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 2008 water quality testing, and has been prepared in compliance with regulations called for in the 1996 reauthorization of the Safe Drinking Water Act. The re-authorization charged the United States Environmental Protection Agency (USEPA) with updating and strengthening the tap water regulatory program.

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, the City goes beyond what is required by testing for unregulated contaminants that may have known health risks.

What You Need to Know About Your Water, 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.

Basic Information About Drinking Water Contaminants

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 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 animal and human activity. 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, agricultural application and septic systems.

In order to ensure that tap water is safe to drink, USEPA and the California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. 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’s Safe Drinking Water Hotline at [800] 426-4791.

This report contains important information about your drinking water. Translate it, or speak with someone who understands it.

Microbial contaminants, such as viruses and bacteria, which may...

Drinking Water Contaminants
Basic Information About Sources of Supply

The report may be accessed through its web site at www.irwd.com. are the Colorado River and the State Water Project, which draws of the total water source. Metropolitan's imported water sources City of San Clemente. The ground water represents 5 to 8 percent of people in Orange County.

Contaminants that may be present in source water include:
- Radioactive contaminants, which can be...
- Inorganic contaminants, such as salts and...
- Organic contaminants, which may come from a variety of sources such as agriculture, uses.

Radioactive contaminants, which can be...

Inorganic contaminants, such as salts and...

Organic contaminants, which may come from a variety of sources such as agriculture, uses.

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 tested their source water and treated surface water for Cryptosporidium in 2008 but did not detect it. If it ever is detected, Cryptosporidium is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

The USEPA 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 USEPA'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).

Immuo-Compromised People

Some people may be more vulnerable to contaminants in drinking 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 from infections. These people should seek advice about drinking water from their health care providers.

Lead

Infants and young children are typically 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 elevated lead levels in your home's water, you may wish to have your water tested; you could also flush your tap for 30 seconds to 2 minutes before using tap water. Additional information is available from the USEPA Safe Drinking Water Hotline [800] 426-4791.

Please share this information with all the other people who drink this water, especially those who may not have received this notice directly (for example, people in apartments, nursing homes, schools, and businesses).

You can do this by posting this notice in a public place or distributing copies by hand or mail.

Imported water — from the Colorado River and northern California — travels hundreds of miles, across deserts and mountains, to meet the needs of Orange County. Water is also pumped from local groundwater basins, then treated and sent to homes and businesses.

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. Our local water is not supplemented with fluoride. 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.


For more information about Metropolitan’s fluoridation program, please contact Edgar G. Dymally at [213] 217-5709 or at eddaly@mwth2o.com.

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 U.S. Environmental Protection Agency hotline at [800] 426-4791.

For further information about the City, please visit our website: http://san-clemente.org
Disinfection and Disinfection Byproducts

Disinfection of drinking water was one of the major public health advances in the 20th century. Disinfection was a major factor in reducing water-borne disease epidemics caused by pathogenic bacteria and viruses, and it remains an essential part of drinking water treatment today.

Chlorine disinfection has almost completely eliminated from our lives the risks of microbial water-borne diseases. Chlorine is added to your drinking water at the source of supply (groundwater well or surface water treatment plant). Enough chlorine is added so that it does not completely dissipate through the distribution system pipes. This "residual" chlorine helps to prevent the growth of bacteria in the pipes that carry drinking water from the source into your home.

However, chlorine can react with naturally-occurring materials in the water to form unintended chemical byproducts, called disinfection byproducts (DBPs), which may pose health risks. A major challenge is how to balance the risks from microbial pathogens and DBPs. It is important to provide protection from these microbial pathogens while simultaneously ensuring decreasing health risks from disinfection byproducts. The Safe Drinking Water Act requires the USEPA to develop rules to achieve these goals.

**2008 CITY OF SAN CLEMENTE | GROUNDWATER QUALITY**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>MCL (MRDL/MRDLG)</th>
<th>Average Amount</th>
<th>Range of Detections</th>
<th>MCL Violation?</th>
<th>Most Recent Sampling Date</th>
<th>Typical Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>RADIOLOGICALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Combined Radium (pCi/L)</td>
<td>6</td>
<td>0</td>
<td>1.2</td>
<td>0.9 - 1.4</td>
<td>2007</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td><strong>INORGANIC CHEMICALS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fluoride (ppm)</td>
<td>2</td>
<td>1</td>
<td>0.4</td>
<td>0.1 - 0.7</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Nitrate (ppm as N)</td>
<td>45</td>
<td>45</td>
<td>5.8</td>
<td>5.8</td>
<td>2008</td>
<td>Fertilizers, Septic Tanks</td>
</tr>
<tr>
<td><strong>SECONDARY STANDARDS</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Chloride (ppm)</td>
<td>500</td>
<td>*</td>
<td>90</td>
<td>78 - 95</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td><strong>UNREGULATED CONTAMINANTS REQUIRING MONITORING</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bicarbonate (ppm)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>180</td>
<td>172 - 188</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Calcium (ppm)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>43</td>
<td>41 - 44</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Magnesium (ppm)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>25</td>
<td>24 - 26</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>pH (pH units)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>7.4</td>
<td>7.3 - 7.6</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Potassium (ppm)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>4.5</td>
<td>4.5</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Sodium (ppm)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>52</td>
<td>42 - 83</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td><strong>AESTHETIC QUALITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Color (color units)</td>
<td>15*</td>
<td>n/a</td>
<td>1</td>
<td>1</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Odor (threshold odor number)</td>
<td>3*</td>
<td>n/a</td>
<td>1</td>
<td>1</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Turbidity (NTU)</td>
<td>5*</td>
<td>n/a</td>
<td>0.2</td>
<td>0.1 - 1.0</td>
<td>2008</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td><strong>SOURCE WATER ASSESSMENTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
</tbody>
</table>

Imported (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.

**2008 CITY OF SAN CLEMENTE | DISTRIBUTION SYSTEM WATER QUALITY**

<table>
<thead>
<tr>
<th>Parameter</th>
<th>MCL (MRDL/MDL)</th>
<th>Average Amount</th>
<th>Range of Detections</th>
<th>MCL Violation?</th>
<th>Typical Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>DISINFECTION BYPRODUCTS</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Trihalomethanes (ppb)</td>
<td>60</td>
<td>60</td>
<td>48.6 - 151</td>
<td>No</td>
<td>Byproducts of Chlorine Disinfection</td>
</tr>
<tr>
<td>Haloacetic Acids (ppb)</td>
<td>60</td>
<td>60</td>
<td>21</td>
<td>21</td>
<td>No</td>
</tr>
<tr>
<td>Chlorine Residual (ppm)</td>
<td>4/4</td>
<td>1.7</td>
<td>0.2 - 2.2</td>
<td>No</td>
<td>Disinfectant Added for Treatment</td>
</tr>
<tr>
<td><strong>BACTERIAL QUALITY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total Coliform Bacteria</td>
<td>5%</td>
<td>0</td>
<td>1.3%</td>
<td>No</td>
<td>Naturally Present in the Environment</td>
</tr>
</tbody>
</table>

No more than 5% of the monthly samples may be positive for total coliform bacteria. The occurrence of 2 consecutive total coliform positive samples, one of which contains fecal coliform, constitutes an acute MCL violation.

<table>
<thead>
<tr>
<th>Action Level (AL)</th>
<th>Health Goal</th>
<th>90th Percentile Value</th>
<th>Sites Exceeding AL</th>
<th>Number of Sites</th>
<th>MCL Violation?</th>
<th>Typical Source of Contaminant</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (ppb)</td>
<td>5</td>
<td>2</td>
<td>ND</td>
<td>0 / 30</td>
<td>No</td>
<td>Corrosion of Household Plumbing</td>
</tr>
<tr>
<td>Copper (ppb)</td>
<td>1.3</td>
<td>0.2</td>
<td>ND</td>
<td>0 / 30</td>
<td>No</td>
<td>Corrosion of Household Plumbing</td>
</tr>
</tbody>
</table>

In 2007, 30 residences were tested for lead and copper at the tap. Lead was detected in 1 of the samples. Copper was detected in all 30 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 that a water system must follow.
WHAT ARE WATER QUALITY STANDARDS?

Drinking water standards established by USEPA and CDPH set limits for substances that may affect consumer health or aesthetic qualities of drinking water. The chart in this report shows the following types of water quality standards:

- **Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs (or MCLGs) as is economically and technologically feasible.
- **Maximum Residual Disinfectant Level (MRDL):** The level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
- **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.
- **Regulatory Action Level (AL):** The level of a contaminant, which, if exceeded, triggers treatment or other requirements that a water system must follow.

What is a Water Quality Goal?

In addition to mandatory water quality standards, USEPA and CDPH have set voluntary water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice and are not directly measurable. Nevertheless, these goals provide useful guideposts and direction for water management practices. The chart in this report includes three types of water quality goals:

- **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 USEPA.
- **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. MRDLGs are set by USEPA.
- **Public Health Goal (PHG):** The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Want Additional Information?

There’s a wealth of information on the internet about Drinking Water Quality and water issues in general. Some good sites — both local and national — to begin your own research are:

- **City of San Clemente** | http://san-clemente.org
- **Municipal Water District of Orange County** | www.mwdoc.com
- **Orange County Water District** | www.ocwd.com
- **Metropolitan Water District of Southern California** | www.mwdh2o.com
- **California Department of Public Health, Division of Drinking Water and Environmental Management** | www.cdph.ca.gov/certlic/drinkingwater
- **U.S. Environmental Protection Agency** | www.epa.gov/safewater/

Residents of San Clemente that are provided water service by the Santa Margarita Water District or South Coast Water District will receive a separate Water Quality Report from the water agency providing service.

HOW ARE CONTAMINANTS MEASURED?

Water is sampled and tested throughout the year. Contaminants are measured in:

- parts per million (ppm) or milligrams per liter (mg/l)
- parts per billion (ppb) or micrograms per liter (μg/l)
- parts per trillion (ppt) or nanograms per liter (ng/l)

If this is difficult to imagine, think about these comparisons:

<table>
<thead>
<tr>
<th>Parts per million (ppm or mg/L)</th>
<th>Parts per billion (ppb or μg/L)</th>
<th>Parts per trillion (ppt or ng/L)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3 drops in 42 gallons</td>
<td>3 drops in 14,000 gallons</td>
<td>10 drops in a Rose Bowl-sized pool</td>
</tr>
<tr>
<td>1 second in 12 days</td>
<td>1 second in 32 years</td>
<td>1 second in 32,000 years</td>
</tr>
<tr>
<td>1 inch in 16 miles</td>
<td>1 inch in 16,000 miles</td>
<td>1 inch in 16 million miles</td>
</tr>
</tbody>
</table>

CITY OF SAN CLEMENTE | UTILITIES DIVISION
380 Avenida Pico, San Clemente, California 92672
http://san-clemente.org