




**City of San Clemente**  
Utilities Division  
380 Ave Pico  
San Clemente, California 92672

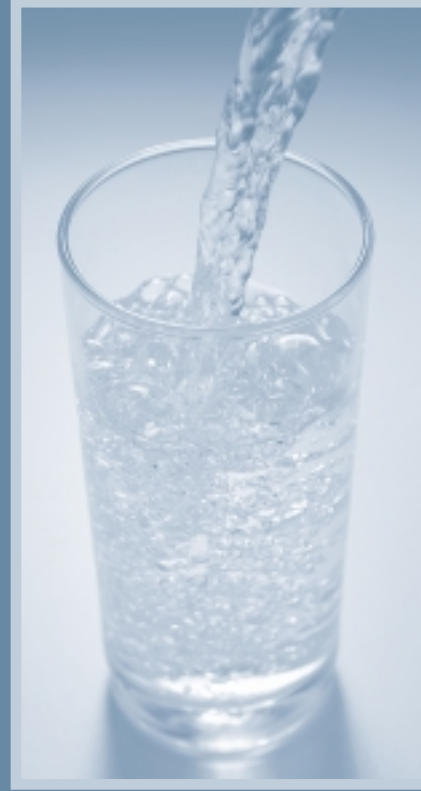
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# 2003 Water Quality Report



City of  
San Clemente  
Utilities Division

# The 2003 Water Quality Report

## *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 2002 water quality testing, and has been prepared in compliance with new regulations called for in the 1996 reauthorization of the Safe Drinking Water Act. The reauthorization charged the United States Environmental Protection Agency (EPA) with updating and strengthening the tap water regulatory program and changed the report's due date to July 1.

EPA and the California Department of Health Services (DHS) are the agencies responsible for establishing drinking water quality standards. To ensure that

your tap water is safe to drink, EPA and DHS prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. DHS regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. The federal Food and Drug Administration (FDA) also sets regulations for bottled water.

**This information is important.  
Have someone translate it for you.**

これは重要な情報ですので、翻訳を依頼してください。

Esta información es importante. Por favor pídale a alguien que se la traduzca.

此乃重要資料，必須請人替您翻譯。

این اطلاعات بسیار مهم است، لطفاً از کسی بخواهید که آن را برای شما ترجمه کند.

이 자료는 매우 중요한 것입니다. 그러므로 영어를 할 수 있는 사람에게 번역해 줄 것을 부탁드립니다.

**Bản báo cáo này có những tin tức quan trọng về nước uống của quý vị.  
Hãy dịch ra hoặc nói chuyện với những ai thông hiểu.**

### *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 Andrew J. Howard, Utilities Manager, at (949) 366-1553. The San Clemente City Council meets at 7:00 p.m. on the first and third Tuesdays of each month in the City Council Chambers, located at 100 Ave. Presidio in the City of San Clemente. Please feel free to participate in these meetings.

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

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, your local utility goes beyond what is required to monitor for additional contaminants that have known health risks.

Unregulated contaminant monitoring helps EPA determine where certain contaminants occur and whether it needs to establish regulations for those contaminants.

# What You Need to Know, ...and How it May Affect You

## Sources of Supply

Your drinking water is a blend of surface water imported by the Metropolitan Water District of Southern California and ground water extracted from City wells located in the southern part of the City of San Clemente. The ground water represents 5 to 8 percent of the total water source. Metropolitan's imported water sources are the Colorado River and the State Water Project, which draws water from the Sacramento-San Joaquin Delta.

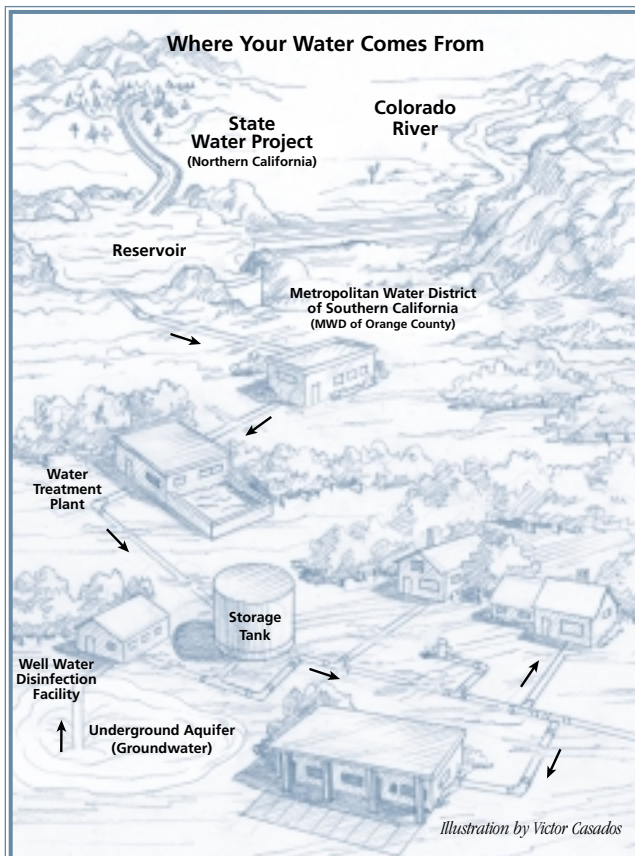
## Government Regulations of Potential Contaminants

Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. As water travels over the surface of the 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 human or animal activity. For most people, the presence of contaminants does not necessarily mean water may be a health risk.

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



Water Distribution System: Imported water supplied by Metropolitan Water District of Southern California (via MWD of Orange County) and piped to your community by your local water retailer. Local groundwater is pumped out of the ground and provided by your local water retailer.

## 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 Metropolitan Water District of Southern California, which did not detect it in the water, tested your surface water for *Cryptosporidium* in 2002. If it ever is detected, *Cryptosporidium* is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

The EPA 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 EPA'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 people

Some people may be more vulnerable to constituents in the water than the general population. Immuno-compromised people, such as those with cancer who are undergoing chemotherapy, persons who have had organ

transplants, people with HIV/AIDS or other immune system disorders, some elderly persons and infants can be particularly at risk of infections. These people should seek advice about drinking water from their healthcare providers.

### *Trihalomethanes and Disinfection*

Trihalomethanes (THMs) are chemical byproducts of disinfecting drinking water. THMs are a group of four chemicals that are formed when chlorine reacts with naturally occurring organic and inorganic matter in water. The trihalomethanes are chloroform, bromodichloromethane, dibromochloromethane, and bromoform.

Chlorine disinfection has almost completely eliminated from our lives the risks of microbial waterborne diseases such as typhoid fever, cholera, and dysentery. However, the health benefit of chlorination has introduced some possible risks from THMs. Some scientific studies have linked THMs to increased risk of cancer. Other studies have linked THMs to reproductive problems, including miscarriage. A California study released in 1998 found an increase in miscarriage rate for women who drank 5 or more glasses of cold water containing more than 75 parts-per-billion total THMs. State and federal officials have cautioned that this study is not definitive and further investigation is now underway.

The maximum amount of total THMs allowed in drinking water is regulated by the U.S. EPA, which set a maximum annual average limit in drinking water of 100 parts per billion in 1979. Effective in January 2002, the Stage 1 Disinfectants / Disinfection Byproducts Rule revises the total THM maximum annual average level at 80 parts per billion. Your drinking water complies with the Stage 1 Disinfectants / Disinfection Byproducts Rule (see the average THM value in the accompanying table). EPA is currently crafting a Stage 2 regulation that will further reduce allowable levels in drinking water.

### *Radon*

Radon is a radioactive gas that you can't see, taste or smell. It is found throughout the United States. Radon can move up through the ground into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon also can get into indoor air when released from tap water from showering, washing dishes, and other household activities. Compared to radon entering the home through soil, radon entering the home through tap water will, in most cases, be a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer. If you are concerned about radon in your home, test the air in your home. Testing is not the responsibility of your local water utility, but it is relatively easy and

inexpensive. Fix your home if the level of radon in your air is 4 picocuries per liter (pCi/L) or greater. There are simple ways to fix a radon problem that aren't too costly. For more information, call your State radon program or call EPA's Radon Hotline at (800) SOS-RADON [800-767-7236].

### *Lead*

Infants and young children typically are more vulnerable to lead in drinking water than the general population. It is possible that lead levels at your home may be higher than at other homes in the community as a result of materials used in your home's plumbing. If you are concerned about possible elevated lead levels in your home's water, you may wish to have your water tested by an independent laboratory and flush your tap for 30 seconds to 2 minutes before using the water. Additional information is available from the Safe Drinking Water Hotline at (800) 426-4791.

### *Import (Metropolitan) Water Assessment*

In December 2002, Metropolitan Water District of Southern California completed its source water assessment of its Colorado River and State Water Project supplies. Colorado River supplies are considered to be most vulnerable to recreation, urban/storm water runoff, increasing urbanization in the watershed and wastewater. State Water Project supplies are considered to be most vulnerable to urban/storm water runoff, wildlife, agriculture, recreation and wastewater. A copy of the assessment can be obtained by contacting Metropolitan by phone at (213) 217-6850.

### *Groundwater Assessment*

The City of San Clemente Utilities Division completed an assessment of drinking water sources for its water supply in October 2001. The two sources 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 Division administration office, 380 Avenida Pico, Building N, San Clemente, California. You may inspect these water source assessments by contacting the Utilities Manager at (949) 366-1553.

## City of San Clemente Groundwater Quality

Chemical	MCL	PHG (MCLG)	Average Amount	Range of Detections	MCL Violation?	Most Recent Sampling Date	Typical Source of Contaminant
<b>Radiologicals</b>							
Alpha Radiation (pCi/L)	15	n/a	1.2	0.5 – 1.9	No	1999	Erosion of Natural Deposits
Uranium (pCi/L)	20	0.5	4.5	4.5	No	1999	Erosion of Natural Deposits
<b>Inorganic Chemicals</b>							
Fluoride (ppm)	2	1	0.41	0.40 – 0.42	No	2002	Erosion of Natural Deposits
Nitrate (ppm as N)	10	10	3.1	2.8 – 3.6	No	2002	Fertilizers, Septic Tanks
Nitrate + Nitrite (ppm as N)	10	10	3.1	2.8 – 3.6	No	2002	Fertilizers, Septic Tanks
<b>Secondary Standards*</b>							
Chloride (ppm)	500*	n/a	101	74 – 144	No	2002	Erosion of Natural Deposits
Iron (ppb)	300*	n/a	<100	ND – 150	No	2002	Erosion of Natural Deposits
Manganese (ppb)	50*	n/a	<20	ND – 36	No	2002	Erosion of Natural Deposits
Specific Conductance (µmho/cm)	1,600*	n/a	872	754 – 990	No	2002	Erosion of Natural Deposits
Sulfate (ppm)	500*	n/a	116	70 – 153	No	2002	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	580	460 – 740	No	2002	Erosion of Natural Deposits
Zinc (ppb)	500*	n/a	0.065	0.054 – 0.076	No	2002	Erosion of Natural Deposits
<b>Unregulated Contaminants Requiring Monitoring</b>							
Alkalinity (ppm as CaCO <sub>3</sub> )	Not Regulated	n/a	170	160 – 180	n/a	2002	Erosion of Natural Deposits
Boron (ppm)	Not Regulated	n/a	0.18	0.18	n/a	2002	Erosion of Natural Deposits
Calcium (ppm)	Not Regulated	n/a	62	40 – 83	n/a	2002	Erosion of Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	29	24 – 34	n/a	2002	Erosion of Natural Deposits
Potassium (ppm)	Not Regulated	n/a	4.5	3.7 – 5.2	n/a	2002	Erosion of Natural Deposits
Sodium (ppm)	Not Regulated	n/a	85	83 – 86	n/a	2002	Erosion of Natural Deposits
Total Hardness (ppm as CaCO <sub>3</sub> )	Not Regulated	n/a	252	192 – 347	n/a	2002	Erosion of Natural Deposits
Total Hardness (grains/gal.)	Not Regulated	n/a	15	11 – 20	n/a	2002	Erosion of Natural Deposits

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = picoCuries per liter; ntu = nephelometric turbidity units; ND = not detected; 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  
 \*Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

### Lead and Copper Action Levels at Residential Taps

	Action Level (AL)	Health Goal	90th Percentile Value	Sites Exceeding AL / Number of Sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	2	<5	0 / 30	No	Corrosion of household plumbing
Copper (ppm)	1.3	0.17	0.13	0 / 30	No	Corrosion of household plumbing

Every three years, 30 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2001. Lead was not detected in any of the samples. Copper was detected in thirty samples. None of the samples exceeded the regulatory action level. A regulatory action level is the concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

## Definitions

### Public Health Goal (PHG)

The level of a contaminant in drinking water below which there is no known or expected risk to health. Public health goals are set by the California Environmental Protection Agency.

### Maximum Contaminant Level (MCL)

The highest level of a contaminant that is allowed in drinking water. MCLs are set as close to the public health goals and maximum contaminant level goals 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 contaminant in drinking water below which there is no known or expected risk to health. Maximum contaminant level goals are set by the EPA.

### Action Levels (AL)

Health-based advisory levels established by the State

Department of Health Services for chemicals that lack MCLs.

### Primary Drinking Water Standard (PDWS)

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

### Regulatory Action Level

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

### Variance

State or EPA permission not to meet an MCL or a treatment technique under certain conditions.

*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.*

### Treatment Technique (TT)

A required process intended to reduce the level of a contaminant in drinking water.

### Measurements

Water is sampled and tested throughout the year. Contaminants are measured in parts per million (ppm), parts per billion (ppb), parts per trillion (ppt), and even parts per quadrillion (ppq). If this is difficult to imagine, think about these comparisons:

**Parts per million (mg/L):**    **Parts per billion (µg/L):**  
 S 3 drops in 42 gallons    S 1 drop in 14,000 gallons  
 S 1 second in 12 days    S 1 second in 32 years  
 S 1 penny in \$10,000    S 1 penny in \$10 million  
 S 1 inch in 16 miles    S 1 inch in 16,000 miles

**It is important to note, however, that even a small concentration of certain contaminants can adversely affect a water supply.**

## City of San Clemente Distribution System Water Quality

	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (ppb)	80	58	9 – 85	No	Byproducts of chlorine disinfection
Haloacetic Acids (ppb)	60	17	2 – 61	No	Byproducts of chlorine disinfection
Chlorine Residual (ppm)	(4 / 4)	1.2	ND – 2.2	No	Disinfectant added for treatment
Color (color units)	15*	1	1	No	Erosion of Natural Deposits
Turbidity (ntu)	5*	0.14	0.04 – 0.82	No	Erosion of Natural Deposits
Odor (threshold odor number)	3*	1	1	No	Erosion of Natural Deposits

Twelve 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; ND = not detected.

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

## Metropolitan Water District of Southern California Treated Surface Water

Chemical	MCL	PHG, or (MCLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
<b>Radiologicals – Tested in 1999</b>						
Alpha Radiation (pCi/L)	15	n/a	3.6	1.2 – 6.0	No	Erosion of natural deposits
Beta Radiation (pCi/L)	50	n/a	6.2	5.2 – 7.8	No	Decay of man-made or natural deposits
Combined Radium (pCi/L)	5	n/a	0.6	ND – 1.5	No	Erosion of natural deposits
Uranium (pCi/L)	20	0.5	2.6	ND – 3.8	No	Erosion of natural deposits

### Inorganic Chemicals – Tested in 2002

Fluoride (ppm)	2	1	0.23	0.20 – 0.27	No	Erosion of natural deposits
Nitrate and Nitrite as N (ppm)	10	10	<0.4	ND – 0.5	No	Agriculture runoff and sewage
Nitrate as N (ppm)	10	10	<0.4	ND – 0.5	No	Agriculture runoff and sewage

### Secondary Standards\* – Tested in 2002

Chloride (ppm)	500*	n/a	86	76 – 98	No	Runoff or leaching from natural deposits
Color (color units)	15*	n/a	2	1 – 3	No	Runoff or leaching from natural deposits
Corrosivity (LSI)	non-corrosive	n/a	0.23	0.17 – 0.26	No	Elemental balance in water
Specific Conductance (µmho/cm)	1,600*	n/a	843	768 – 939	No	Substances that form ions in water
Sulfate (ppm)	500*	n/a	171	126 – 207	No	Runoff or leaching of natural deposits
Total Dissolved Solids (ppm)	1,000*	n/a	499	434 – 567	No	Runoff or leaching of natural deposits
Turbidity (NTU)	5*	n/a	0.06	0.05 – 0.07	No	Runoff or leaching of natural deposits

### Unregulated Chemicals – Tested in 2002

Alkalinity (ppm)	Not Regulated	n/a	111	95 – 124	n/a	Runoff or leaching from natural deposits
Boron (ppb)	Not Regulated	n/a	130	110 – 130	n/a	Runoff or leaching from natural deposits
Calcium (ppm)	Not Regulated	n/a	54	43 – 63	n/a	Runoff or leaching from natural deposits
Magnesium (ppm)	Not Regulated	n/a	24	21 – 26	n/a	Runoff or leaching from natural deposits
Perchlorate (ppb)	Not Regulated	n/a	<4	ND – 4	n/a	Rocket fuel discharged to the Colorado River
pH (pH units)	Not Regulated	n/a	8	8	n/a	Hydrogen ion concentration
Potassium (ppm)	Not Regulated	n/a	3.9	3.7 – 4.2	n/a	Runoff or leaching from natural deposits
Sodium (ppm)	Not Regulated	n/a	80	74 – 89	n/a	Runoff or leaching from natural deposits
Hardness (ppm)	Not Regulated	n/a	232	192 – 258	n/a	Runoff or leaching of natural deposits
Hardness (grains/gal)	Not Regulated	n/a	14	11 – 15	n/a	Runoff or leaching of natural deposits

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = picoCuries per liter; NTU = nephelometric turbidity unit; ND = not detected; < = average is less than the detection limit for reporting purposes; MCL = Maximum Contaminant Level; (MCLG) = federal MCL Goal; PHG = California Public Health Goal; n/a = not applicable; LSI = Langelier Saturation Index; µmho/cm = micromho per centimeter

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

Turbidity - combined filter effluent	Treatment Technique	Turbidity Measurements	TT Violation?	Typical Source of Contaminant
1) Highest single turbidity measurement	0.3 NTU	0.14	No	Soil run-off
2) Percentage of samples less than 0.3 NTU	95%	100	No	Soil run-off

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 Metropolitan'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 contaminants in drinking water that are difficult and sometimes impossible to measure directly. ntu = nephelometric turbidity unit

## Information Collection Rule Disinfection By-Products in Metropolitan Water District Finished Water Data Collected August 1997 - November 1998

Chemical	Average Amount (ppb)	Range of Detections (ppb)	Typical Source of Contaminant
<b>Disinfection By-Products</b>			
Haloacetonitriles	7.6	5.1 – 11	Formed by the reaction with chlorine disinfectant
Haloketones	1.7	0.7 – 2.7	Formed by the reaction with chlorine disinfectant
Chloral Hydrate	3.8	1.5 – 6.1	Formed by the reaction with chlorine disinfectant
Total Organic Halogen	113	78 – 155	Formed by the reaction with chlorine disinfectant
Cyanogen Chloride	1.7	0.5 – 2.3	Formed by the reaction with chlorine disinfectant

The Information Collection Rule (ICR) is a multi-year national monitoring program administered by the U.S. Environmental Protection Agency. The primary purpose of the ICR is to gather nationwide occurrence data on chemicals which may be formed during drinking water disinfection. The results of the ICR will assist the EPA in regulating many of these disinfection by-products over the next 5 years.

ppb = parts-per-billion.