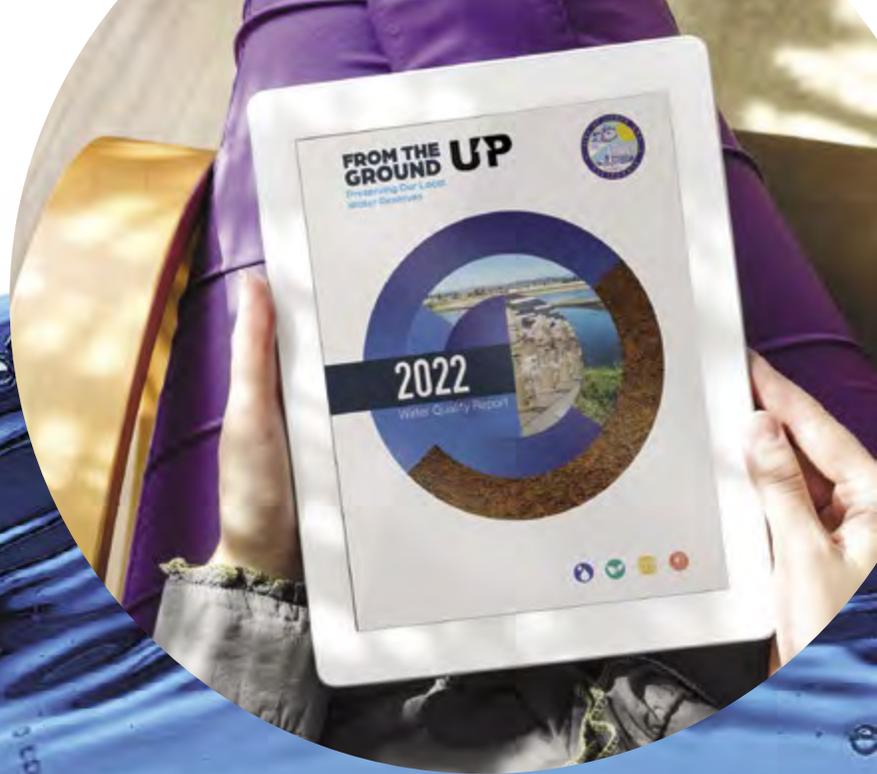




How To Read The Data Tables



The data presented on the following tables are from the most recent monitoring completed in compliance with regulations. The State allows us to monitor for some contaminants less than once per year because the concentrations of these contaminants do not change frequently. Some of our data, though representative, are more than one year old.

You will find three data tables showing a list of chemicals tested in each of the following water sources:

- **Santa Ana Distribution System**
- **Santa Ana Groundwater**
- **Metropolitan Water District of Southern California Treated Surface Water**

For each table, begin with the chemical and read across.

- 1 The column marked "Chemicals" lists the substances found in the water Santa Ana delivers.
- 2 MCL is the highest level of substance (contaminant) allowed.
- 3 MCLG is the goal level for that substance (this may be lower than what is allowed).
- 4 Average Amount is the average level measured for the substance (less is better).
- 5 Range of Detections is the highest and lowest amounts measured.
- 6 A "No" under MCL Violation indicates government requirements were met.
- 7 Typical Sources in Drinking Water tells you where the constituent usually originates.

Note: Unregulated Constituents are measured, but maximum allowed contaminant (MCL) levels have not been established by the government.



Glossary

Terms & Abbreviations

Chemicals

Components or elements found in drinking water.

Maximum Contaminant Level (MCL)

The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

Maximum Contaminant Level Goal (MCLG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the U.S. EPA.

Maximum Residual Disinfectant Level (MRDL)

The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standard (PDWS)

The MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Public Health Goal (PHG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the Cal/EPA.

Regulatory Action Level

The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT)

A required process intended to reduce the level of contaminants in drinking water that are difficult and sometimes impossible to measure directly.

Variations and Exemptions

Permissions from the State Water Board to exceed an MCL or not comply with a treatment technique under certain conditions.

Measurements

Santa Ana conducts extensive sampling and testing to ensure your water meets all water quality standards. In 2022, we collected 16,107 samples for contaminants at various sampling points in our water system; all of which were below state and federal maximum allowable levels.

Contaminants are measured in:

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

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

Parts per trillion (ppt)
or nanograms per liter (ng/L)

PicoCuries per liter (pCi/L)
A measurement of radioactivity in water.

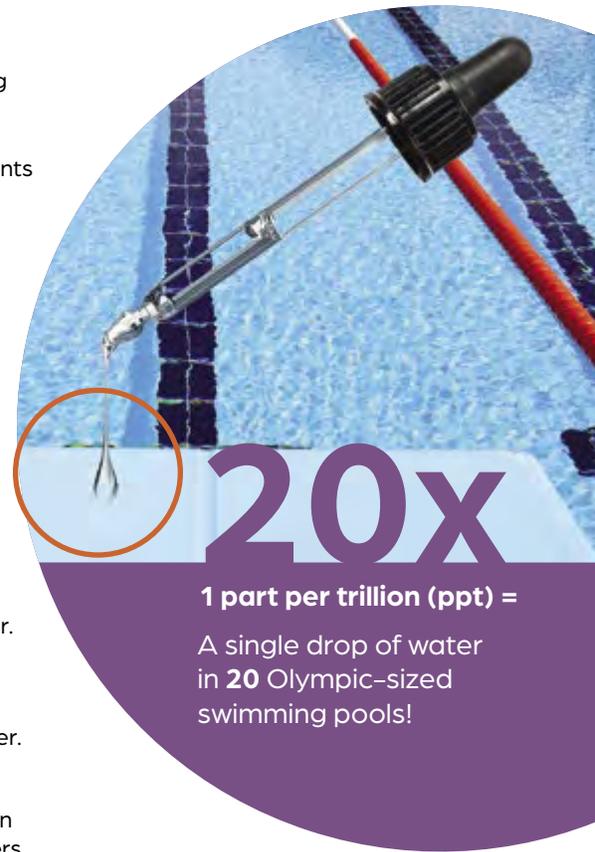
Micromhos per centimeter (umho/cm)
A measurement for conductivity of water.

Grains per gallon (grains/gal)
A measurement of water hardness often used for sizing household water softeners. One grain per gallon is equal to 17.1 mg/L of hardness.

Nephelometric Turbidity Units (NTU)
A measurement of the clarity of water. Turbidity in excess of 5 NTU is noticeable to the average person.

Additional Abbreviations

- AL** = Regulatory Action Level
- NA** = Not Applicable
- ND** = Not Detected
- NL** = Notification Level
- SMCL** = Secondary MCL





2022 Water Quality Tables

2022 CITY OF SANTA ANA DISTRIBUTION SYSTEM'S WATER QUALITY

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Type	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
DISINFECTANT RESIDUAL AND DISINFECTION BY-PRODUCTS					
Chlorine Residual (ppm)	(4 / 4)	1.03	ND - 2.9	No	Disinfectant Added for Treatment
Total Trihalomethanes (ppb)	80	32	ND - 38	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb)	60	15	ND - 15	No	Byproducts of Chlorine Disinfection
AESTHETIC QUALITY					
Odor (threshold odor number)	3*	1	1	No	Naturally-Occuring Organic Materials
Turbidity (ntu)	5*	0.17	ND - 0.83	No	Erosion of Natural Deposits

Twelve locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids. Fifty locations are tested monthly for color, odor and turbidity. Color was not detected in 2022.

MRDL = Maximum Residual Disinfectant Level; MRDLG = Maximum Residual Disinfectant Level Goal;

< = detected but average is less than the reporting limit; ntu = nephelometric turbidity unit; ND = not detected.

*Chemical is regulated by a secondary standard to maintain aesthetic qualities (color, odor, and taste).

Microbiological	MCL	MCLG	Highest Number of Detections	No. of Months in Violation	Typical Source of Bacteria
<i>E.coli</i>	(a)	0	0	0	Human and Animal Fecal Waste

(a) Routine and repeat samples are total coliform-positive and either is *E. coli*-positive or system fails to take repeat samples following *E. coli*-positive routine sample or system fails to analyze total coliform-positive repeat sample for *E. coli*.

LEAD AND COPPER ACTION LEVELS AT RESIDENTIAL TAPS

Chemical	Action Level (AL)	Public Health Goal	90th Percentile Value	Sites Exceeding AL / Number of Sites	AL Violation?	Typical Source of Chemical
Lead (ppb)	15	0.2	ND	0 / 123	No	Internal Corrosion of Household Water Plumbing Systems; Discharges from Industrial Manufacturers; Erosion of Natural Deposits
Copper (ppm)	1.3	0.3	0.16	0 / 123	No	Internal Corrosion of Household Water Plumbing Systems; Discharges from Industrial Manufacturers; Erosion of Natural Deposits

In 2021, 123 residences were tested for lead and copper at-the-tap. Lead was detected in 4 samples, none of which exceeded the AL for lead.

Copper was detected in 98 samples, none of which exceeded the AL for copper. A regulatory action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

UNREGULATED CHEMICALS REQUIRING MONITORING IN THE DISTRIBUTION SYSTEM

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Bromochloroacetic acid (ppb)	NA	NA	0.94	ND - 3.9	2020
Bromodichloroacetic acid (ppb)	NA	NA	0.68	ND - 2.1	2020
Chlorodibromoacetic acid (ppb)	NA	NA	0.47	ND - 1.4	2020
Dibromoacetic acid (ppb)	NA	NA	0.88	ND - 2.6	2020
Dichloroacetic acid (ppb)	NA	MCLG = 0	1.2	ND - 6.1	2020
Monobromoacetic acid (ppb)	NA	NA	0.1	ND - 0.6	2020
Trichloroacetic acid (ppb)	NA	MCLG = 20	0.7	ND - 2.5	2020

** Total chromium is regulated with an MCL of 50 ppb but was not detected, based on the detection limit for purposes of reporting of 10 ppb. Total chromium was included as part of the unregulated chemicals requiring monitoring.



2022 Water Quality Tables



2022 CITY OF SANTA ANA GROUNDWATER QUALITY



Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Most Recent Sampling Date	Typical Source of Chemical
Radiologicals							
Uranium (pCi/l)	20	0.43	2.8	ND - 5.8	No	2021	Erosion of Natural Deposits
Inorganic Chemicals							
Arsenic (ppb)	10	0.004	< 2	ND - 2.2	No	2021	Erosion of Natural Deposits
Barium (ppm)	1	2	<0.1	ND - 0.14	No	2021	Erosion of Natural Deposits
Fluoride (ppm)	2	1	0.36	0.27 - 0.45	No	2021	Erosion of Natural Deposits
Nitrate (ppm as N)	10	10	1.9	0.41 - 4.2	No	2022	Runoff and Leaching from Fertilizer Use; Leaching from Septic Tanks and Sewage; Erosion of Natural Deposits
Nitrate + Nitrite (ppm as N)	10	10	1.9	0.41 - 4.2	No	2022	Runoff and Leaching from Fertilizer Use; Leaching from Septic Tanks and Sewage; Erosion of Natural Deposits
Perchlorate (ppb)	6	1	<2	ND - 3.3	No	2022	Discharge from Industrial Operations
Secondary Standards*							
Chloride (ppm)	500*	NA	52	20 - 107	No	2021	Erosion of Natural Deposits
Specific Conductance (umho/cm)	1,600*	NA	666	461 - 1,040	No	2021	Substance That Forms Ions When In Water
Sulfate (ppm)	500*	NA	85.1	51 - 123	No	2021	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	NA	405	258 - 635	No	2021	Erosion of Natural Deposits
Turbidity (ntu)	5*	NA	<0.1	ND - 0.1	No	2021	Soil Runoff
Unregulated Constituents							
Alkalinity, total (ppm as CaCO ₃)	Not Regulated	NA	169	138 - 223	NA	2022	Erosion of Natural Deposits
Bicarbonate (ppm as HC0 ₃)	Not Regulated	NA	206	168 - 272	NA	2022	Erosion of Natural Deposits
Boron (ppm)	NL = 1	NA	<0.1	ND - 0.11	NA	2021	Erosion of Natural Deposits
Calcium (ppm)	Not Regulated	NA	75	35 - 122	NA	2022	Erosion of Natural Deposits
Hardness, total (grains/gal)	Not Regulated	NA	15	7.7 - 24	NA	2021	Erosion of Natural Deposits
Hardness, total (ppm as CaCO ₃)	Not Regulated	NA	248	132 - 410	NA	2021	Erosion of Natural Deposits
Magnesium (ppm)	Not Regulated	NA	14.1	8 - 22.4	NA	2021	Erosion of Natural Deposits
pH (pH units)	Not Regulated	NA	7.9	7.7 - 8.1	NA	2022	Acidity, Hydrogen Ions
Potassium (ppm)	Not Regulated	NA	2.4	1.4 - 3.4	NA	2021	Erosion of Natural Deposits
Sodium (ppm)	Not Regulated	NA	43.7	36.7 - 60.5	NA	2021	Erosion of Natural Deposits

*Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

UNREGULATED CHEMICALS REQUIRING MONITORING

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Bromide (ppm)	NA	NA	0.13	0.062 - 0.3	2020
Manganese (ppb) **	SMCL = 50	NA	0.2	ND - 1	2020
Total Organic Carbon (Unfiltered) (ppm)	NA	NA	0.23	0.08 - 0.57	2020

SMCL = Secondary MCL

** Manganese is regulated with a secondary standard of 50 ppb but was not detected, based on the detection limit for purposes of reporting of 20 ppb. Manganese was included as part of the unregulated chemicals requiring monitoring.

Note: Detection of PFAS in Well 35 has been confirmed. Samples were collected and analyzed, and Santa Ana was informed on 2/8/23.



2022 Water Quality Tables

2022 METROPOLITAN WATER DISTRICT (MWD) TREATED SURFACE WATER

- ① ② ③ ④ ④ ⑤ ⑥ ⑦

Constituent	MCL	PHG (MCLG)	Diemer Average	Weymouth Average	Range of Detections	MCL Violation?	Typical Source in Drinking Water
Radiologicals – Tested in 2020 and 2022							
Alpha Radiation (pCi/L)	15	(0)	ND	ND	ND – 3	No	Erosion of Natural Deposits
Beta Radiation (pCi/L)	50	(0)	6	6	ND – 9	No	Decay of Natural and Man-made Deposits
Combined Radium (pCi/L)	5	(0)	ND	ND	ND – 1	No	Erosion of Natural Deposits
Uranium (pCi/L)	20	0.43	2	2	1 – 3	No	Erosion of Natural Deposits
Inorganic Chemicals – Tested in 2022							
Aluminum (ppm)	1	0.6	0.14	0.156	0.058 – 0.24	No	Treatment Process Residue, Natural Deposits
Barium (ppm)	1	2	0.107	0.107	0.107	No	Refinery Discharge, Erosion of Natural Deposits
Bromate (ppb)	10	0.1	ND	ND	ND – 7.6	No	Byproduct of Drinking Water Ozonation
Fluoride (ppm) treatment-related	2	1	0.7	0.7	0.6 – 0.8	No	Water Additive for Dental Health
Secondary Standards – Tested in 2022							
Aluminum (ppb)	200*	600	140	156	58 – 240	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	NA	101	102	98 – 105	No	Runoff or Leaching from Natural Deposits
Color (color units)	15*	NA	1	1	1	No	Runoff or Leaching from Natural Deposits
Odor (threshold odor number)	3*	NA	3	3	3	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	NA	988	992	964 – 1,020	No	Substances That Form Ions In Water
Sulfate (ppm)	500*	NA	221	222	212 – 232	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1,000*	NA	628	638	608 – 648	No	Runoff or Leaching from Natural Deposits
Unregulated Chemicals – Tested in 2022							
Alkalinity, total (ppm as CaCO ₃)	Not Regulated	NA	126	127	125 – 128	NA	Runoff or Leaching from Natural Deposits
Boron (ppm)	NL = 1	NA	0.13	0.14	0.13 – 0.14	NA	Runoff or Leaching from Natural Deposits
Calcium (ppm)	Not Regulated	NA	68	70	66 – 71	NA	Runoff or Leaching from Natural Deposits
Hardness, total (ppm as CaCO ₃)	Not Regulated	NA	278	279	275 – 281	NA	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gal)	Not Regulated	NA	16	16	16	NA	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	Not Regulated	NA	25	26	24 – 26	NA	Runoff or Leaching from Natural Deposits
pH (units)	Not Regulated	NA	8.1	8.1	8.1	NA	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	NA	4.6	4.6	4.4 – 4.8	NA	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	NA	98	100	95 – 103	NA	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	NA	2.5	2.4	1.7 – 2.6	NA	Various Natural and Man-made Sources
Turbidity – Combined Filter Effluent Metropolitan Water District Filtration Plants			Treatment Technique	Turbidity Measurements		TT Violation?	Typical Source in Drinking Water
				Diemer	Weymouth		
1) Highest single turbidity measurement (NTU)			0.3	0.03	0.04	No	Soil Runoff
2) Percentage of samples less than or equal to 0.3 NTU			95%	100%	100%	No	Soil Runoff

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. Low turbidity in MWD's treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT). A treatment technique is a required process intended to reduce the level of chemicals in drinking water that are difficult and sometimes impossible to measure directly. NTU = nephelometric turbidity units.

UNREGULATED CONSTITUENTS REQUIRING MONITORING

Constituent	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
Germanium (ppb)	NA	NA	0.1	ND – 0.4	2018
Manganese (ppb) **	SMCL = 50	NA	2.2	0.8 – 3.3	2018



Notes

Trihalomethanes and Haloacetic Acids

Twelve locations in the distribution system are tested quarterly for total trihalomethanes (TTHMs) and haloacetic acids (HAAS).

Coliform

No more than 5% of the monthly samples may be positive for total coliform bacteria. The occurrence of 2 consecutive total coliform positive samples, one of which contains fecal coliform/E.coli, constitutes an acute MCL violation.

Lead and Copper

A regulatory action level (AL) is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

In 2021, 123 residences were tested for lead and copper at-the-tap. Lead was detected in 4 of the samples, **none of which exceeded the AL for lead**. Copper was detected in 98 samples, **none of which exceeded the AL for copper**. No school submitted a request to be sampled for lead.

Lead and Copper Rule Revisions (LCRR)

The Lead and Copper Rule, recently updated by the U.S. EPA, brings important changes to protect consumers from lead and copper in drinking water. Starting on March 16, 2024, these revisions strengthen the existing regulations to improve public health outcomes.

What does this mean for you? The new rules set stricter guidelines for testing, monitoring, and reducing lead and copper levels in drinking water systems. Water utilities, like the City of Santa Ana, are now required to conduct surveys to find out if there are any lead service lines in their water system that are made of or

contain lead. Service lines connect the water main to individual properties and are owned by customers. Taking this comprehensive inventory helps utilities understand the extent of lead service lines in their systems so they can develop plans to replace or fix them to reduce lead exposure risks.

These changes are all about keeping you safe and ensuring you have access to clean and healthy drinking water. The rules also make it easier for you to find information about water quality and any potential risks. It's a big step forward in protecting your well-being.

Combined Filter Effluent Turbidity (NTU)

Turbidity is a measure of the cloudiness of the water, an indication of particulate matter, some of which might include harmful microorganisms. Low turbidity in MWD's treated water is a good indicator of effective filtration. Filtration is called a "treatment technique" (TT). A treatment technique is a required process intended to reduce the level of chemicals in drinking water that are difficult and sometimes impossible to measure directly.

