

2012 WATER QUALITY REPORT



CITY
OF TUSTIN
WATER SERVICES

Your 2012 Water Quality Report

Drinking Water Quality

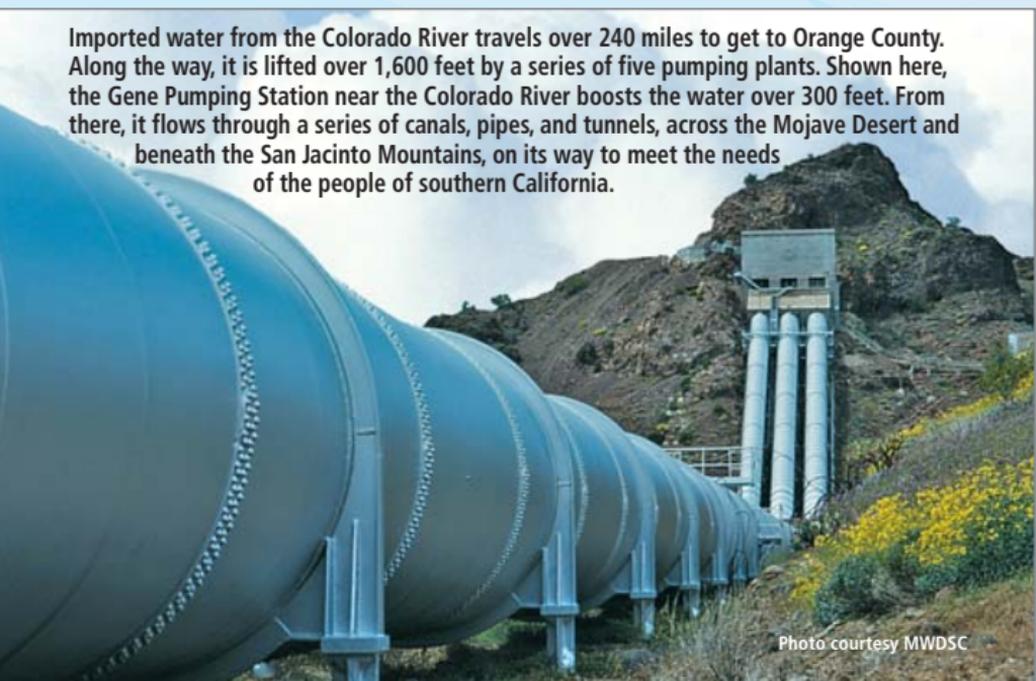
Since 1990, California public water utilities have been providing an annual Water Quality Report to their customers. This year's report covers calendar year 2011 drinking water quality testing and reporting. The City of Tustin Water Services Division (City) vigilantly safeguards its water supply and, as in years past, the water delivered to your home meets the quality standards required by federal and state regulatory agencies. The U.S. Environmental Protection Agency (USEPA) and the California Department of Public Health (CDPH) are the agencies responsible for establishing and enforcing drinking water quality standards.

In some cases, the City goes beyond what is required by testing for unregulated chemicals that may have known health risks but do not have drinking water standards. For example, the Orange County Water District (OCWD), which manages the groundwater basin, and the Metropolitan Water District of Southern California (MWDSC), which supplies imported treated surface water to the City, test for unregulated chemicals in our water supply. Unregulated chemical monitoring helps USEPA and CDPH determine where certain chemicals occur and whether new standards need to be established for those chemicals.

Through drinking water quality testing programs carried out by OCWD for groundwater, MWDSC for treated surface water and the City for the distribution system, your drinking water is constantly monitored from source to tap for regulated and unregulated constituents.

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.

Imported water from the Colorado River travels over 240 miles to get to Orange County. Along the way, it is lifted over 1,600 feet by a series of five pumping plants. Shown here, the Gene Pumping Station near the Colorado River boosts the water over 300 feet. From there, it flows through a series of canals, pipes, and tunnels, across the Mojave Desert and beneath the San Jacinto Mountains, on its way to meet the needs of the people of southern California.



What You Need to Know About Your Water, and How it May Affect You

Sources of Supply

Orange County's water supplies are a blend of groundwater provided by OCWD and water imported from Northern California and the Colorado River by the Municipal Water District of Orange County (MWDOC) via MWDCS. Groundwater comes from a natural underground aquifer that is replenished with water from the Santa Ana River, local rainfall and imported water. The groundwater basin is 350 square miles and lies beneath north and central Orange County from Irvine to the Los Angeles County border and from Yorba Linda to the Pacific Ocean. More than 20 cities and retail water districts draw from the basin to provide water to homes and businesses.

Orange County's Water Future

For years, Orange County has enjoyed an abundant, seemingly endless supply of high-quality water. However, as water demand continues to increase statewide, we must be even more conscientious about our water supply and maximize the efficient use of this precious natural resource.

OCWD and MWDOC work cooperatively to evaluate new and innovative water management and supply development programs, including water reuse and recycling, wetlands expansion, recharge facility construction, ocean and brackish water desalination, surface storage and water use efficiency programs. These efforts are helping to enhance long-term countywide water reliability and water quality.

A healthy water future for Orange County rests on finding and developing new water supplies, as well as protecting and improving the quality of the water that we have today. Your local and regional water agencies are



Questions about your water?

Contact us for answers.

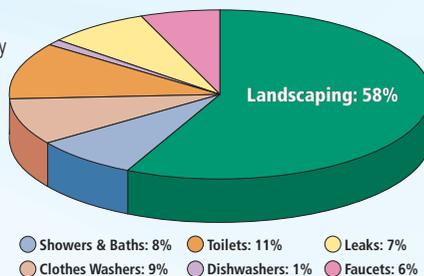
For information about this report, or your water quality in general, please contact Art Valenzuela at (714) 573-3382. The Tustin City Council meets the first and third Tuesdays of every month at 7:00 pm in the City Council Chambers, 300 Centennial Way, Tustin, California. Please feel free to participate in these meetings.

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

How Residential Water is Used in Orange County

Outdoor watering of lawns and gardens makes up approximately 60% of home water use. By cutting your outdoor watering by 1 or 2 days a week, you can dramatically reduce your overall water use.

Visit www.bewaterwise.com for water saving tips and ideas for your home and business.



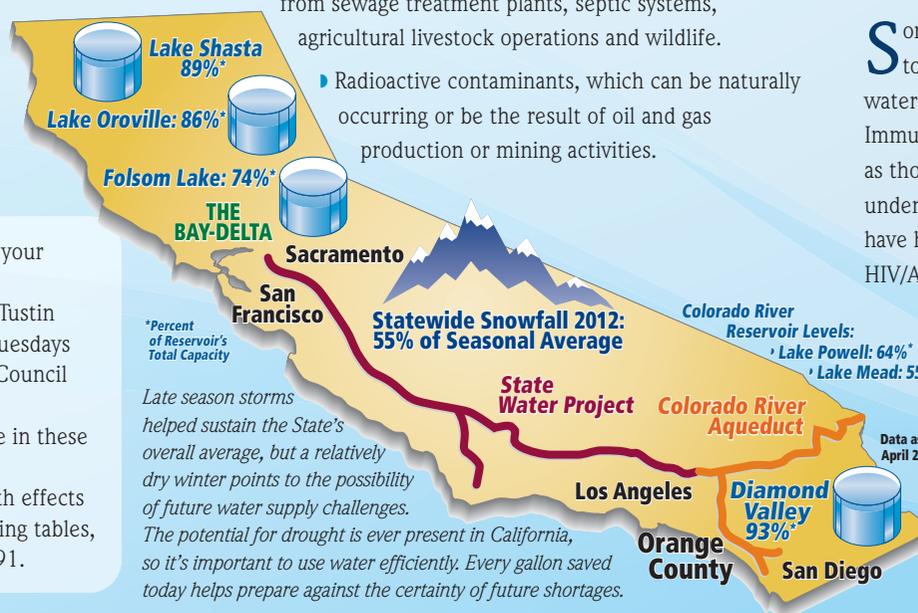
committed to making the necessary investments today in new water management projects to ensure an abundant and high-quality water supply for our future.

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.
- ▶ Radioactive contaminants, which can be naturally occurring or be the result of oil and gas production or mining activities.



- ▶ 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.
- ▶ Pesticides and herbicides, which 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, which are by-products of industrial processes and petroleum production, and can also come from gasoline stations, urban stormwater runoff, agricultural application and septic systems.



In order to ensure that tap water is safe to drink, USEPA and the 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.

Immuno-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.

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 10 a.m. and 4 p.m. Eastern Time (7 a.m. to 1 p.m. in California).



The Quality of Your Water is Our Primary Concern

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, MWDSC 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, MWDSC 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

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

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)

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 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.
- **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.

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:

U.S. Centers for Disease Control and Prevention

1-800-232-4636

www.cdc.gov/fluoridation/

American Water Works Association

www.awwa.org

California Department of Public Health

www.cdph.ca.gov/certlic/drinkingwater/Pages/Fluoridation.aspx

For more information about MWDSC's fluoridation program, please contact Edgar G. Dymally at (213) 217-5709 or at edymally@mwdh2o.com.

About Lead in Tap Water

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. The City 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,



2011 City of Tustin Drinking Water Quality Local Groundwater and Metropolitan Water District Treated Surface Water

Chemical	MCL	PHG (MCLG)	Avg. Groundwater Amount	Avg. Imported MWD Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Radiologicals – Tested in 2009 and 2011							
Alpha Radiation (pCi/L)	15	(0)	ND	3	ND – 3	No	Erosion of Natural Deposits
Beta Radiation (pCi/L)	50	(0)	NR	<4	ND – 4	No	Decay of Man-made or Natural Deposits
Uranium (pCi/L)	20	0.43	2.0	2	ND – 4.4	No	Erosion of Natural Deposits
Inorganic Chemicals – Tested in 2010 and 2011							
Aluminum (ppm)	1	0.6	ND	0.14	ND – 0.24	No	Treatment Process Residue, Natural Deposits
Arsenic (ppb)	10	0.004	<2	ND	ND – 2.7	No	Erosion of Natural Deposits
Fluoride (ppm) treatment-related*	Control Range 0.7 – 1.3 ppm Optimal Level 0.8 ppm		NR	0.8	0.5 – 1.0	No	Erosion of Natural Deposits
Fluoride (ppm)	2	1	0.14	NR	ND – 0.21	No	Erosion of Natural Deposits
Nitrate (ppm as NO ₃)	45	45	22	<2	15 – 36	No	Fertilizers, Septic Tanks
Nitrate+Nitrite (ppm as N)	10	10	4.9	<0.4	3.3 – 8.2	No	Fertilizers, Septic Tanks
Perchlorate (ppb)	6	6	<4	ND	ND – 8.1	No	Industrial Waste Discharge
Selenium (ppb)	50	30	<5	ND	ND – 11	No	Erosion of Natural Deposits
Secondary Standards* – Tested in 2010 and 2011							
Aluminum (ppb)	200*	600	ND	140	ND – 240	No	Treatment Process Residue, Natural Deposits
Chloride (ppm)	500*	n/a	130	72	54 – 320	No	Erosion of Natural Deposits
Color (color units)	15*	n/a	ND	1	ND – 1	No	Erosion of Natural Deposits
Odor (threshold odor number)	3*	n/a	ND	2	ND – 2	No	Naturally-occurring Organic Materials
Specific Conductance (µmho/cm)	1,600*	n/a	1,100	690	320 – 2,100	No	Substances that Form Ions in Water
Sulfate (ppm)	500*	n/a	160	160	81 – 280	No	Erosion of Natural Deposits
Total Dissolved Solids (ppm)	1,000*	n/a	670	470	370 – 1,300	No	Erosion of Natural Deposits
Turbidity (ntu)	5*	n/a	0.21	0.05	ND – 0.70	No	Erosion of Natural Deposits
Unregulated Contaminants Requiring Monitoring – Tested in 2010 and 2011							
Alkalinity, total (ppm as CaCO ₃)	Not Regulated	n/a	190	90	48 – 260	n/a	Erosion of Natural Deposits
Boron (ppb)	Not Regulated	n/a	100	130	ND – 210	n/a	Erosion of Natural Deposits
Calcium (ppm)	Not Regulated	n/a	110	51	39 – 220	n/a	Erosion of Natural Deposits
Hardness, total (ppm as CaCO ₃)	Not Regulated	n/a	380	190	57 – 810	n/a	Erosion of Natural Deposits
Magnesium (ppm)	Not Regulated	n/a	27	20	4.8 – 65	n/a	Erosion of Natural Deposits
pH (pH units)	Not Regulated	n/a	7.7	8.0	7.0 – 8.6	n/a	Acidity, Hydrogen Ions
Potassium (ppm)	Not Regulated	n/a	2.3	3.8	1.7 – 4.0	n/a	Erosion of Natural Deposits
Sodium (ppm)	Not Regulated	n/a	87	72	50 – 160	n/a	Erosion of Natural Deposits
Total Organic Carbon (ppm)	Not Regulated	TT	<0.3	2.4	ND – 3.0	n/a	Runoff or Leaching from Natural Deposits
Vanadium (ppb)	Not Regulated	n/a	3.7	ND	ND – 6.5	n/a	Erosion of Natural Deposits

ppb = parts-per-billion; ppm = parts-per-million; pCi/L = picoCuries per liter; ntu = nephelometric turbidity units; µmho/cm = micromhos per centimeter; NR = Not Required to be analyzed; 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; NL = Notification Level; n/a = not applicable; TT = treatment technique *Contaminant is regulated by a secondary standard.

Turbidity – combined filter effluent Metropolitan Water District Diemer Filtration Plant	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.

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 (800) 426-4791, or on the web at www.epa.gov/safewater/lead.

Nitrate Advisory

At times, nitrate in your tap water may have exceeded one-half the MCL, but it was never greater than the MCL of 45 milligrams per liter (mg/L). Nitrate in your drinking water in 2011 ranged from 15 mg/L to 36 mg/L. The following advisory is issued because in 2011 we recorded nitrate measurements in the drinking water supply which exceeded one-half the nitrate MCL.

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.

Entrained Air

If your tap water has a slightly "milky" appearance, you're probably experiencing an interesting but harmless phenomenon known as "entrained air." The milky color in the water caused by tiny air bubbles is harmless and is related to the operation of City wells. The air is dissolved under pressure in the groundwater, much like carbon dioxide in a bottle of soda. If your tap water is milky-colored and you want to confirm you are experiencing entrained air, rinse out a clear glass twice and then fill it with cold tap water. After a few moments, the water should begin to clear from the bottom of the glass to the top as the bubbles rise to the surface. If the water does not clear, please contact us.

Source Water Assessments

Imported (MWDSC) Water Assessment

Every five years, MWDSC is required by CDPH to examine possible sources of drinking water contamination in its State Water Project and Colorado River source waters.

MWDSC has submitted to CDPH its 2010 updates to the Watershed Sanitary Surveys for the Colorado River and State Water Project, which include suggestions for how to better protect these source waters. Both source waters are exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires, and other watershed-related factors that could affect water quality.

Water from the Colorado River is considered to be most vulnerable to contamination from recreation, urban/stormwater runoff, increasing urbanization in the watershed, and wastewater. Water supplies from Northern California's State Water Project are most vulnerable to contamination from urban/stormwater runoff, wildlife, agriculture, recreation, and wastewater.

USEPA also requires MWDSC to complete one Source Water Assessment (SWA) that utilizes information collected in the watershed sanitary surveys. MWDSC completed its SWA in December 2002. The SWA is used to evaluate the vulnerability of water sources to contamination and helps determine whether more protective measures are needed.

A copy of the most recent summary of either Watershed Sanitary Survey or the SWA can be obtained by calling MWDSC at (213) 217-6850.

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 Tustin: www.tustinca.org • **Municipal Water District of Orange County:** www.mwdoc.com

Orange County Water District: www.ocwd.com • **Water Education Foundation:** www.watereducation.org

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/

California Department of Water Resources: www.water.ca.gov

Water Conservation Tips: www.bewaterwise.com • www.wateruseitwisely.com

Groundwater Assessment

An assessment of the drinking water sources for the City was completed in December 2002. The groundwater sources are considered most vulnerable to the following activities not associated with detected contaminants: confirmed leaking underground storage tanks, dry cleaners, and gas stations. The groundwater sources are considered most vulnerable to the following activities associated with contaminants detected in the water supply: known contaminant plumes, historic agricultural activities and application of fertilizers, and sewer collection systems.

A copy of the complete assessment is available at Department of Public Health Office of Drinking Water, Santa Ana District, 28 Civic Center Plaza, Room 325, Santa Ana, California 92701. You may request a summary of the assessment by contacting the City of Tustin Water Services at (714) 573-3382.

2011 City of Tustin Distribution System Water Quality

Disinfection Byproducts	MCL (MRDL/MRDLG)	Average Amount	Range of Detections	MCL Violation?	Typical Source of Contaminant
Total Trihalomethanes (ppb)	80	18	0.0-63	No	Byproducts of Chlorine Disinfection
Haloacetic Acids (ppb)	60	8.70	0.0-41	No	Byproducts of Chlorine Disinfection
Chlorine Residual (ppm)	(4 / 4)	1.1	0.57-2.0	No	Disinfectant Added for Treatment

Aesthetic Quality

Turbidity (ntu)	5*	0.08	0.01-0.11	No	Erosion of Natural Deposits
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Sixteen locations in the distribution system are tested quarterly for total trihalomethanes and haloacetic acids; twenty locations are tested monthly for color, odor and turbidity. Color and odor were not detected in 2011. **MRDL** = Maximum Residual Disinfectant Level; **MRDLG** = Maximum Residual Disinfectant Level Goal; **ntu** = nephelometric turbidity units; **ND** = not detected *Contaminant is regulated by a secondary standard to maintain aesthetic qualities (taste, odor, color).

Bacterial Quality	MCL	MCLG	Highest Monthly Positive Samples	MCL Violation?	Typical Source of Contaminant
Total Coliform Bacteria	5%	0	1.2%	No	Naturally present in the environment

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/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 / Number of Sites	AL Violation?	Typical Source of Contaminant
Lead (ppb)	15	0.2	10	2 / 34	No	Corrosion of Household Plumbing
Copper (ppm)	1.3	0.3	0.3	0 / 34	No	Corrosion of Household Plumbing

Lead and copper at-the-tap samples were collected from 34 residences in 2009. Lead was detected above the regulatory Action Level in two homes. Copper was not detected above the Action Level. A regulatory action level is the concentration of a contaminant which, if exceeded in more than 10 percent of the samples, triggers treatment or other requirements that a water system must follow.

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

يحتوي هذا التقرير على معلومات هامة عن نوعية ماء الشرب في منطقتك. يرجى ترجمته، أو ابحث التقرير مع صديق لك يفهم هذه المعلومات جيداً.

Arabic

Der Bericht enthält wichtige Informationen über die Wasserqualität in Ihrer Umgebung. Der Bericht sollte entweder offiziell übersetzt werden, oder sprechen Sie mit Freunden oder Bekannten, die gute Englischkenntnisse besitzen

German

이 보고서에는 귀하가 거주하는 지역의 수질에 관한 중요한 정보가 들어 있습니다. 이것을 번역하거나 충분히 이해하시는 친구와 상의하십시오.

Korean

这份报告中有些重要的信息，讲到关于您所在社区的水的品质。请您找人翻译一下，或者请能看得懂这份报告的朋友给您解释一下。

Chinese

Questo rapporto contiene informazioni importanti che riguardano la vostra acqua potabile. Traducetelo, o parlate con una persona qualificata in grado di spiegarvelo.

Italian

Este informe contiene información muy importante sobre su agua potable. Para más información ó traducción, favor de contactar a Customer Service Representative. Telefono: (714) 573-3382.

Spanish

Ce rapport contient des informations importantes sur votre eau potable. Traduisez-le ou parlez en avec quelqu'un qui le comprend bien.

French

この資料には、あなたの飲料水についての大切な情報が書かれています。内容をよく理解するために、日本語に翻訳して読むか説明を受けてください。

Japanese

Bản báo cáo có ghi những chi tiết quan trọng về phẩm chất nước trong cộng đồng quý vị. Hãy nhờ người thông dịch, hoặc hỏi một người bạn biết rõ về vấn đề này.

Vietnamese



**City of Tustin
Water Services**

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Tustin, California 92780

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