



2018 WATER QUALITY

SAN CLEMENTE REPORT

PUBLISHED BY THE CITY OF SAN CLEMENTE
UTILITIES DEPARTMENT

DRINKING WATER QUALITY

Since 1990, California water utilities have been providing an annual Water Quality Report to their customers. This year's report covers calendar year 2017 water quality testing and has been prepared in compliance with regulations called for in the 1996 reauthorization of the Safe Drinking Water Act. The reauthorization charged the United States Environmental Protection Agency (USEPA) with updating and strengthening the tap water regulatory program.

Some contaminants are not required to be monitored annually because the concentrations of these contaminants do not frequently change. Therefore, some of the data, though representative is more than one year old.

The City of San Clemente vigilantly safeguards its water supply and as in

years past, the water delivered to your home meets the standards required by the state and federal regulatory agencies. In some cases, the City goes beyond what is required by testing for unregulated contaminants that may have known health risks.

SOURCES OF SUPPLY

Your drinking water is a blend of surface water imported by the Metropolitan Water District of Southern California (MWDSC) and local groundwater. MWDSC imported water sources are the Colorado River and the State Water Project which draws water from the Sacramento-San Joaquin Delta.

Beginning in 2017, the City began to receive water from the Irvine Ranch Water District processed through the Baker Water Treatment Plant as an additional source of water to further ensure a constant water supply to its customers.

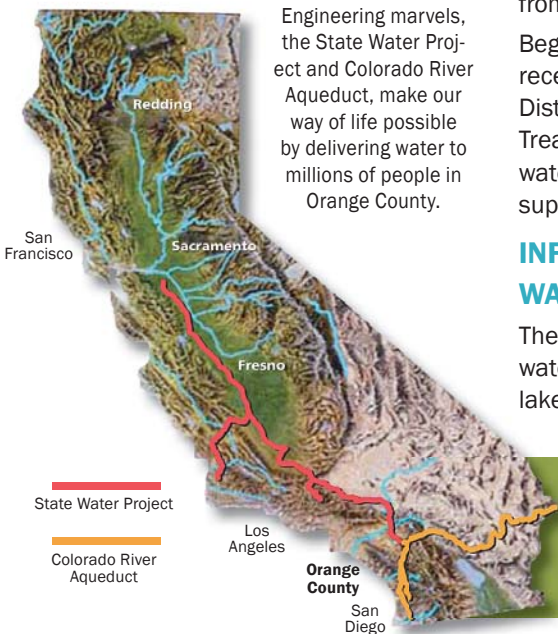
INFORMATION ABOUT DRINKING WATER CONTAMINANTS

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 land or through the layers of the ground it dissolves naturally occurring minerals and, in some cases, radioactive material and can pick up substances resulting from the presence of animal and human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, which may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.
- Inorganic contaminants, such as salts and metals, which can be naturally occurring or result from urban storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production or mining activities.
- Pesticides and herbicides, which may come from a variety of sources such as agriculture, urban storm water runoff and residential uses.
- Organic chemical contaminants, including synthetic and volatile organic chemicals, which are by-products of



Engineering marvels, the State Water Project and Colorado River Aqueduct, make our way of life possible by delivering water to millions of people in Orange County.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

Este informe contiene información muy importante sobre su agua potable. Para más información ó traducción, favor de contactar a Kevin Lussier, [949] 366-1553.

2017 CITY OF SAN CLEMENTE DISTRIBUTION SYSTEM WATER QUALITY

Chemical	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
DISINFECTION BYPRODUCTS & DISINFECTANT RESIDUAL					
Total Trihalomethanes (ppb)	80	40	24-49	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb)	60	15	5.2-25	No	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	(4/4)	1.2	0.2-2.3	No	Disinfectant Added for Treatment
AESTHETIC QUALITY					
Color (color units)	15*	1	1	No	Erosion of Natural Deposits
Odor (threshold odor number)	3*	1	1	No	Erosion of Natural Deposits
Turbidity (NTU)	5*	0.2	ND-0.76	No	Erosion of Natural Deposits
OTHERS					
Fluoride (ppm)	2	0.63	0.25-0.93	No	Erosion of Natural Deposits; Water Additive for Dental Health
pH (pH units)	NR	8.12	6.95-9.19	No	Hydrogen Ion Concentration

Four locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; twenty locations are tested monthly for color, odor and turbidity. **MRDL** = Maximum Residual Disinfectant Level; **MRDLG** = Maximum Residual Disinfectant Level Goal; **NTU** = nephelometric turbidity units *Chemical is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

LEAD & 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	0/30	No	Corrosion of Household Plumbing
Copper (ppm)	1.3	0.3	0.084	0/30	No	Corrosion of Household Plumbing

In 2016, 30 residences were tested for lead and copper at-the-tap. Lead was detected in 2 of 30 samples. Copper was detected in 7 of 30 samples. None of the samples exceeded the regulatory Action Level (AL). A regulatory action level is the concentration of a chemical which, if exceeded, triggers treatment or other requirements that a water system must follow. DLR = Detection Limit for Purposes of Reporting

UNREGULATED CHEMICALS REQUIRING MONITORING DISTRIBUTION SYSTEM - CITY OF SAN CLEMENTE TABLE

Chemical	Notification Level	Public Health Goal	Average Amount	Range of Detections	Most Recent Sampling Date
Chlorate (ppb)	800	n/a	56	41-71	2015
Chromium, Hexavalent (ppb)	n/a	0.02**	0.083	0.043-0.24	2015
Chromium, Total (ppb)***	MCL = 50	MCLG = 100	0.14	ND-0.51	2015
Molybdenum, Total (ppb)	n/a	n/a	5.3	4.1-7.8	2015
Strontium, Total (ppb)	n/a	n/a	950	680-1,200	2015
Vandium, Total (ppb)	50	n/a	2.1	0.7-3	2015

** There is currently no MCL for hexavalent chromium. The previous MCL of 10 ppb was withdrawn on September 11, 2017.*** 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.

industrial processes and petroleum production, and can also come from gasoline stations, urban storm water runoff, agricultural application and septic systems.

In order to ensure that tap water is safe to drink, USEPA and the State Water Resources Control Board, Division of Drinking Water (DDW) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that must 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. 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 USEPA's Safe Drinking Water Hotline at [800] 426-4791.

CRYPTOSPORIDIUM

Cryptosporidium is a microscopic organism that, when ingested, can cause diarrhea, fever, and other gastrointestinal symptoms. The organism comes from animal and/or human wastes and may be in surface water. The MWDSC tested their source water and treated surface water for Cryptosporidium in 2017 but did not detect it. If it ever is detected, Cryptosporidium is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

The USEPA and the federal Centers for Disease Control guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available from USEPA's Safe Drinking Water hotline at [800] 426-4791 between 9 a.m. and 5 p.m. Eastern Time (6 a.m. to 2 p.m. in California).

IMMUNO-COMPROMISED

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people, such as those with cancer who are undergoing chemotherapy, have had organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at

risk. These people should seek advice about drinking water from their health care providers.

LEAD IN TAP WATER

If present, elevated levels of lead can cause serious problems, especially for pregnant women and young children. Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. The City of San Clemente is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. The City of San Clemente recently completed lead sampling for the Capistrano Unified

School District. A total of 40 samples were collected from eight public schools. Of the 40 samples, lead was detected in only one of the samples, and the result was well below the State Action Level of 15 parts per billion which required no corrective action from the Capistrano Unified School District or the City of San Clemente.

When your water has been sitting for several hours, you can minimize the potential for lead exposure by flushing your tap for 30 seconds to 2 minutes before using water. If you are concerned about lead in your water, you may wish to have your water tested.

Please share this information with others who may not have received this notice directly (apartments, nursing homes, schools, and businesses).

You can do this by posting this notice in a public place or distributing copies by hand or mail.

If you have any questions about your water, please contact us for answers:

For information about this report, or your water quality in general, please contact Assistant Utilities Manager Kevin Lussier, at [949] 366-1553.

For more information about the health effects of the listed contaminants in the following tables, call the U.S. Environmental Protection Agency hotline at [800] 426-4791.

For further information about the City, please visit our website: www.san-clemente.org

Information on testing methods and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at www.epa.gov/safewater/lead.

DRINKING WATER FLUORIDATION

Fluoride has been added to U.S. drinking water supplies since 1945. Of the 50 largest cities in the U.S., 43 fluoridate their drinking water. In December 2007, the MWDSC joined a majority of the nation's public water suppliers in adding fluoride to drinking water in order to prevent tooth decay. In line with recommendations from the DDW, and the U.S. Centers for Disease Control and Prevention, MWDSC adjusted the natural fluoride level in imported treated water from the Colorado River and State Project water to the optimal range for dental health of 0.6 to 1.2 parts per million. Fluoride levels in drinking water are limited under

California State regulations at a maximum dosage of 2 parts per million. There are many places to go for additional information about the fluoridation of drinking water.

U.S. Centers for Disease Control and Prevention

1-800-232-4636
cdc.gov/Oralhealth/publications/factsheets

American Dental Association

cada.org/en/public-programs/advocating-for-the-public/fluoride-and-fluoridation

American Water Works Association

www.awwa.org
 For more information about MWDSC fluoridation program, please contact Edgar G. Dymally at [213] 217-5709 or at edymally@mwdh2o.com.

DISINFECTION AND DISINFECTION BYPRODUCTS

Disinfection of drinking water was one of the major public health advances in the 20th century. Disinfection was a major factor in reducing waterborne disease epidemics caused by pathogenic bacteria and viruses, and it remains an essential part of drinking water treatment today.

Chlorine disinfection has almost completely eliminated the risks of microbial waterborne diseases. Chlorine is added to drinking water at the source of supply (groundwater well or surface water treatment plant). Enough chlorine is added so that it does not completely dissipate through the distribution system pipes. This "residual" chlorine helps to prevent the growth of bacteria in the pipes that carry drinking water from the source into your home.

However, chlorine can react with naturally-occurring materials in the water to form unintended chemical byproducts called disinfection byproducts (DBPs), which may pose health risks. A major challenge is how to balance the risks from microbial pathogens and DBPs. It is important to provide protection from these microbial pathogens while simultaneously ensuring decreasing health risks from disinfection byproducts. The Safe Drinking Water Act requires the U.S. Environmental Protection Agency (USEPA) to develop rules to achieve these goals.

Trihalomethanes (THMs) and Haloacetic Acids (HAAs) are the most common and most studied DBPs found in drinking water treated with chlorine. In 1979, the USEPA set the maximum amount of total THMs allowed in drinking water at 100 parts per billion as an annual running average. Effective in January 2002, the Stage 1 Disinfectants / Disinfection Byproducts Rule lowered the total THM maximum annual average level to 80 parts per billion and added HAAs to the list of regulated chemicals in drinking water.

Stage 2 of the regulation was finalized by USEPA in 2006, which further controls allowable levels of DBPs in drinking water without compromising disinfection itself. A required distribution system evaluation was completed in 2008 and full Stage 2 compliance began in 2012.

2017 METROPOLITAN WATER DISTRICT OF SOUTHERN CALIFORNIA TREATED SURFACE WATER

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
INORGANIC CHEMICALS • TESTED IN 2017						
Aluminum (ppm)	1	0.6	0.16	ND-0.13	No	Treatment Process Residue, Natural Deposits
Fluoride (ppm) treatment-related	Control Range 0.6- 1.2 ppm Optimal Level 0.7 ppm		0.7	0.6-0.9	No	Water Additive for Dental Health
SECONDARY STANDARDS* • TESTED IN 2017						
Aluminum (ppb)	200*	600	160	ND-130	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	n/a	50	34-66	No	Runoff or Leaching from Natural Deposits
Color (color units)	15*	n/a	1	1	No	Naturally-occurring Organic Materials
Odor (threshold odor number)	3*	n/a	2	2	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1600*	n/a	490	351-630	No	Substances that form Ions in Water
Sulfate (ppm)	500*	n/a	96	65-127	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1000*	n/a	294	213-374	No	Runoff or Leaching from Natural Deposits
UNREGULATED CHEMICALS • TESTED IN 2017						
Alkalinity, total as CaCO ₃ (ppm)	NR	n/a	61	48-74	n/a	Runoff or Leaching from Natural Deposits
Boron (ppm)	NL=1	n/a	0.1	0.1	n/a	Runoff or Leaching from Natural Deposits
Calcium (ppm)	NR	n/a	28	20-36	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as CaCO ₃ (ppm)	NR	n/a	119	82-156	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gal)	NR	n/a	7	4.8-9.1	n/a	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	NR	n/a	12	8.1-16	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	NR	n/a	8.4	8.2-8.6	n/a	Hydrogen Ion Concentration
Potassium (ppm)	NR	n/a	2.8	2.4-3.2	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	NR	n/a	51	39-63	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	n/a	2.4	1.8-3.0	n/a	Various Natural and Man-made sources

ppb = parts-per-billion; **ppm** = parts-per-million; **pCi/L** = picoCuries per liter; **µmho/cm** = micromhos per centimeter; **ND** = not detected; **MCL** = Maximum Containment Level; **(MCLG)** = Federal MCL Goal; **PHG** = California Public Health Goal; **NL** = Notification Level; **n/a** = not applicable; **TT** = treatment technique; *Chemical is regulated by a secondary standard.

Turbidity - combined filter effluent Metro. Water District Diemer Filtration Plant	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Chemical
1) Highest single turbidity measurement	0.3 NTU	0.08	No	Soil Runoff
2) Percentage of samples <0.3 NTU	95%	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 MWDSC 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.

Chemical	Notification Level	PHG	Average Amount	Range of Detections	Most Recent Sampling Date
UNREGULATED CHEMICALS REQUIRING MONITORING					
Chlorate (ppb)	800	n/a	160	42 - 300	2014
Chromium, Hexavalent (ppb)	n/a	0.02**	0.042	0.035 - 0.053	2014
Molybdenum, Total (ppb)	n/a	n/a	4.4	4.1 - 4.7	2014
Strontium, Total (ppb)	n/a	n/a	1,000	970 - 1,100	2014
Vanadium, Total (ppb)	50	n/a	2.6	2.2 - 3.1	2014

** There is currently no MCL for hexavalent chromium. The previous MCL of 10 ppb was withdrawn on September 11, 2017.

2017 CITY OF SAN CLEMENTE GROUNDWATER QUALITY

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Most Recent Sampling	Typical Source of Chemical
RADIOLOGICALS							
Beta Radiation (pCi/L)	50	(0)	4.7	4.1-5.2	No	2016	Decay of Man-made or Natural Deposits
Gross Alpha (pCi/L)	15	(0)	<3	ND-3	No	2017	Decay of Man-made or Natural Deposits
Combined Radium (pCi/L)	5	(0)	<1	ND-1	No	2016	Erosion of Natural Deposits
INORGANIC CHEMICALS							
Flouride (ppm)	2	1	0.47	0.28-0.76	No	2017	Erosion of Natural Deposits
Nitrate (ppm as N)	10	10	1.4	1.2-1.6	No	2017	Fertilizers, Septic Tanks
Nitrate+Nitrite (ppm as N)	10	10	1.4	1.2-1.6	No	2017	Fertilizers, Septic Tanks
SECONDARY STANDARDS*							
Chloride (ppm) - treated	500*	n/a	188	86.4-324	No	2017	Erosion of Natural Deposits
Color (color units)	15*	n/a	2	2	No	2017	Erosion of Natural Deposits
Manganese (ppb) - treated	50*	n/a	<20	ND-28	No	2017	Erosion of Natural Deposits
Odor (threshold odor number)	3*	n/a	1.5	1.0-2.0	No	2017	Erosion of Natural Deposits
Specific Conductance (µmho/cm)	1,600*	n/a	1040	723-1360	No	2017	Erosion of Natural Deposits
Sulfate (ppm)	500*	n/a	136	80-192	No	2017	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	703	455-1020	No	2017	Erosion of Natural Deposits
Turbidity (NTU) - treated	5*	n/a	0.26	0.08-0.63	No	2017	Erosion of Natural Deposits
UNREGULATED CHEMICALS							
Bicarbonate (ppm)	NR	n/a	182	176-187	No	2017	Erosion of Natural Deposits
Calcium (ppm)	NR	n/a	61	36-86	No	2017	Erosion of Natural Deposits
Aggressive Index	NR	n/a	11.3	11.0-11.6	No	2017	Erosion of Natural Deposits
Magnesium (ppm)	NR	n/a	34	22-46	No	2017	Erosion of Natural Deposits
pH (pH units) - treated	NR	n/a	7.3	7.04-7.58	No	2017	Hydrogen Ion Concentration
Sodium (ppm)	NR	n/a	79	67-91	No	2017	Erosion of Natural Deposits
Total Alkalinity (ppm as CaCO3)	NR	n/a	182	176-187	No	2017	Erosion of Natural Deposits
Total Hardness (ppm as CaCO3)	NR	n/a	338	188-520	No	2017	Erosion of Natural Deposits

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = picoCuries per liter; NTU = nephelometric turbidity units; µmho/cm = micromhos per centimeter; ND = not detected; NR = not regulated; n/a = not applicable; < = average is less than the detection limit for reporting purposes; MCL = Maximum Contaminant Level; (MCLG) = Federal MCL Goal; PHG = California Public Health Goal; *Chemical 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 Detection	Most Recent Sampling Date
Chromium, Hexavalent (ppb)	n/a	0.02**	0.025	ND-0.049	2015
Molybdenum, Total (ppb)	n/a	n/a	7.4	7.1-7.6	2015
Strontium, Total (ppb)	n/a	n/a	460	440-470	2015

** There is currently no MCL for hexavalent chromium. The previous MCL of 10 ppb was withdrawn on September 11, 2017.

SOURCE WATER ASSESSMENT

IMPORTED MWDSC WATER ASSESSMENT

Every five years, MWDSC is required by DDW to examine possible sources of drinking water contamination in its State Water Project and Colorado River source waters. The most recent watershed sanitary surveys for MWDSC's source waters are the Colorado River Watershed Sanitary Survey - 2015 Update, and the State Water Project Watershed Sanitary Survey - 2016 Update. Water from the Colorado River is considered to be most vulnerable to contamination from recreation, urban/stormwater runoff, increasing urbanization in the watershed and wastewater. Water supplies from Northern California's State Water Project are most vulnerable to contamination from urban/stormwater runoff, wildlife, agriculture, recreation and wastewater. USEPA also requires MWDSC to complete one Source Water Assessment (SWA) that utilizes information collected in the

watershed sanitary surveys. MWDSC completed its SWA in December 2012. The SWA is used to evaluate the vulnerability of water sources to contamination and helps determine whether more protective measures are needed. A copy of the most recent summary of either Watershed Sanitary Survey or the SWA can be obtained by calling MWDSC at (213) 217-6000.

GROUNDWATER ASSESSMENT

The City of San Clemente Utilities Department completed an assessment of drinking water sources for its water supply in October 2001 and again in 2008. The City's wells are considered vulnerable to the following Possible Contamination Activities (PCAs) associated with some contaminants detected in the water supply: Maintenance yards, above-ground fuel tanks, an historic dump site, an electrical switching station, and a site for temporary deposition of street sweeper debris. Residences, parks, sewers, roads and storm drains represent additional PCAs. While PCAs exist within the source

water assessment area, the water sources are protected from immediate contamination threats by the confining nature of the aquifer, and the significant depth of well perforations at each water source. Copies of each water assessment are located at the City of San Clemente Utilities Department administration office, 380 Avenida Pico, Building N, San Clemente, California. You may review these water source assessments by contacting the Utilities Manager at (949) 366-1553.



WANT ADDITIONAL INFORMATION?

- City of San Clemente**
www.san-clemente.org
- Municipal Water District of OC**
www.mwdoc.com
- Orange County Water District**
www.ocwd.com
- Metropolitan Water District of Southern California**
www.mwdh2o.com
- State Water Resources Control Board, Division of Drinking Water**
www.swrcb.ca.gov/drinking_water/programs/index.shtml
- U.S. Environmental Protection Agency**
www.epa.gov

2017 IRVINE RANCH WATER DISTRICT BAKER WATER TREATMENT PLANT

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Chemical
RADIOLOGICALS - TESTED IN 2017						
Alpha Radiation (pCi/L)	15	(0)	6.2	6.2	No	Erosion of Natural Deposits
Uranium (pCi/L)	20	0.43	2.7	2.7	No	Erosion of Natural Deposits
INORGANIC CHEMICALS - TESTED IN 2017						
Barium (ppm)	1	2	<0.1	ND-0.127	No	Refinery Discharge, Erosion of Natural Deposits
Fluoride (ppm)	2.0	1	0.30	0.27 - 0.32	No	Erosion of Natural Deposits; Water Additive for Dental Health
Nitrate (as Nitrogen) (ppm)	10	10	<0.4	ND - 1.3	No	Runoff and Leaching from Fertilizer Use; Leaching from Septic Tanks and Sewage; Erosion of Natural Deposits
SECONDARY STANDARDS* - TESTED IN 2017						
Chloride (ppm)	500*	n/a	84	69 - 100	No	Runoff or Leaching from Natural Deposits
Odor (threshold odor number)	3*	n/a	2	2	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	974	928 - 1,021	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	n/a	234	218 - 250	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (TDS) (ppm)	1,000*	n/a	616	582 - 650	No	Runoff or Leaching from Natural Deposits
Turbidity (NTU)	5*	n/a	0.1	0.1	No	Soil Runoff
UNREGULATED CHEMICALS - TESTED IN 2017						
Alkalinity, total as CaCO ₃ (ppm)	NR	n/a	134	128-140	n/a	Runoff or Leaching from Natural Deposits
Boron (ppm)	NL=1	n/a	0.116	0.108-0.125	n/a	Runoff or Leaching from Natural Deposits
Calcium (ppm)	NR	n/a	80	77-83	n/a	Runoff or Leaching from Natural Deposits
Hardness, total as CaCO ₃ (ppm)	NR	n/a	316	310-323	n/a	Runoff or Leaching from Natural Deposits
Hardness, total (grains/gallon)	NR	n/a	19	18-19	n/a	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	NR	n/a	28	28	n/a	Runoff or Leaching from Natural Deposits
pH (pH units)	NR	n/a	8.3	8.2-8.4	n/a	Hydrogen Ion Concentration
Potassium (ppm)	NR	n/a	4.6	4.4-4.8	n/a	Runoff or Leaching from Natural Deposits
Sodium (ppm)	NR	n/a	90	76-104	n/a	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	TT	n/a	3.2	2.3-4.1	n/a	Various Natural and Man-made Sources

ppb = parts-per-billion; **ppm** = parts-per-million; **pCi/L** = picoCuries per liter; **µmho/cm** = micromhos per centimeter; **ND** = not detected; **MCL** = Maximum Containment Level; **(MCLG)** = Federal MCL Goal; **PHG** = California Public Health Goal; **NL** = Notification Level; **n/a** = not applicable; **TT** = treatment technique; *Chemical is regulated by a secondary standard. **NTU** = nephelometric turbidity units.

Turbidity - combined filter effluent Irvine Ranch Water District - Baker Water Treatment Plant	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Chemical
1) Highest single turbidity measurement	0.1 NTU	0.06	No	Soil Runoff
2) Percentage of samples less than 0.1 NTU	95%	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 the 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.

WHAT ARE WATER QUALITY STANDARDS?

Drinking water standards established by USEPA and DDW set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The chart in this report shows the following types of water quality standards:

- **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.
- **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.
- **Secondary MCLs** are set to protect the odor, taste, and appearance of drinking water.
- **Primary Drinking Water Standard:** MCLs for contaminants that affect health along with their monitoring and reporting requirements and water treatment requirements.
- **Regulatory Action Level (AL):** The concentration of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

WHAT IS A WATER QUALITY GOAL?

In addition to mandatory water quality standards, USEPA and DDW have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful direction for water management practices. The chart in this report includes three types of water quality goals:

- **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 USEPA.
- **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.
- **Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

HOW ARE CONTAMINANTS MEASURED?

Water is sampled and tested throughout the year. 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)

If this is difficult to imagine, think about these comparisons and equivalencies:

Parts per million (ppm or mg/L):

- 3 drops of liquid in 42 gallons
- 1 second in 12 days
- 1 inch in 16 miles

Parts per billion (ppb or µg/L):

- 3 drops of liquid in 14,000 gallons
- 1 second in 32 days
- 1 inch in 16,000 miles

Parts per trillion (ppt or ng/L):

- 10 drops of liquid in a Rose Bowl sized pool
- 1 second in 32,000 days
- 1 inch in 16 million miles

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Where Does San Clemente's Water Come From?



IMPORTED WATER 80% Of the Total Water Supply

Imported drinking water (potable water) is purchased from the Metropolitan Water District of Southern California, and travels hundreds of miles to Southern California from two sources:

- Water from the Colorado River Basin at Lake Havasu is delivered through the **Colorado River Aqueduct (CRA)**.
- Water from the **State Water Project (SWP)** is delivered from Northern California through the California Aqueduct.



Colorado River Aqueduct



Diamond Valley Lake



Local Well

LOCAL GROUNDWATER 7% Of the Total Water Supply

The City has two local wells that produce between 400 to 600 acre feet of groundwater a year to add to its potable water supplies. (An acre foot of water equals 325,900 gallons).

RECYCLED WATER 13% Of the Total Water Supply

The City's water reclamation plant treats wastewater while also producing recycled water for irrigation. It delivers approximately 1,000 acre feet of recycled water per year to as many as 140 irrigation customers that might otherwise rely on potable water. These customers are primarily homeowner associations and business parks, city parks, schools and traffic medians. Recycled water provides a new source of supply and reduces the City's reliability on imported water from the Metropolitan Water District.



Water Reclamation Plant



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