

## TERMS USED IN THIS REPORT

**Level 1 Assessment:** A Level 1 assessment is a study of the water system to identify potential problems and determine (if possible) why total coliform bacteria have been found in our water system.

**Level 2 Assessment:** A Level 2 assessment is a very detailed study of the water system to identify potential problems and determine (if possible) why an E. coli MCL violation has occurred and/or why total coliform bacteria have been found in our water system on multiple occasions.

**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.

N/A: Not applicable

ND: Not detectable at testing limit.

NS: No standards

NT: Not tested

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

**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.

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

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

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

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

**Nephelometric Turbidity Unit (NTU):** Nephelometric Turbidity Unit is a measure of the clarity of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

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

**Units of Measure:** 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); Picocuries per liter (pCi/L): Picocuries per liter is a measurement of the radioactivity in water. Umhos/cm: A measure of conductivity in water.

Units		Equivalence
mg/L – milligrams per liter	ppm – parts per million	1 second in 11.5 days
µg/L – micrograms per liter	ppb – parts per billion	1 second in nearly 32 years
ng/L – nanograms per liter	ppt – parts per trillion	1 second in nearly 32,000 years
pg/L – picograms per liter	ppq – parts per quadrillion	1 second in nearly 32,000,000 years

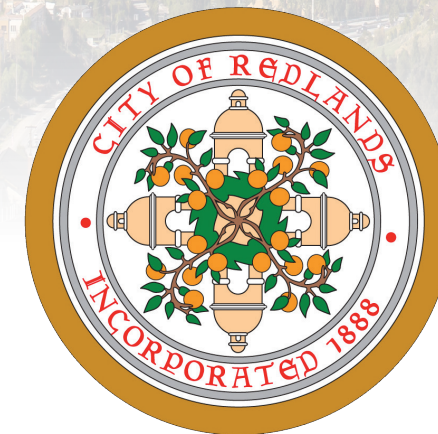
## Contact Us:

CITY OF REDLANDS, MUNICIPAL UTILITIES & ENGINEERING DEPARTMENT

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CITYOFREDLANDS.ORG/MUED



# CITY OF REDLANDS

CONSUMER CONFIDENCE REPORT

## 2019



# WATER SOURCES

The water system consists of over 450 miles of underground pipelines with approximately 23,000 service connections. The City owns and operates 22 potable wells and 12 non-potable wells located throughout the Bunker Hill, Mill Creek, and Yucaipa groundwater basins. The water is stored throughout a system of 18 reservoirs. Wells provide nearly 40% of the City's water supply. The remainder of its water supply is produced from two surface water treatment plants. The Hinckley Water Treatment Plant utilizes water from the Santa Ana River and the Tate Water Treatment Plant utilizes water from the Mill Creek watershed. Imported water from the State Water Project, purchased from the San Bernardino Valley Municipal Water District, is periodically used to meet peak demand through the Hinckley and Tate Water Treatment Plants. In 2018, the City delivered over 22,461 acre feet of water to its customers with a peak day delivery of over 35 million gallons.

# WATER SOURCE PROTECTION

The City of Redlands is committed to protecting our water sources from possible contamination. Source water assessments were completed in 2002 for all of our drinking water supplies. You can view the source water assessments at our office (location listed on back page). The assessments help to identify the vulnerability of drinking water supplies. 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:

***Kevin Watson, Utilities Operations Manager***  
***(909) 798-7588 ext. 1***

You can do your part to protect our water sources by properly disposing of household hazardous waste. To find out how to properly dispose of hazardous waste, so it does not contaminate groundwater, please call or visit:

***City of Redlands-Customer Service***  
***(909) 798-7529***  
***cityofredlands.org/qol/recycling***

# IMPORTANT FACTS FROM THE US EPA ABOUT DRINKING WATER

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 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 source water 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 stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining, or farming.
- Pesticides and herbicides, that 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, that are byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application, and septic systems.
- Radioactive contaminants, that can be naturally-occurring or be the result of oil and gas production and mining activities.

In order to ensure that tap water is safe to drink, the U.S. Environmental Protection Agency (U.S. EPA) and the State Water Resources Control Board (State Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Board regulations also establish limits for contaminants in bottled water that 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 U.S. 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 persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly, and infants can be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. U.S. 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).

## PUBLIC PARTICIPATION OPPORTUNITIES

City Council meetings are held on the first and third Tuesdays of every month and the Municipal Utilities / Public Works Commission (MUPWC) meetings are held the first Monday of even numbered months. All items that are heard by the City Council or the MUPWC are placed on the required agendas and posted at City Hall located at 35 Cajon Street, Redlands, California.

SURFACE WATER TREATMENT PERFORMANCE								Number of Samples Taken In 2018: 10,605			
Contaminant	Violation	Year	MCL [TT]	PHG (MCLG)	Level Found	Range	Source				
Turbidity <sup>1</sup>	No	2018	TT = 1 NTU	N/A	0.13 NTU	.02 - .13	Soil runoff				
			TT = 95% of samples < 0.3 NTU		100%	N/A					
PRIMARY DRINKING WATER STANDARDS											
MICROBIOLOGICAL CONSTITUENTS											
Contaminant	Violation	Year	MCL (Level I/II) [TT]	PHG (MCLG)	Distribution System	Treated Surface Water Supply	Source		Health Effects		
Total Coliform	No	2018	5%	0%	2%	0%	Naturally present in the environment		Coliforms are bacteria that are naturally present in the environment and are used as an indicator that other, potentially-harmful, bacteria may be present. Coliforms were found in more samples than allowed and this was a warning of potential problems.		
Revised Total Coliform Rule	No	2018	[TT]	N/A	2%	0%					
INORGANIC CONSTITUENTS											
Contaminant	Violation	Year	MCL	PHG (MCLG)	Groundwater Supply Average	Groundwater Supply Range	Year	Source Surface Water Supply Average	Source Surface Water Supply Range	Source	Health Effects
Aluminum mg/L	No	2017	1	0.6	ND	ND	2018	0.25	ND - .67	Erosion of natural deposits; residue from some surface water treatment processes	Some people who drink water containing aluminum in excess of the MCL over many years may experience short-term gastrointestinal tract effects.
Asbestos (MFL)	No	NT	7	7	NT	NT	2016	0.07	ND - .20	Internal corrosion of asbestos cement water mains; erosion of natural deposits	Some people who drink water containing asbestos in excess of the MCL over many years may have an increased risk of developing benign intestinal polyps.
Chromium [Total] µg/L	No	2017	50	-100	0.9	ND - 14	2018	ND	ND	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits	Some people who use water containing chromium in excess of the MCL over many years may experience allergic dermatitis.
Fluoride mg/L	No	2017	2	1	0.7	.31 - .96	2018	0.44	ND - .82	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories	Some people who drink water containing fluoride in excess of the federal MCL of 4 mg/L over many years may get bone disease, including pain and tenderness of the bones. Children who drink water containing fluoride in excess of the state MCL of 2 mg/L may get mottled teeth.
Nitrate (as N) mg/L**	No	2018	10	10	1.3	ND - 5.8	2018	0.38	ND - .63	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits	Infants below the age of six months who drink water containing nitrate in excess of the MCL may quickly become seriously ill and, if untreated, may die because high nitrate levels can interfere with the capacity of the infant's blood to carry oxygen. Symptoms include shortness of breath and blueness of the skin. High nitrate levels may also affect the oxygen-carrying ability of the blood of pregnant women.
Perchlorate µg/L	No	2018	6	1	1.3	ND - 3.9	2018	ND	ND	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.	Perchlorate has been shown to interfere with uptake of iodide by the thyroid gland, and to thereby reduce the production of thyroid hormones, leading to adverse effects associated with inadequate hormone levels. Thyroid hormones are needed for normal prenatal growth and development of the fetus, as well as for normal growth and development in the infant and child. In adults, thyroid hormones are needed for normal metabolism and mental function.

LEAD AND COPPER RULE										
Contaminant	Violation	Year	MCL	PHG	90th percentile	No. of sites	Number of Schools Requesting Lead Sampling 2018	Source	Health Effects	
Copper mg/L	No	2017	AL=1.3	0.3	0.15	33 Sites	N/A	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	Copper is an essential nutrient, but some people who drink water containing copper in excess of the action level over a relatively short amount of time may experience gastrointestinal distress. Some people who drink water containing copper in excess of the action level over many years may suffer liver or kidney damage. People with Wilson's Disease should consult their personal doctor.	
Lead ug/L *	No	2017	AL=15	0.2	N/D	33 Sites	2	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits	Infants and children who drink water containing lead in excess of the action level may experience delays in their physical or mental development. Children may show slight deficits in attention span and learning abilities. Adults who drink this water over many years may develop kidney problems or high blood pressure.	

SYNTHETIC ORGANIC CONTAMINANTS INCLUDING PESTICIDES AND HERBICIDES										
Contaminant	Violation	Year	MCL	PHG	Groundwater Supply Average	Groundwater Supply Range	Treated Surface Water Supply Average	Treated Surface Water Supply Range	Source	Health Effects
1,2,3-Trichloropropane [TCP] (µg/L)	No	2018	0.005	0.0007	ND	ND	ND	ND	Discharge from industrial and agricultural chemical factories; leaching from hazardous waste sites; used as cleaning and maintenance solvent, paint and varnish remover, and cleaning and degreasing agent; byproduct during the production of other compounds and pesticides.	Some people who drink water containing 1,2,3-trichloropropane in excess of the MCL over many years may have an increased risk of getting cancer.

DISINFECTION BY-PRODUCTS, DISINFECTION RESIDUALS, DISINFECTION BY-PRODUCT PRECURSORS										
Contaminant	Violation	Year	MCL (MRDL) [TT]	PHG (MRDLG)	Distribution System Average	Distribution System Range	Source	Health Effects		
Total Trihalomethanes µg/L	No	2018	80	N/A	18	ND - 53	Byproduct of drinking water disinfection	Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience liver, kidney, or central nervous system problems, and may have an increased risk of getting cancer.		
Haloacetic Acids µg/L	No	2018	60	N/A	11	ND - 32	Byproduct of drinking water disinfection	Some people who drink water containing haloacetic acids in excess of the MCL over many years may have an increased risk of getting cancer.		
Chlorine as Cl <sub>2</sub> mg/L	No	2018	4	4	0.6	.2 - 1.5	Drinking water disinfectant added for treatment	Some people who use water containing chlorine well in excess of the MRDL could experience irritating effects to their eyes and nose. Some people who drink water containing chlorine well in excess of the MRDL could experience stomach discomfort.		
Total Organic Carbon mg/L	No	2018	[TT]	N/A	1	.5 - 2.1	Various natural and manmade sources	Total organic carbon (TOC) has no health effects. However, total organic carbon provides a medium for the formation of disinfection byproducts. These byproducts include trihalomethanes (THMs) and haloacetic acids (HAAs). Drinking water containing these byproducts in excess of the MCL may lead to adverse health effects, liver or kidney problems, or nervous system effects, and may lead to an increased risk of cancer.		

\*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 water for drinking or cooking. [Optional: If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.] 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 or at <http://www.epa.gov/lead>.

\*\*Nitrate in drinking water at levels above 10 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 10 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.

## 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).

RADIOACTIVE CONSTITUENTS											
Contaminant	Violation	Year	MCL	PHG (MCLG)	Groundwater Supply Average	Groundwater Supply Range	Year	Treated Surface Water Supply Average	Treated Surface Water Supply Range	Source	Health Effects
Gross Alpha pCi/L	No	2017	15	0	4.7	ND - 12.1	2018	ND	ND	Erosion of natural deposits	Certain minerals are radioactive and may emit a form of radiation known as alpha radiation. Some people who drink water containing alpha emitters in excess of the MCL over many years may have an increased risk of getting cancer.
Gross Beta pCi/L	No	2014	50	0	3.8	N/A	2018	N/A	N/A	Decay of natural and man-made deposits	Certain minerals are radioactive and may emit forms of radiation known as photons and beta radiation. Some people who drink water containing beta and photon emitters in excess of the MCL over many years may have an increased risk of getting cancer.

SECONDARY DRINKING WATER STANDARDS								
Constituent	Violation	Year	Secondary MCL	Groundwater Supply Average	Groundwater Supply Range	Year	Typical Source of Contaminant	
Chloride mg/L	No	2017	500	47	4.5 - 50	2018	Naturally-occurring organic materials	
Color (units)	No	2018	15	0.01	ND - 5.0	2018	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives	
Foaming Agents [MBAS] µg/L	No	2017	500	60	ND - 80	2018	Leaching from natural deposits; industrial wastes	
Odor - Threshold TON	No	2018	3	0.1	ND - 1.5	2018	Industrial discharges	
Specific Conductance µS/cm	No	2018	1600	387	250 - 640	2018	Soil runoff	
Sulfate mg/L	No	2017	500	28	15 - 58	2018	Runoff/leaching from natural deposits; industrial wastes	
Total Dissolved Solids [TDS] mg/L	No	2018	1000	229	170 - 290	2018	Substances that form ions when in water; seawater influence	
Turbidity [NTU] <sup>2</sup>	No	2018	5	0.05	.1 - 1.0	2018	Runoff/leaching from natural deposits; seawater influence	

1 Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our filtration system.

2 Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of water quality. High turbidity can hinder the effectiveness of disinfectants.



SAMPLING RESULTS FOR SODIUM AND HARDNESS							
Constituent	Year	MCL / PHG (MCLG)	Groundwater Supply Average	Groundwater Supply Range	Treated Surface Water Supply Average	Treated Surface Water Supply Range	Explanation of Sodium and Hardness
Sodium mg/L	2018	N/A	23	6 - 84	36	7 - 53	"Hardness" is the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring. "Sodium" refers to the salt present in the water and is generally naturally occurring.
Hardness mg/L	2018	N/A	149	91 - 222	119	90 - 160	

ADDITIONAL MONITORING FOR UCMR 3							
Contaminant	Year	Notification Level	Groundwater Supply Average	Groundwater Supply Range	Treated Surface Water Supply Average	Treated Surface Water Supply Range	Explanation of unregulated contaminants
Chlorate µg/L	2014	800	89	58 - 120	109	48 - 120	Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.
Molybdenum µg/L	2014	N/A	2.6	ND - 5.6	2.4	ND - 7.5	
Strontium mg/L	2014	N/A	98	ND - 210	131	ND - 360	
Vanadium	2014	50	1.7	ND - 3.4	1.6	ND - 5.9	

ADDITIONAL MONITORING FOR UCMR 4							
Contaminant	Year	Notification Level	Groundwater Supply Average	Groundwater Supply Range	Treated Surface Water Supply Average	Treated Surface Water Supply Range	Explanation of unregulated contaminants
Total Microcystins	2018	N/A	NT	NT	ND	ND	Unregulated contaminant monitoring helps U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated.
Anatoxin-A	2018	N/A	NT	NT	ND	ND	
Cylindrospermopsin	2018	N/A	NT	NT	ND	ND	

ADDITIONAL MONITORED CONSTITUENTS WITH NO MCLS							
Constituent	Year	Notification Level	Groundwater Supply Average	Groundwater Supply Range	Year	Treated Surface Water Supply Average	Treated Surface Water Supply Range
Alkalinity mg/L	2017	N/A	136	97 - 170	2018	108	67 - 149
Bicarbonate mg/L	2017	N/A	136	97 - 170	2018	109	67 - 150
Calcium mg/L	2017	N/A	46	28 - 67	2018	33	20 - 47
Langelier Index at 25 C	2017	N/A	N/A	N/A	2018	0	-0.3 - 1
Magnesium mg/L	2017	N/A	9.0	6 --13	2018	9.0	7 - 11
pH	2018	N/A	8.0	7.4 - 8.3	2018	8.1	7.8 - 8.4
Potassium mg/L	2017	N/A	2.8	ND - 5.1	2010	1.8	1.4 - 2.1



This report contains important information about your drinking water. Please contact the City of Redlands at 35 Cajon Street, Suite 15A, Redlands CA 92373 or 909-798-7698 for assistance.

Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse City of Redlands a 909-798-7698 para asistirlo en español.

يحتوي هذا التقرير على معلومات مهمة حول مياه الشرب الخاصة بك. يرجى الاتصال بمدينة ريدلاندز على الرقم 7698-798-909 للحصول على المساعدة باللغة العربية.

Ang pag-uulat na ito ay naglalaman ng mahalagang impormasyon tungkol sa inyong inuming tubig. Mangyaring makipag-ugnayan sa City of Redlands, 35 Cajon Street, Suite 15A, Redlands CA 92373 o tumawag sa 909-798-7698 para matulungan sa wikang Tagalog.

这份报告含有关于您的饮用水的重要讯息。请用以下地址和电话联系 City of Redlands 以获得中文的帮助 City of Redlands, 35 Cajon Street, Suite 15A, Redlands CA 92373 909-798-7698