

# CITY OF REDLANDS CONSUMER CONFIDENCE REPORT

# 2013





# Your Water Supply

The City of Redlands has provided water services to the community since 1910. Currently, Redlands provides water to a population of approximately 78,000 within its service area via approximately 23,000 water connections. The water utility service area generally coincides with the area designated by LAFCO as the sphere of influence for Redlands. The service area encompasses 36 square miles inside Redlands's corporate boundaries and approximately 5,000 persons outside Redlands boundaries, but within the sphere of influence, also receive services from Redlands. A small part in the southeastern section of Redlands is currently served by Western Heights Mutual Water Company. By 1910, Redlands fully established a water system to serve its population. Currently, the majority of water is obtained from the Santa Ana River, Mill Creek, and

groundwater. Redlands operates two surface water treatment plants and uses 20 wells, 37 booster pumps, 18 reservoirs, and 400 miles of transmission and distribution lines to provide water to its customers. Redlands also owns other facilities that are currently not in use due to age, contamination, or other factors. Water used in the service area is metered and billed bimonthly.



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

[www.cityofredlands.org/MUED/water](http://www.cityofredlands.org/MUED/water)

**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.**

## 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.

## Did you know...

The City of Redlands offers FREE water audits to its water customers?

The City of Redlands offers free water audits to customers within their service area. Upon request, water conservation staff will conduct a site visit to discuss any need or question you may have on reducing water consumption in irrigation, leak detection, and through general water conservation tips. If interested, please contact the Customer Service Division at 909-798-7516.

## Water Efficiency Rebate Program\*

High Efficiency Sprinkler Nozzles  
 \$4/nozzle  
 Rebate

Smart Irrigation Controllers  
 \$80  
 Rebate

Synthetic Turf  
 \$1/sq. ft.  
 replaced

High Efficiency Clothes Washers  
 \$100  
 Rebate

High Efficiency Toilets  
 \$100  
 Rebate

Other Water Saving Products  
 \$1/150 gal.  
 saved per yr.

\* Rebates require a pre-inspection and post-inspection for eligibility and are processed on a first-come-first-served basis until funds for the fiscal year are exhausted. Participants must be City of Redlands water customers. Please see additional rebate requirements at:

[www.cityofredlands.org/water/conservation](http://www.cityofredlands.org/water/conservation)  
 or call: 909-798-7516



## TREATMENT OPTIMIZATION OF THE HORACE P. HINCKLEY WATER TREATMENT PLANT PROJECT

The City's Horace P. Hinckley Surface Water Treatment Plant (Hinckley) delivers approximately 30 percent of the water needed to meet customer demands. The US Environmental Protection Agency (EPA) adopted new Stage II Disinfectants/Disinfection-Byproducts (DBP) Rule, which became effective in 2012. The City was required to construct modifications to the plant to meet these new water quality standards.

Hinckley has a permitted capacity of 14.5 million gallons per day and treats water from the Santa Ana River (SAR) and the California State Water Project (SWP). SAR water is the preferred source due to its high quality and low cost. Depending on time of year, available water supplies, and water demand, Hinckley treats water from each source or blends of the two. During periods of drought or low rainfall, SAR water is not available in sufficient supplies to meet customer demands. During these times, City relies on supplies from the SWP to augment SAR supplies.

Before the recent improvements were completed it was possible that when Hinckley was treating water from the SWP, the City would not have been in compliance with the new DBP regulation. Tests demonstrated that regardless of process control alterations, existing plant facilities would not effectively remove the DBP precursors. Through extensive testing and studies it was determined significant modifications to Hinckley were necessary to comply with the new DBP requirements. In addition to controlling DBP formation, the improvements to Hinckley will also increase Hinckley's ability to treat moderate to high turbidity water. The new improvements now allow the City to more reliably treat one of the City's least costly sources of water. Other necessary improvements include a package treatment plant which allow water used to backwash the filters to be reused and put to beneficial use.



### Opal Basin

*The City of Redlands, through the State Department of Water Resources, received a \$5 million state grant this year for the Opal Basin Improvements and Agricultural Preservation project.*

*The project will construct flood control and aquifer recharge facilities at the northeast corner of Opal and Citrus Avenues, together with improvements establishing approximately an equivalent area for citrus preservation in perpetuity at existing orchards located along the east side of Judson Street between Lugonia and San Bernardino Avenues.*

*The Opal Basin is being designed to intercept peak flow from the Zanja, provide flood detention/retention for groundwater recharge, and to slowly release flood waters back to the existing Zanja channel. The basin is anticipated to provide more than 600 acre-feet in size providing for approximately 480 acre-feet of flood control storage attenuation and over 100 acre-feet of aquifer recharge storage. Additionally, the project will include a provision for hiking trails along the Zanja and around the facilities.*

*The City strives to protect public safety and private property by identifying, designing and building these type of flood control projects. This project will advance program goals by improved flood protection, enhanced water conservation, and agricultural preservation.*

*The basin project will go through various environmental regulatory processes to comply with the requirements of California Environmental Quality Act (CEQA), Department of Fish and Game, US Army Corps of Engineers, State Historic Preservation Office, and many other local and state governmental agencies.*

*The City hopes to work collaboratively with local community groups and organizations, schools, and other interested stakeholders during the design and permitting process to ensure that sustainable development features are an integral part of the constructed system.*



## ORANGE BLOSSOM TRAIL PHASE 1 & 2

The Orange Blossom Trail (OBT) is a seven and one-half (7½) mile bicycle and pedestrian trail located primarily within existing flood control and railroad right-of-way through the heart of Redlands. The OBT will provide non-motorized transportation routes for Redlands residents and will link them to a variety of locations in the City including schools, businesses, parks and public transportation, as well regional non-motorized trails like the Santa Ana River Trail at the western terminus of the trail at Mountain View Avenue, as well as the eastern terminus at Opal Avenue. In areas where space permits, the Orange Blossom Trail will be a dual track trail, with both a paved trail for fast traffic such as bicycles and a decomposed granite trail for slower pedestrian traffic. In the upcoming year, the City of Redlands is anticipating the construction of two phases of the Orange Blossom Trail, from Grove Street to Wabash Avenue, and from California Street to Alabama Street. These two phases of the OBT are grant funded and are scheduled to complete about 2 ½ miles of the OBT.

## PIPELINE REPLACEMENTS IN FISCAL YEAR 2012

### 2012 CIP WATER PIPELINE REPLACEMENT PROJECT

The purpose of the 2012 CIP Water Pipeline Replacement Project is to replace water distribution pipelines that are substandard, deteriorated and regularly in need of leak repair. Many of these pipelines have exceeded their useful lifespan and require repeated maintenance by City crews. This Project provides for the replacement of approximately 6.25 miles of water pipelines at various locations throughout the City and will ensure continued delivery of water while reducing the overall maintenance efforts.

### CITRUS AVENUE WATER PIPELINE REPLACEMENT PROJECT

As part of this Project, approximately 1,110 linear feet of water pipeline and appurtenances was replaced in E. Citrus Avenue from "B" Street to East end of E. Citrus Avenue. City staff determined that this pipeline was unable to provide sufficient flow to existing customers. The existing 1 ½" pipeline was replaced with a new standard residential 8" pipeline.

### BROOKSIDE AVENUE WATER PIPELINE REPLACEMENT PROJECT

The scope of work for this project was to replace a deteriorated section of water pipeline. The project replaced approximately 1,500 linear feet of water pipelines and appurtenances in Brookside Avenue between San Mateo Street and Roma Street. This section of Brookside Avenue will also be repaved and restriped as part of the Project.

### WATERLINES RELOCATION AT FIFTH AVENUE AND WALNUT STREET

The County of San Bernardino performed roadway improvements on Fifth Avenue and Walnut Street. To accommodate the roadway improvements, a portion of the existing waterlines and appurtenances required replacement. In all, over 2,000 linear feet of pipeline was replaced. This Project will allow for continued reliable service to customers in the area.



# P.A.R.I.S.

Incorporating the Pavement Management Program (PMP) into Pavement Accelerated Repair Implementation Strategy (PARIS)

## BACKGROUND

In February 2012 staff completed a comprehensive PMP which provided a condition assessment of all City streets and guidelines for prioritization of street maintenance work. This report was presented to and adopted by City Council on March 6, 2012. In developing the PMP, the physical condition of City streets was evaluated, rated, and the remaining projected life cycle determined. The PMP further identifies a schedule for maintenance and reconstruction of City streets at specified time intervals in order to extend the overall life-expectancy of all City streets in the most efficient and economical manner possible. In addition, the PMP establishes a comprehensive process to prioritize the rehabilitation of City streets and is a powerful tool to aid in the decision making process in order to best utilize financial resources.

As part of the PMP staff utilized eRoad Pavement technology, or simply "eRoad", is an automated pavement evaluation system to create a database of the current inventory of City street conditions, treatment options, and cost estimates for each treatment available. Using this system, it has been confirmed that due to the lack of a comprehensive and systematic maintenance program, the City's average Pavement Condition Index (PCI) has dropped to 53 on a scale of 0-100, 0 being a street needing full reconstruction and 100 being a new street. An average PCI of 53 is considered poor according to industry standard and in comparison to surrounding cities.



Various rehabilitation and resurfacing methods are available to maintain a road surface, each with their own benefits and expected service life. To maximize the City's resources, the appropriate treatment must be selected for each road, many of which are described in the PMP report. Because new pavement deteriorates slowly at first, then at a continually increasing rate as time passes, this deterioration can be significantly reduced by use of systematic preventive maintenance starting in the early stages of the pavement's lifecycle.

Finally, the PMP identifies two specific methodologies to prioritize streets for resurfacing and maintenance: the matrix method and the vehicle miles traveled (VMT) method. The decision to utilize either of the referenced methodologies or a hybrid of the two for prioritizing resurfacing is directly related to the existing physical condition of each street and availability of financial resources.

The matrix method factors in a variety of criteria impacting the general use of streets. These factors are PCI, average daily traffic (ADT), truck routes, vicinity to schools and population density, etc. This methodology takes advantage of an in-depth analysis provided by the eRoad system and use of advanced GIS technologies. The result is a "big-picture" approach that graphically shows streets that warrant treatment based on function, location, and the condition of the street surface.

The second method, VMT, uses ADT to queue streets for maintenance. Using traffic volumes as a guide for selecting streets for maintenance leads to a cost effective approach in terms of cost per mile traveled on a section of road on a daily basis. Ideally, the objective is to use the most cost effective method to achieve the highest street condition that provides the public with a street grid system that is in good condition and well maintained.

The Pavement Accelerated Repair Implementation Strategy (PARIS) report is the final part of the critical comprehensive pavement management plan as it identifies methodologies to implement the PMP and finance the program. Within the PARIS report, pavement lifecycles, deterioration rates, opportunity costs, contributors to pavement deterioration, and potential funding sources are all identified. Also included is a method for identifying, quantifying, and recovering costs associated with the damage caused by the major contributor to pavement deterioration. Additionally, the PARIS report illustrates how the City's current limited funding for maintenance will result in the street degradation rate accelerating significantly over time. Finally, a strategy that will increase the City's PCI to approximately 80 in five years through use of various funding sources is given.

The primary reason the PARIS report recommends resurfacing a significant portion of City streets in the initial five year term is to stop the rapid degradation rates of streets. By front-loading repairs and maintenance, streets will receive pavement treatments at a less expensive rate, thereby reducing the overall cost to repair the City's street grid.



# NO DRUGS DOWN THE DRAIN

It was once a recommended practice to dispose of unwanted or expired medications (both prescription and over-the-counter medicines such as cold/flu remedies, pain relievers, and antiseptics) by flushing them down the toilet or pouring them down the drain. Increased environmental studies and testing have found that measurable concentrations of medications are making their way into our waterways and have prompted improved disposal alternatives.

## WHAT CAN BE DONE?

When you have unused medications you are ready to dispose of, don't flush them down the toilet or the sink. In Redlands, residents can take them, along with other hazardous waste from your home (batteries, paint, pesticides, etc.), to the City of Redlands Household Hazardous Waste Facility. It is recommended that you place your unwanted medications in a sealed plastic bag, separating your liquid medications from capsules and tablets, prior to transporting.

Other disposal options include making the capsules and tablets unusable by wetting, breaking, and crushing them. Place the remnants in the original childproof container with your personal information removed, seal the container with tape and place in your household refuse container for collection.

Home generated sharps are not accepted for disposal at this facility. You can take your full containers to Redlands Fire Station #1 located at 525 E. Citrus Ave. between 8 a.m. and 5 p.m. daily for free disposal.

The Redlands Household Hazardous Waste Facility is located at 500 Kansas Street (between Park Ave. and Colton Ave.) and is open every Saturday from 9:30 a.m. to 12:30 p.m. For more information please call Customer Service at (909) 798-7516

## MANDATORY COMMERCIAL RECYCLING BUSINESS & MULTI-FAMILY

The State of California has passed Assembly Bill 341,  
REQUIRING MANDATORY COMMERCIAL RECYCLING.

YOU ARE REQUIRED TO RECYCLE IF YOUR PROPERTY IS:

- A business that disposes of 4 cubic yards or more of solid waste per week or
- A Multi-Family dwelling of 5 units or more

YOU CAN COMPLY BY:

Separating your recyclable materials from your trash and taking them to a recycling center or subscribing to a service for the collection of recyclables by the City of Redlands, self-haul the materials, or contract with a permitted private recycler.

*Help reduce the greenhouse gas emissions in California and help the City achieve Zero Waste.*

For more information please contact:

City of Redlands  
Quality of Life Department at:  
909-798-7655 or visit:  
[www.cityofredlands.org/qol](http://www.cityofredlands.org/qol)





# 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.cityofredlands.org/qol/recycling](http://www.cityofredlands.org/qol/recycling)

## 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.

## 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	Turbidity Performance Standard No. 1 (TPS No. 1):
<b>Lowest Monthly % of Samples Meeting TPS No. 1</b>	100%	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.
<b>Highest single turbidity measurement during 2012</b>	0.25	
<b>Number of Violations to Any Surface Water Treatment Regulations</b>	None	

## 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 August of 2011. 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 36 residences tested, none exceeded the Regulatory Action Level (AL) for lead or copper. The 90<sup>th</sup> percentile value for lead in the water samples was 5.4 parts per billion as compared to an AL of 15 parts per billion for lead, while the 90<sup>th</sup> percentile for the copper samples was 0.36 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 can not 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>.

**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 6:00 p.m.**

## Consumer Confidence Report 2012

From January 1, 2012 to December 31, 2012, the City of Redlands conducted over 12,000 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	SOURCE
Total Coliform*	2012	5%	0%	0%	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 2012, there was no total coliform positive sample out of the 1393 samples taken.

#### INORGANIC CONSTITUENTS

CONSTITUENT	YEAR	MCL	PHG (MCLG)	REDLANDS WATER	RANGE	SOURCE
Aluminum (mg/L)	2011	1	0.6	0.025	ND - 0.15	Erosion of natural deposits; residue from some surface water treatment processes
Barium (mg/L)	2011	1	2	0.015	0.013 - 0.017	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chromium (µg/L)	2011	50	100	0.27	ND - 1.6	Discharges from steel and pulp mills and chrome plating; erosion of natural deposits
Copper (mg/L)	2011	1.3	0.3	0.00016	ND - 0.0024	Internal corrosion of household plumbing; erosion of natural deposits; leaching from wood preservatives
Fluoride (mg/L)	2011	2	1	0.60	ND - 1.30	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Lead (µg/L)	2011	15	0.2	0.10	ND - 0.76	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Nitrate as NO <sub>3</sub> (mg/L)	2012	45	45	10.90	ND - 28.9	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate + Nitrite (as N) (mg/L)	2012	10	10	1.80	ND - 5.20	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Perchlorate (µg/L)	2012	6	6	0.93	ND - 4.64	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.

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

CONSTITUENT	YEAR	MCL	PHG (MRDLG)	REDLANDS WATER	RANGE	SOURCE
Total Trihalomethanes (µg/L)	2012	80	N/A	23.5	0 - 67	Byproduct of drinking water disinfection
Haloacetic Acids (µg/L)	2012	60	N/A	20.9	0 - 37	Byproduct of drinking water disinfection
Chlorine as Cl <sub>2</sub> (mg/L)	2012	4	4	0.69	0.08 - 2.2	Drinking water disinfectant added for treatment
Total Organic Carbon (mg/L)	2012	TT	N/A	1.12	0.52 - 2.2	Various natural and manmade sources

#### RADIOACTIVE CONSTITUENTS

CONSTITUENT	YEAR	MCL	PHG (MCLG)	REDLANDS WATER	RANGE	SOURCE
Gross Alpha (pCi/L)	2012	15	0	2.92	ND - 11	Erosion of natural deposits
Gross Beta (pCi/L)	2007	50	0	3.4	N/A	Decay of natural and man-made deposits
Total Tritium (pCi/L)	2007	20000	400	188	183-194	Decay of natural and man-made deposits
Radium 226 + 228 (pCi/L)	2006	5	0	0.93	0.8 - 1.1	Erosion of natural deposits
Radium 226 (pCi/L)	2006	5	0.05	0.97	0.25 - 1.16	Erosion of natural deposits
Radium 228 (pCi/L)	2008	5	0.019	0.7	ND - 0.8	Erosion of natural deposits
Strontium 90 (pCi/L)	2007	8	0.35	1.7	N/A***	Decay of natural and man-made deposits
Uranium (pCi/L)	2011	20	0.43	4.7	3.5 - 5.9	Erosion of natural deposits

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

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

CONSTITUENT	YEAR	SECONDARY MCL	REDLANDS WATER	RANGE	SOURCE
Aluminum (µg/L)	2011	200	25	ND - 150	Erosion of natural deposits; residue from some surface water treatment processes
Chloride (mg/L)	2011	500	14.23	ND - 40.88	Run-off/leaching from natural deposits; seawater influence
Color (Units)	2011	15	0.037	ND - 3	Naturally occurring organic materials.
Copper (mg/L)	2011	1	0.0082	ND - 0.097	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives.
Iron (µg/L)	2011	300	0.021	ND - 0.08	Leaching from natural deposits; industrial wastes
Manganese (µg/L)	2011	50	0.85	ND - 5.1	Leaching from natural deposits.
MBAS (Foaming Agents) (µg/L)	2009	500	0.0028	ND - 0.03	Municipal and industrial waste discharges
Odor - Threshold (TON)	2012	3	0.95	ND - 2	Naturally-occurring organic materials
Specific Conductance (µmhos/cm)	2011	1600	325	250 - 370	Substances that form ions when in water; seawater influence
Sulfate (mg/L)	2011	500	30.05	12 - 61.86	Run-off/leaching from natural deposits; industrial wastes
Total Dissolved Solids (mg/L)	2012	1000	185.3	162 - 226.5	Run-off/leaching from natural deposits
Turbidity, Laboratory (NTU)	2012	5	0.12	ND - 0.84	

(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 (mg/L)	2012	N/A	N/A	19.5	18 - 21	Generally naturally occurring.
Hardness (mg/L)	2011	N/A	N/A	142	83 - 160	Sum of polyvalent cations in the water, usually naturally occurring.

### Additional Monitoring for State Regulated Contaminants with no MCLs (Unregulated Contaminants)

CONSTITUENT	YEAR	NOTIFICATION LEVEL	REDLANDS WATER	RANGE
Alkalinity (mg/L)	2011	N/A	93	42 - 140
Bicarbonate (mg/L)	2011	N/A	155	110 - 170
Boron (µg/L)	2008	1,000	10	ND - 57
Calcium (mg/L)	2011	N/A	43	25 - 49
Hexavalent Chromium (µg/L)	2011	N/A	1.46	0.16 - 8.5
Langelier Index at 25° C	2011	N/A	0.15	-0.36 - 0.46
Magnesium (mg/L)	2011	N/A	8.4	5 - 9.6
pH	2011	N/A	7.8	7.6 - 8.0
Potassium (mg/L)	2011	N/A	2.65	1.5 - 3.2
Radon pCi/L	2007	N/A	748	682 - 793
Silica (mg/L)	2005	N/A	17	15 - 23
Vanadium (µg/L)	2005	50	4	ND - 12

Please Note: 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.

### 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).



## POSTAL CUSTOMER

### Art, Education & Water Conservation

For the past five 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.



Janessa Feinberg  
Grade 2  
Crafton Elementary

German Chavez  
Grade 5  
Franklin Elementary



2013 Poster Contest  
**"Don't Waste a Drop"**