

A close-up photograph of water being poured from a glass pitcher into a clear glass. The water is captured mid-pour, creating a dynamic splash and bubbles. The background is a blurred wooden surface. The text is overlaid on the central glass.

# ANNUAL WATER QUALITY REPORT

REPORTING YEAR 2018

*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

## Our Mission Continues

We are once again pleased to present our annual water quality report covering all testing performed between January 1 and December 31, 2018. Over the years, we have dedicated ourselves to producing drinking water that meets all state and federal standards. We continually strive to adopt new methods for delivering the best-quality drinking water to you. As new challenges to drinking water safety emerge, we remain vigilant in meeting the goals of source water protection, water conservation, and community education while continuing to serve the needs of all our water users.

Please remember that we are always available should you ever have any questions or concerns about your water.

### Where Does My Water Come From?

The primary source of drinking water supplied to district customers in Arrowhead Woods is from Lake Arrowhead and supplemented by five groundwater 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.

### 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 Tuesday of every month (with the exception of December) at 5:30 p.m. in the District Board Room (27307 State Highway 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>.



### What's Your Water Footprint?



You may have some understanding about your carbon footprint, but how much do you know about your water footprint? The water footprint of an individual, community, or business is defined as the total volume of fresh water that is used to produce the goods and services that are consumed by the individual or community or produced by the business. For example, 11 gallons of water are needed to irrigate and wash the fruit in one half-gallon container of orange juice. Thirty-seven gallons of water are used to grow, produce, package, and ship the beans in that morning cup of coffee. Two hundred and sixty-four gallons of water are required to produce 1 quart of milk, and 4,200 gallons of water are required to produce 2 pounds of beef.

According to the U.S. EPA, the average American uses over 180 gallons of water daily. In fact, in the developed world, one flush of a toilet uses as much water as the average person in the developing world allocates for an entire day's cooking, washing, cleaning, and drinking. The annual American per capita water footprint is about 8,000 cubic feet; twice the global per capita average. With water use increasing sixfold in the past century, our demands for fresh water are rapidly outstripping what the planet can replenish.

To check out your own water footprint, go to <http://goo.gl/QMoIXT>.

## 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 <http://www.lakearrowheadcsd.com>.

## 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 wastebasket.

### 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 like disposable diapers, creams and lotions, and personal hygiene products, including nonbiodegradable wipes.

## 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, 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.

We remain vigilant in delivering the best-quality drinking water

## 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, 2009 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. 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 <http://www.lakearrowheadcsd.com>.

## About Our Exceedance

In summer 2016 the district conducted 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. The results indicated 2 of the 31 homes were above the action level for lead. The district contacted the residents of the two homes above the action level to discuss the results and ask where and how the samples were taken. After talking to the customers, it was discovered that the samples were obtained from restroom sinks instead of the customary location of the kitchen sink. Following these discussions, the district requested confirmation samples at the original restroom sinks as well as samples from the kitchen sinks. Those four additional samples were sent to the independent laboratory for analysis, and three of the four were again above the action level. A total of 35 samples from 31 homes were collected for the 2016 Lead and Copper Program. Those additional samples were counted in the 90th-percentile equation, and since there was an exceedance of the maximum contaminant limit, the district implemented the following additional actions:

- Lead and copper standard tap sampling at 40 homes for two 6-month periods beginning in January 2017.
- Lead public education, including lead education brochures mailed to all customers and placed at school sites and medical facilities throughout Lake Arrowhead. Public service announcements were sent to local newspapers and radio and television stations.
- A corrosion control study, including 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.

## 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 5-year life span.

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; since 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.

## 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 at (800) 426-4791 or at [www.epa.gov/safewater/lead](http://www.epa.gov/safewater/lead).



## 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

				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
<b>Chlorine</b> (ppm)	2018	[4.0 (as Cl <sub>2</sub> )]	[4 (as Cl <sub>2</sub> )]	1.30	1.00–1.75	NA	NA	No	Drinking water disinfectant added for treatment
<b>Control of DBP precursors [TOC]</b> (Units)	2018	TT	NA	2.51	2.40–2.70	NA	NA	No	Various natural and man-made sources
<b>Fluoride</b> (ppm)	2018	2.0	1	ND	NA	ND	NA	No	Erosion of natural deposits; water additive that promotes strong teeth; discharge from fertilizer and aluminum factories
<b>Gross Alpha Particle Activity</b> (pCi/L)	2018	15	(0)	1.62 <sup>1</sup>	ND–6.80 <sup>1</sup>	NA	NA	No	Erosion of natural deposits
<b>Haloacetic Acids</b> (ppb)	2018	60	NA	11.27	4.30–19.40	5	1.4–6.8	No	By-product of drinking water disinfection
<b>Nitrate [as nitrogen]</b> (ppm)	2018	10	10	ND	NA	0.18	ND–0.68	No	Runoff and leaching from fertilizer use; leaching from septic tanks and sewage; erosion of natural deposits
<b>TTHMs [Total Trihalomethanes]</b> (ppb)	2018	80	NA	55.56	24.60–86.60	44.2	12.9–68.1	No	By-product of drinking water disinfection
<b>Turbidity<sup>2</sup></b> (NTU)	2018	TT	NA	0.19	0.05–0.19	0.5	NA	No	Soil runoff
<b>Turbidity</b> (Lowest monthly percent of samples meeting limit)	2018	TT	NA	100	NA	100	NA	No	Soil runoff
<b>Uranium</b> (pCi/L)	2018	20	0.43	ND	NA	NA	NA	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	EXCEEDANCE	TYPICAL SOURCE
<b>Copper</b> (ppm)	2018	1.3	0.3	0.310	0/40	No	Internal corrosion of household plumbing systems; erosion of natural deposits; leaching from wood preservatives
<b>Lead</b> (ppb)	2018	15	0.2	ND	2/40	Yes	Internal corrosion of household water plumbing systems; discharges from industrial manufacturers; erosion of natural deposits

## SECONDARY SUBSTANCES

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	SMCL	PHG (MCLG)	Lake Arrowhead CSD		Crestline-Lake Arrowhead Water Agency (CLAWA)		VIOLATION	TYPICAL SOURCE
				AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH		
<b>Aluminum</b> (ppb)	2018	200	NS	42.50	ND–110	NA	NA	No	Erosion of natural deposits; residual from some surface water treatment processes
<b>Chloride</b> (ppm)	2018	500	NS	23	18–28	85.44	74–110	No	Runoff/leaching from natural deposits; seawater influence
<b>Color</b> (Units)	2018	15	NS	1.65	1–9	NA	NA	No	Naturally occurring organic materials
<b>Corrosivity</b> (Units)	2018	Non-corrosive	NS	11.02	11–11.04	NA	NA	No	Natural or industrially influenced balance of hydrogen, carbon, and oxygen in water affected by temperature and other factors
<b>Odor-Threshold</b> (TON)	2018	3	NS	1.07	1–2	1	1–1	No	Naturally occurring organic materials
<b>Specific Conductance</b> (µS/cm)	2018	1,600	NS	285.69	202–496	NA	NA	No	Substances that form ions when in water; seawater influence
<b>Sulfate</b> (ppm)	2018	500	NS	7.35	6.6–7.35	49	39–60	No	Runoff/leaching from natural deposits; industrial wastes
<b>Total Dissolved Solids</b> (ppm)	2018	1,000	NS	145	140–150	299.38	280–320	No	Runoff/leaching from natural deposits
<b>Turbidity</b> (NTU)	2018	5	NS	0.286	0.07–1.05	NA	NA	No	Soil runoff

## UNREGULATED AND OTHER SUBSTANCES <sup>3</sup>

SUBSTANCE (UNIT OF MEASURE)	YEAR SAMPLED	Lake Arrowhead CSD		Crestline-Lake Arrowhead Water Agency (CLAWA)	
		AMOUNT DETECTED	RANGE LOW-HIGH	AMOUNT DETECTED	RANGE LOW-HIGH
<b>Bicarbonate</b> (ppm)	2018	77	76–78	NA	NA
<b>Boron</b> (ppb)	2018	ND	NA	144.38	ND–170
<b>Calcium</b> (ppm)	2018	20	19–21	NA	NA
<b>Magnesium</b> (ppm)	2018	3.55	3.30–3.80	NA	NA
<b>pH</b> (Units)	2018	7.61	7.04–8.43	8.10	7.80–8.50
<b>Potassium</b> (ppm)	2018	2.65	2.50–2.80	NA	NA
<b>Sodium</b> (ppm)	2018	18.50	14–23	68.75	59–79
<b>Total Hardness</b> (ppm)	2018	92.16	62–137	95.06	89–100
<b>Vanadium</b> (ppb)	2018	ND	NA	1.30	ND–4.7

<sup>1</sup> 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.

<sup>2</sup> Turbidity is a measure of the cloudiness of the water. It is monitored because it is a good indicator of the effectiveness of the filtration system.

<sup>3</sup> 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.

**µS/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.

**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).

**SMCL (Secondary Maximum Contaminant Level):** These standards are developed to protect aesthetic qualities of drinking water and are not health based.

**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.