



# Drinking Water Quality

Moulton Niguel Water District (MNWD) is pleased to report that once again, through safe and effective treatment, the drinking water provided by the District meets and exceeds the standards required by state and federal regulatory agencies.

The following information provides a review of water quality for 2010. Included are details about where your water comes from, what it contains, and how it compares to state standards. We are committed to providing you with factual information, because informed consumers are our best customers.

The United States Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) are the agencies responsible for establishing drinking water quality standards. In order to ensure that tap water is safe to drink, the USEPA and the CDPH prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Department regulations also establish limits for contaminants in bottled water that provide the same protection for public health.



## What You Need to Know Sources of Your Drinking Water

The sources of drinking water (both tap water and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs, and wells. Your drinking water originates from the Colorado River and the State Water Project, which draws water from the San Francisco-San Joaquin Bay Delta. Each water source has unique water quality challenges. The water travels hundreds of miles through an intricate delivery system of the Metropolitan Water District of Southern California (MWDSC). 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.

Your water is treated at the Diemer Filtration Plant in Yorba Linda by MWDSC and delivered to the Moulton Niguel Water District distribution system. Moulton Niguel's pipelines and reservoirs are utilized to deliver the water to you when and where it is needed.



# Drinking Water and Your Health

## Protecting Water Quality at the Source

In December 2002, MWDSC 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 MWDSC at (213) 217-6850.

**D**rinking 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 Safe Drinking Water Hotline (800) 426-4791.

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, 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

## Precautions for Some to Consider

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.

Some contaminants are known to cause problems for people with weakened immune systems. This is the case with a microscopic parasite called "*Cryptosporidium*" which can cause a life-threatening infection.

*Cryptosporidium* is a microbial pathogen found in surface water throughout the U.S. Although filtration removes *Cryptosporidium*, the most commonly-used filtration methods cannot guarantee 100 percent removal. Our monitoring indicates the presence of these organisms in our source water and/or finished water. Current test methods do not allow us to determine if the organisms are dead or if they are capable of causing disease. Ingestion of *Cryptosporidium* may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immuno-compromised people, infants and small children, and the elderly are at greater risk of developing life-threatening illness. We encourage immuno-compromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

USEPA/Centers 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 (800) 426-4791.

## Current Water Issues

### Lead

If present, elevated levels of lead can cause serious health 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. Moulton Niguel Water District is responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. 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 for drinking or cooking. If you are concerned about lead in your water, you may wish to have your water tested. Information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the Safe Drinking Water Hotline or at <http://www.epa.gov/safewater/lead>.

### Nitrate

Nitrate in drinking water at levels above 45 mg/L is a health risk for infants of less than six months of age. Such 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. Nitrate levels above 45 mg/L 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. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider. Nitrate found in our distribution system in 2010, ranged from .60 - .78 parts per million and the average was .7 parts per million.

If you have any questions, please contact us for answers....

For information about your water quality or to find out about upcoming opportunities to participate in public meetings, please contact the Customer Service Department at (949) 831-2500.

You may also contact us at  
27500 La Paz Road, Laguna Niguel, California, 92677.

Additional information, including copies of this report, can be found on our website at [www.mnwd.com](http://www.mnwd.com).

For more information about health effects of the listed constituents in the following tables, call the USEPA hotline at (800) 426-4791.

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 اطلاعیه مهم می باشد. از کسی بخواهید که این را به شما ترجمه کند.

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

For additional copies of this report, please call (949) 831-2500.

Chloramines are effective killers of bacteria and other microorganisms that may cause disease. Chloramines form less disinfection byproducts and have no odor when used properly. People who use kidney dialysis machines may want to take special precautions and consult their physician for the appropriate type of water treatment. Customers who maintain fish ponds, tanks or aquariums should also make necessary adjustments in water quality treatment, as these disinfectants are toxic to fish.

For further information or if you have any questions about chloramines please call MNWD's Lab at (949) 234-5471.

### Water Hardness

Levels of calcium and magnesium, which occur naturally in water, are the primary substances that determine whether water is hard or soft. Water from the Colorado River, Moulton Niguel's primary source of water, contains fairly high levels of these minerals and is considered "hard." Water hardness does not affect health. However, hard water does require more soap than soft water and will, over time, leave mineral deposits on plumbing fixtures. In 2010, the hardness found in your water averaged 352 parts per million or 14.7 grains per gallon.

### 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 Metropolitan Water District of Southern California 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 CDPH, as well as the U.S. Centers for Disease Control and Prevention, Metropolitan 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 0.7 to 1.3 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.

United States Centers for Disease Control and Prevention: 1-800-232-4636  
[www.cdc.gov/fluoridation/](http://www.cdc.gov/fluoridation/)

California Department of Public Health  
[www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx](http://www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx)

American Water Works Association: [www.awwa.org](http://www.awwa.org)

For more information about Metropolitan's fluoridation program, please contact Edgar G. Dymally at (213) 217-5709 or at [edymally@mnwdh2o.com](mailto:edymally@mnwdh2o.com).

# Moulton Niguel Water District Distribution System Water Quality 2010

Disinfection By Product	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (TTHM) (ppb) (a)	80	46.6	42.2 – 57.2	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb) (b)	60	15.4	9.3 – 24.0	No	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	4	2.08	1.8 – 2.3	No	Disinfectant Added for Treatment
pH (Units)	N/A	7.8	7.8 – 7.9	No	Byproducts of Chlorine Disinfection

## Aesthetic Quality

Color (Color Units)	15*	<5	ND – <5	No	Erosion of Natural Deposits
Odor (Threshold Odor Number)	3*	0.8	0.4 – 1.0	No	Erosion of Natural Deposits
Turbidity (NTU) (c)	5*	0.15	0.12 – 0.17	No	Erosion of Natural Deposits

Twelve locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; Fifty-two samples are tested monthly for color, odor, and turbidity. MRDL = Maximum Residual Disinfectant Level; MRDLG = Maximum Residual Disinfectant Level Goal; NTU = nephelometric turbidity unit.

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

Bacterial Quality	MCL	MCLG	Highest Monthly Percent Positives	MCL Violation?	Typical Source of Contaminant
Total Coliform Bacteria (d)	5%	0	1.5%	No	Naturally Present in the Environment

Bacterial Quality	MCL	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Heterotrophic Plate Count (HPC) CFU/mL (e)	N/A	24	1 – 130	No	Naturally Present in the Environment

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

## Lead and Copper Action Levels at Residential Taps

	Action Level (AL)	Health Goal	90th Percentile Value	Sites Exceeding AL / # of Sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	0.2	ND(<5)	0/51	No	Corrosion of household plumbing
Copper (ppm) (f)	1.3	0.3	0.26	0/51	No	Corrosion of household plumbing

Every three years, selected residences are tested for lead and copper at-the-tap. The most recent set of fifty-one samples were collected in September 2009. None of the homes tested exceeded the State or Federal Regulatory limits.

## Abbreviations

AI	Aggressiveness Index
AL	Action Level
CFU	Colony Forming Units
DLR	Detection Limits for Purposes of Reporting
MCL	Maximum Contaminant Level
MCLG	Maximum Contaminant Level Goal
MRDL	Maximum Residual Disinfectant Level
MRDLG	Maximum Residual Disinfectant Level Goal
N	Nitrogen

N/A	Not Applicable
ND	Not Detected
NL	Notification Level
NTU	Nephelometric Turbidity Units
pCi/L	picoCuries per Liter
PHG	Public Health Goal
ppb	parts per billion or micrograms per liter (µg/L)
ppm	parts per million or milligrams per liter (mg/L)
ppt	parts per trillion or nanograms per liter (ng/L)
TON	Threshold Odor Number
TT	Treatment Technique
µS/cm	microSiemen per centimeter; or micromho per centimeter (µmho/cm)

# 2010 Metropolitan Water District of Southern California Treated Surface Water

Chemical	MCL	PHG (MCLG)	DLR	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
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## Radiologicals – Tested in 2009

Gross Alpha Particle Activity (pCi/L)	15	(0)	3	5.6	3.8 – 9.3	No	Erosion of Natural Deposits
Gross Beta Particle Activity (pCi/L) (g)	50	(0)	4	4.3	ND – 6.4	No	Decay of Natural and Man-made Deposits
Uranium (pCi/L)	20	0.43	1	3.3	2.9 – 3.7	No	Erosion of Natural Deposits

## Inorganic Chemicals – Tested in 2010

Aluminum (ppb) (f)	1,000	600	50	170	66 – 230	No	Residue from Water Treatment Process; Natural Deposits Erosion
Arsenic (ppb)	10	0.004	2	2.3	ND – 2.8	No	Natural Deposits Erosion, Glass and Electronics Production Wastes
Barium (ppb)	1,000	2,000	100	110	ND – 120	No	Oil and Metal Refineries Discharge; Natural Deposits Erosion
Fluoride (ppm) treatment-related (h)	Control Range		0.1	0.8	0.4 – 1.0	No	Water Additive for Dental Health
	0.7–1.3 ppm	Optimal Level 0.8 ppm					
Fluoride (ppm) naturally-occurring (h)	2.0	1	0.1	0.3	0.2 – 0.4	No	Erosion of Natural Deposits
Nitrate (ppm) (i)	10	10	0.4	ND	ND	No	Runoff and Leaching from Fertilizer Use; Septic Tank and Sewage; Natural Deposits Erosion

## Secondary Standards- Tested in 2010

Aluminum (ppb) (f)	200*	600	50	170	66 – 230	No	Residue from Water Treatment Process; Natural Deposits Erosion
Chloride (ppm)	500*	N/A	N/A	93	83 – 93	No	Runoff/ Leaching from Natural Deposits; Seawater Influence
Color (units)	15*	N/A	N/A	1	1 – 2	No	Naturally-occurring Organic Materials
Odor Threshold (TON) (j)	3*	N/A	1	2	2	No	Naturally-occurring Organic Materials
Specific Conductance (µS/cm)	1,600*	N/A	N/A	970	460 – 1,000	No	Substances that Form Ions in Water; Seawater Influence
Sulfate (ppm)	500*	N/A	0.5	230	160 – 240	No	Runoff/Leaching from Natural Deposits; Industrial Wastes
Total Dissolved Solids (ppm)	1,000*	N/A	N/A	590	470 – 610	No	Runoff/Leaching from Natural Deposits; Seawater Influence
Turbidity (NTU)	5*	N/A	N/A	0.04	0.03 – 0.16	No	Soil Runoff

## Unregulated Chemicals- Tested in 2010

Alkalinity	N/A	N/A	N/A	110	67 – 120	N/A	
Boron (ppb)	N/L=1,000	N/A	100	120	120 – 130	N/A	Runoff or Leaching from Natural Deposits; Industrial Wastes
Calcium (ppm)	N/A	N/A	N/A	66	51 – 70	N/A	
Corrosivity (Aggressiveness Index) (k)	N/A	N/A	N/A	12.1	12.0 – 12.2	N/A	Elemental Balance in Water; Affected by Temperature, Other Factors
Hardness (ppm)	N/A	N/A	N/A	270	92 – 300	N/A	
Hardness, total (grains/Gal)	Not Regulated	N/A	N/A	16	14 – 18	N/A	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	N/A	N/A	N/A	27	22 – 28	N/A	
pH (pH units)	N/A	N/A	N/A	7.9	7.5 – 8.0	N/A	
Potassium (ppm)	N/A	N/A	N/A	4.7	3.9 – 4.8	N/A	
Sodium (ppm)	N/A	N/A	N/A	95	78 – 95	N/A	
TOC (ppm)	TT	N/A	0.30	2.2	1.9 – 2.3	N/A	Various Natural and Man-made Sources
Vanadium (ppb)	N/L=50	N/A	3	3.0	ND – 3.3	N/A	Naturally-Occurring; Industrial Waste Discharge

ppb = parts-per-billion; ppm = parts-per-million; ppt = parts-per-trillion; pCi/L = picoCuries per liter; ntu = nephelometric turbidity units; µmho/cm = micromhos per centimeter;

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; TT = treatment technique \* Contaminant is regulated by a secondary standard.

## Turbidity- Combined Filter Effluent Treatment Technique Turbidity Measurements TT Violation Typical Source of Contaminant

1) Highest single turbidity measurement	0.3 NTU	0.08	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.

## Footnotes

- a. Reporting level is 0.5 ppb for each of the following: bromodichloromethane, bromoform, chloroform, and dibromochloromethane. Thirteen locations in the distribution system are tested quarterly for total trihalomethanes. (Total Trihalomethanes)
- b. DLR is 1.0 ppb for each of the following: dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid; and 2.0 ppb for monochloroacetic acid. (Haloacetic Acids)
- c. The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. Turbidity is a measure of the cloudiness of the water, is an indicator of treatment performance. The averages and ranges of turbidity shown in the Secondary Standards were based on the treatment plant effluent. (Turbidity)
- d. Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Compliance is based on the combined distribution system sampling. In 2010, 1,599 samples were analyzed and eight samples were positive for total coliforms. The MCL was not violated. (Total Coliform Bacteria)
- e. All distribution samples collected had detectable total chlorine residuals and no HPC was required. HPC reporting level is 1 CFU/mL. (Heterotrophic Plate Count)
- f. Aluminum, copper, MTBE, and thiobencarb have both primary and secondary standards. (Aluminum, Copper)
- g. The gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. The screening level is 50 pCi/L. (Gross Beta Particle Activity)
- h. Metropolitan was in compliance with all provisions of the State's Fluoridation System Requirements. (Fluoride)
- i. State MCL is 45 mg/L as nitrate, which is the equivalent of 10 mg/L as N. (Nitrate)
- j. Data for Skinner based on the State-required quarterly monitoring following MCL exceedance. The quarterly samples reported to the State were 35 TON in January, 20 TON in April, 19 TON in July, and 24 TON in October. Metropolitan utilizes a flavor profile analysis (FPA) method that can detect odor occurrences more accurately and found the FPA samples from this location acceptable. No taste and odor event was observed and no complaints were received during the period. (Odor Threshold)
- k. AI <10.0 = Highly aggressive and very corrosive water  
AI > 12.0 = Non-aggressive water  
AI (10.0 - 11.9) = Moderately aggressive water (Corrosivity)

## Moulton Niguel's Water Quality Data

The tables on the previous pages list all the drinking water contaminants that we detected during the 2010 calendar year. The presence of these contaminants in water does not necessarily indicate that the water poses a health risk. Unless otherwise noted, the data presented is from testing done from January 1 through December 31, 2010. 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.

Your water is tested for more than 100 required constituents substances and is continually monitored to ensure that it meets all state and federal standards. Only those substances that were detected have been listed in the tables. All of the contaminants fall within the state and federal standards to ensure your water is safe to drink.

## Definitions

### Maximum Contaminant Level (MCL)

The highest level of a contaminant that is allowed in drinking water. Primary 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. MCLGs are set by the U.S. Environmental Protection Agency (EPA).

### Primary Drinking Water Standard (PDWS)

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. Public health goals are set by the California Environmental Protection Agency.

### 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.

### Regulatory Action Level (AL)

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 a contaminant in drinking water.

### Variances and Exemptions

Department permission to exceed an MCL or not comply with a treatment technique under certain conditions.

#### Parts per million:

- 3 drops in 42 gallons
- 1 second in 12 days
- 1 penny in \$10,000
- 1 inch in 16 miles

#### Parts per billion:

- 1 drop in 14,000 gallons
- 1 second in 32 years
- 1 penny in \$10 million
- 1 inch in 16,000 miles