# Consumer Confidence Report


2011

City of REDLANDS "A City That Works"

# Water Sources and Quantities

The water delivered by the City of Redlands comes from surface water, ground water and imported California State Water Project water. Surface water consists of water from Mill Creek and the Santa Ana River. In 2010, the Hinckley surface water treatment plant produced 2.17 billion gallons of water, the Tate surface water treatment plant produced 2.31 billion gallons of water. Hinckley primarily treats Santa Ana River water and Tate primarily treats Mill Creek. Both plants can treat California State Water Project water when local supplies are insufficient in meeting demands or become unavailable. Ground water comes from wells located within the Bunker Hill basin with wells located throughout the city's service area. In 2010 these wells produced 4.02 billion gallons of water. The amount of water delivered from each source varies during the year due to demand and availability. Local surface water is the most economical source and is utilized first to reduce operating expenses.

## Tours

**Groups are welcome to tour our treatment facilities to learn how drinking water is treated and delivered to our customers. For information on touring our facilities, please contact Bill Gane, water operations manager, at (909) 798-7588, extension #1.**

Please contact us if you have any question regarding the information presented in this report.

City of Redlands
Municipal Utilities &
Engineering Department
PO Box 3005
35 Cajon Street, Suite 15A
Redlands, CA 92373
**(909) 798-7698**

**THIS REPORT CONTAINS IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER. TRANSLATE IT OR SPEAK WITH SOMEONE WHO UNDERSTANDS IT.**

***ESTE INFORME CONTIENE INFORMACIÓN MUY IMPORTANTE SOBRE SU AGUA POTABLE. TRADÚZCALO O HABLE CON ALGUIEN QUE LO ENTIENDA BIEN.***

**www.redlandswater.org**

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## Water Source Protection

Redlands Municipal Utilities and Engineering Department is committed to protecting our water sources from possible contamination. Source water assessments have been completed for all of our drinking water supplies. You can view the source water assessments at http://swap.ice.ucdavis.edu/TSinfo/TSintro.asp

The assessments help to identify the vulnerability of drinking water supplies to contamination from typical human activities.

These assessments are intended to provide basic information necessary for us to develop programs to protect our drinking water supplies.

Possible contaminants can originate from: agricultural drainage, urban runoff, septic systems, sewer collection systems, junk/scrap/salvage operations, crop irrigation, underground storage tanks at automobile gas stations, and illegal dumping.

Anyone interested in receiving a copy of the source water assessment should contact Bill Gane, water operations manager at (909) 798-7588 ext. 1.

You can do your part to protect our precious water sources by properly disposing of household hazardous wastes.

To find out how to properly dispose of hazardous waste so it does not contaminate groundwater, please phone our Customer Service Office at (909) 798-7529, or visit www.redlandssolidwaste.org

**We welcome your comments regarding water issues in Redlands at our City Council Meetings held in the Council's Chambers at 35 Cajon Street in Redlands on the first and third Tuesdays of every month at 5:00 p.m.**

## TERMS USED IN THIS REPORT

**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. Secondary MCLs are set to protect the odor, taste, and appearance of drinking water.

**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 the US Environmental Protection Agency (US EPA).

**Maximum Residual Disinfectant Level (MRDL):** The highest level of a disinfectant allowed in drinking water. There is convincing evidence that the 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. MRDLG's do not reflect the benefits of the use of disinfectants to control microbial contaminants.

**ND:** Not detectable at testing limit.

**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.

**N/A:** Not applicable

**Primary Drinking Water Standards (PDWS):** MCLs and MRDLs for contaminants that affect health, along with their monitoring, reporting and water treatment requirements.

**Units of Measure:**

Parts per million (ppm) or milligrams per liter (mg/L).
Parts per billion (ppb) or micrograms per liter (ug/L).
Parts per trillion (ppt) or nanograms per liter (ng/L).
Picocuries per liter (pCi/L): a measure of radiation.
Umhos/cm: A measure of conductivity in water.

**Redlands Water:** Water source site average for water supplied to customers.

**Range of Detection:** The range (lowest to highest) of detected constituents.

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

**Notification Level (NL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

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

From **January 1, 2010** to **December 31, 2010**, the City of Redlands conducted over 10,000 water quality tests from samples taken at various locations throughout the water system in accordance with state and federal laws. The following tables list only those contaminants that were detected. It is important to note, that the presence of these contaminants, as detected in the water, does not necessarily indicate that the water poses a health risk.

# Primary Drinking Water Standards

## MICROBIOLOGICAL CONSTITUENTS

| CONSTITUENT | YEAR | MCL | PHG (MCLG) | REDLANDS WATER | RANGE | SOURCE |
|---|---|---|---|---|---|---|
| Total Coliform** | 2010 | 5% | (0%) | < 1% | ND – 1% | Naturally present in the environment |

** Results of all samples collected in the distribution system during any month shall be free of total coliform bacteria in 95 percent or more of the monthly samples. In 2010, there were two total coliform positive samples out of the 1395 samples taken. Follow-up samples were negative for total coliform.

## INORGANIC CONSTITUENTS

| CONSTITUENT | YEAR | MCL (AL) | PHG (MCLG) | REDLANDS WATER | RANGE | SOURCE |
|---|---|---|---|---|---|---|
| Aluminum | 2010 | 1 ppm | 0.6 ppm | 0.07 ppm | 0.07 – 0.07 ppm | Erosion of natural deposits |
| Barium | 2010 | 1 ppm | 2.0 ppm | 0.008 ppm | 0.008-0.009 ppm | Erosion of natural deposits |
| Chromium | 2008 | 50 ppb | (100) ppb | 0.09 ppb | ND – 1.2 ppb | Erosion of natural deposits |
| Copper | 2010 | (1.3) ppm | 0.3 ppm | 0.0023 ppm | ND – 0.0047 ppm | Erosion of natural deposits; internal corrosion of household plumbing; leaching from wood preservatives |
| Fluoride | 2010 | 2.0 ppm | 1.0 ppm | 0.61 ppm | ND – 1.37 ppm | Erosion of natural deposits |
| Lead | 2008 | (15) ppb | 0.2 ppb | 0.11 ppb | ND – 0.96 ppb | Erosion of natural deposits; internal corrosion of household plumbing; discharges from industrial manufacturers |
| Nitrate as NO3 | 2010 | 45 ppm | 45 ppm | 8 ppm | ND – 25.0 ppm | Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits |
| Nitrate + Nitrite(as N) | 2010 | 10 ppm | 10 ppm | 2 ppm | ND – 4.9 ppm | |
| Nitrate as Nitrogen | 2010 | 10 ppm | 10 ppm | 1.7 ppm | ND – 5.6 ppm | |
| Perchlorate | 2010 | 6 ppb | 6 ppb | 1 ppb | ND – 5.2 ppb | Perchlorate is an inorganic chemical used in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries. It usually gets into drinking water as a result of environmental contamination from historic aerospace or other industrial operations that used or use, store, or dispose of perchlorate and its salts. |

## SYNTHETIC ORGANIC CONSTITUENTS

| CONSTITUENT | YEAR | MCL | PHG (MCLG) | REDLANDS WATER | RANGE | SOURCE |
|---|---|---|---|---|---|---|
| Dibromochloropropane (DBCP) | 2009 | 200 ppt | 1.7 ppt | 2.8 ppt | ND – 30 ppt | Banned nematocide that still may be present in soils due to run-off/leaching from former use on soybeans, cotton, vineyards, tomatoes, and tree fruit. |
| Simazine | 2008 | 4 ppb | 4 ppb | 0.01 ppb | ND – 0.06 ppb | Herbicide run-off |

## DISINFECTION BY-PRODUCTS, DISINFECTION RESIDUALS, DISINFECTION BY-PRODUCT PRECURSORS

| CONSTITUENT | YEAR | MCL (MRDL) [TT] | PHG (MRDLG) | REDLANDS WATER | RANGE | SOURCE |
|---|---|---|---|---|---|---|
| Total Trihalomethanes | 2010 | 80 ppb | N/A | 32.41 ppb | ND – 100 ppb | By-product of drinking water disinfection |
| Haloacetic Acids | 2010 | 60 ppb | N/A | 23.61 ppb | ND – 46 ppb | By-product of drinking water disinfection |
| Chlorine | 2010 | (4) ppm | (4) ppm | 0.67 ppm | 0.03 – 2.14 ppm | Drinking water disinfectant added for treatment |
| Total Organic Carbon | 2010 | [TT] | N/A | 1.07 ppm | 0.42 – 2.5 ppm | Various natural and man-made sources |

## RADIOACTIVE CONSTITUENTS

| CONSTITUENT | YEAR | MCL | PHG (MCLG) | REDLANDS WATER | RANGE | SOURCE |
|---|---|---|---|---|---|---|
| Gross Alpha | 2010 | 15 pCi/l | (0) | 3.2 pCi/l | ND – 7.4 pCi/l | Erosion of natural deposits |
| Gross Beta | 2007 | 50 pCi/l | (0) | 3.4 pCi/l | N/A *** | Erosion of natural deposits and man-made deposits |
| Total Tritium | 2006 | 20,000 pCi/l | 400 pCi/l | 214 pCi/l | 190-277 pCi/l | Erosion of natural deposits and man-made deposits |
| Radium 226 + 228 | 2006 | 5 pCi/l | (0) | 0.93 pCi/l | 0.8 - 1.1 pCi/l | Erosion of natural deposits |
| Radium 226 | 2006 | 5 pCi/l | 0.05 pCi/l | 0.97 pCi/l | 0.25 – 1.16 pCi/l | Erosion of natural deposits |
| Radium 228 | 2008 | 5 pCi/l | 0.019 pCi/l | 0.7 pCi/l | ND – 0.8 pCi/l | Erosion of natural deposits |
| Strontium 90 | 2007 | 8 pCi/l | 0.35 pCi/l | 1.7 pCi/l | N/A *** | Decay of natural and man-made deposits |
| Uranium | 2010 | 20 pCi/l | 0.43 pCi/l | 3.9 pCi/l | 1.7 – 6 pCi/l | Erosion of natural deposits |

## VOLATILE ORGANIC CONSTITUENTS

| CONSTITUENT | YEAR | MCL | PHG (MCLG) | REDLANDS WATER | RANGE | SOURCE |
|---|---|---|---|---|---|---|
| Trichlorotrifluoroethane | 2008 | 1.2 ppm | 4 ppm | 0.003 ppm | ND – 0.023 ppm | Discharge from metal degreasing sites and other factories; dry-cleaning solvent; refrigerant |

*** *No range to report - only one sample tested.*

## Secondary Drinking Water Standards (Aesthetic Standards) (a)

| CONSTITUENT | YEAR | SECONDARY MCL | REDLANDS WATER | RANGE | SOURCE |
|---|---|---|---|---|---|
| Aluminum | 2010 | 200 ppb | 70.5 ppb | 70 – 71 ppb | Erosion of natural deposits; residual from some surface water treatment processes |
| Chloride | 2010 | 500 ppm | 13.2 ppm | ND – 70.1 ppm | Run-off; erosion of natural deposits; seawater influence |
| Color | 2010 | 15 Units | 0.03 Unit | ND – 3 Units | Naturally occurring organic materials |
| Copper | 2010 | 1 ppm | 0.0023 ppm | ND – 0.0047 ppm | Erosion of natural deposits; internal corrosion of household plumbing; leaching from wood preservatives |
| Iron | 2009 | 300 ppb | 20 ppb | ND– 49.0 ppb | Leaching from natural deposits; industrial wastes |
| Manganese | 2009 | 50 ppb | 0.9 ppb | ND – 3.7 ppb | Leaching from natural deposits. |
| MBAS (Foaming Agents) | 2009 | 500 ppb | 0.0028 ppb | ND – 0.03 ppb | Municipal and industrial waste discharges |
| Odor - Threshold | 2010 | 3 Units | 0.55 Units | ND – 2 Units | Naturally-occurring organic materials |
| Specific Conductance | 2010 | 1,600 umhos/ cm | 195 umhos/ cm | 190 – 200 umhos/ cm | Substances that form ions when in water; seawater influence |
| Sulfate | 2010 | 500 ppm | 28 ppm | 12.41 – 64.07 ppm | Run-off/leaching from natural deposits; industrial wastes |
| Total Dissolved Solids | 2010 | 1,000 ppm | 117 ppm | 110 – 130 ppm | Run-off/leaching from natural deposits |

(a) There are no PHGs, MCLGs, or mandatory standard health effects language for these constituents because secondary MCLs are set on the basis of aesthetics.

## Sampling Results For Sodium and Hardness

| CONSTITUENT | YEAR | MCL | PHG (MCLG) | REDLANDS WATER | RANGE | SOURCE |
|---|---|---|---|---|---|---|
| Sodium | 2010 | N/A | N/A | 7.6 ppm | 4.2 – 11 ppm | Generally found in ground and surface water |
| Hardness | 2010 | N/A | N/A | 78 ppm | 69 – 87 ppm | Generally found in ground and surface water |

## Additional Monitoring (State Regulated & Unregulated Constituents with no MCLs)

| CONSTITUENT | YEAR | NOTIFICATION LEVEL | REDLANDS WATER | RANGE |
|---|---|---|---|---|
| Alkalinity | 2010 | N/A | 93 ppm | 74 - 140 ppm |
| Bicarbonate | 2010 | N/A | 100 ppm | 100 – 100 ppm |
| Boron | 2008 | 1,000 ppb | 10 ppb | ND – 57 ppb |
| Bromide | 2005 | N/A | 50 ppb | ND – 120 ppb |
| Calcium | 2010 | N/A | 24 ppm | 21 – 27 ppm |
| Hexavalent Chromium | 2008 | N/A | 0.26 ppb | 0.14 – 0.38 ppb |
| Langelier Index at 25C | 2010 | N/A | -0.22 | -0.3 – -0.13 |
| Magnesium | 2010 | N/A | 4.3 ppm | 3.8 – 4.8 ppm |
| pH | 2010 | N/A | 7.85 | 7.8 – 7.9 |
| Potassium | 2010 | N/A | 1.75 ppm | 1.4 – 2.1 ppm |
| Radon | 2007 | N/A | 748 pCi/L | 682 – 793 pCi/L |
| Silica | 2005 | N/A | 17 ppm | 15 – 23 ppm |
| Vanadium | 2005 | 50 ppb | 4 ppb | ND – 12 ppb |

**INFORMATION ABOUT RADON**

Radon is a naturally occurring gas formed from the normal radioactive decay of uranium. In 2007 testing, radon was detected in our finished water supply. There are no regulatory limits prescribed for radon levels in drinking water – the pathway to radon exposure occurs primarily through its presence in the air. Exposure over a long period of time to air containing radon may cause adverse health effects. If you are concerned about radon in your home, testing is inexpensive and easy. For more information, call your State radon program (1-800-745-7236), the National Safe Council's Radon Hotline (1-800-SOS-RADON), or the EPA Safe Drinking Water Act Hotline (1-800-426-4791).

** The State allows monitoring for some contaminants less than once per year because these contaminants do not change frequently. Some of these data, though representative, are more than one year old.*

## Important Facts From the US EPA About Drinking Water

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 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.

Contaminants that may be present in untreated source water may 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 storm water runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- 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 by-products of industrial processes and petroleum production, and can also come from gas stations, urban storm water runoff, agricultural application, and septic systems.
- Radioactive contaminants, which can be naturally occurring or the result of oil and gas production, and mining activities.

In order to ensure water is safe to drink, the United States Environmental Protection Agency (US EPA) and the California Department of Public Health (DPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. DPH regulations also establish limits for contaminants in bottled water to provide the same protection for public health.

## Additional Information About Drinking Water

All 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 the water poses a health risk. More information about contaminants and potential health effects can be obtained by calling the US EPA's Safe Drinking Water Hotline (1-800-426-4791).

*Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised people such as people with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly persons, and infants can be particularly at risk from infections. For these people, advice should be sought about drinking water from their health care providers. US EPA/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 (1-800-426-4791).*

### Air Bubbles in the Water

Tap water that appears cloudy could simply have air (bubbles) in the water. Some well sources produce water with dissolved air that remains pressurized in the distribution pipelines until reaching the consumer. When the water flows from the faucet, the air is released and may form tiny air bubbles. After filling a glass, these bubbles will slowly rise and disappear.

## Sampling Results Showing Treatment of Surface Water Sources

Turbidity is a measure of the cloudiness of water. We monitor turbidity because it is a good indicator of the effectiveness of our filtration system. Turbidity results which meet performance standards are considered to be in compliance with filtration requirements.

| | |
|---|---|
| **Treatment Technique** | Conventional Filtration |
| **Lowest Monthly % of Samples Meeting TPS No. 1** | 100% |
| **Highest single turbidity measurement during 2010** | 0.24 |
| **Number of Violations to Any Surface Water Treatment Regulations** | None |

**Turbidity Performance Standard No. 1 (TPS No. 1):**

The turbidity level of the combined filter effluent shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1.0 NTU for more than one hour. Additionally, the turbidity level of the combined filter effluent shall not exceed 1.0 NTU for more than eight consecutive hours while the plant is operating.

## Lead and Copper Analysis Results

The Municipal Utilities and Engineering Department performs an analysis of lead and copper in the water of residential homes in our service area every three years. The last round of testing was conducted in September of 2008. When water comes into contact with residential plumbing containing lead and/or copper, they can leach into the household water system. Of a random sampling of thirty residences tested, none exceeded the Regulatory Action Level (AL) for lead or copper. The 90$^{th}$ percentile value for lead in the water samples was 5.7 parts per billion as compared to an AL of 15 parts per billion for lead, while the 90$^{th}$ percentile for the copper samples was 0.27 parts per million, as compared to an AL of 1.3 parts per million for copper.

**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 of Redlands 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 the 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 (1-800-426-4791) or at http://www.epa.gov/safewater/lead.**

The next round of voluntary residential testing will take place between the months of June – September 2011. A component of the lead/copper program requires sampling from the same homes each sampling round, therefore the same customers that volunteered in 2008 will be sent letters again in 2011 asking them to volunteer to take a sample from their home. All volunteers will be given a $15.00 credit on their water bill following the analysis of the samples, along with a copy of the sample results from their home. If not enough people volunteer, other customers whose homes meet the EPA's criteria for a sampling site will be sent letters asking them to volunteer to collect samples at their homes.

# Water Leak Repair Process

When a water leak is reported to city staff, a work order is generated and given to water distribution personnel. A distribution operator is sent to the location to determine the nature and severity of the leak.

The operator may place a barricade over the leak and will mark the area to be excavated with white chalk. Underground Service Alert (USA) is notified of the intended work. USA will notify all utilities providers that may have facilities in the excavation area and are instructed to mark the location of their facilities. A "safe work date" is typically 48 hours after USA is notified. Workload, size, and nature of a leak determines when it will be repaired. Less critical leaks may not get repaired upon the "safe work date" but all reported leaks are monitored daily to determine if conditions deteriorate. Every leak is considered important and addressing them in a timely manner is critical in maintaining an efficient distribution system. Water lost

due to main and service line leaks is not billed to the consumers. To report leaks please call 909-798-7516 during business hours (7:30 A.M. – 5:30 P.M., M-Th) and Redlands Police Department at 909-798-7681 after hours.

## Conservation in our Community

Over the past two years, Redlands resident Linda Richards has embarked on a journey of gardening and water efficiency in her own yard right here in beautiful Redlands. She began with a nearly empty palette and has created a lush landscape that is filled with colors, beauty, wildlife and pride. Through the process she has reduced watering costs, reduced her overall maintenance and increased the beauty and natural functionality of her yard. Read more about her process and find more pictures at **www.redlandswater.org** then click on **water conservation.**

**Before**

**9 months**

**24 months**

City of REDLANDS
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Redlands, CA 92373

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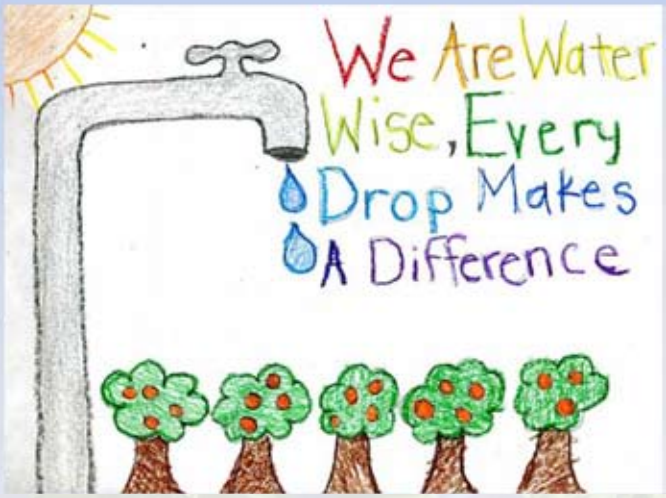
# Art, Education, Water Conservation

For the past three years the Municipal Utilities & Engineering Department has held a water conservation poster art contest that involves our local elementary school students. Each year has produced wonderful examples of art and water awareness in our community. Below are the winners of this year's contest. We would like to thank all of the participants for their wonderful artwork and commitment to being water smart.


Layla Moncada-Terreros
Grade 3
Crafton Elementary




Emma Martinez-Spencer
Grade 4
Kimberly Elementary