ANNUAL WATER QUALITY REPORT

Reporting Year 2021

Presented By

City of Loma Linda

Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o hable con alguien que lo entienda bien.

PWS ID#: 3610013

We've Come a Long Way

Once again, we are proud to present our annual water quality report covering the period between January 1 and December 31, 2021. In a matter of only a few decades, drinking water has become exponentially safer and more reliable than at any other point in human history. Our exceptional staff continues to work hard every day—at all hours—to deliver the highest-quality drinking water without interruption. Although the challenges ahead are many, we feel that by relentlessly investing in customer outreach and education, new treatment technologies, system upgrades, and training, the payoff will be reliable, high-quality tap water delivered to you and your family.

Source Water Assessment

To find and protect against any potential contamination sources to our water supply, the City of Loma Linda completed a drinking water source assessment for each well. These assessments were completed as follows:

- Mountain View 3, November 1999
- Richardson 4, February 2000
- Richardson 3, November 2000
- Mountain View 5, February 2003
- Richardson 6, August 2009
- Mountain View 6 and Richardson 5, April 2009

The drinking water source assessment is the first step in the development of a complete drinking water source protection program. The assessment includes a delineation of the area around a drinking water source through which contaminants might move and reach that drinking water supply. In addition, it includes an inventory of activities that might lead to the release of microbiological or chemical contaminants within the delineated area. This enables us to determine whether the drinking water source might be vulnerable to contamination. All information obtained during the process is provided to CDPH for review. A copy of the assessment can be obtained by contacting our office during regular business hours.

Lead in Home Plumbing

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. We are responsible for providing high-quality drinking water, but we 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 two minutes before using water for drinking or cooking. (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 at (800) 426-4791 or at www.epa.gov/safewater/lead.

Important Health Information

While your drinking water meets the federal and state standards for arsenic, it does contain low levels of arsenic. The arsenic standard balances the current understanding of arsenic's possible health effects against the costs of removing arsenic from drinking water. The U.S. Environmental Protection Agency (U.S. EPA) continues to research the health effects of low levels of arsenic, which is a mineral known to cause cancer in humans at high concentrations and linked to other health effects, such as skin damage and circulatory problems.

Nitrate in drinking water at levels above 10 parts per million (ppm) 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 ppm 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.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised 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 may be particularly at risk from infections. These people should seek advice about drinking water from their health care providers. The U.S. EPA/CDC (Centers for Disease Control and Prevention) guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the Safe Drinking Water Hotline at (800) 426-4791 or http://water.epa.gov/drink/hotline.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. The city council meets the second and fourth Tuesday of each month beginning at 7:00 p.m. at the City of Loma Linda Council Chamber, 25541 Barton Road, Loma Linda.

QUESTIONS? For more information about this report, or for any questions relating to your drinking water, please call Russ Handy, Utilities Superintendent, at (909) 799-4420.

Substances That Could Be in 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.

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

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 can 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, which are by-products of industrial processes and petroleum production, and which can also come from gas stations, urban stormwater runoff, agricultural applications, and septic systems;

Radioactive Contaminants that can be naturally occurring or can be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the U.S. EPA's Safe Drinking Water Hotline at (800) 426-4791.

Water Treatment Processes

The city removes contaminants in a variety of ways. All water is chlorinated to kill or remove bacteria, viruses, and pathogens that may be present. To accomplish this, water is passed through a cylinder containing calcium hypochlorite, which produces a chlorine solution. Then it flows into a storage tank from which the solution is pumped into a pipeline connected to the wellhead, where it mixes with the water to provide contact time. A minimum of 0.2 milligram per liter (mg/L) is maintained throughout the water system to ensure all possible bacteriological contaminants are deactivated. There are 14 stations throughout the city where we collect bacterial samples and test chlorine residuals.

Blending is another form of treatment used to reduce or remove chemical and mineral contaminants. This is achieved by introducing water from a high-quality water source into a common pipeline, where it is combined with a source of lower quality. Water is then pushed through an in-line mixer, which reduces the contaminant or mineral to levels that meet or exceed standards set forth by U.S. EPA and State of California water quality regulations. The sources and combined water are tested at frequencies determined by CDPH to ensure high-quality drinking water. The city uses this method to reduce levels of nitrate and arsenic.

We also treat water to remove arsenic using a process known as adsorption. First, the pH of the well water is adjusted using carbon dioxide gas and chlorine. This changes the arsenic into an oxidized state, making it more readily adsorbed. From there, it enters the treatment vessels, which contain iron oxide media. As water passes through the bed of media, arsenic is removed to levels that meet or exceed the standards set by the U.S. EPA and CDPH. From there, the water passes through post-treatment filters, which prevent loose media from entering the distribution system. The performance of the media is closely monitored by frequent testing of the treated water. When the treated water reaches arsenic levels close to 80 percent of the maximum allowable limit, filter maintenance is performed by backwashing and forward flushing the media vessels or replacing the media. Perchlorate and VOCs are removed in filtration processes similar to those used for arsenic removal.

All water is closely monitored by trained and certified personnel to ensure that it meets all water quality regulations set forth by the U.S. EPA and CDPH. If you have questions regarding any of our treatment processes, please call (909) 799-4410 and ask to speak with one of our treatment operators or the utilities superintendent.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule, and the water we deliver must meet specific health standards. Here, we only show those substances that were detected in our water (a complete list of all our analytical results is available upon request). Remember that detecting a substance does not mean the water is unsafe to drink; our goal is to keep all detects below their respective maximum allowed levels.

The state recommends monitoring for certain substances less than once per year because the concentrations of these substances do not change frequently. In these cases, the most recent sample data are included, along with the year in which the sample was taken.

REGULATED SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
1,1-Dichloroethylene (ppb)	2020	6	10	0.19	ND–0.57	No	Discharge from industrial chemical factories
Aluminum (ppm)	2021	1	0.6	0.0106	ND–0.034	No	Erosion of natural deposits; residue from some surface water treatment processes
Antimony (ppb)	2021	6	1	0.42	ND–0.21	No	Discharge from petroleum refineries; fire retardants; ceramics; electronics; solder
Arsenic (ppb)	2021	10	0.004	6.035	5.2–7.1	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2021	1	2	0.0086	ND–0.043	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Chlorine (ppm)	2021	[4.0 (as Cl2)]	[4 (as Cl2)]	0.40	0.20–0.69	No	Drinking water disinfectant added for treatment
Chromium, Total (ppb)	2021	50	(100)	2.46	2.1–3.1	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2021	2.0	1	0.828	0.56–1.0	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2020	15	(0)	3.9	ND–9.4	No	Erosion of natural deposits
Hexavalent Chromium[1] (ppb)	2020	NS	0.02	1.99	0.17–2.9	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Mercury, Inorganic (ppb)	2021	2	1.2	0.30	ND–0.73	No	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and cropland
Nickel (ppb)	2021	100	12	14.26	4.6–27	No	Erosion of natural deposits; discharge from metal factories
Nitrate [as nitrogen] (ppm)	2021	10	10	5.34	1.2–6.7	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate + Nitrite (ppm)	2021	10	10	2.11	ND–8.3	No	NA
Perchlorate (ppb)	2021	6	1	0.0077	ND–0.4	No	An inorganic inorganic chemical used in solid rocket propellant, fireworks, explosives, flares, matches, and a variety of industries; historic aerospace or other industrial operations that used or use, store, or dispose of perchlorate and its salts
Thallium (ppb)	2021	2	0.1	0.036	ND–0.18	No	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Uranium (pCi/L)	2019	20	0.43	2.75	ND–8.3	No	Erosion of natural deposits

Tap water samples were collected for lead and copper analyses from sample sites throughout the community

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AL	PHG (MCLG)	AMOUNT DETECTED (90TH %ILE)	SITES ABOVE AL/ TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2020	1.3	0.3	0.14	0/30	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives

SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chloride (ppm)	2021	500	NS	13.36	3.9–24	No	Runoff/leaching from natural deposits; seawater influence
Copper (ppm)	2021	1.0	NS	0.00428	ND–0.014	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Manganese (ppb)	2021	50	NS	2.94	ND–8	No	Leaching from natural deposits
Odor, Threshold (TON)	2021	3	NS	1	1–1	No	Naturally occurring organic materials
Silver (ppb)	2021	100	NS	0.29	ND–0.76	No	Industrial discharges
Specific Conductance (µS/cm)	2021	1,600	NS	386	270–520	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2021	500	NS	29.8	15–41	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2021	1,000	NS	238	160–290	No	Runoff/leaching from natural deposits
Turbidity (NTU)	2021	5	NS	0.252	ND–0.96	No	Soil runoff

UNREGULATED SUBSTANCES[2]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Boron (ppb)	2021	73.8	61–87
Chromium VI [Hexavalent Chromium] (ppb)	2020	1.99	0.17–2.9
Hardness, Total [as CaCO3] (ppm)	2021	82.76	7.8–220
Sodium (ppm)	2021	60.6	22–78
Vanadium (ppb)	2021	28.42	5.1–71

OTHER UNREGULATED SUBSTANCES[2]

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
% difference (units)	2021	8.9	3–12
Bicarbonate (ppm)	2021	154	120–220
Calcium (ppm)	2021	24.16	2.7–70
Carbonate (ppm)	2021	4.32	ND–12
Chromium, Total (ppb)	2021	2.46	2.1–3.1
Magnesium (ppm)	2021	2.5	ND–11
pH (units)	2021	8.32	7.7–9.0
Potassium (ppm)	2021	1.52	0.52–2.3
Total Alkalinity (ppm)	2021	132	110–180
Total Anions (units)	2021	3.71	2.75–4.8
Total Cations (units)	2021	4.08	2.91–5.42

[1] There is currently no MCL for hexavalent chromium. The previous MCL of 10 ppb was withdrawn on September 11, 2017.

[2] 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.

Definitions

90th %ile: The levels reported for lead and copper represent the 90th percentile of the total number of sites tested. The 90th percentile is equal to or greater than 90% of our lead and copper detections.

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

MCL (Maximum Contaminant Level): 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 (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

MCLG (Maximum Contaminant Level Goal): 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. EPA.

MRDL (Maximum Residual Disinfectant Level): 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.

MRDLG (Maximum Residual Disinfectant Level Goal): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

NA: Not applicable.

ND (Not detected): Indicates that the substance was not found by laboratory analysis.

NS: No standard.

NTU (Nephelometric Turbidity Units): Measurement of the clarity, or turbidity, of water. Turbidity in excess of 5 NTU is just noticeable to the average person.

pCi/L (picocuries per liter): A measure of radioactivity.

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

PHG (Public Health Goal): 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 EPA.

ppb (parts per billion): One part substance per billion parts water (or micrograms per liter).

ppm (parts per million): One part substance per million parts water (or milligrams per liter).

TON (Threshold Odor Number): A measure of odor in water.

µS/cm (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

Where Does My Water Come From?

The City of Loma Linda's customers are fortunate because we enjoy an abundant groundwater supply. We operate seven wells: Richardson Wells 3, 4, 5, and 6 and Mountain View Wells 3, 5, and 6. All of the city's wells are located in the Bunker Hill Basin, a vast natural underground water storage area referred to as an aquifer. The Bunker Hill Basin stretches from the San Bernardino Mountain Range to the south hills of Loma Linda. The water that replenishes the Bunker Hill Basin comes from annual rainfall and snowmelt from the San Bernardino Mountains. The wells are located in the north area of the City of Loma Linda.

Loma Linda also uses a supplemental supply of water as needed from the City of San Bernardino Municipal Water Department. Both the City of Loma Linda and the City of San Bernardino Municipal Water Department fall under the same regulations for water set forth by the U.S. EPA and the California Department of Public Health (CDPH).

In June 2006, an arsenic removal facility was installed to treat water at our Mountain View 3 and 5 wells. This was done to maintain compliance in response to the U.S. EPA's decision to lower the maximum contaminant level (MCL) from 50 to 10 parts per billion (ppb).

In 2011, as part of a joint project with Lockheed Martin Inc., two treatment facilities were installed to remove perchlorate and volatile organic chemicals (VOCs) from two new wells that were installed in 2010. This was done in an effort to isolate and remove those contaminants in the aquifer and keep them from migrating further into the Bunker Hill Basin.

Water Conservation Tips

You can play a role in conserving water and save yourself money in the process by becoming conscious of the amount of water your household is using and looking for ways to use less whenever you can. It's not hard to conserve water. Here are a few tips:

- Automatic dishwashers use 15 gallons for every cycle, regardless of how many dishes are loaded. So get a run for your money and load it to capacity.
- Turn off the tap when brushing your teeth.
- Check every faucet in your home for leaks. Just a slow drip can waste 15 to 20 gallons a day. Fix it and you can save almost 6,000 gallons per year.
- Check your toilets for leaks by putting a few drops of food coloring in the tank. Watch for a few minutes to see if the color shows up in the bowl. It is not uncommon to lose up to 100 gallons a day from an invisible toilet leak. Fix it and you save more than 30,000 gallons a year.
- Use your water meter to detect hidden leaks. Simply turn off all taps and water-using appliances. Then check the meter after 15 minutes. If it moved, you have a leak.