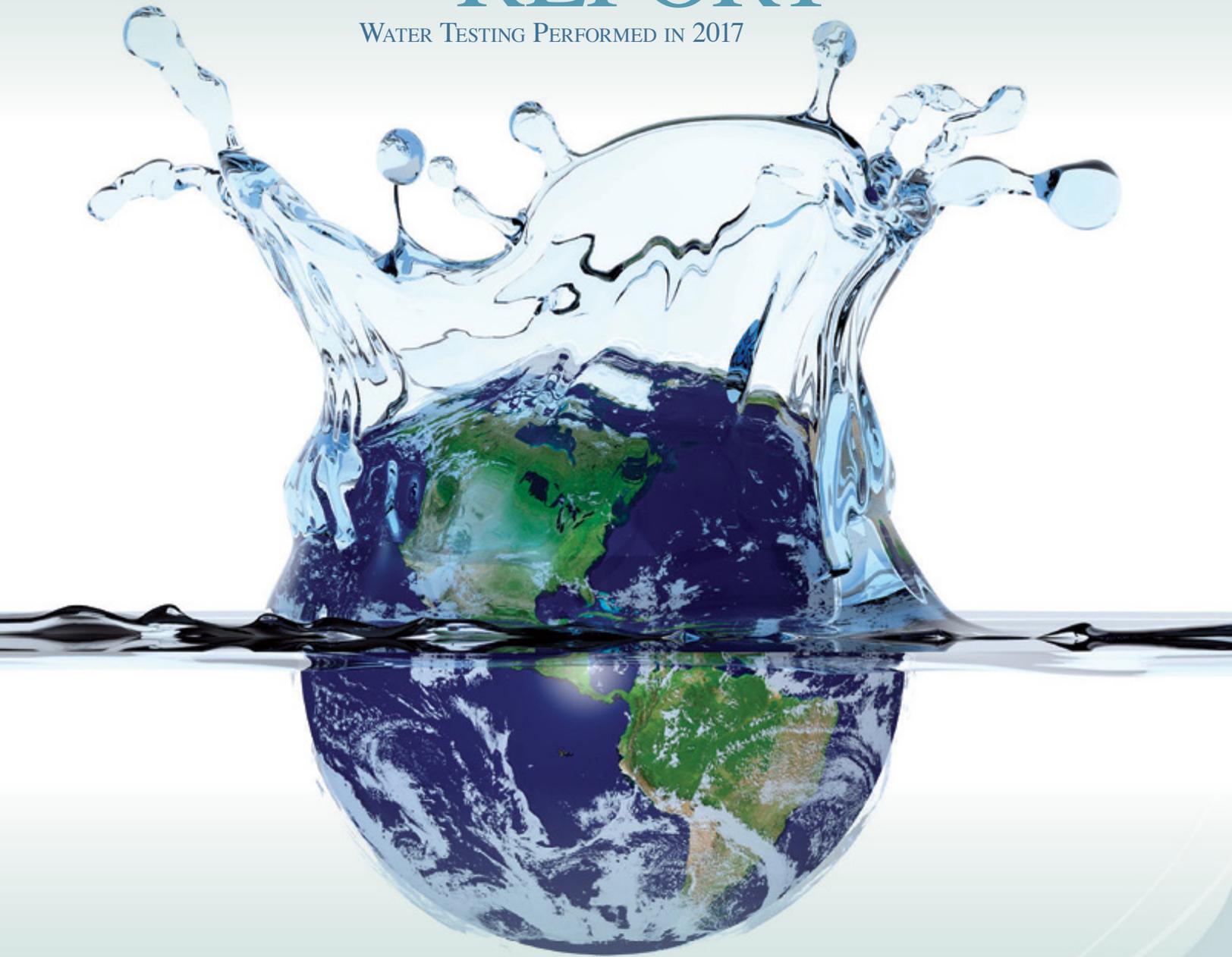


ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2017



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

Quality First

Once again we are pleased to present our annual water quality report. As in years past, we are committed to delivering the best-quality drinking water possible. To that end, we remain vigilant in meeting the challenges of new regulations, source water protection, water conservation, and community outreach and education while continuing to serve the needs of all of our water users. Thank you for allowing us the opportunity to serve you and your family.

We encourage you to share your thoughts with us on the information contained in this report. After all, well-informed customers are our best allies. 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.

Water treatment is a complex, time-consuming process.

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

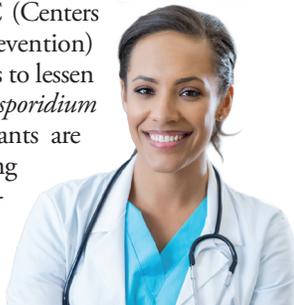
Radioactive Contaminants, that can be naturally occurring or can be the result of oil and gas production and mining activities.

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.

Important Health Information

While your drinking water meets the federal and state standard 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. 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 is linked to other health effects such as skin damage and circulatory problems.

Some people may be more vulnerable to contaminants in drinking water than the general population. Immunocompromised persons such as those with cancer undergoing chemotherapy, those 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 Tuesdays of each month, beginning at 7:00 p.m., at the City of Loma Linda Council Chamber, 25541 Barton Road, Loma Linda, California.

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 to produce 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 milligrams per liter is maintained throughout the water system to assure all possible bacteriological contaminants are deactivated. There are 14 stations throughout the city where we collect bacteria samples and test chlorine residuals.

Blending is another form of treatment used to reduce or remove chemical and/or 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 water 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 EPA and State of California water quality regulations. The sources and combined water are tested at frequencies determined by the California Department of Public Health 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 to reduce the pH. This changes the arsenic into an oxidized state, making it more readily adsorbed. From there, the water enters the treatment vessels, which contain an 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 EPA and California DPH. From there, the water passes through post-treatment filters which remove and 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 levels, filter maintenance is performed by back-washing and forward flushing the media vessels or replacing the media.

Perchlorate and VOCs are also removed from water that contains them, in filtration processes similar to our arsenic removal.

If you have any questions regarding any of our treatment processes, please call (909) 799-4410 and ask to speak with one of our treatment operators or Utilities Superintendent.

All water is closely monitored by trained and certified personnel to assure that it meets all water quality regulations set forth by the EPA and California DPH.



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 Mt. 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. Environmental Protection Agency (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 Mt. View #3 and Mt. View #5 wells. This was done to maintain compliance in response to the EPA's decision to lower the MCL (maximum contaminant level) for arsenic from 50 ppb to 10 ppb.

In 2011, as part of a joint project with Lockheed Martin, Inc., two treatment facilities were installed to remove perchlorate and VOCs (Volatile Organic Chemicals) 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.

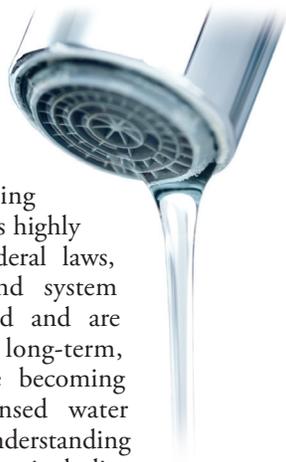


Count on Us

Delivering high-quality drinking water to our customers involves far more than just pushing water through pipes. Water treatment is a complex, time-consuming process. Because tap water is highly regulated by state and federal laws, water treatment plant and system operators must be licensed and are required to commit to long-term, on-the-job training before becoming fully qualified. Our licensed water professionals have a basic understanding of a wide range of subjects, including mathematics, biology, chemistry, and physics. Some of the tasks they complete on a regular basis include:

- Operating and maintaining equipment to purify and clarify water;
- Monitoring and inspecting machinery, meters, gauges, and operating conditions;
- Conducting tests and inspections on water and evaluating the results;
- Maintaining optimal water chemistry;
- Applying data to formulas that determine treatment requirements, flow levels, and concentration levels;
- Documenting and reporting test results and system operations to regulatory agencies; and
- Serving our community through customer support, education, and outreach.

So, the next time you turn on your faucet, think of the skilled professionals who stand behind each drop.



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 Well # 3, November 1999; Richardson Well #4, February 2000; Richardson Well #3, November 2000; Mountain View Well #5, February 2003; Richardson Well #6, August 2009; Mt. View Well #6 and Richardson Well #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 inventory enables us to determine whether the drinking water source might be vulnerable to contamination. All information obtained during the process is provided to California Department of Public Health for review.

A copy of the assessment can be obtained by contacting us 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 2 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 or at www.epa.gov/lead.



Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. The information in the data tables shows only those substances that were detected between January 1 and December 31, 2017. Remember that detecting a substance does not necessarily 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 often 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.

We participated in the 3rd stage of the U.S. EPA's Unregulated Contaminant Monitoring Rule (UCMR3) program by performing additional tests on our drinking water. UCMR3 benefits the environment and public health by providing the EPA with data on the occurrence of contaminants suspected to be in drinking water, in order to determine if the EPA needs to introduce new regulatory standards to improve drinking water quality. Contact us for more information on this program.

REGULATED SUBSTANCES							
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Arsenic (ppb)	2017	10	0.004	5.8	4.8–7.1	No	Erosion of natural deposits; runoff from orchards; glass and electronics production wastes
Barium (ppm)	2017	1	2	0.013	0–0.042	No	Discharges of oil drilling wastes and from metal refineries; erosion of natural deposits
Cadmium (ppb)	2017	5	0.04	0.056	0–0.2	No	Internal corrosion of galvanized pipes; erosion of natural deposits; discharge from electroplating and industrial chemical factories, and metal refineries; runoff from waste batteries and paints
Chlorine (ppm)	2017	[4.0 (as Cl ₂)]	[4 (as Cl ₂)]	0.43	0.2–0.84	No	Drinking water disinfectant added for treatment
Chromium (ppb)	2017	50	(100)	2.4	0–3.8	No	Discharge from steel and pulp mills and chrome plating; erosion of natural deposits
Fluoride (ppm)	2017	2.0	1	0.87	0.63–1.1	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2015	15	(0)	6.48	0–14	No	Erosion of natural deposits
Hexavalent Chromium (ppb)	2017	NS ¹	0.02	2.58	1.9–3.5	No	Discharge from electroplating factories, leather tanneries, wood preservation, chemical synthesis, refractory production, and textile manufacturing facilities; erosion of natural deposits
Mercury [inorganic] (ppb)	2017	2	1.2	0.21	0–0.7	No	Erosion of natural deposits; discharge from refineries and factories; runoff from landfills and cropland
Nitrate [as nitrogen] (ppm)	2017	10	10	2.39	0.25–6.2	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate + Nitrite (ppm)	2017	10	10	3.34	0.24–8.9	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
TTHMs [Total Trihalomethanes] (ppb)	2017	80	NA	2.9	1.1–4.7	No	By-product of drinking water disinfection
Thallium (ppb)	2017	2	0.1	0.52	0–0.98	No	Leaching from ore-processing sites; discharge from electronics, glass, and drug factories
Uranium (pCi/L)	2015	20	0.43	5	0–11	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% TILE)	SITES ABOVE AL/TOTAL SITES	VIOLATION	TYPICAL SOURCE
Copper (ppm)	2017	1.3	0.3	0.2	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
Aluminum (ppb)	2017	200	NS	18.5	0–44	No	Erosion of natural deposits; residual from some surface water treatment processes
Chloride (ppm)	2017	500	NS	14.6	5.4–26	No	Runoff/leaching from natural deposits; seawater influence
Iron (ppb)	2017	300	NS	3.66	0–22	No	Leaching from natural deposits; industrial wastes
Manganese (ppb)	2017	50	NS	20.45	2.1–49	No	Leaching from natural deposits
Odor–Threshold (Units)	2017	3	NS	1	1–1	No	Naturally occurring organic materials
Specific Conductance (µS/cm)	2017	1,600	NS	413	270–530	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2017	500	NS	34.1	17–45	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2017	1,000	NS	270	190–370	No	Runoff/leaching from natural deposits
Turbidity (Units)	2017	5	NS	0.15	0–0.9	No	Soil runoff
Zinc (ppm)	2017	5.0	NS	0.0028	0–0.017	No	Runoff/leaching from natural deposits; industrial wastes

UNREGULATED AND OTHER SUBSTANCES ²

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH
Bicarbonate (ppm)	2017	156.8	91–210
Boron (ppb)	2017	68.3	45–89
Calcium (ppm)	2017	30.4	2.6–68
Carbonate (ppm)	2017	5	0–16
Dioxane (ppb)	2015	0.095	0–0.37
Hardness (ppm)	2017	90.4	6.4–210
Magnesium (ppm)	2017	3.54	0–10
pH (Units)	2017	8.36	7.7–9.2
Potassium (ppm)	2017	1.63	0.65–2.3
Total Alkalinity (ppm)	2017	140	100–180
Total Chromium (ppb)	2015	1.78	0–2.5
Total Molybdenum (ppb)	2015	3.8	0–5.6
Total Strontium (ppb)	2015	208.16	0–380
Sodium (ppm)	2017	53	21–80
Vanadium (ppb)	2017	25.05	5.5–71

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

²Unregulated contaminant monitoring helps the 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

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

$\mu\text{S/cm}$ (microsiemens per centimeter): A unit expressing the amount of electrical conductivity of a solution.

LRAA (Locational Running Annual Average): The average of sample analytical results for samples taken at a particular monitoring location during the previous four calendar quarters. Amount Detected values for TTHMs and HAAs are reported as the highest LRAAs.

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

NS: No standard

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).