

# City of Redlands **2023**

## Consumer Confidence Report





## **THIS REPORT CONTAINS IMPORTANT INFORMATION ABOUT YOUR DRINKING WATER**

For questions about this report please contact:

Paul Mariscal, Water Production Operations & Maintenance Superintendent at  
(909) 798-7502 x2.

Please visit the City of Redlands at 35 Cajon Street, Suite 15A Redlands, Ca. 92373  
or Customer Service at (909) 798-7516 for assistance in English.

Este informe contiene información muy importante sobre su agua para beber.  
Para asistencia en español, favor de comunicarse con City of Redlands ubicado  
al 35 Cajon Street, Suite 15A Redlands, Ca. 92359 o por teléfono a (909) 798-7516.



## **WATER SOURCE PROTECTION**

The City of Redlands vigilantly safeguards its water supply, and we are proud to report that the City's water once again met all United States Environmental Protection Agency (U.S. EPA) and State of California drinking water health standards.

This brochure details the City of Redlands' 2022 water quality and includes information about where your water comes from, what it contains, and how it compares to State standards. The City of Redlands is committed to providing its customers with information, because informed customers are the best allies.

Sources of drinking water – whether bottled or tap water - include rivers, lakes, streams, ponds, reservoirs, springs, and wells. As water travels over land surface 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 and human activity.



# **IMPORTANT FACTS FROM THE U.S. EPA ABOUT DRINKING WATER**

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 storm water 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 storm water 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 storm water 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. EPA and the State Water Resources Control Board (State Water Board) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. State Water Board regulations also establish limits for contaminants in bottled water that provide the same protection for public health.



## **IMPORTANT FACTS FROM THE U.S. EPA ABOUT DRINKING WATER**

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).

The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

Additional information on bottled water is available on the California Department of Public Health's website at <https://www.cdph.ca.gov/Programs/CEH/DFDCS/Pages/FDBPrograms/FoodSafetyProgram/Water.aspx>.

# SOURCES OF WATER



Pictured: Mill Creek, looking northeast from Morton Peak. Mill Creek provides approximately 25% of the City's water supply.

## What is a watershed?

A watershed is an area of land that drains all the streams and rainfall to a common outlet such as the outflow of a reservoir, mouth of a bay, or any point along a stream channel.

The City of Redlands was incorporated in 1888 and has developed extensively over the past 135 years. More than 75,000 residents in Redlands, Mentone, parts of Crafton Hills and San Timoteo Canyon, and small parts of Loma Linda and San Bernardino depend on the Redlands Municipal Utilities & Engineering Department to provide water service to their homes and businesses.

The City of Redlands water system treats and utilizes surface water from the Santa Ana River and Mill Creek watersheds. Additionally, during peak demand periods, imported State Water from the Department of Water Resources is used to supplement surface water sources.

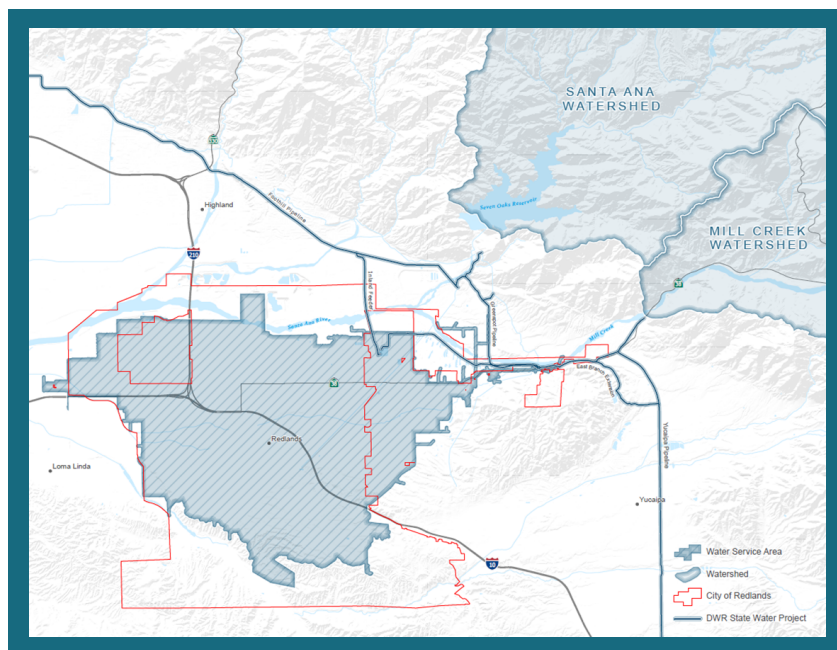
Surface water sources and groundwater pumped from the Bunker Hill Basin each account for approximately 50% of the production needed to meet the water system's normal demands.

In 2022 the City's water system treated and produced nearly 24,000 acre feet of drinking water.

# SOURCES OF WATER

The City of Redlands is committed to protecting its water sources from possible contamination. Source water assessments were completed in 2002 for all of Redlands' drinking water supplies.

These assessments help to identify the vulnerability of drinking water supplies to contamination from typical human activities and provide basic information necessary to develop programs to protect City drinking water supplies.



Pictured: City of Redlands water service area.

Possible contaminants may 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 Paul Mariscal, Water Production Operations & Maintenance Superintendent at (909) 798-7502 x2.



## TERMS USED IN THIS REPORT

### 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): A measurement of the radioactivity in water

Umhos/cm: A measure of conductivity in water

- **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 U.S. Environmental Protection Agency.
- **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 Standard (PDWS):** MCLs, MRDLs and treatment techniques (TTs) for contaminants that affect health, along with their monitoring and reporting requirements.
- **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.



# TERMS USED IN THIS REPORT

## Units in Comparison to Time

Parts per million (ppm) or milligrams per liter (mg/l)= 1 second in 11.5 days

Parts per billion (ppb) or micrograms per liter (µg/l)=1 second in nearly 32 years

Parts per trillion (ppt) or nanograms per liter (ng/l)= 1 second in nearly 32,000 years

- **Regulatory Action Level (AL):** The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.
- **Treatment Technique (TT):** A required process intended to reduce the level of a contaminant in drinking water.
- **Unregulated Contaminant Monitoring Rule (UCMR):** Provides EPA and other interested parties with scientifically valid data on the occurrence of contaminants suspected to be present in drinking water, but that do not have health-based standards set under the Safe Drinking Water Act (SDWA)
- **Nephelometric Turbidity Units (NTU):** The unit used to measure the turbidity of a fluid or the presence of suspended particles in water. The higher the concentration of suspended solids in the water is, the dirtier it looks and the higher the turbidity is.
- **N/A:** Not applicable
- **ND:** Non-detect

# INORGANIC CONTAMINANTS

The State allows us to monitor 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.

Inorganic Contaminants										
Contaminant (CCR units)	Year	MCL in CCR units	PHG (MCLG) in CCR units	Groundwater Supply Average	Groundwater Supply Range	Surface Water Supply Average	Surface Water Supply Range	Violation	Major Sources in Drinking Water	Health Effects Language
Fluoride (naturally occurring) (mg/L)	2022	2	1	0.6	.3 - 1.6	0.5	.2 - .8	No	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 (mg/L)	2022	10 (as N)	10 (as N)	3.2	ND - 8.6	ND	ND	No	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)	2022	6	1	1.3	ND - 4.7	ND	ND	No	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.

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.

# MICROBIOLOGICAL CONTAMINANTS

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.

Microbiological Contaminants								
Contaminant (CCR units)	Year	Traditional MCL	PHG	Distribution Supply	Surface Water Supply (Treated)	Violation	Major Sources in Drinking Water	Health Effects Language
Total Coliform Bacteria	2022	MCL: Systems that collect ≥40 samples/month: 5.0% of monthly samples are positive; Systems that collect <40 samples/month: 1 positive monthly sample	0	.07%	ND	No	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.
Turbidity	2022	TT	N/A	0.9 (average)	.03 (average)	No	Soil runoff	Turbidity has no health effects. However, high levels of turbidity can interfere with disinfection and provide a medium for microbial growth. Turbidity may indicate the presence of disease-causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2021. These revisions add the requirements of the federal Revised Total Coliform Rule, effective since April 1, 2016, to the existing state Total Coliform Rule. The revised rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and E. coli bacteria). The U.S. EPA anticipates greater public health protection as the rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. If found, these must be corrected by the water system. The state Revised Total Coliform Rule became effective July 1, 2021. As a result, no coliform or E. coli assessments and/or corrective actions were triggered.

# RADIOACTIVE CONTAMINANTS

Radioactive Contaminants										
Contaminant (CCR units)	Year	MCL in CCR units	PHG	Groundwater Supply Average	Groundwater Supply Range	Surface Water Supply Average	Surface Water Supply Range	Violation	Major Sources in Drinking Water	Health Effects Language
Gross Alpha Particle Activity (pCi/L)	2022	15	0	5.3	1.3 – 9.8	2	1.8 – 2.2	No	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.
Uranium (pCi/L)	2022	20	0.43	4.5	.9 – 9.2	.5	ND – 1.1	No	Erosion of natural deposits	Some people who drink water containing uranium in excess of the MCL over many years may have kidney problems or an increased risk of getting cancer.

# LEAD AND COPPER

Lead & Copper								
Contaminant	MCL	PHG	Average	Range	Sample Date	Violation	Number of Schools Requesting Lead Sampling	Typical Source
Lead (µg/L)	AL = 15	0.2	ND	34 sites sampled; 0 sites over AL	2020	No	0	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits
Copper (mg/L)	AL = 1.3	0.3	ND	34 sites sampled; 0 sites over AL	2020	No	N/A	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

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.

# DISINFECTION BYPRODUCTS

Disinfection Byproducts, Disinfectant Residuals, and Disinfection Byproduct Precursors								
Contaminant (CCR units)	Year	MCL or [MRDL] in CCR units	PHG, (MCLG) or [MRDLG]	Distribution System Average	Distribution System Range	Violation	Major Sources in Drinking Water	Health Effects Language
TTHMs [Total Trihalomethanes] (µg/L)	2022	80	N/A	12	ND – 51	No	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.
HAA5 [Sum of 5 Haloacetic Acids] (µg/L)	2022	60	N/A	7	ND – 27	No	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 (mg/L)	2022	[MRDL = 4.0 (as Cl <sub>2</sub> )]	[MRDLG = 4 (as Cl <sub>2</sub> )]	0.9	.24 - 1.7	No	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.
Control of DBP Precursors (TOC)	2022	TT	N/A	0.7	.4 - 1.4	No	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.

## REGULATED CONTAMINANTS WITH SECONDARY DRINKING WATER STANDARDS

Conventional Surface Water Treatment Plant Filter Performance							
Contaminant	MCL	PHG	Level Found	Range	Sample Date	Violation	Typical Source
Turbidity	TT = 1 NTU	N/A	0.28 NTU	.03 - .28	2022	No	Soil runoff
Turbidity	TT = 95% of samples ≤0.3 NTU	N/A	100%	.03 - .28	2022	No	Soil runoff

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.

# SODIUM AND HARDNESS

Sampling Results for Sodium and Hardness							
Constituent	Year	MCL / PHG (MCLG)	Groundwater Supply	Groundwater Range	Surface Water Supply (Treated)	Surface Water Supply Range (Treated)	Source Information
Sodium mg/L	2022	N/A	25	10 – 86	36	8 - 65	"Sodium" refers to the salt present in the water and is generally naturally occurring.
Hardness mg/L	2022	N/A	155	100 – 190	113	85 - 140	"Hardness" is the sum of polyvalent cations present in the water, generally magnesium and calcium. The cations are usually naturally occurring.

## REGULATED CONTAMINANTS WITH SECONDARY DRINKING WATER STANDARDS

Regulated Contaminants with Secondary Drinking Water Standards							
Constituent	Year	Secondary MCL (units)	Groundwater Supply	Groundwater Range	Surface Water Supply (Treated)	Surface Water Supply Range (Treated)	Typical Source of Contaminant
Turbidity	2022	5 Units	0.14	ND - 1.5	0.03	.03 - .28	Soil runoff
Total Dissolved Solids [TDS]	2022	1,000 mg/L	251	170 - 380	225	180 - 270	Runoff/leaching from natural deposits
Specific Conductance	2022	1,600 µS/cm	384	240 - 610	365	280 - 450	Substances that form ions when in water; seawater influence
Chloride	2022	500 mg/L	18	4 - 52	36	6 - 67	Runoff/leaching from natural deposits; seawater influence
Sulfate	2022	500 mg/L	33	15 - 70	41	25 - 57	Runoff/leaching from natural deposits; industrial wastes

Monitoring required by section 64449 of the California Code of Regulations, Title 22.

Note: There are no PHGs, MCLGs, or mandatory standard health effects language for these constituents because secondary MCLs are set on the basis of aesthetic concerns.

# UNREGULATED CONTAMINANT MONITORING RULE

UCMR 4						
Cyanotoxins	Year	Minimum Reporting Level	System Average	System Range	Typical Source of Contaminant	Health Effects Language
Manganese	2019	0.4 µg/L	0.41	ND - 1.5	Leaching from natural deposits	Manganese exposures resulted in neurological effects. High levels of manganese in people have been shown to result in adverse effects to the nervous system.
Total Organic Carbon (TOC) *	2019	N/A	1	0 - 3.7	Various natural and manmade sources	Total organic carbon (TOC) has no health effects. However, TOC 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 getting cancer.
Bromide *	2019	N/A	0.02	ND - 1.1	N/A	N/A

\* Raw surface water sources

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.

The 1996 Amendments to the Safe Drinking Water Act (SDWA) required the U.S. EPA to establish criteria for a monitoring program for unregulated contaminants, and to publish, once every five years, a list of no more than 30 contaminants to be monitored by public water systems (PWS). Section 64450 of the California Code of Regulations also required certain water systems to monitor a number of unregulated contaminants, with contaminant lists that were published or revised in 1990, 1996, 2000, and 2003. This section of the California Code of Regulations was repealed effective October 18, 2007. Water systems that continued to monitor for state unregulated contaminants are encouraged, but not required, to include the information regarding detected contaminants in the CCR. Although Section 64450 of the California Code of Regulations was repealed, the State Water Board may request water systems to monitor for specific contaminants per Health and Safety Code (HSC) section 116375(b).

# 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.

## WATER CONSERVATION PROGRAM

Redlands strives to make water conservation a way of life. The City is currently in level 2 drought contingency plan, which maintains the ban on wasteful water uses, such as watering ornamental grass on commercial properties.

The City offers water conservation rebates, providing incentives for residents to help reduce water use. Visit <https://www.cityofredlands.org/post/conservation-programs> to find out more about the City's water conservation efforts.



Get a credit on your water bill by applying for a rebate

 Smart Irrigation Controller Up to \$150	 High Efficiency Sprinklers \$4 per sprinkler	 High Efficiency Washer Up to \$200	 High Efficiency Toilet Up to \$100	 Drought Tolerant Landscape \$1 per sqft with max of \$1000	 Irrigation-less Groundcover Conversion \$1 per sqft with max of \$1000
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Find out more about the City of Redlands water conservation rebates at [www.cityofredlands.org/water-conservation](http://www.cityofredlands.org/water-conservation)

Pictured: Water Conservation Division post card with rebate information. The City offers rebates on lawn conversion, weather-based irrigation controllers, high efficiency sprinklers, high efficiency washing machines, and high efficiency toilets.

Email [endwaterwaste@cityofredlands.org](mailto:endwaterwaste@cityofredlands.org) to find out more.