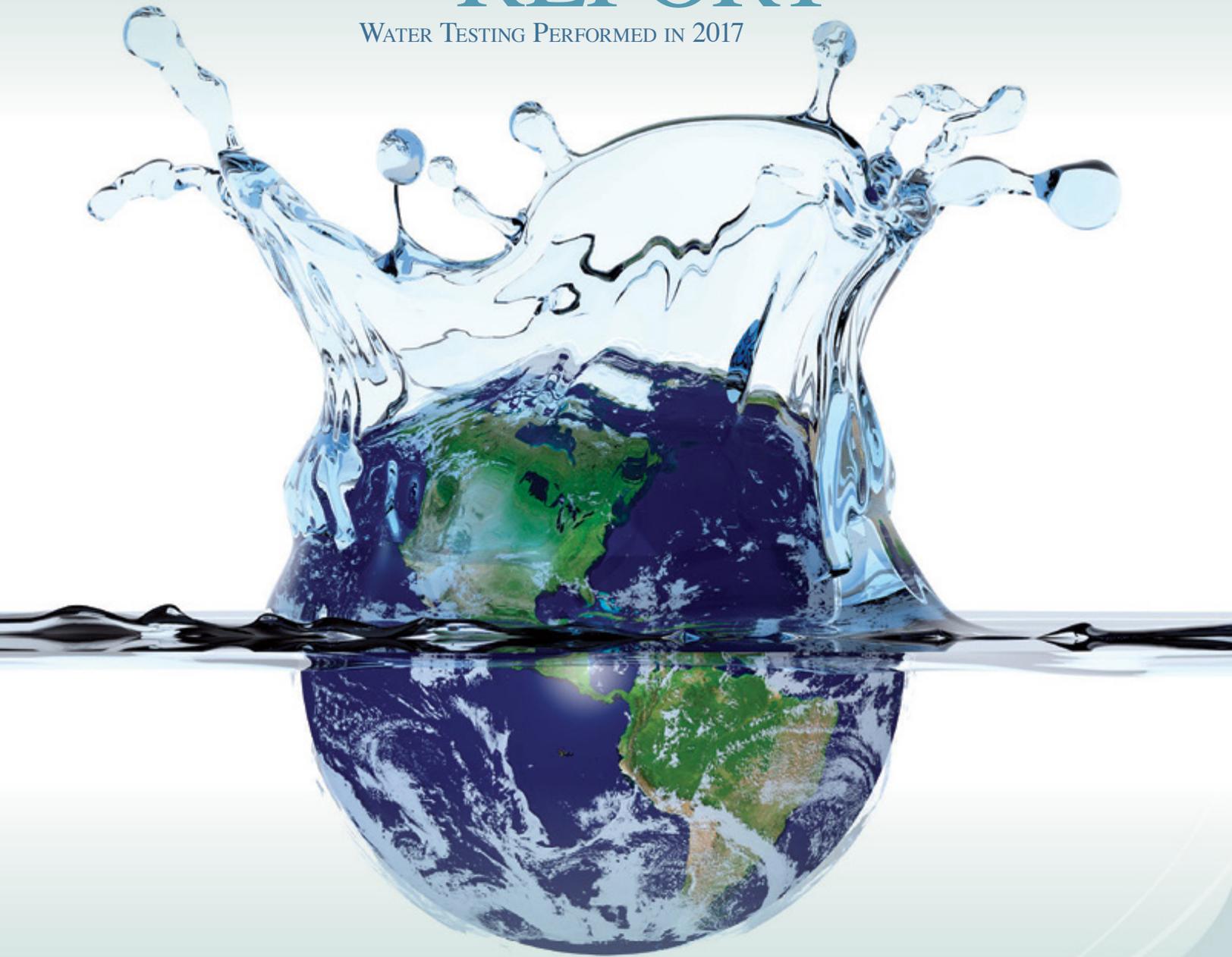


ANNUAL WATER QUALITY REPORT

WATER TESTING PERFORMED IN 2017



Presented By
Lake Arrowhead CSD

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

PWS ID#: 3610005

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.

Water Conservation

You can play a role in conserving water and saving yourself money in the process by becoming conscious of the amount of water your household is using and by looking for ways to use less whenever you can. It is 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 can 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.

Water treatment is a complex, time-consuming process.

Source Water Assessment

A watershed Sanitary Survey was originally completed in 1995 to determine the vulnerability of the Lake to contaminants. That survey was updated in 2001, and again most recently in 2015, and concluded that the Lake is at low risk for contamination, with the greatest potential being the proximity of the wastewater collection system to the Lake. The District filed its Vulnerability Assessment with the State and federal agencies in 2006. For more information about this report, or for any questions relating to your drinking water, please call Marc

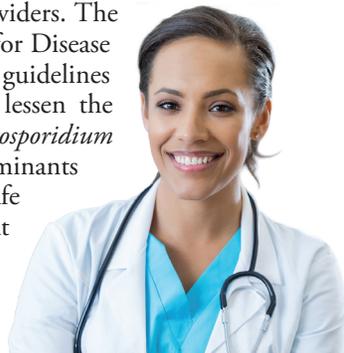
Lippert, Water Treatment Supervisor, at (909) 336-7113 or Customer Service at (909) 336-7100. You may also visit our website at www.lakearrowheadcsd.com.

Community Participation

You are invited to participate in our public forum and voice your concerns about your drinking water. Regular meetings of the Board of Directors are held on the second and fourth Tuesdays of every month (with the exception of December) at 5:30 p.m. at the District Board Room (27307 State Hwy 189, Suite 104) in Blue Jay. Special meetings may be held, if necessary, throughout the year, with dates, times, and locations to be determined.

Important Health Information

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>.



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 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.

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 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, which are by-products of industrial processes and petroleum production, and which can also come from gas stations, urban storm-water 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.

Where Does My Water Come From?

The primary source of drinking water supplied to District customers in Arrowhead Woods is from Lake Arrowhead and is supplemented by five ground water wells and purchased water from Crestline-Lake Arrowhead Water Agency (CLAWA). CLAWA treats the water and delivers it into the District's distribution system, where it is blended with water treated by the District. Both agencies use state-of-the-art treatment processes to ensure that the water delivered to your home is safe and pleasant tasting. Although our water quality consistently meets Public Health goals, we do not currently have enough supply to meet community demands in a prolonged dry period.

FOG (fats, oils, and grease)

You may not be aware of it, but every time you pour fat, oil, or grease (FOG) down your sink (e.g., bacon grease), you are contributing to a costly problem in the sewer collection system. FOG coats the inner walls of the plumbing in your house as well as the walls of underground piping throughout the community. Over time, these greasy materials build up and form blockages in pipes, which can lead to wastewater backing up into parks, yards, streets, and storm drains. These backups allow FOG to contaminate local waters, including drinking water.

Exposure to untreated wastewater is a public health hazard. FOG discharged into septic systems and drain fields can also cause malfunctions, resulting in more frequent tank pump-outs and other expenses.

Communities spend billions of dollars every year to unplug or replace grease-blocked pipes, repair pump stations, and clean up costly and illegal wastewater spills. Here are some tips that you and your family can follow to help maintain a well-run system now and in the future:

NEVER:

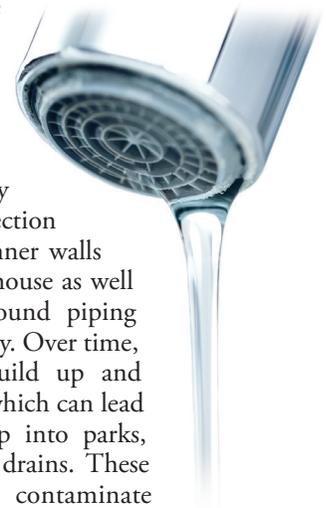
- Pour fats, oil, or grease down the house or storm drains.
- Dispose of food scraps by flushing them.
- Use the toilet as a waste basket.

ALWAYS:

- Scrape and collect fat, oil, and grease into a waste container such as an empty coffee can, and dispose of it with your garbage.
- Place food scraps in waste containers or garbage bags for disposal with solid wastes.
- Place a wastebasket in each bathroom for solid wastes such as disposable diapers, creams and lotions, and personal hygiene products, including nonbiodegradable wipes.

QUESTIONS?

For more information about this report, or for any questions relating to your drinking water, please call Marc Lippert, Water Treatment Supervisor, at (909) 336-7113 or Customer Service at (909) 336-7100. You may also visit our website at www.lakearrowheadcsd.com.



Impact of Zebra Mussels

The zebra mussel is a small mussel native to Russia. In 1988, it reached North America by a transatlantic freighter. Since then, they have continued to spread throughout the country. Zebra mussels are very successful invaders because they live and feed in many different aquatic habitats and breed prolifically (each female produces 1 million eggs per year) for their entire five-year lifespan.

Adult zebra mussels colonize on living and nonliving surfaces, including boats, buoys, piers, plants, and clams. They are a great concern to drinking water utilities because they can attach to water intake pipes, severely restricting the flow of fresh water. They can also impact water quality by increasing taste and odor problems in the water supply.

Zebra mussels are almost impossible to eradicate once they become established. Water utilities have had to retool their water intake systems to prevent zebra mussel-related problems costing millions of dollars a year. Utilities rely on a variety of methods to remove mussels from intake pipes; because there is no single, ideal removal solution, new methods are constantly under investigation.

While complete removal may be impossible, preventing zebra mussel spread is not. Human activities have spread them into many inland lakes and streams, usually through recreational boating, fishing, and diving practices. Simple steps such as draining live wells, cleaning vegetation off boat trailers, removing attached zebra mussels from boat hulls, and not dumping bait into lakes or rivers can prevent the spread of zebra mussels into noninfested waters.

About Our Exceedance

In the summer of 2016, the District conducted the lead and copper sampling at 31 homes in the Arrowhead Woods water service area. After collection, these samples were sent to an independent laboratory for analysis. After the results came back from the lab, there were 2 of the 31 homes above the action level for lead. The District contacted those 2 homes that were above the action level to discuss the results and inquire about where and how the samples were taken. After talking to the customers at these two homes it was discovered that the samples were obtained from their restroom sinks instead of the customary location of the kitchen sink. After these discussions, the District brought these two homes 2 additional sample bottles to take confirmation samples at the original bathroom sinks as well as samples from their kitchen sinks. Those 4 additional samples were sent to the independent lab for analysis, and 3 of the 4 were again above the action level. This now took the total number of samples collected for the 2016 Lead and Copper Program to 35 samples from 31 homes. Those additional samples counted in the 90th percentile equation and because there is a AL exceedance at the 90th percentile, the District implemented the following additional actions:

- Lead and copper standard tap sampling at 40 homes for two 6 month periods beginning in January of 2017.
- Lead public education, including Lead education brochures mailed to all customers, and brochures at school sites and medical facilities throughout Lake Arrowhead. Also, public service announcements to the local newspapers, radio stations, and television stations.
- A corrosion control study, which will include monitoring for pH, alkalinity, calcium, conductivity, and water temperature in addition to lead and copper sampling.

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.



Failure in Flint

The national news coverage of water conditions in Flint, Michigan, has created a great deal of confusion and consternation. The water there has been described as being corrosive; images of corroded batteries and warning labels on bottles of acids come to mind. But is corrosive water bad?

Corrosive water can be defined as a condition of water quality that will dissolve metals (iron, lead, copper, etc.) from metallic plumbing at an excessive rate. There are a few contributing factors but, generally speaking, corrosive water has a pH of less than 7; the lower the pH, the more acidic, or corrosive, the water becomes. (By this definition, many natural waterways throughout the country can be described as corrosive.) While all plumbing will be somewhat affected over time by the water it carries, corrosive water will damage plumbing much more rapidly than water with low corrosivity.

By itself, corrosive water is not a health concern; your morning glass of orange juice is considerably more corrosive than the typical lake or river. What is of concern is that exposure in drinking water to elevated levels of the dissolved metals increases adverse health risks. And there lies the problem.

Public water systems are required to maintain their water at optimal conditions to prevent it from reaching corrosive levels. Rest assured that we routinely monitor our water to make sure that what happened in Flint never happens here. For more information on how corrosivity impacts water quality, download this informative pamphlet: <http://goo.gl/KpTmXv>.

Test Results

Our water is monitored for many different kinds of substances on a very strict sampling schedule. The information in the data tables show 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 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

				Lake Arrowhead CSD		Crestline-Lake Arrowhead Water Agency (CLAWA)			
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	MCL [MRDL]	PHG (MCLG) [MRDLG]	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Chlorine (ppm)	2017	[4.0 (as Cl ₂)]	[4 (as Cl ₂)]	1.31	0.77–1.74	NA	NA	No	Drinking water disinfectant added for treatment
Control of DBP precursors [TOC] (Units)	2017	TT	NA	2.93	2.5–3.8	NA	NA	No	Various natural and man-made sources
Fluoride (ppm)	2017	2.0	1	ND	NA	0.04	0–0.59	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
Gross Alpha Particle Activity (pCi/L)	2017	15	(0)	1.36 ¹	ND–9.80	NA	NA	No	Erosion of natural deposits
Haloacetic Acids (ppb)	2017	60	NA	16.98	4.20–34.20	10 ²	0–8.30	No	By-product of drinking water disinfection
Nitrate [as nitrogen] (ppm)	2017	10	10	NA	NA	0.26	0–0.58	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
Nitrate [as nitrogen] (ppm)	2017	10	10	ND	NA	NA	NA	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
TTHMs [Total Trihalomethanes] ³ (ppb)	2017	80	NA	55.30	23–80.30	44 ²	12.50–56.10	No	By-product of drinking water disinfection
Turbidity (NTU)	2017	TT	NA	0.0855 ⁴	0.03–0.200	NA	NA	No	Soil runoff
Turbidity (lowest monthly percent of samples meeting limit)	2017	TT = 95% of samples meet the limit	NA	100	NA	NA	NA	No	Soil runoff
Uranium (pCi/L)	2017	20	0.43	0.250	ND–8.60	NA	NA	No	Erosion of natural deposits

Tap Water Samples 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	EXCEEDANCE	TYPICAL SOURCE
Copper (ppm)	2017	1.3	0.3	0.68	0/80	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
Lead (ppb)	2017	15	0.2	5.1	3/80	Yes	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

SECONDARY SUBSTANCES

			Lake Arrowhead CSD		Crestline-Lake Arrowhead Water Agency (CLAWA)				
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH	VIOLATION	TYPICAL SOURCE
Aluminum (ppb)	2017	200	NS	26.60	ND-69	NA	NA	No	Erosion of natural deposits; residual from some surface water treatment processes
Chloride (ppm)	2017	500	NS	21.50	18-25	52.44	27-110	No	Runoff/leaching from natural deposits; seawater influence
Color (Units)	2017	15	NS	2.75	1-19	NA	NA	No	Naturally occurring organic materials
Corrosivity (Units)	2017	Non-corrosive	NS	11.08	10.85-11.31	NA	NA	No	Natural or industrially influenced balance of hydrogen, carbon, and oxygen in the water; affected by temperature and other factors
Odor-Threshold (TON)	2017	3	NS	1.03	1-2	1	1-1	No	Naturally occurring organic materials
Specific Conductance (µS/cm)	2017	1,600	NS	295.30	197-618	NA	NA	No	Substances that form ions when in water; seawater influence
Sulfate (ppm)	2017	500	NS	6.95	6-7.90	37.75	28-47	No	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (ppm)	2017	1,000	NS	120	100-140	225	130-320	No	Runoff/leaching from natural deposits
Turbidity (Units)	2017	5	NS	0.290	0.05-1.16	NA	NA	No	Soil runoff

UNREGULATED AND OTHER SUBSTANCES ⁵

		Lake Arrowhead CSD		Crestline-Lake Arrowhead Water Agency (CLAWA)	
SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
Bicarbonate (ppm)	2017	78	75-81	NA	NA
Boron (ppb)	2017	ND	NA	81.25	0-140
Calcium (ppm)	2017	19.50	19-20	NA	NA
Magnesium (ppm)	2017	3.65	3.60-9.70	NA	NA
pH (Units)	2017	7.56	6.68-8.22	7.85	7.40-8.10
Potassium (ppm)	2017	2.60	2.60-2.60	NA	NA
Sodium (ppm)	2017	18	15-21	47.44	34-73
Total Hardness (ppm)	2017	88.71	61-162	67.25	47-92
Vanadium (ppb)	2017	ND	NA	1.30	0-4.70

¹ These results were from samples taken at the IX Treatment Plant Final at the Lake Arrowhead Country Club. This water is then sent to Bernina Treatment Plant and blended with Lake and CLAWA water.

² Total Trihalomethanes and Haloacetic Acids are reported as the Highest Locational Running Annual Average.

³ Some people who drink water containing trihalomethanes in excess of the MCL over many years may experience problems with their liver, kidneys, or central nervous systems, and may have an increased risk of getting cancer.

⁴ 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.

⁵ 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

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

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.

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