not Applicable

ND Not Detected

NTU Nephelometric Turbidity Units

pCi/L picoCuries per liter

PHG **Public Health Goal** - 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's Office of Environmental Health Hazard Assessment.

ppb parts per billion or micrograms per liter (µg/L)

ppm parts per million or milligrams per liter (mg/L)

RAA **Running Annual Average**; highest RAA is the highest of all Running Annual Averages calculated as average of all the samples collected within a 12-month period.

Range Results based on minimum and maximum values; range and average values are the same for samples collected once or twice annually.

TON Threshold Odor Number

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

µS/cm microSiemen per centimeter; or micromho per centimeter (µmho/cm)

Primary Standards (Primary Drinking Water Standards) - MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Secondary Standards - Requirements that ensure the appearance, taste and smell of drinking water are acceptable.

Footnotes

(a) Metropolitan monitors turbidity at the CFE locations using continuous and grab samples. Turbidity, a measure of cloudiness of the water, is an indicator of treatment performance. Turbidity was in compliance with the TT primary drinking water standard and the secondary drinking water standard of less than 5 NTU.

(b) Per the state's Surface Water Treatment Rule, treatment techniques that remove or inactivate *Giardia* cysts will also remove HPC bacteria, *Legionella*, and viruses. *Legionella* and virus monitoring is not required.

(c) Compliance is based on monthly samples from treatment plant effluents and the distribution system.

(d) All distribution system samples had detectable total chlorine residuals, so no HPC analysis was required. Metropolitan monitors HPC bacteria to ensure treatment process efficacy.

(e) Compliance with the state MCL for aluminum is based on RAA. No secondary standard MCL exceedance occurred in the Jensen treatment plant effluent.

(f) Metropolitan was in compliance with all provisions of the state's fluoridation system requirements. Fluoride feed systems were temporarily out of service during treatment plant shutdowns and/or maintenance work in 2019, resulting in occasional fluoride levels below 0.6 mg/L.

(g) Data are from samples collected in 2017 for the required triennial monitoring (2017-2019) until the next samples are collected.

(h) Compliance with the state and federal MCLs is based on RAA or LRAA, as appropriate. Plant core locations for TTHM and HAA5 are service connections specific to each of the treatment plant effluents.

(i) Compliance with the state and federal bromate MCL is based on RAA. No MCL exceedance occurred in the Skinner treatment plant effluent.

(j) Compliance with odor threshold secondary MCL is based on RAA. Both Diemer and Jensen treatment plants returned to compliance during the first quarter of 2019 with reduced monitoring frequency from quarterly to annual.

(k) Metropolitan's TDS compliance data are based on flow-weighted monthly composite samples collected twice per year (April and October). The 12-month statistical summary of flow-weighted data is reported in the "Other Detected Constituents That May be of Interest to Consumers".

Other Detected Constituents That May be of Interest to Consumers

Parameter	Units	NL	Range / Average	TREATMENT PLANT EFFLUENTS AND DISTRIBUTION SYSTEM: Diemer Plant	Jensen Plant	Mills Plant	Skinner Plant	Weymouth Plant	Major Sources in Drinking Water
Alkalinity (as $CaCO_3$)	ppm	NA	Range	69 - 74	80 - 84	54 - 59	84 - 87	67 - 70	Runoff/leaching of natural deposits; carbonate, bicarbonate, hydroxide, and occasionally borate, silicate, and phosphate
			Average	72	82	56	86	68	
Boron	ppb	1,000	Range	120	160	120	120	120	Runoff/leaching from natural deposits; industrial wastes
			Average						
Calcium	ppm	NA	Range	29 - 30	26 - 28	14 - 16	33 - 39	23 - 27	Runoff/leaching from natural deposits
			Average	30	27	15	36	25	
Calcium Carbonate Precipitation Potential (as $CaCO_3$) [a] (CCPP)	ppm	NA	Range	1.2 - 7.7	1.1 - 3.5	0.2 - 2.4	0.4 - 5.6	1.1 - 7.3	Elemental balance in water; affected by temperature, other factors
			Average	3.0	2.0	1.2	2.9	2.6	
Chlorate	ppb	800	Range	55	ND	28	35	42	Byproduct of drinking water chlorination; industrial processes
			Average						
Corrosivity as Aggressiveness Index [b]	AI	NA	Range	12.1 - 12.2	12.1 - 12.3	11.9 - 12.0	12.0	12.1 - 12.2	Elemental balance in water; affected by temperature, other factors
			Average	12.1	12.2	12.0		12.1	
Corrosivity as Saturation Index [c]	SI	NA	Range	0.33 - 0.52	0.28 - 0.46	0.20 - 0.25	0.20 - 0.28	0.34 - 0.38	Elemental balance in water; affected by temperature, other factors
			Average	0.43	0.37	0.22	0.24	0.36	
Hardness (as $CaCO_3$)	ppm	NA	Range	124 - 130	112 - 117	66 - 76	139 - 164	101 - 116	Runoff/leaching from natural deposits; sum of polyvalent cations, generally magnesium and calcium present in the water
			Average	127	114	71	152	108	
Magnesium	ppm	NA	Range	13 - 14	12 - 13	8.0 - 8.5	14 - 16	11 - 12	Runoff/leaching from natural deposits
			Average	14	12	8.2	15	12	
N-Nitrosodimethylamine (NDMA)	ppt	10 PHG=3	Range	ND	ND	3.9	3.9	ND	Byproduct of drinking water chloramination; industrial processes
			Range	***Distribution Systemwide: ND – 4.0***					
Perfluorohexanoic Acid (PFHxA) [d]	ppt	NA	Range	2.2 - 2.3	2.6	2.7 - 3.0	2.2 - 2.4	2.5 - 2.6	Industrial chemical factory discharges; runoff/leaching from landfills; used in fire-retarding foams and various industrial processes
			Average	2.3		2.9	2.3	2.6	
pH	pH Units	NA	Range	8.4 - 8.5	8.4 - 8.5	8.6	8.1 - 8.2	8.5	NA
			Average	8.4	8.4		8.1		
Potassium	ppm	NA	Range	2.6 - 2.9	2.7	1.8 - 2.2	3.3 - 3.6	2.2 - 2.7	Salt present in the water; naturally occurring
			Average	2.8		2.0	3.4	2.4	
Sodium	ppm	NA	Range	54 - 57	51 - 54	33 - 40	62 - 69	46 - 54	Salt present in the water; naturally occurring
			Average	56	52	36	66	50	
Sum of Five Haloacetic Acids (HAA5) [e]	ppb	MCL = 60	Range	1.0 - 3.0	1.5 - 4.9	2.4 - 6.6	ND - 7.1	ND - 6.7	Byproduct of drinking water chlorination
			Average	2.1	2.8	4.2	4.1	2.8	
Total Dissolved Solids (TDS) [f]	ppm	MCL = 1,000	Range	279 - 611	257 - 289	163 - 292	314 - 574	246 - 606	Runoff/leaching from natural deposits
			Average	362	276	226	396	352	
Total Trihalomethanes (TTHM) [e]	ppb	MCL = 80	Range	13 - 21	8.2 - 39	8.6 - 33	12 - 44	9.7 - 30	Byproduct of drinking water chlorination
			Average	16	12	20	21	17	

Abbreviations and Definitions

(please refer to the main table for other abbreviations and definitions)

- **AI** Aggresiveness Index
- **$CaCO_3$** Calcium Carbonate
- **CCPP** Calcium Carbonate Precipitation Potential
- **NL** Notification Level - The level at which notification of the public water system to the State Water Resources Control Board is required.
- **ppt** parts per trillion or nanograms per liter (ng/L)
- **SI** Saturation Index

Footnotes

(a) Positive CCPP = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative CCPP = corrosive; tendency to dissolve calcium carbonate. Reference: *Standard Methods (SM2330)*

(b) AI ≥ 12.0 = Non-aggressive water; AI 10.0–11.9 = Moderately aggressive water; AI ≤ 10.0 = Highly aggressive water. Reference: *ANSI/AWWA Standard C400-93 (R98)*

(c) Positive SI = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI = corrosive; tendency to dissolve calcium carbonate. Reference: *Standard Methods (SM2330)*

(d) Data are from two analytical methods based on EPA 537.1 and a research method for 18 different perfluoroalkyl and polyfluoroalkyl substances (PFAS) that include Perfluorohexanoic Acid (PFHxA).

(e) HAA5 and TTHM noncompliance samples collected at treatment plant effluents.

(f) Statistical summary represents 12 months of flow-weighted data and values may be different than the TDS reported to meet compliance with secondary drinking water regulations.

» Use of mobile technology allows field sampling staff to test and submit results instantly.

Additional Information

Additional information about drinking water safety and standards can be found at:

STATE WATER RESOURCES CONTROL BOARD DIVISION OF DRINKING WATER

1001 I Street
Sacramento, CA 95814
(916) 449-5577
www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Chemicalcontaminants.html

U.S. ENVIRONMENTAL PROTECTION AGENCY OFFICE OF GROUND WATER AND DRINKING WATER

1200 Pennsylvania Avenue, NW
Mail Code 4606M
Washington, DC 20460-0003
https://www.epa.gov/ground-water-and-drinking-water

CONSUMER INFORMATION

www.epa.gov/ccr

INFORMATION ON HOW DRINKING WATER STANDARDS ARE ESTABLISHED

https://www.epa.gov/dwstandardsregulations

Annual Drinking Water Quality Report

Covering the reporting period of January - December 2019

> This report is very important to read or have translated. The sentences below reflect the diversity of Metropolitan's service area and read, "This report contains important information about your drinking water. Translate it, or speak with someone who understands it."

Arabic

هامة عن نوعية مياه الشرب. يرجى ترجمته أو مناقشته مع شخص يفهمه جيداً.
يحتوي هذا التقرير على معلومات

Chinese

这份报告中含有关于饮用水的重要信息。请您找人翻译，或者请能看得懂这份报告的朋友给您 解释一下。

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 Informationen über die Wasserqualität in Ihrer Umgebung. Der Bericht sollte entweder offiziell übersetzt werden, oder sprechen Sie mit Freunden oder Bekannten, die gute Englishchkenntnisse besitzen.

Greek

Αυτή η αναφορά περιέχει σημαντικές πληροφορίες σχετικά με το πόσιμο νερό. Μεταφράστε την ή ζητήστε να σάς την εξηγήσει κάποιος που την κατανοεί.

Hindi

इस रिपोर्ट में पीने के पानी के बारे में महत्वपूर्ण जानकारी दी गई है। इसका अनुवाद करें, या किसी ऐसे व्यक्ति से बात करें, जो इसे समझता हो।

Japanese

この資料には、あなたの飲料水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか説明を受けてください。

Khmer

របាយការណ៍នេះមានព័ត៌មានសំខាន់អំពីទឹកសម្រាប់ពិសា។ សូមបកប្រែ ឬពិគ្រោះជាមួយអ្នកដែលមើលយល់របាយការណ៍នេះ។

Korean

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다.이 보고서를 번역하시거나, 내용을 이해하는 분과 상의하십시오.

Polish

Sprawozdanie zawiera ważne informacje na temat jakości wody w Twojej miejscowści. Poproś kogoś o przellurnaczenie go lub porozmawiaj z osobą która je dobrze rozumie.

Russian

Отчет содержит важную информацию о питьевой воде. Переведите его или попросите кого-нибудь, кто хорошо понимает текст, объяснить вам его содержание.

Spanish

Este informe contiene información importante acerca de su agua potable. Tradúzcalo o hable con alguien que lo entienda.

Tagalog

Ang ulat na ito ay naglalaman ng mahahalagang impormasyon tungkol sa pag-inom ng tubig. Mangyaring ipasalin ito, o kumausap sa isang taong nakakaintindi nito.

Vietnamese

Bản báo cáo này có chứa các thông tin quan trọng về nước uống. Hãy dịch, hoặc nói chuyện với ai đó hiểu bản báo cáo này.

THE METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA

Metropolitan's Board of Directors typically meets on the second Tuesday of each month at the district's downtown Los Angeles headquarters building at 700 N. Alameda Street, Los Angeles, adjacent to historic Union Station. More information is available at **www.mwdh2o.com**.

June 2020 . 5,000

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