2022
WATER QUALITY REPORT

PADRE DAM
Municipal Water District

ABOUT THIS REPORT

Padre Dam's mission is to provide high quality water services to our customers in the most effective manner possible, earning customer and community respect. As part of this mission, Padre Dam compiles a Water Quality Report each year with information about the safety and quality of your drinking water.

This report is a snapshot of last year's water quality (2022). Included are details about where your water comes from, what it contains, and how it compares to State and Federal standards.

QUESTIONS

This report follows the State Board Guidance for Consumer Confidence Reports dated January 2023. It is our intent to provide this report to all of our consumers. Additional copies may be obtained by calling Emma Shea in Communications at 619-258-4613.

If you have any questions or concerns about this Water Quality Report, please contact Paul Clarke, Director of Operations and Water Quality, at 619-258-4746 or pclarke@padre.org.

We always welcome public participation and comments during our regularly scheduled board meetings. Meetings are held the first and third Wednesday of each month at 4:00 pm. Visit **www.padredam.org/board** for more information.

Este informe contiene informacion muy importante sobre su agua potable. Traduzcalo o hable con alguien que lo entienda bien. Favor de comunicarse Padre Dam Municipal Water District a 9300 Fanita Parkway o 619-258-4600 para asistirlo en español.

POTENTIAL SOURCE WATER CONTAMINANTS

The sources of drinking water in San Diego County (both tap and bottled water) include the ocean, 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 may pick up substances resulting from the presence of animals or 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 salt and metals, that can be naturally occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining and farming.
- **Pesticides and herbicides,** which 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 can also come from gas stations, urban stormwater runoff and septic systems.
- **Radioactive contaminants,** 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 USEPA and the 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.

IMPORTANT: WHAT'S IN MY WATER?

In 2022, Padre Dam Municipal Water District's drinking water met or surpassed every public health requirement set by the State Water Resources Control Board Division of Drinking Water (State Board) and the United States Environmental Protection Agency (USEPA).

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 USEPA Safe Drinking Water Hotline at 1-800-426-4791, or online at: **http://water.epa.gov/drink/standards/hascience.cfm.**

Some people may be more vulnerable to contaminants in drinking water than the general population. Immune-compromised persons such as persons with cancer undergoing chemotherapy, persons who have undergone organ transplants, persons 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. The USEPA and Centers for Disease Control (CDC) guidelines on appropriate means to lessen the risk of infection by Cryptosporidium and other microbial contaminants are available online at: **http://water.epa.gov/drink/standards/hascience.cfm.**

WHERE YOUR WATER COMES FROM

SOURCE WATER ASSESSMENT

Metropolitan assessed the vulnerability of its imported water in 2020 for the Colorado River and 2021 for the State Water Project. These source waters are both exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires and other watershed-related factors that could affect water quality. Treatment to remove specific contaminants can be more expensive than measures to protect water at the source, which is why Metropolitan and other water agencies invest resources to support improved watershed protection programs. For a copy of these assessments, contact Metropolitan at 213-217-5696.

Helix Water District assessed Lake Jennings in March 2021. This assessment found the lake's water quality to be vulnerable to wastewater, recreation, development, equestrian properties and pesticide/herbicide use. Contact Helix Water District at 619-667-6248 for more information on their assessment.

WATER SOURCES

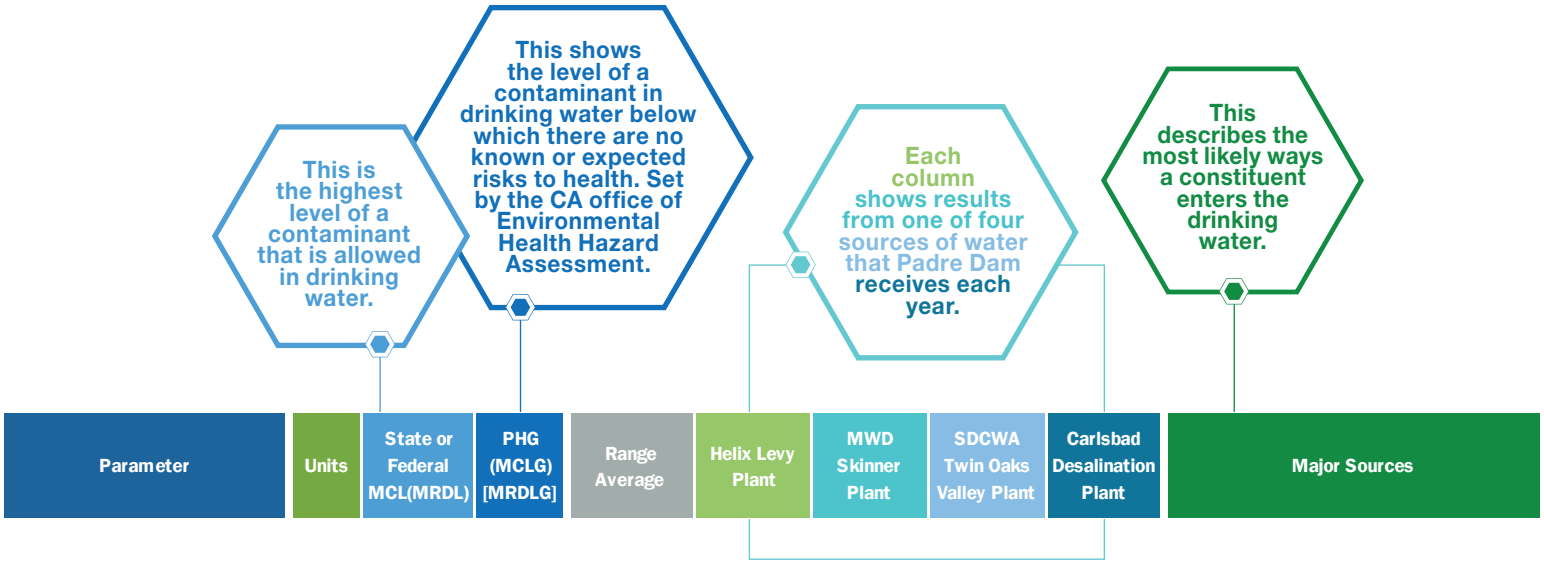
Padre Dam imports 100 percent of its potable water supply from the Metropolitan Water District of Southern California (Metropolitan) and the San Diego County Water Authority (SDCWA). The water is treated at Metropolitan's Skinner Treatment Plant near Temecula, the SDCWA's Twin Oaks Valley Treatment Plant in San Marcos, Claude "Bud" Lewis Carlsbad Desalination Plant and Helix Water District's Levy Treatment Plant in Lakeside. Metropolitan, SDCWA, Helix and Padre Dam coordinate annually to assess water quality levels and produce this Water Quality Report.

The tap water you received from Padre Dam in 2022 was blended water from the Colorado River System, the California State Water Project, ocean water from the Desalination Plant and local watersheds within San Diego County.

HOW TO READ THE FOLLOWING TABLES

ABOUT THE TABLES

The tables on the following pages are a summary of the testing performed on your water in 2022. To read the tables, compare the health standards for organic and inorganic constituents in your water with the levels recorded at the Skinner Treatment Plant, Twin Oaks Valley Treatment Plant, Claude "Bud" Lewis Carlsbad Desalination Plant and Levy Treatment Plant. The terms used in the tables are explained below.



TERMS

Primary Drinking Water Standards (PDWS) Primary Drinking Water Standards (PDWS) MCLs and MRDLs for contaminants that affect health along with their monitoring, reporting and treatment requirements.
Maximum Contaminant Level Goal (MCLG) is 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) is 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 Office of Environmental Health Hazard Assessment.
Maximum Contaminant Level (MCL) is 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 are set to protect the odor, taste, and appearance of drinking water.
Maximum Residual Disinfectant Level (MRDL) is the level of a disinfectant added for water treatment that may not be exceeded at the consumer's tap.
Maximum Residual Disinfectant Level Goal (MRDLG) is the level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLGs are set by the USEPA.
Secondary Standards are set by the State Board for constituents that affect the aesthetic quality of water, such as taste, odor and color.
PPM is the abbreviation for parts per million, or in volume terms, milligrams per liter (mg/L). For example, one part per million is one cent in $10,000, or one minute in 2 years.
PPB is the abbreviation for parts per billion, or in volume terms, micrograms per liter (ug/L). For example, one part per billion is one cent in $10,000,000, or one minute in 2,000 years.
PPT is the abbreviation for parts per trillion, or in volume terms, nanograms per liter (ng/L). For example, one part per trillion is one second in nearly 32,000 years.
Treatment Technique (TT) is a required process intended to reduce the level of a contaminant in drinking water.

OTHER ABBREVIATIONS USED

AI	Aggressiveness index
AL	Action level
CFU	Colony-forming units
DBP	Disinfection by-products
DLR	Detection limits for reporting purposes
GPG	Grains per gallon
HPC	Heterotrophic plate count
N	Nitrogen
NA	Not applicable
ND	Not detected
NL	Notification level
NTU	Nephelometric turbidity units
pCi/L	Picocuries per liter
ppq	Parts per quadrillion
pg/L	Picograms per liter
ppt	Parts per trillion
ng/L	Nanograms per liter
RAA	Running annual average
SI	Saturation index (Langelier)
SS	Single sample
TOC	Total organic compound
TON	Threshold odor number
uS/cm	MicroSiemen per centimeter

PRIMARY STANDARDS

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	Range Average	Helix Levy Plant	MWD Skinner Plant	SDCWA Twin Oaks Valley Plant	Carlsbad Desalination Plant	Major Sources
PRIMARY STANDARDS - Mandatory Health-Related Standards									
CLARITY									
Combined Filter Effluent Turbidity (a)	NTU	TT=0.3	NA	Highest	0.22	0.05	0.03	0.05	Naturally present in the environment
	%	95%	NA	% ≤ 0.3	100	100	100	100	Soil runoff
MICROBIOLOGICAL									
					PD Distribution System				
Total Coliform Bacteria (b)	%	5	0	Range	ND				Naturally present in the environment
INORGANIC CHEMICALS									
Aluminum (c)	ppb	1,000	600	Range	160 - 500	ND - 230	ND - 220	ND	Residue from water treatment process; erosion of natural deposits
				Average	294	113	70	ND	
Arsenic	ppb	10	0.004	Range	ND - 3.4	ND	2.3	ND	Natural deposits erosion, glass and production wastes
				Average	ND	ND	SS	ND	
Barium	ppm	1	2	Range	ND - 0.12	ND	ND	ND	Discharges of oil drilling wastes and from metal refineries
				Average	ND	ND	SS	ND	
Chromium-6	ppb	NA	0.02	Range	ND	ND	0.03 - 0.22	ND	Industrial discharge; erosion of natural deposits
				Average	ND	ND	0.11	ND	
Fluoride (d) Treatment-related	ppm	2	1	Range	0.6 - 1.0	0.6 - 0.8	0.5 - 0.7	ND - 0.8	Control range: 0.7-1.2; Optimal Level 0.7 Additive for dental health
				Average	0.7	0.7	0.6	0.7	
Nitrate (as N) (e)	ppm	10	10	Range	ND	ND	ND - 0.4	ND	Runoff and leaching from fertilizer use; septic/sewage; natural deposits, erosion
				Average	ND	ND	ND	ND	
RADIOLOGICALS(f)									
Gross Alpha Particle Activity	pCi/L	15	0	Range	ND - 3.8	ND - 3	ND - 4	ND	Erosion of natural deposits
				Average	ND	ND	ND	ND	
Gross Beta Particle Activity (g)	pCi/L	50	0	Range	NA	5 - 8	4.9 - 5.1	ND	Decay of natural and man-made deposits
				Average	NA	7	5	ND	
Combined Radium-226/228	pCi/L	5	0	Range	NA	ND	ND	0.19 - 0.43	Erosion of natural deposits
				Average	NA	ND	ND	0.2	
Uranium	pCi/L	20	0.43	Range	ND - 2.6	ND - 2	ND	ND	Erosion of natural deposits
				Average	1.3	2	ND	ND	
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCT PRECURSORS									
					PD Distribution System				
Total Trihalomethanes (TTHM) (h)	ppb	80	NA	Range	7.8 - 33				By-product of drinking water chlorination
				Highest RAA	33				
Haloacetic Acids (five) (HAA5) (i)	ppb	60	NA	Range	ND - 7.4				By-product of drinking water chlorination
				Highest RAA	5				
Total Chloramine Residual (Cl2)	ppm	[4.0]	[4.0]	Range	0.53 - 3.60				Drinking water disinfectant added for treatment
				Highest RAA	2.29				
Bromate (j)	ppb	10	0.1	Range	ND	ND - 5.5	1.6 - 5.8	NA	By-product of drinking water ozonation
				Highest RAA	ND	1.2	3	NA	

SECONDARY STANDARDS

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	Range Average	Helix Levy Plant	MWD Skinner Plant	SDCWA Twin Oaks Valley Plant	Carlsbad Desalination Plant	Major Sources
SECONDARY STANDARDS - Aesthetic Standards									
Aluminum (c)	ppb	200	600	Range	160 - 500	ND - 230	ND - 220	ND	Residue from water treatment process; natural deposits erosion
				Highest RAA	294	113	74	ND	
Chloride	ppm	500	NA	Range	89 - 110	98 - 106	110 - 110	20 - 119	Runoff/leaching from natural deposits; seawater influence
				Average	100	102	110	90	
Color	Units	15	NA	Range	ND	1 - 2	ND	ND	Naturally occurring organic materials
				Average	ND	2	ND	ND	
Odor Threshold	TON	3	NA	Range	ND	1	ND	ND	Naturally occurring organic materials
				Average	ND	SS	SS	ND	
Specific Conductance	µS/cm	1,600	NA	Range	830 - 1,000	944 - 1,030	980	345 - 485	Substances that form ions in water; seawater influence
				Average	930	987	SS	401	
Sulfate	ppm	500	NA	Range	170 - 220	206 - 229	210 - 220	13 - 15	Runoff/leaching from natural deposits; industrial wastes
				Average	195	218	217	14	
Total Dissolved Solids (TDS) (k)	ppm	1,000	NA	Range	480 - 680	591 - 651	610	138 - 285	Runoff/leaching from natural deposits; seawater influence
				Average	580	621	SS	211	
OTHER PARAMETERS - Chemical									
Alkalinity as $CaCO_3$	ppm	NA	NA	Range	110 - 120	119 - 128	130	46 - 87	Naturally occurring and adjusted during treatment processes
				Average	117	124	SS	61	
Boron	ppb	NL = 1,000	NA	Range	ND - 150	130	130	470 - 910	Runoff/leaching from natural deposits; industrial wastes
				Average	90	SS	SS	620	
Calcium	ppm	NA	NA	Range	59 - 76	63 - 71	67 - 68	17 - 31	Naturally occurring
				Average	69	67	68	21	
Chlorate	ppb	NL = 800	NA	Range	ND	75	250 - 440	NA	By-product of drinking water chlorination; industrial processes
				Average	ND	SS	336	NA	
Corrosivity (l) (as Aggressiveness Index)	AI	NA	NA	Range	12.2 - 12.7	12.4 - 12.5	13	10 - 12	Elemental balance in water; affected by temperature, other factors
				Average	12.4	12.4	SS	11	
Corrosivity (m) (as Saturation Index)	SI	NA	NA	Range	NA	0.58 - 0.75	0.82	0.04 - 0.59	Elemental balance in water; affected by temperature, other factors
				Average	NA	0.66	SS	0.23	
Hardness as $CaCO_3$	ppm	NA	NA	Range	242 - 304	263 - 282	270	42 - 76	Sum of polyvalent cations present in the water, usually naturally occurring
				Average	278	272	SS	52	
Magnesium	ppm	NA	NA	Range	23 - 28	24 - 26	25 - 25	0.95 - 1.6	Naturally occurring
				Average	26	25	25	1.26	
pH	pH Units	NA	NA	Range	8.1 - 8.4	8.1 - 8.2	8.0 - 8.7	8.3 - 8.7	Naturally occurring and adjusted during treatment processes
				Average	8.3	8.2	8.3	8.5	
Potassium	ppm	NA	NA	Range	4.7 - 5.1	4.4 - 4.8	4.7 - 4.8	0 - 31	Naturally occurring
				Average	4.9	4.6	4.8	7	
Silica	ppm	N/A	N/A	Range	3.6 - 9.7	ND	ND	ND	
				Average	6.8	ND	ND	ND	
Sodium	ppm	NA	NA	Range	83 - 100	96 - 103	98 - 98	53 - 65	Naturally occurring salt present in the water
				Average	94	100	98	59	
TOC	ppm	TT	NA	Range	1.6 - 3.2	2.3 - 2.6	1.3 - 3.3	NA	Various natural and man-made sources
				Highest RAA	2.3	2.5	2.4	NA	
N-Nitrosodimethylamine (NDMA)	ppt	NL = 10	3	single sample	NA	4.4	ND	NA	By-product of drinking water chloramination; industrial processes
					NA	SS	SS	NA	
FEDERAL UNREGULATED CONTAMINANTS MONITORING RULE (UCMR4) (n)									
					PD Distribution System				
Manganese	ppb	NA	NA	Range	ND - 2.5				Leaching from natural deposits
				Average	.99				
HAA5	ppb	NA	NA	Range	.25 - 14.7				By-product of drinking water chlorination
				Average	6.75				
HAA6Br	ppb	NA	NA	Range	0.3 - 16.5				
				Average	6.88				
HAA9	ppb	NL=800	NA	Range	0.55 - 26				
				Average	11.4				

PADRE DAM LEAD & COPPER RESULTS

Padre Dam is required to test lead and copper levels within our service area every three years. Padre Dam last tested for lead and copper in 2022. Forty-four locations were sampled. The results were well below regulatory action levels and are provided in the table below.

In response to new permitting requirements from the State Water Resources Control Board, Padre Dam contacted all public schools within our service area in 2017 and offered lead testing. All 21 public schools within Padre Dam's service area participated in testing in 2017. Please contact each school for individual site testing results.

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	90% percentile of all samples
Copper	ppm	1.3	0.05	0.28
Lead	ppm	0.015	0.005	ND

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. Padre Dam 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. Padre Dam suggests you collect this flushed water with a bucket and use it to water plants or other non-consumable use. 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 1-800-426-4791 or online at: **http://www.epa.gov/safewater/lead.**

SODIUM & HARDNESS

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	Range Average	Helix Levy Plant	MWD Skinner Plant	SDCWA Twin Oaks Valley Plant	Carlsbad Desalination Plant
Sodium	ppm	NA	NA	Range	83 - 100	96 - 103	98 - 98	53 - 65
				Average	94	100	98	59
Hardness (parts per million)	ppm	NA	NA	Range	242 - 304	263 - 282	SS	42 - 76
				Average	278	272	270	52
Hardness (grains per gallon)	gpg	NA	NA	Range	14 - 18	15 - 17	SS	2.5 - 4.4
				Average	16	16	16	3

FOOTNOTES TO TABLES

(a) The turbidity level of the combined filter effluent shall be less than or equal to 0.3 NTU (0.1 NTU at Twin Oaks Treatment Plant and Carlsbad Desalination Plant) in 95% of the measurements taken each month and shall not exceed 1 NTU at any time. Turbidity is a measure of the cloudiness of the water and is an indicator of treatment performance.

(b) Total coliform MCLs: No more than 5.0% of the monthly samples may be total coliform-positive. Compliance is based on the combined distribution system sampling. The MCL was not violated.

(c) Aluminum has both primary and secondary standards. Compliance with the state MCL for aluminum is based on RAA.

(d) All facilities were in compliance with all provisions of the State's Fluoridation System Requirements. Fluoride samples that were below target ranges were blended with other water supply sources to maintain compliance with water distributed to consumers.

(e) State MCL is 45 ppm as nitrate, which equals 10 ppm as N.

(f) Twin Oaks - Data collected (annually) from four consecutive quarters of monitoring in 2021 – 2022. Helix – Radiological monitoring occurred in 2021.

(g) The gross beta particle activity MCL is 4 millirem/year annual dose equivalent to the total body or any internal organ. The screening level is 50 pCi/L.

(h) DLR = 0.5 ppb for each TTHM (bromoform, chloroform, dibromochloromethane, bromodichloromethane).

(i) DLR = 1.0 ppb for each HAA5 analyte (dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid) except for monochloroacetic acid which has a DLR = 2.0 ppb.

(j) Twin Oaks - Running annual average was calculated from quarterly results of monthly and daily samples. Bromate reporting level is 3 ppb. Skinner - Compliance with the State and Federal bromate MCL is based on RRA.

(k) Skinner - Metropolitan's TDS compliance data are based on flow-weighted monthly composite samples collected twice per year (April and October).

(l) AI is a calculated value that measures the aggressiveness of water transported through pipes. AI ≥ 12.0 = Non- aggressive water. AI (10.0 - 11.9) = Moderately aggressive water. AI ≤10.0 = Highly aggressive and very corrosive water.

(m) SI measures the tendency for a water to precipitate or dissolve calcium carbonate (a natural mineral in water). Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI index = corrosive; tendency to dissolve calcium carbonate.

(n) Unregulated contaminants are those for which EPA has not established drinking water standards. The purpose of unregulated contaminant monitoring is to assist EPA in determining the occurrence of unregulated contaminants in drinking water and whether future regulation is warranted. The Unregulated Contaminant Monitoring Rule (UCMR 4) monitoring period for Public Water Systems is 2018-2020.