

Drinking Water Quality

Moulton Niguel Water District 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 2008. 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 Health Services (DHS) are the agencies responsible for establishing drinking water quality standards. To ensure that your water is safe to drink, USEPA and DHS prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. Regulations also establish limits for contaminants in bottled water that must provide the same protection for public health.



June 2009 Moulton Niguel Water



What You Need to Know Sources of Your Drinking Water

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 it travels over the surface of the land or through the ground, it can pick up substances left behind from animals or people, and it dissolves minerals and sometimes radioactive material.

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 & 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.

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 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).

Contaminants that may be present in Colorado River and State Water Project source water before it arrives in Southern California and enters MWDSC's treatment system include:

- Microbial contaminants, such as viruses and bacteria, which may come from wastewater 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, that are byproducts of industrial

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

Precautions for Some to Consider

Some people may be more vulnerable to constituents in the water than the general population. This may be a result of a weakened immune system due to chemotherapy treatment, organ transplantation, HIV/AIDs or other immune system disorders. Even some elderly persons and infants can be particularly at risk of infections. People with these profiles should get additional advice about drinking water from their healthcare 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 2008. If it should be detected, *Cryptosporidium* is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

Guidelines from USEPA and the federal Centers for Disease Control and Prevention to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA Safe Drinking Water Hotline at (800) 426-4791.

Current Water Issues

Total Trihalomethanes (THMs)

THMs are a family of chemicals formed when chlorine is added as a disinfectant. Disinfection is an important and necessary step in the water treatment process to protect against harmful bacteria and other possible contamination and chlorine is the most widely used and approved disinfectant in the United States. Moulton Niguel Water District uses chloramine (a blend of chlorine and ammonia) as a way to reduce the THMs in your water.

Results of a health study released in early 1998 suggest that women who drink five glasses of tap water daily and are in their first three months of pregnancy may have an increased risk of miscarriage from levels of THMs in drinking water. State officials, however, have cautioned that the study is not definitive and have stated that more study on the issue is needed.

Because of concerns about health effects, the THM standard of 100 parts per billion (ppb) was lowered to 80 ppb effective January 2002. *In 2008, Moulton Niguel's THM levels ranged between 36.9–69.4 parts per billion.*

MTBE

This gasoline additive, designed to reduce harmful car emissions, has become a serious contamination problem when underground tanks have leaked into ground water basins, requiring the closure of many drinking water wells. Gasoline-powered watercraft have also contaminated some surface water sources of supply. *In 2007, MTBE was not detected in Moulton Niguel water.*

Arsenic

On February 22, 2002, a new arsenic standard was adopted by the USEPA, setting the allowable level of arsenic in drinking water at 10 ppb. The level was lowered from the previous standard of 50 ppb, in light of new studies linking arsenic in water to bladder, lung and skin cancer, as well as kidney and liver cancer and other nervous and vascular system complications. The new rule requires that all water systems be in compliance by January 23, 2006. *Arsenic found in the water in 2008 ranged from was ND (Not Detected) – 2.4 parts per billion. The average was ND.*

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 USEPA Safe Drinking 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 اطلاعاتیه مهم می باشد. از کسی بخواید که این را به شما ترجمه کند.

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

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

Hotline at (800) 426-4791. *In 2008, lead was not detected in Moulton Niguel water.*

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 2008, the Hardness found in your water averaged 257 parts per million or 15 grains per gallon.*

Fluoride

In November 2007, the MWDC, 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 Health Services, as well as the U.S. Centers for Disease Control and Prevention, MWDC will adjust 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.

In 2008, Moulton Niguel's naturally-occurring fluoride levels averaged 0.2 parts per million. Data for the naturally-occurring fluoride were taken before the fluoridation treatment began in November 2007. MWDC was in compliance with all provision of the State's Fluoridation System Requirements.

For additional information on fluoride, please visit 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.

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 2008

| Parameter | Primary MCL [MRDL] | Average Amount | Range of Detections | MCL/ MRDL Violation? | Typical Source of Contaminant |
|--|--------------------|----------------|---------------------|----------------------|---|
| Total Coliform Bacteria (%) (a) | 5.0 | 0.1 | 0.0 – 0.8 | No | Naturally present in the environment |
| Fecal Coliform/ <i>E.coli</i> (%) (b) | (b) | 0.0 | 0.0 | No | Human and animal fecal waste |
| Total Trihalomethanes (TTHM) (ppb) (c) | 80 | 52.9 | 36.9 – 69.4 | No | By-product of drinking water chlorination |
| Haloacetic Acids (five) (HAA5) (ppb) (d) | 60 | 18.5 | 7.1 – 34.4 | No | By-product of drinking water chlorination |
| Total Chlorine Residual (ppm) | 4.0 | 2.3 | 0.3 – 3.5 | No | Drinking water disinfectant added for treatment |
| Turbidity (NTU) (e) | 5 | 0.15 | 0.07 – 0.52 | No | Soil runoff |
| Color (Units) (e) | 15 | <5 | ND – <5 | No | Naturally occurring organic materials |
| Odor Threshold (Units) (e) | 3 | 0.8 | 0.5 – 2.0 | No | Naturally occurring organic materials |
| pH (Units) | TT | 8.1 | 8.0 – 8.2 | No | |
| Heterotrophic Plate Count (CFU/mL) | TT | 3 | < 1–19 | No | Naturally present in the environment |

Footnotes

- No more than 5.0% of the monthly samples may be total coliform-positive. The MCL was not violated.
- E. coli* MCL: The occurrence of two consecutive total coliform-positive samples, one of which contains *E. coli*, constitutes an acute MCL violation. The MCL was not violated.
- Twelve locations in the distribution system are tested quarterly for total trihalomethanes.
- 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 which has a DLR of 2.0 ppb.
- Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color). Eleven locations are tested weekly for color, odor and turbidity.

Lead and Copper Action 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 | 2 | ND<5 | 0/52 | No | Corrosion of household plumbing |
| Copper (ppm) | 1.3 | 0.17 | 0.26 | 0/52 | 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-two samples were collected in 2006. Neither lead nor copper was detected above the regulatory action level in any sample. A regulatory action level is the concentration of a contaminant that, if exceeded, triggers treatment or other requirements that a water system must follow.

ABBREVIATIONS

| | | | |
|-------|--|---------|--|
| AI | Agressiveness Index | NL | Notification Level |
| AL | Action Level | NTU | Nephelometric Turbidity Units |
| CFU | Colony Forming Units per milliliter | P or ND | Positive or Not Detected |
| DBP | Disinfection By-Products | pCi/L | picoCuries per Liter |
| DLR | Detection Limits for purposes of Reporting | PHG | Public Health Goal |
| MBAS | Methylene Blue Active Substances | ppb | parts per billion or micrograms per liter (µg/L) |
| MCL | Maximum Contaminant Level | ppm | parts per million or milligrams per liter (mg/L) |
| MCLG | Maximum Contaminant Level Goal | ppq | parts per quadrillion or pictograms per liter (pg/L) |
| MFL | Millions Fibers per Liter | ppt | parts per trillion or nanograms per liter (ng/L) |
| MRDL | Maximum Residual Disinfectant Level | RAA | Running Annual Average |
| MRDLG | Maximum Residual Disinfectant Level Goal | SI | Saturation Index (Langelier) |
| N | Nitrogen | TOC | Total Organic Carbon |
| NA | Not Applicable | TON | Threshold Odor Number |
| ND | Not Detected | TT | Treatment Technique |
| | | µS/cm | microSiemen per centimeter; or micromho per centimeter (µmho/cm) |

Metropolitan Water District of Southern California Treated Surface Water

| Parameter | State MCL | PHG or MCLG | State DLR | Average Amount | Range of Detections | MCL Violation? | Typical Source of Contaminant |
|---|-----------|-------------|-----------|----------------|---------------------|----------------|---|
| PRIMARY STANDARDS – Mandatory Health-Related Standards | | | | | | | |
| <u>Semi-Volatile Organic Compounds</u> | | | | | | | |
| Acrylamide | TT | (0) | NA | TT | TT | No | Water treatment chemical impurities |
| Epichlorohydrin | TT | (0) | NA | TT | TT | No | Water treatment chemical impurities |
| <u>Inorganic Chemicals</u> | | | | | | | |
| Aluminum (ppb) (e) | 1000 | 600 | 50 | 164 | 78 – 280 | No | Residue from water treatment process; natural deposits erosion |
| Arsenic (ppb) | 10 | 0.004 | 2 | 2.4 | ND – 29 | No | Natural deposits erosion; glass and electronics production wastes |
| Barium (ppb) | 1000 | 2000 | 100 | 117 | 111 – 123 | No | Oil and metal refineries discharge; natural deposits erosion |
| Fluoride (ppm) (i) (Naturally-occurring) | 2 | 1 | 0.1 | 0.2 | 0.1 – 0.2 | No | Erosion of natural deposits; discharge from fertilizer and aluminum factories |
| Fluoride (ppm) (i) (Treatment-related) | 2 | 1 | 0.1 | 0.8 | 0.6 – 0.9 | No | Water additive for dental health |
| Nitrate (as N) (ppm) (j) | 10 | 10 | 0.4 | 0.5 | ND – 0.6 | No | Runoff and leaching from fertilizer use; septic tank and sewage; natural deposits erosion |
| <u>Radiologicals (d)</u> | | | | | | | |
| 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) (l) | 50 | (0) | 4 | 4.3 | ND – 6.4 | No | Decay of man-made and natural deposits |
| SECONDARY STANDARDS – Aesthetic Standards | | | | | | | |
| Aluminum (ppb) (h) | 200 | 600 | 50 | 164 | 78 – 280 | No | Residue from water treatment process; natural deposits erosion |
| Chloride (ppm) | 500 | NA | NA | 96 | 92 – 103 | No | Runoff /leaching from natural deposits; seawater influence |
| Specific Conductance (µS/cm) | 1600 | NA | NA | 947 | 837 – 1080 | No | Substances that form ions in water; seawater influence |
| Sulfate (ppm) | 500 | NA | 0.5 | 212 | 170 – 272 | No | Runoff/leaching from natural deposits; industrial wastes |
| Total Dissolved Solids (TDS) (ppm) | 1000 | NA | NA | 569 | 505 – 668 | No | Runoff/leaching from natural deposits; seawater influence |
| Turbidity (Monthly) (NTU) (f) | 5 | NA | NA | 0.05 | 0.04 – 0.05 | No | Soil runoff |
| UNREGULATED CHEMICALS REQUIRING MONITORING | | | | | | | |
| Boron (ppb) | NA | NL = 1,000 | 100 | 140 | 130 – 150 | NA | Runoff/leaching from natural deposits; industrial wastes |
| Chromium VI (ppb) (m) | NA | NA | 1 | 0.19 | 0.10 – 0.29 | NA | Industrial waste discharge ; could be naturally present as well |
| Vanadium (ppb) | NA | NL = 50 | 3 | 3.8 | 3.5 – 4.0 | NA | Naturally-occurring; industrial waste discharge |
| ADDITIONAL PARAMETERS | | | | | | | |
| <u>Federal Regulated Contaminants with No MCLs (h)</u> | | | | | | | |
| <u>List 1 – Assessment Monitoring</u> | | | | | | | |
| Perchlorate (ppb) (k) | 6 | 6 | 4 | ND | ND | NA | Industrial waste discharge |
| <u>Other Parameters</u> | | | | | | | |
| Alkalinity (ppm) | NA | NA | NA | 110 | 100 – 121 | NA | |
| Calcium (ppm) | NA | NA | NA | 61 | 55– 72 | NA | |
| Chlorate (ppb) | NA | NL = 800 | 20 | 48 | 24 – 58 | NA | By-product of drinking water chlorination; industrial processes |
| Corrosivity (Al) (n) | NA | NA | NA | 12.3 | 12.2 – 12.4 | NA | Elemental balance in water; affected by temperature, other factors |
| Corrosivity (SI) (o) | NA | NA | NA | 0.46 | 0.38 – 0.50 | NA | Elemental balance in water; affected by temperature, other factors |
| Hardness (ppm) | NA | NA | NA | 257 | 226 – 300 | NA | |
| HPC (CFU/mL) (g) | TT | NA | NA | ND | ND – 2 | NA | Naturally present in the environment |
| Magnesium (ppm) | NA | NA | NA | 25 | 22 – 29 | NA | |
| N-Nitrosodimethylamine (NDMA) (ppt) (p) | NA | 3 | 2 | ND – 2.7 | ND | NA | By-product of drinking water chloramination; industrial processes |
| Potassium (ppm) | NA | NA | NA | 4.5 | 4.1 – 4.9 | NA | |
| Sodium (ppm) | NA | NA | NA | 94 | 85 – 106 | NA | |
| Total Organic Carbon (TOC) (ppm) | TT | NA | 0.30 | 2.3 | 1.9 – 2.5 | NA | Various natural and man-made sources |

| Turbidity- Combined Filter Effluent | State MCL | Turbidity Measurements | TT Violation? | Typical Source of Contaminant |
|---|-----------|------------------------|---------------|-------------------------------|
| 1) Highest single turbidity measurement (NTU) | 0.3 | 0.05 | No | Soil runoff |
| 2) Percentage of samples less than 0.3 NTU | 95%(p) | 100 | No | Soil runoff |

Footnotes

- a) No more than 5.0% of the monthly samples may be total coliform-positive. The MCL was not violated.
- b) *E. coli* MCL: The occurrence of two consecutive total coliform-positive samples, one of which contains *E. coli*, constitutes an acute MCL violation. The MCL was not violated.
- c) Twelve locations in the distribution system are tested quarterly for total trihalomethanes.
- d) 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 which has a DLR of 2.0 ppb.
- e) Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color). Eleven locations are tested weekly for color, odor and turbidity.
- f) 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.
- g) All distribution samples collected had detectable total chlorine residuals and no HPC was required. HPC reporting level is 1 CFU/mL.
- h) Aluminum, copper, MTBE, and thiobencarb have both primary and secondary standards.
- i) Metropolitan was in compliance with all provisions of the State's Fluoridation System Requirements.
- j) State MCL is 45 mg/L as nitrate, which is the equivalent of 10 mg/L as N.
- k) Perchlorate reporting level is 2 ppb.
- l) 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.
- m) Chromium VI reporting level is 0.03 ppb.
- n) AI < 10.0 = Highly aggressive and very corrosive water
AI > 12.0 = Non-aggressive water
AI (10.0 - 11.9) = Moderately aggressive water
- o) Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes Negative SI index = corrosive; tendency to dissolve calcium carbonate
- p) Analysis conducted by Metropolitan Water Quality Laboratory using Standard Methods 6450B.

Moulton Niguel's Water Quality Data

The tables on the following pages list all the drinking water contaminants that we detected during the 2008 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, 2008. 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).

Maximum Residual Disinfectant Level (MRDL)

The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.

Maximum Residual Disinfectant Level Goal (MRDLG)

The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLs are set by the U.S. 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.

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.

Variance

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

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:

- 💧 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