

Setting Standards of Excellence in Public Service



# 2021

## 2021 Water Quality Report

Calendar Year 2021 Water Quality Data

Published June 2022



**Helix**  
WATER DISTRICT





All of the services,  
products and jobs  
we depend on,  
depend on water.



# Who We Are

We are a not-for-profit, local government agency formed in 1913 to develop and manage a public water system for East County's economy and public health.

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Helix Water District is a not-for-profit, local government agency formed in 1913 to develop and manage a public water system for East County's economy and public health. Today, we provide treated water for 500,000 East County residents and distribute water to 277,000 people in La Mesa, Lemon Grove, Spring Valley, El Cajon and Lakeside.

Unlike other government, we are not funded by taxes. We charge fees to recover the cost of the services we provide, and state law prohibits us from collecting a penny more. We reinvest all of the revenue we collect in the operation and maintenance of the water supply, storage, treatment and distribution systems that provide your water.

We are governed by a board elected by the communities they live in. Boardmembers represent your interests at Helix and at the San Diego County Water Authority, where we collaboratively manage the San Diego region's water supply. They are also active in the organizations that shape water policy in California, and lobby our elected officials in Sacramento and Washington.

The board meets on the first, third and fourth Wednesdays of the month at 3 p.m., and we encourage customers and the public to attend in person or on Zoom.com. Meeting agendas are posted on our homepage at [hwd.com](http://hwd.com) and The Zoom link for each meeting is displayed on the first page of the agenda.

## This Report is About Your Water

In calendar year 2021, as in years past, your tap water met all U.S. Environmental Protection Agency and state of California drinking water health standards. This report follows California's State Water Resources Control Board, Division of Drinking Water guidelines for water quality reports dated March 2022. It is our intent to provide this report to all of our consumers. Please call us at 619-466-0585 for additional copies.

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If you have questions about this report, please contact Senior Chemist/Lab Compliance Administrator Cindy Ziernicki at 619-667-6248 or [wqr@helixwater.org](mailto:wqr@helixwater.org).

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We also recommend visiting our Water Quality FAQs webpage, which explains the reasons and remedies for a wide variety of taste, odor and visual issues that can occur with tap water. Go to [hwd.com/water-quality-faqs](http://hwd.com/water-quality-faqs).

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# Our Water Supply

## Where Your Water Comes From

Helix Water District is committed to providing you with safe and reliable water. Our water is a blend of water purchased from the San Diego County Water Authority and local surface water.

SDCWA's water sources are a combination of imported water from Northern California via the State Water Project and the Colorado River, along with local supplies including saltwater desalination. Over the past 30 years, imported water has accounted for 86% of our water supply, on average, due to limited local precipitation. The remainder of our water supply comes from local water runoff collected in Lake Cuyamaca, El Capitan Reservoir and Lake Jennings.

Throughout the year, the ratio of water that we receive from each source changes depending on availability. What is in our water varies depending on the water source, and the geology and environment that it flows through on the way to our plant. Our state-certified employees test our source water continuously and adjust treatment accordingly to ensure high-quality water for our customers.

All raw water, whether imported or local, is treated before entering our distribution system. In 2021, 96% of your water was treated at Helix Water District's R.M. Levy Water Treatment Plant in Lakeside. The remaining 4% of water was purchased through SDCWA and treated at the Metropolitan Water District of Southern California's R.A. Skinner Treatment Plant, SDCWA's Twin Oaks Valley Water Treatment Plant and/or the Claude "Bud" Lewis Carlsbad Desalination Plant.

## Potential Source Water Contaminants

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. 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 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 byproducts of industrial processes and petroleum production, and can also come from gas stations, urban stormwater 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. Environmental Protection Agency (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. 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.

**Protecting Lake Jennings**

Protecting watersheds prevents contamination of water supplies. The Lake Jennings Watershed Sanitary Survey is regularly updated in accordance with state regulations. The most recent update was March 2021. The purpose of such surveys is to assess the watershed to determine the existence and potential hazards of contamination sources that could reach the public water supply.

Lake Jennings serves as a recreational area for the public, and activities that may affect water quality are closely monitored. The March 2021 *Lake Jennings Watershed Sanitary Survey Update* found the lake’s water quality to be vulnerable to spills, recreation, development, wastewater/septic systems, and equestrian properties.

Through water quality monitoring and management of activities in and around the lake, along with community involvement, Helix Water District is able to minimize the risk of these potential sources of contamination. If you would like a summary of the assessment, please contact Helix’s senior chemist, Cindy Ziernicki, at 619-667-6248 or [wqr@helixwater.org](mailto:wqr@helixwater.org).

**Facing page:** our source water blend in 2021 (avg.)



What is in our water varies depending on the water source and the geology and environment that it flows through on the way to our plant.

How to protect your community’s water



Limit your use of fertilizers



Dispose of chemicals properly



Pick up after your pet



Maintain your septic system



Volunteer with a watershed protection group



Use best management practices at equine facilities. The county of San Diego contracts with the Solana Center for manure management workshops. Go to [solanacenter.org/resources/composting-resources/composting-manure](https://solanacenter.org/resources/composting-resources/composting-manure)



Organize a storm drain stenciling project

# Water Treatment

## Our Advanced Treatment Process

In 2021, 96% of the water Helix Water District customers received was treated at the R.M. Levy Water Treatment Plant in Lakeside. Helix uses a proven, highly effective, multistep water treatment process to produce high-quality water for our customers. The multistep water treatment process includes the use of ozone as a highly effective disinfecting agent. Ozone is able to inactivate and destroy a wide range of potentially harmful organisms and chemical compounds in the raw source water. Ozone also reduces disinfection byproducts and improves the taste and odor of the finished drinking water.



State-certified staff conduct hands-on testing in the field and in our lab

## Continuous Water Quality Testing

We continuously monitor and test the water during and after the treatment process. Our state-certified operators and lab staff collect and analyze over 200 water samples each day. Hands-on testing is completed in the field and in our state-certified laboratory, which also uses the latest analytical instruments to perform automated testing which is continuously monitored. Helix's treated water consistently meets all primary federal and state quality standards.



Over 200 water samples are collected and analyzed each day

## Educational Information

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



Automated water quality testing monitored 24/7

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 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). Additional information on *Cryptosporidium* is available at <https://www.epa.gov/sites/production/files/2015-10/documents/cryptosporidium-report.pdf>.



# Water Distribution

## About Lead

Helix Water District meets all standards for lead under the U.S. Environmental Protection Agency Lead and Copper Rule and does not have any lead pipes or service lines within its distribution system.

Helix Water District is required to collect water samples from select homes and to test that water under the EPA's Lead and Copper Rule. In 2021, 65 customers provided samples from their taps to Helix Water District for lead and copper analysis. The results are presented below.

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. Helix Water District 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. If you do so, you may wish to collect the flushed water and reuse it for another beneficial purpose, such as watering plants.

## Lead and Copper

Parameter	Units	AL	PHG	90th Percentile	Number of Sites Sampled	Year Sampled	Number of Sites Above Action Level (AL)	Number of Schools Requesting Lead Sampling	Typical Sources
Lead	µg/L	15	0.2	ND	65	2021	0	79	Internal corrosion of household plumbing, industrial discharges, natural deposits
Copper	mg/L	1.3	0.3	0.065	65	2021	0	N/A	Internal corrosion of household plumbing, erosion of natural deposits, leaching from preservatives

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 <https://www.epa.gov/lead>.

## Lead Testing in Schools

Assembly Bill 746, which was signed into law in October 2017, requires California water providers to conduct lead testing at public K-12 schools within their service area to determine if lead is present in the school's private plumbing or water fixtures.

Helix Water District proactively contacted all schools within its service area and offered testing in advance of the state's 2019 deadline. All public schools, plus the majority of private schools, within Helix's service area participated in testing. All school samples met the lead standards established by the U.S. Environmental Protection Agency Lead and Copper Rule. Please contact each school directly to obtain individualized testing results.

## Lead Testing in Schools

Sample Date	Number of Schools Requesting Sampling
2017	79



# Water Quality Data

The following tables are a summary of the testing performed on your water from January 1 to December 31, 2021. The terms used in the tables are explained below.

## Abbreviations

AL: Regulatory Action Level
CFU: Colony-Forming Units
DBP: Disinfection Byproducts
DDW: Division of Drinking Water
DLR: Detection Limit for Reporting Purposes
HWD: Helix Water District
LRAA: Locational Running Annual Average
MCL: Maximum Contaminant Level
MCLG: Maximum Contaminant Level Goal
mg/L: Milligrams per liter
MRDL: Maximum Residual Disinfectant Level
MRDLG: Maximum Residual Disinfectant Level Goal
N/A: Not Applicable
ND: Not Detected
NL: Notification Level
NS: No Standard
NTU: Nephelometric Turbidity Units
pCi/L: picoCuries per liter
PDWS: Primary Drinking Water Standards
PFAS: Perfluorinated Alkyl Substances
PHG: Public Health Goal
RAA: Running Annual Average
SWRCB: State Water Resources Control Board
TOC: Total Organic Carbon
TON: Threshold Odor Number
TT: Treatment Technique
ug/L: micrograms per liter
us/cm: microSiemens per centimeter

## What are water quality standards?

Drinking water standards are mandated by the U.S. Environmental Protection Agency and state of California. They set limits for substances that may affect consumer health or aesthetic qualities of water. Water quality standards are enforceable and violations are reported.

**Maximum Contaminant Level (MCL):** The highest level of a contaminant that is allowed in drinking water.

**Primary MCLs:** Set as close to the PHGs or MCLGs as is economically and technologically feasible.

**Secondary MCLs:** Set to protect the odor, taste and appearance of drinking water.

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

## What are water quality goals?

In addition to mandatory drinking water standards, the USEPA and state have set nonenforceable water quality goals for some contaminants. Water quality goals are often set at such low levels that they are not achievable in practice nor directly measurable. Nevertheless, these goals provide useful guideposts and direction for water management practices. Helix's 2019 Public Health Goals Report on Water Quality is available at <https://hwd.fyi/2019PHG>.

**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 USEPA.

**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.

**Maximum Residual Disinfectant Level Goal (MRDLG):** 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.

## Additional definitions

**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.

**Disinfection Byproduct (DBP):** DBPs are formed when disinfectants (chlorine, chloramines, ozone or others) react with organic and inorganic compounds naturally occurring in the water.



## Primary Drinking Water Standards (a)

Water Leaving Treatment Plant	Units	State MCL	PHG (MCLG)	Helix Plant			Purchased Water			Major Sources
				Min	Max	Avg	Min	Max	Avg	
Clarity (b)										
Highest Filter Effluent Turbidity (b)	NTU	$\frac{TT = 0.3^*}{TT = 0.1^{**}}$	N/A	N/A	0.13	N/A	N/A	0.09	N/A	Soil runoff
Percentage of samples meeting turbidity limits (b)	%	95%	Highest %* $\leq 0.3$ NTU	N/A	100%	N/A	N/A	100%	N/A	
			Highest %** $\leq 0.1$ NTU							
Inorganic Chemicals										
Aluminum (c)	mg/L	1	0.6	0.11	0.37	0.21	ND	0.058	ND	Erosion of natural deposits, residue from some surface water treatment processes
Arsenic	µg/L	10	0.004	ND	3.2	ND	ND	2.1	ND	
Fluoride (treatment related) (d)	mg/L	2	1	0.6	0.7	0.7	0.5	0.9	0.7	Added during treatment process, erosion of natural deposits
Nitrate (N)	mg/L	10	10	ND	ND	ND	ND	0.5	ND	Runoff and leaching from fertilizer use, septic tanks
Radionuclides (h)										
Gross Alpha Particle Activity	pCi/L	15	(0)	ND	2.57	1.3	ND	4	ND	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50 (e)	(0)	ND	ND	ND	ND	7	ND	Decay of natural and manmade deposits
Uranium	pCi/L	20	0.43	ND	3.8	ND	ND	2	ND	Erosion of natural deposits

\* Standard for Helix Water District / \*\* Standard for purchased water due to the use of desalination

Water in the Distribution System	Units	State MCL	PHG [MCLG]	Helix Plant (g)			Purchased Water			Major Sources
				Min	Max	Avg	Min	Max	Avg	
Microbiological										
Total Coliform Bacteria-- State Total Coliform Rule (% positive samples/month) (f)	%	5.0%	0%	0%	0%	0%	Data Not Required			Byproduct of drinking water chlorination

Water in the Distribution System	Units	State MCL	PHG	Helix Plant			Purchased Water			Major Sources
		[MRDL]	[MRDLG]	Min	Max	Avg	Min	Max	Avg	
Disinfection Byproducts (DBPs), Disinfection Residuals and DBP Precursors (Federal)										
Bromate	µg/L	10	0.1	ND	ND	ND	ND	2	ND	Byproduct of drinking water ozonation
Chlorate	µg/L		NL = 800	N/A	N/A	N/A	49	370	154	Byproduct of drinking water disinfection
Total Organic Carbon (TOC)	mg/L	TT	N/A	2.5	3.8	3.1	2.0	4.2	2.7	TOC is a precursor for formation of disinfection byproducts
Total Trihalomethanes (TTHM's)	µg/L	80	N/A	13	27	19.5	Data Not Required			Byproduct of drinking water chlorination
Haloacetic Acids (HAA5)	µg/L	60	N/A	2.8	11.4	7.2				Byproduct of drinking water disinfection
Chloramines as Cl2 (h)	mg/L	[4.0]	[4.0]	ND	3.5	2.1				Drinking water disinfectant added for treatment

Primary Drinking Water Standards (a)

Samples From Customer Taps	Units	Action Level	Reporting Level	90th Percentile Concentration	Number of Sites Exceeding Action Level	Major Sources
Lead and Copper (i)						
Lead	mg/L	15	5	ND	0	Internal corrosion of household plumbing systems
Copper	mg/L	1.3	0.05	0.065	0	

Secondary Drinking Water Standards - Aesthetic Standards

Parameter	Units	State MCL	PHG (MCLG)	Helix Plant			Purchased Water			Major Sources
				Min	Max	Avg	Min	Max	Avg	
Aluminum (c)	µg/L	200	N/A	110	370	211	ND	58	ND	Erosion of natural deposits, residue from some surface water treatment processes
Chloride	mg/L	500	N/A	65	96	88	54	99	89	Runoff or leaching from natural deposits, seawater influence
Color	Color Units	15	N/A	ND	ND	ND	ND	1	ND	Naturally occurring organic materials
Odor	Odor Units	3	N/A	ND	4.9	ND	ND	2	ND	Naturally occurring material and/or algae blooms
Specific Conductance	µS/cm	1,600	N/A	720	950	880	301	956	761	Runoff or leaching from natural deposits
Sulfate	mg/L	500	N/A	110	200	170	10	221	147	Runoff or leaching from natural deposits, industrial waste
Total Dissolved Solids (TDS)	mg/L	1,000	N/A	390	560	500	140	610	466	Runoff or leaching from natural deposits
Sodium and Hardness										
Sodium	mg/L	N/A	N/A	69	95	87	53	95	82	Sodium refers to the salt in water and is generally naturally occurring
Total Hardness as CaCO3	mg/L	N/A	N/A	152	284	257	42	273	197	Sum of polyvalent cations present in the water, generally magnesium and calcium, and are usually naturally occurring
Total Hardness in grains per gallon	gr/Gal	N/A	N/A	7.9	17	15	2.5	16	11.5	

Additional Parameters

Parameter	Units	Notification Level	Helix Plant			Purchased Water		
			Min	Max	Avg	Min	Max	Avg
Aggressive Index	AI	N/A	12.1	12.4	12.3	10.3	13	12
Alkalinity - Total as CaCO3	mg/L	N/A	100	120	113	63	123	102
Calcium	mg/L	N/A	48	72	61	17	67	50
Magnesium	mg/L	N/A	19	25	23	0.9	25	16
pH	pH	N/A	7.8	8.4	8.1	8.1	8.7	8.3
Potassium	mg/L	N/A	4.5	5.2	4.7	4.3	4.7	4.6

## Unregulated Chemicals Requiring Monitoring (j)

Parameter	Units	Notification Level (CCRD) (I) [PHG]	Helix Plant			Purchased Water			Major Sources
			Min	Max	Avg	Min	Max	Avg	
Boron	mg/L	1	ND	0.13	ND	0.12	0.59	0.28	Leaching of rocks, soils, wastewater and fertilizers/pesticides
Bromide	mg/L	N/A	ND	0.12	ND	N/A	N/A	N/A	Saltwater intrusion and naturally occurring
Bromochloromethane	µg/L	N/A	ND	0.078	ND				Fire extinguishing agent
Haolacetic Acids 9	µg/L	N/A	4.8	29.4	13.4				Byproduct of drinking water chlorination
Hexavalent Chromium (k)	µg/L	[0.02]	ND	ND	ND	ND	0.22	ND	Erosion of natural deposits, discharges of oil drilling waste
Molybdenum	µg/L	N/A	2.9	4.3	3.8	N/A			Potential disinfection byproduct, naturally occurring
N-Nitrosodimethylamine (NDMA)	ng/L	10	N/A	N/A	N/A	ND	4.2	2	Emissions from diesel vehicle exhaust, industrial processes and discharges; may also be formed during drinking water treatment
Perfluorooctane Sulfonic Acid (PFOS) (l)	ng/L	(4)	ND	ND	ND	ND	ND	ND	Manufacturing and industrial sites, fire/crash training areas, and industrial or municipal waste sites
Perfluorooctanoic Acid (PFOA) (l)	ng/L	(4)	ND	ND	ND	ND	ND	ND	
Strontium	mg/L	N/A	0.56	1.1	0.86	3.3	3.6	3.4	Naturally occurring
Vanadium	µg/L	50	ND	2.9	ND	ND	ND	ND	Industrial discharge, naturally occurring

## Footnotes

- Over 100 parameters are monitored. Primary drinking water standards monitored but not detected are not listed on the table.
- Turbidity is a measure of the cloudiness of the water. We monitor it because it is a good indicator of the effectiveness of our treatment process.
- Aluminum has both primary and secondary standards.
- Optimal fluoride level as established by U.S. Department of Health and Human Services and the State Water Resources Control Board is 0.7 mg/L.
- The State Water Resources Control Board considers 50 pCi/L to be the level of concern for beta particles.
- Total coliform MCLs: No more than 5% of the monthly samples may be total coliform positive. The MCL was not violated.
- Range and average based on monthly percentages of positive total coliform samples.
- At any sample point in the distribution system, the presence of heterotrophic plate count at concentrations less than or equal to 500 CFU per milliliter shall be considered equivalent to a detectable disinfectant residual. The HPC for chloramine residuals < 0.2 mg/L were always less than this threshold.
- Lead and Copper Rule monitoring mandated every three years. Most recent monitoring conducted in 2021 at 65 sampling sites.
- Unregulated contaminant monitoring helps the USEPA and the SWRCB determine where certain contaminants occur and whether the contaminants need to be regulated.
- Former DLR for Cr6 of 1 ug/L was used.
- PFAS was monitored for four quarters in 2019. The CCRDL is a Consumer Confidence Report Detection Level.





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San Diego, CA

Calendar Year 2021

# Water Quality Report

This report contains important information about your drinking water.  
Please contact Helix Water District at 619-466-0585 for assistance.

## Spanish

Este informe contiene información muy importante sobre su agua para beber. Favor de comunicarse Helix Water District a 619-466-0585 para asistirlo en español.

## Farsi/Persian

این گزارش حاوی اطلاعات مهمی در مورد آب آشامیدنی شماست. برای دریافت اطلاعات بیشتر با ما تماس بگیرید  
Helix Water District, 619-466-0585

## Korean

이 보고서는 당신의 식수에 관한 중요한 정보를 포함하고 있습니다. 한국어로 된 도움을 원하시면  
Helix Water District, 619-466-0585 로 문의 하시기 바랍니다.

## Mandarin

这份报告含有关于您的饮用水的重要讯息。请用以下地址和电话联系  
Helix Water District 以获得中文的帮助: 619-466-0585.

## Tagalog

Ang pag-uulat na ito ay naglalaman ng mahalagang impormasyon tungkol sa inyong inuming tubig. Mangyaring makipag-ugnayan sa Helix Water District o tumawag sa 619-466-0585 para matulungan sa wikang Tagalog.

## Vietnamese

Báo cáo này chứa thông tin quan trọng về nước uống của bạn. Vui lòng liên hệ với  
Helix Water District theo số 619-466-0585 để được hỗ trợ bằng tiếng Việt.



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