

# City of Corona Water Utilities Department

# Confidence Report



# 2000



**City of Corona**  
Water Utilities Department  
P.O. Box 940  
Corona, CA 92878

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## Message From the Director

The City of Corona Water Utilities Department has grown from a small municipal water agency in 1964, to a modern "state-of-the-art" water system that maximizes the City's and State's natural resources through a variety of public information and capital improvement projects.

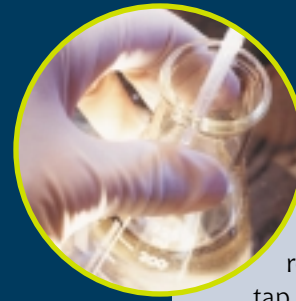
These capital improvement projects include construction on new local water wells, the rehabilitation of existing wells and treatment plants, building of numerous water reservoirs, installation of new water distribution lines, as well as replacement of old lines. The most significant project, however, is the construction of the new reverse osmosis (desalination) water treatment facility, which will greatly improve overall water quality.

These improvements, along with our commitment to serve our customers, will meet the goals of improving the City's water quality and system reliability.



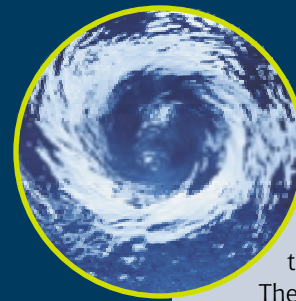
## Corona's Water Sources

In 1999, Corona residents and businesses used 12 billion gallons of water. 45% of the water used was pumped from ground water wells owned and operated by the City. Another 45% came from the Colorado River, by way of the California Aqueduct and Lake Matthews. The final 10% came from Northern California, by way of the State Water Project. In order to provide Corona residents with the highest quality water, while maintaining fiscal responsibilities, one or all three sources can be delivered to any part of the service area depending on the demands and the season.



## Water Treatment

The water from the Colorado River must be treated to remove harmful bacteria before it is delivered to your tap. This is done at the City's two treatment plants, Sierra Del Oro and Lester water treatment facilities. The treatment process involves the addition of chemicals, filtration to catch small particles, then disinfection with chloramine to kill bacteria.



## Nitrates and Blending

You will notice in the tables of detected contaminants that the ground water exceeds the standard for nitrates. The City of Corona is required by law to report the levels of contaminants detected in the SOURCES of water not the water delivered to your tap. The City of Corona operates three blending stations to mix the groundwater with water from the two treatment plants to lower the concentration of nitrates. The water delivered to your tap meets the standard established by the State Department of Health Services by a safety margin of no less than 10%.

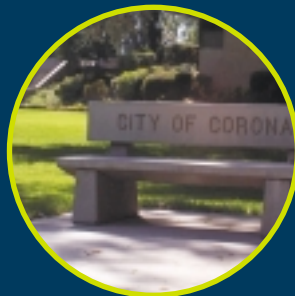
Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. High nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. High nitrate levels may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. Nitrate levels may rise quickly for short periods of time because of rainfall or agricultural activity. If you are caring for an infant, you should ask advice from your health care provider, or choose to use bottled water for mixing formula and juice for your baby. If you are pregnant, you should drink bottled water.



# General Water Quality Information

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 EPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. USEPA/Center for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by cryptosporidium and other microbial contaminants are available from the Safe Drinking Water Hotline (1-800-426-4791).



The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over the surface of the land or through the ground, it dissolves naturally-occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity.

Contaminants that may be present in source water include:

- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- Inorganic contaminants, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- Pesticides and herbicides, which 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, and septic systems.
- Radioactive contaminants, which can be naturally-occurring or be the result of oil and gas production and mining activities.

## Primary Standards

## Mandatory Health-Related Standards Established by the State of California Department of Health Services

CLARITY (NTU)	UNIT	State MCL	PHG (MCLG)	High %<0.5	Low	State Project Water	Colorado River Water	Major Sources in Drinking Water
Combined Filter Effluent Turbidity	NTU	5.0 & .5 (a)	NS	High %<0.5	Low	0.11	100%	Soil runoff
Turbidity (Monthly)	NTU	5	NS	High	Low	0.05	100%	Soil runoff
				Mean	High	0.07	1.2	Soil runoff
					Mean	0.06	0.91	
MICROBIOLOGICAL (CFU/100mL)				Ground Water				
Total Coliform Bacteria (b)	(b)	5.0%	(0)	Low	Distribution-System-Wide Low: 0%	0%	0%	Naturally present in the environment
				High	Distribution-System-Wide: .64%	0%	0.2%	NC
				Mean	Distribution-System-Wide: .053%	0%	0.038%	NC
Fecal Coliform and E. Coli	(b)	(b)	(0)	Low	Distribution-System-Wide: 0 Positive Samples	0%	0%	NC
				High	Distribution-System-Wide: 0 Positive Samples	0%	0%	NC
				Mean	Distribution-System-Wide: 0 Positive Samples	0%	0%	NC

## Primary Standards

## Mandatory Health-Related Standards Established by the State of California Department of Health Services

PARAMETER	UNIT	State MCL	PHG (MCLG)	Low High Mean	Ground Water	State Project Water	Colorado River Water	Major Sources of Contaminant in Drinking Water
RADIOACTIVE CONTAMINANTS								
Gross Alpha Particle Activity	pCi/L	15	(0)	Low High Mean	ND 8.70 5.10	ND 2.12 7.97	2.62 5.48	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50	(0)	Low High Mean	NC NC NC	ND 4.25 5.79	ND 8.06 5.79	Decay of natural and manmade deposits
Combined Radium (c)	pCi/L	5	(0)	Low High Mean	NC NC NC	ND 2.08 1.31	ND 1.69 ND	Erosion of natural deposits
Uranium	pCi/L	20	(0)	Low High Mean	0 9 4.12	ND ND ND	ND 4.84 3.32	Erosion of natural deposits
INORGANIC CONTAMINANTS								
Arsenic (AS)	ppb	50	N/A	Low High Mean	ND 3.1 0.99	ND ND ND	2.3 3 2.7	Erosion of natural deposits; glass and electronics production wastes
Fluoride (F)	ppm	2	1	Low High Mean	0.326 0.482 0.408	ND 0.11 ND	0.27 0.32 0.30	Erosion of natural deposits; discharge from fertilizer and aluminum factories
Nitrate (NO3) (d)	ppm	45	45	Low High Mean	4.2 110 38.6	ND 2.68 2.2	ND ND ND	Runoff & leaching from fertilizer use; sewage; erosion of natural deposits
VOLATILE ORGANIC CHEMICALS								
Tetrachloroethylene (PCE)	ppb	5	(0)	Low High Mean	0.8 1.1 0.97	ND ND ND	ND ND ND	Discharge from factories, dry cleaners and autoshops
Trichloroethylene (TCE)	ppb	5	0.8	Low High Mean	ND 3.6 0.893	ND ND ND	ND ND ND	Discharge from metal degreasing sites and other factories
Total Trihalomethanes (THM) (e)	ppb	100	n/a	Low High Mean	ND ND ND	43 67 52	NC NC NC	By-product of drinking water chlorination

**Public Health Goal (PHG):** The level of a contaminant in drinking water which there is no known or expected risk to health. PHGs 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 PHGs as economically or technologically feasible. 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.

**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. Environmental Protection Agency.

## Secondary Standards

## Aesthetic Standards

PARAMETER	UNIT	State MCL	PHG (MCLG)	Low High Mean	Ground Water	State Project Water	Colorado River Water	Major Sources of Contaminant in Drinking Water
CHEMICAL PARAMETERS								
Color (units)	Units	15	NS	Low High Mean	ND ND ND	1 2 2	3 8 6	Naturally-occurring organic materials
Corrosivity (f)		Non-Corrosive	NS	Low High Mean	Non-Corrosive	Non-Corrosive	Non-Corrosive	Natural or industrially-influenced balance of hydrogen, carbon and oxygen in the water; affected by temperature and other factors
Hardness (As CaCO3)	ppm	NS	NS	Low High Mean	193 460 386	78 97 88	277 291 286	Leaching from natural deposits
Heterotrophic Plate Count (g)	CFU/mL	NS	NS	Low High Mean	NS NS NS	<1 2 <1	NS NS NS	Naturally present in the environment
Methyl-tert-butyl ether (MTBE)	ppb	5	NS	Low High Mean	ND ND ND	ND 4 ND	ND ND ND	Leaking underground storage tanks; discharge from petroleum and chemical factories
Odor-Threshold (h)	Units	3	NS	Low High Mean	1 1 1	(h) (h) (h)	(h) (h) (h)	Naturally-occurring organic materials
Total Dissolved Solids (TDS)	ppm	1000	NS	Low High Mean	334 889 688	180 253 213	565 587 577	Runoff/leaching from natural deposits
Specific Conductance (umho/cm)	umho/cm	1600	NS	Low High Mean	590 1510 1173	316 470 380	903 938 920	Substances that form ions when in water; seawater influence
Chloride (Cl)	ppm	500	NS	Low High Mean	28.3 152 101	39 76 53	71 74 73	Runoff/leaching from natural deposits; seawater influence
Sulfate (SO4)	ppm	500	NS	Low High Mean	98.2 232 184	24 40 32	228 234 230	Runoff/leaching from natural deposits; industrial wastes

## Key To Abbreviations

MCL .....Maximum Contaminant Level

PHG .....Public Health Goals

MCLG .....Maximum Contaminant Level Goal

ND .....Not Detected, for averaging purposes, ND = "zero"

NC .....Not Collected

NS .....No Standard

umho/cm .....Micromhos per centimeter

NTU .....Nephelometric Turbidity Units

pCi/L .....PicoCuries per liter

ppm .....Parts per million, or milligrams per liter

ppb .....Parts per billion, or micrograms per liter

ppt .....Parts per trillion, or nanograms per liter

ppq .....Parts per quadrillion, or picograms per liter

GPM .....Gallons per minute



PARAMETER	UNIT	State MCL	PHG (MCLG)	Low High Mean	Ground Water	State Project Water	Colorado River Water	Major Sources of Contaminant in Drinking Water
<b>Additional Parameters - Unregulated</b>								
Alkalinity (As CaCO <sub>3</sub> )	ppm	NS	NS	Low	120	62	124	
				High	271	78	133	
				Mean	212	70	129	
Boron	ppm	NS	NS	Low	130	62	124	
				High	266	78	133	
				Mean	111	70	129	
Bicarbonate (HCO <sub>3</sub> )	ppm	NS	NS	Low	146	NC	NC	
				High	330	NC	NC	
				Mean	258	NC	NC	
Calcium (Ca)	ppm	NS	NS	Low	65.4	17	69	
				High	159	21	73	
				Mean	107	19	71	
Chloral Hydrate	ppb	NS	NS	Low	NC	2.4	NC	
				High	NC	8.2	NC	
				Mean	NC	4.4	NC	
Chloropicrin	ppb	NS	NS	Low	NC	0.2	NC	
				High	NC	1.1	NC	
				Mean	NC	0.05	NC	
Cyanogen chloride	ppb	NS	NS	Low	NC	2.7	NC	
				High	NC	7.2	NC	
				Mean	NC	4.4	NC	
Haloacetic acids	ppb	NS	NS	Low	NC	22	NC	
				High	NC	64	NC	
				Mean	NC	35	NC	
Haloacetonitriles	ppb	NS	NS	Low	NC	6.2	NC	
				High	NC	13	NC	
				Mean	NC	8.7	NC	
Haloketones	ppb	NS	NS	Low	NC	1	NC	
				High	NC	2.9	NC	
				Mean	NC	1.6	NC	
Magnesium (Mg)	ppm	NS	NS	High	52.7	8	25.5	
				Low	7.3	12	27.5	
				Mean	29	10	26.5	
Perchlorate	ppb	NS	NS	Low	NC	ND	ND	
				High	NC	ND	8	
				Mean	NC	ND	6	
pH	pH Units	NS	NS	Low	7.01	8.3	8.17	
				High	7.46	8.41	8.42	
				Mean	7.20	8.38	8.29	
Potassium (K)	ppm	NS	NS	Low	1	1.9	4.1	
				High	3.9	2.7	4.5	
				Mean	2.2	2.3	4.3	
Total Organic Carbons	ppm	NS	NS	Low	ND	NC	NC	
				High	0.687	NC	NC	
				Mean	0.273	NC	NC	
Total Organic Halides	ppb	NS	NS	Low	NC	166	NC	
				High	NC	250	NC	
				Mean	NC	194	NC	
Total Chlorine Residual	ppm	NS	NS	Low	NC	1.7	NC	
				High	NC	2.7	NC	
				Mean	NC	2.1	NC	
Sodium (Na)	mg/L	NS	NS	Low	41.8	32	81	Runoff/leaching from natural deposits; seawater influence
				High	152	52	88	
				Mean	90	41	84	

## Notes

- (a) The turbidity level of the filtered water shall be less or equal to .5 NTU in 95% of the measurements taken each month and shall not exceed 5.0 NTU at any time. Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system. Monthly turbidity values are secondary standards.
- (b) Total Coliform MCLs: No more than 5.0% of the monthly samples may be coliform positive. Fecal Coliform/E.Coli MCLs: The occurrence of 2 consecutive total coliform positive samples, one of which contains fecal coliform/E coli, constitutes an acute MCL violation. These MCLs were not violated in 1999. Results are based on distribution system's highest percent positives.
- (c) Standard is for Radium -226 and -228 combined.
- (d) State MCL is 45 mg/L as Nitrate, which equals 10 mg/L as N.
- (e) Calculated from the highest of quarterly filtration plant effluent samples. MWD compliance is based on a running annual mean value of more than 40 quarterly distribution system samples.
- (f) Corrosivity is measured by the Langlier Stability Index. A positive index, indicating non-corrosivity, was maintained.
- (g) Pour plate technique, 48-hour incubation at 35 degrees centigrade, monthly mean value.
- (h) Metropolitan Water District has developed a flavor-profile analysis method that can more accurately detect odor occurrences. For more information contact MWD.

**Air** in the water can cause a milky appearance. Water which contains dissolved air is delivered to our homes under pressure. Turning on the faucet releases the pressure, causing air bubbles to appear. Like the carbon dioxide in soft drinks, the tiny air bubbles rise to the surface. Clearing begins at the bottom of the container and within a minute the water is clear.



# Capital Improvement Projects

Capital Improvement Projects serve an integral part in planning and maintaining the City's water reliability. The City of Corona Water Utilities Department has planned many projects that will allow the Department to maintain system integrity. One of these important projects is the replacement of three older wells constructed in the 1950's with new "state-of-the-art" equipment. The new wells, once on-line, will increase mechanical reliability and water production, thus enabling the City to meet stringent new compliance standards with the Department of Health Services.

Another project currently underway is the construction of five miles of transmission lines that will carry water from these newly constructed wells to the new desalination facility. Once the water is treated at the plant, it will then be transferred to a blending station and serve the higher elevation areas in the City. Once this project is completed, another three miles of pipelines will be constructed to serve the areas of Sierra Del Oro and Green River. The construction of the desalination facility is on schedule and is expected to be in operation by December 2000.

Lastly, other planned projects will include the replacement of six miles of water lines constructed prior to 1925, the retrofitting of deteriorated water services and fire services, replacement of filter-media at the water treatment plants, as well as the rehabilitation of several booster and pressure reducing stations.



# Water Reliability 2000

Water reliability through the 21st Century is the issue many agencies must address. Faced with a variety of challenges in the new millennium the Corona Water Utilities Department must plan for the future. With the reallocation of Colorado River water and the projected increase in population, Corona, along with other water agencies, must meet the challenges of developing new innovative solutions to meet future water demands.

The City of Corona Water Utilities Department has taken a proactive approach in meeting these challenges through the development of various projects such as community assistance programs that help and encourage efficient water usage in the home, business, and community; and by developing a city-wide recycled water plan which will offset the use of expensive imported water by utilizing cheaper recycled water for irrigation.

These types of solutions will assist in conserving the present water supply and will allow us to meet water demand goals now and well into the future. The Corona Water Utilities Department will continue to meet these challenges by maintaining and preserving our natural resources in the most cost-effective, community-oriented way.

For general information about this report please call (909) 736-2263. For questions related to water quality, please contact the Water Production & Distribution Division at (909) 736-2478.

If you are interested in participating in decisions that affect the quality and supply of the water in the City of Corona you can attend the regular City Council meetings on the first and third Wednesday of every month.

**-Español-** Este informe contiene información muy importante sobre su agua de beber. Tradúzcalo ó hable con alguien que lo entienda bien.