2003 Water Quality Report

City of San Clemente
Utilities Division
380 Ave Pico
San Clemente, California 92672
The 2003 Water Quality Report

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 2002 water quality testing, and has been prepared in compliance with new regulations called for in the 1996 reauthorization of the Safe Drinking Water Act. The reauthorization charged the United States Environmental Protection Agency (EPA) with updating and strengthening the tap water regulatory program and changed the report’s due date to July 1.

EPA and the California Department of Health Services (DHS) are the agencies responsible for establishing drinking water quality standards. To ensure that your tap water is safe to drink, EPA and DHS prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. DHS regulations also establish limits for contaminants in bottled water that must provide the same protection for public health. The federal Food and Drug Administration (FDA) also sets regulations for bottled water.

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, your local utility goes beyond what is required to monitor for additional contaminants that have known health risks.

Unregulated contaminant monitoring helps EPA determine where certain contaminants occur and whether it needs to establish regulations for those contaminants.

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 Environmental Protection Agency hotline at (800) 426-4791.
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.

Government Regulations of Potential Contaminants
Drinking water, including bottled water, may be reasonably expected to contain at least small amounts of some contaminants. As water travels over the surface of the 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 human or animal activity. For most people, the presence of contaminants does not necessarily mean water may be a health risk.

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 and septic systems.

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, which did not detect it in the water, tested your surface water for Cryptosporidium in 2002. If it ever is detected, Cryptosporidium is eliminated by an effective treatment combination including sedimentation, filtration and disinfection.

The EPA 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 EPA’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).

Immuno-compromised people
Some people may be more vulnerable to constituents in the 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 of infections. These people should seek advice about drinking water from their healthcare providers.

**Trihalomethanes and Disinfection**

Trihalomethanes (THMs) are chemical byproducts of disinfecting drinking water. THMs are a group of four chemicals that are formed when chlorine reacts with naturally occurring organic and inorganic matter in water. The trihalomethanes are chloroform, bromodichloromethane, dibromochloromethane, and bromoform.

Chlorine disinfection has almost completely eliminated from our lives the risks of microbial waterborne diseases such as typhoid fever, cholera, and dysentery. However, the health benefit of chlorination has introduced some possible risks from THMs. Some scientific studies have linked THMs to increased risk of cancer. Other studies have linked THMs to reproductive problems, including miscarriage. A California study released in 1998 found an increase in miscarriage rate for women who drank 5 or more glasses of cold water containing more than 75 parts-per-billion total THMs. State and federal officials have cautioned that this study in not definitive and further investigation is now underway.

The maximum amount of total THMs allowed in drinking water is regulated by the U.S. EPA, which set a maximum annual average limit in drinking water of 100 parts per billion in 1979. Effective in January 2002, the Stage 1 Disinfectants / Disinfection Byproducts Rule revises the total THM maximum annual average level at 80 parts per billion. Your drinking water complies with the Stage 1 Disinfectants / Disinfection Byproducts Rule (see the average THM value in the accompanying table). EPA is currently crafting a Stage 2 regulation that will further reduce allowable levels in drinking water.

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

**Import (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.
Requirements which a water system must follow.

Every three years, 30 residences are tested for lead and copper at-the-tap. The most recent set of samples was collected in 2001. Lead was not detected in any of the samples. Copper was detected in 10 of the 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 which a water system must follow.

The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Maximum Contaminant Level (MCL)
The highest level of a contaminant that is allowed in drinking water. 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. Maximum contaminant level goals are set by the EPA.

Action Levels (AL)
Health-based advisory levels established by the State Department of Health Services for chemicals that lack MCLs.

Primary Drinking Water Standard (PDWS)
MCL's for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Regulatory Action Level
The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

Variances
State or EPA permission not to meet an MCL or a treatment technique that is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.

Variance
State or EPA permission not to meet an MCL or a treatment technique that is economically and technologically feasible. Secondary MCLs are set to protect the odor, taste and appearance of drinking water.

Treatment Technique (TT)
A required process intended to reduce the level of a contaminant in drinking water.

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 billion (µg/L) = 1 microgram per liter
- Parts per trillion (ppt) = 1 picogram per liter
- Parts per quadrillion (ppq) = 1 femtogram per liter

It is important to note, however, that even a small concentration of certain contaminants can adversely affect a water supply.

City of San Clemente Groundwater Quality

### Unregulated Contaminants Requiring Monitoring

**Chemical** | **MCL** | **PHG (MCLG)** | **Average Amount** | **Range of Detections** | **MCL Violation?** | **Most Recent Sampling Date** | **Typical Source of Contaminant**
--- | --- | --- | --- | --- | --- | --- | ---
Alpha Radiation (pCi/L) | 15 | n/a | 1.2 | 0.5 – 1.9 | No | 1999 | Erosion of Natural Deposits
Uranium (pCi/L) | 20 | 0.5 | 4.5 | 4.5 | No | 1999 | Erosion of Natural Deposits

**Inorganic Chemicals**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>MCL</th>
<th>PHG (MCLG)</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>Fluoride (ppm)</td>
<td>2</td>
<td>1</td>
<td>0.41</td>
<td>0.40 – 0.42</td>
<td>No</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Nitrate (ppm as N)</td>
<td>10</td>
<td>10</td>
<td>3.1</td>
<td>2.8 – 3.6</td>
<td>No</td>
<td>2002</td>
<td>Fertilizers, Septic Tanks</td>
</tr>
<tr>
<td>Nitrate + Nitrite (ppm as N)</td>
<td>10</td>
<td>10</td>
<td>3.1</td>
<td>2.8 – 3.6</td>
<td>No</td>
<td>2002</td>
<td>Fertilizers, Septic Tanks</td>
</tr>
</tbody>
</table>

**Secondary Standards***

<table>
<thead>
<tr>
<th>Chemical</th>
<th>MCL</th>
<th>PHG (MCLG)</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>Chloride (ppm)</td>
<td>500*</td>
<td>n/a</td>
<td>101</td>
<td>74 – 144</td>
<td>No</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Iron (ppb)</td>
<td>300*</td>
<td>n/a</td>
<td>&lt;100</td>
<td>ND – 150</td>
<td>No</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Manganese (ppb)</td>
<td>50*</td>
<td>n/a</td>
<td>&lt;20</td>
<td>ND – 36</td>
<td>No</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Specific Conductance (µmho/cm)</td>
<td>1,600*</td>
<td>n/a</td>
<td>872</td>
<td>754 – 990</td>
<td>No</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Sulfate (ppm)</td>
<td>500*</td>
<td>n/a</td>
<td>116</td>
<td>70 – 153</td>
<td>No</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Total Dissolved Solids (ppm)</td>
<td>1,000*</td>
<td>n/a</td>
<td>580</td>
<td>460 – 740</td>
<td>No</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Zinc (ppb)</td>
<td>500*</td>
<td>n/a</td>
<td>0.065</td>
<td>0.054 – 0.076</td>
<td>No</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
</tbody>
</table>

**Unregulated Contaminants Requiring Monitoring**

<table>
<thead>
<tr>
<th>Chemical</th>
<th>MCL</th>
<th>PHG (MCLG)</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>Alkalinity (ppm as CaCO₃)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>170</td>
<td>160 – 180</td>
<td>n/a</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Boron (ppm)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>0.18</td>
<td>0.18</td>
<td>n/a</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Calcium (ppm)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>62</td>
<td>40 – 83</td>
<td>n/a</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Magnesium (ppm)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>29</td>
<td>24 – 34</td>
<td>n/a</td>
<td>2002</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>3.7 – 5.2</td>
<td>n/a</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Sodium (ppm)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>85</td>
<td>83 – 86</td>
<td>n/a</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Total Hardness (ppm as CaCO₃)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>252</td>
<td>192 – 347</td>
<td>n/a</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
<tr>
<td>Total Hardness (grains/gal.)</td>
<td>Not Regulated</td>
<td>n/a</td>
<td>15</td>
<td>11 – 20</td>
<td>n/a</td>
<td>2002</td>
<td>Erosion of Natural Deposits</td>
</tr>
</tbody>
</table>

### Lead and Copper Action Levels at Residential Taps

<table>
<thead>
<tr>
<th>Chemical</th>
<th>Action Level (AL)</th>
<th>Health Goal</th>
<th>90th Percentile Value</th>
<th>Sites Exceeding AL / Number of Sites</th>
<th>AL Violation?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lead (ppb)</td>
<td>15</td>
<td>2</td>
<td>&lt;5</td>
<td>0 / 30</td>
<td>No</td>
</tr>
<tr>
<td>Copper (ppb)</td>
<td>1.3</td>
<td>0.17</td>
<td>0.13</td>
<td>0 / 30</td>
<td>No</td>
</tr>
</tbody>
</table>

### Definitions

**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 Contaminant Level (MCL)**
The highest level of a contaminant that is allowed in drinking water. 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. Maximum contaminant level goals are set by the EPA.

**Action Levels (AL)**
Health-based advisory levels established by the State Department of Health Services for chemicals that lack MCLs.

**Primary Drinking Water Standard (PDWS)**
MCL’s for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

**Regulatory Action Level**
The concentration of a contaminant which, if exceeded, triggers treatment or other requirements which a water system must follow.

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

*Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).
**Chemical Properties and Disinfection By-Products**

### Metropolitan Water District of Southern California Treated Surface Water

<table>
<thead>
<tr>
<th>Chemical</th>
<th>MCL (MRDL/MRDLG)</th>
<th>PHG, or (MCLG)</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>Cyanogen Chloride</td>
<td>7.6</td>
<td>5.1 – 11</td>
<td></td>
<td></td>
<td></td>
<td>Formed by the reaction with chlorine disinfectant</td>
</tr>
<tr>
<td>Haloketones</td>
<td>1.7</td>
<td>0.7 – 2.7</td>
<td></td>
<td></td>
<td></td>
<td>Formed by the reaction with chlorine disinfectant</td>
</tr>
<tr>
<td>Chlorine Residual (ppm)</td>
<td>113</td>
<td>78 – 155</td>
<td></td>
<td></td>
<td></td>
<td>Formed by the reaction with chlorine disinfectant</td>
</tr>
<tr>
<td>Total Organic Halogen (ppb)</td>
<td>1.7</td>
<td>0.5 – 2.3</td>
<td></td>
<td></td>
<td></td>
<td>Formed by the reaction with chlorine disinfectant</td>
</tr>
</tbody>
</table>

**Notes:**
- ppm = parts-per-billion; ppb = parts-per-billion; pCi/L = picocuries per liter; NTU = nephelometric turbidity unit; ND = not detected.
- *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).