



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 2009. 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 U.S. Environmental Protection Agency (USEPA) and the State Department of Public Health (Department) 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* may be found in untreated surface water. It shows up very infrequently, and in low levels, in Southern California's untreated water supply.

The MWDSC tests your water for *Cryptosporidium*. *Cryptosporidium* was not detected in 2009. If it should be detected, *Cryptosporidium* is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

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 the water in 2009, ranged from .26 - .64 parts per million and the average was .42 parts per million.

## Chloramines

Moulton Niguel Water District imports all its water from MWDSC. The imported water supply is treated with chloramines, a combination of chlorine and ammonia, as the drinking water disinfectant. In addition

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.

MNWD treats its stored water with chloramines. 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 2009, the hardness found in your water averaged 280 parts per million or 16 grains per gallon.

## Fluoride

In November 2007, the MWDSC, Moulton Niguel's water supplier, joined a majority of the nation's public water suppliers in adding fluoride to drinking water in order to prevent tooth decay. Previously, low levels of naturally occurring fluoride were present.

In line with recommendations from the California Department of Public Health, as well as the U.S. Centers for Disease Control and Prevention, MWDSC has adjusted the natural fluoride level in the water, which ranges from 0.1 to 0.4 parts per million, to the optimal range for dental health of 0.7 to 0.8 parts per million.

Fluoride levels in drinking water are limited under California state regulations at a maximum concentration of 2 parts per million.

Fluoride has been added to numerous U.S. drinking water supplies since 1945. Of the 50 largest cities in the U.S., 43 fluoridate their drinking water.

For additional information on fluoride, please visit [www.mwdh2o.com](http://www.mwdh2o.com).

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.

# Moulton Niguel Water District Distribution System Water Quality 2009

Disinfection By Product	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (TTHM) (ppb) (a)	80	44.3	29.6 – 66.0	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb) (b)	60	16.9	6.2 – 34.6	No	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	4/4	2.1	0.2 – 3.2	No	Disinfectant Added for Treatment
pH (Units)	N/A	7.8	7.6 – 8.1	No	Byproducts of Chlorine Disinfection

## Aesthetic Quality

	MCL	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Color (Color Units)	15*	<5	ND – <5	No	Erosion of Natural Deposits
Odor (Threshold Odor Number)	3*	0.9	0.5 – 2.0	No	Erosion of Natural Deposits
Turbidity (NTU) (c)	5*	0.13	.06 – .32	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	0.6%	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	4	0 – 62	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	0.21	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

NA	Not Applicable
ND	Not Detected
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)

# 2009 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 2008

Alpha Radiation (pCi/L)	15	(0)	3	5.6	3.8 – 9.3	No	Erosion of Natural Deposits
Beta Radiation (pCi/L) (g)	50	(0)	4	4.3	ND – 6.4	No	Decay of Man-made or Natural Deposits
Uranium (pCi/L)	20	0.42	1	3.3	2.9 – 3.7	No	Erosion of Natural Deposits

## Inorganic Chemicals – Tested in 2009

Aluminum (ppm) (f)	1	0.6	50	0.17	0.10 – 0.23	No	Treatment Process Residue, Natural Deposits
Arsenic (ppb)	10	0.004	2	2.3	ND – 2.6	No	Erosion of Natural Deposits
Barium (ppm)	1	2	100	0.13	0.12 – 0.14	No	Erosion of Natural Deposits
Fluoride (ppm) treatment-related (h)	Control Range 0.7–1.3 ppm	Optimal Level 0.8 ppm	0.1	0.8	0.7 – 0.9	No	Water Additive for Dental Health
Fluoride (ppm) naturally-occurring (h)	2.0	1	0.1	0.3	0.2 – 0.4	No	Erosion of Natural Deposits
Nitrate as NO <sub>3</sub> (ppm) (i)	45	45	0.4	7.5	4.0 – 8.4	No	Agriculture Runoff and Sewage

## Secondary Standards- Tested in 2009

Aluminum (ppb) (f)	200*	600	50	170	100 – 230	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	N/A	N/A	97	89 – 99	No	Runoff or Leaching from Natural Deposits
Color (color units)	15*	N/A	N/A	2	1 – 2	No	Runoff or Leaching from Natural Deposits
Odor (threshold odor number)	3*	N/A	1	2	2	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	N/A	N/A	1,000	880 – 1,100	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	N/A	0.5	240	190 – 250	No	Runoff or Leaching from Natural Deposits
Total Dissolved Solids (ppm)	1,000*	N/A	N/A	610	530 – 640	No	Runoff or Leaching from Natural Deposits
Turbidity (ntu)	5*	N/A	N/A	0.04	0.04 – 0.05	No	Runoff or Leaching from Natural Deposits

## Unregulated Chemicals- Tested in 2009

Alkalinity, total as CaCO <sub>3</sub> (ppm)	Not Regulated	N/A	N/A	120	98 – 120	N/A	Runoff or Leaching from Natural Deposits
Boron (ppb)	Not Regulated	N/A	100	140	120 – 140	N/A	Runoff or Leaching from Natural Deposits
Calcium (ppm)	Not Regulated	N/A	N/A	68	56 – 75	N/A	Runoff or Leaching from Natural Deposits
Corrosivity (Al) (j)	N/A	N/A	N/A	12.2	12.0 – 12.3	N/A	Elemental Balance in Water; Affected by Temperature, Other Factors
Hardness, total as CaCO <sub>3</sub> (ppm)	Not Regulated	N/A	N/A	280	240 – 300	N/A	Runoff or Leaching from Natural Deposits
Hardness, total (grains/Gal)	Not Regulated	N/A	N/A	16	14 – 18	N/A	Runoff or Leaching from Natural Deposits
Magnesium (ppm)	Not Regulated	N/A	N/A	27	23 – 29	N/A	Runoff or Leaching from Natural Deposits
pH (pH units)	Not Regulated	N/A	N/A	7.9	7.8 – 8.0	N/A	Hydrogen Ion Concentration
Potassium (ppm)	Not Regulated	N/A	N/A	4.8	4.3 – 5.1	N/A	Runoff or Leaching from Natural Deposits
Sodium (ppm)	Not Regulated	N/A	N/A	98	86 – 100	N/A	Runoff or Leaching from Natural Deposits
Total Organic Carbon (ppm)	Not Regulated	TT	0.30	2.3	2.0 – 2.6	N/A	Various Natural and Man-made Sources
Vanadium (ppb)	Not Regulated	N/A	3	3.1	ND – 3.4	N/A	Runoff or Leaching from Natural Deposits

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	0.06	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. Twelve locations in the distribution system are tested quarterly for 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.
- 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 and is an indicator of treatment performance. The averages and ranges of turbidity shown in the Secondary Standards were based on the treatment plant effluent.
- 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 from all the treatment plants. In 2009, 8116 samples were analyzed and two samples were positive for total coliforms. The MCL was not violated.
- e. All distribution samples collected had detectable total chlorine residuals and no HPC was required. HPC reporting level is 1 CFU/mL.
- f. Aluminum, copper, MTBE, and thiobencarb have both primary and secondary standards.
- 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.
- h. Metropolitan was in compliance with all provisions of the State's Fluoridation System Requirements.
- i. State MCL is 45 mg/L as nitrate, which is the equivalent of 10 mg/L as N.
- j. AI < 10.0 = Highly aggressive and very corrosive water  
AI > 12.0 = Non-aggressive water  
AI (10.0 - 11.9) = Moderately aggressive water

## Moulton Niguel's Water Quality Data

The tables on the previous pages list all the drinking water contaminants that we detected during the 2009 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, 2009. 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 which a water system must follow.

#### Treatment Technique (TT)

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

#### Variations 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