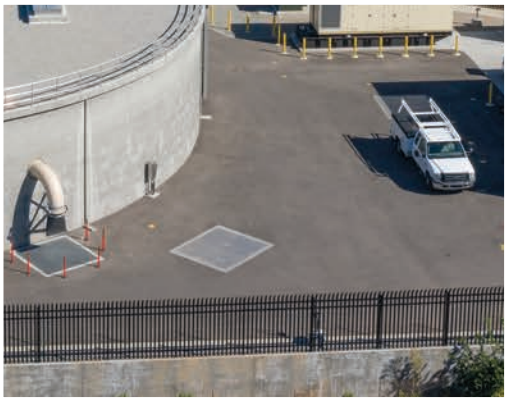
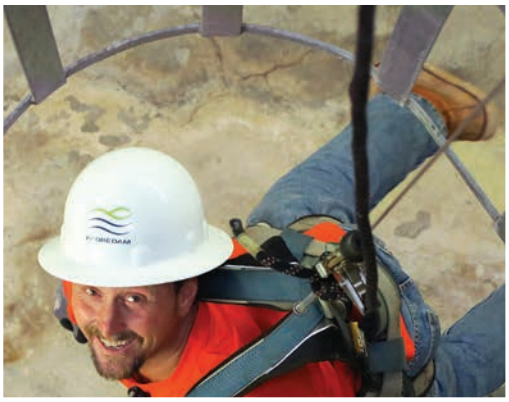




2019 | WATER QUALITY REPORT

Padre Dam Municipal Water District


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 (2019). 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 2020. 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 3:30 pm at Padre Dam's Customer Service Center, 9300 Fanita Parkway, Santee, CA.

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

IMPORTANT: WHAT'S IN MY WATER?

In 2019, 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), with the exception of one incident at the Twin Oaks Treatment plant which is described on this page. See: Summary Information for Violation of a MCL, MRDL, AL, TT, or Monitoring and Reporting Requirement.

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.**

POTENTIAL SOURCE WATER CONTAMINANTS

The sources of drinking water in San Diego County (both tap 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 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.

SUMMARY INFORMATION FOR VIOLATION OF A MCL, MRDL, AL, TT, OR MONITORING AND REPORTING REQUIREMENT

San Diego County Water Authority Treatment Process Issue in April 2019

The San Diego County Water Authority (SDCWA) experienced a treatment process failure at its regional treatment plant (Twin Oaks). Water in the treatment plant was not in contact with the proper dosage of ozone disinfectant for the required amount of time. On April 21-22, 2019, a segment of the disinfection treatment facility did not provide the intended disinfection of pathogens. Upon being notified of the malfunction, a review of the overall pathogen removal at the treatment plant was performed. It was determined, however unable to be confirmed, that the required reduction of pathogens was most likely achieved. The SDCWA implemented policy and engineering changes to immediately identify and correct improper valve conditions that led to the April 21-22 incident. SDCWA has prepared new procedures for ensuring that the continuous disinfection treatment facility is operating as designed and as required. Inadequately treated water may contain disease causing organisms. These organisms include bacteria, viruses, and parasites that can cause symptoms such as nausea, cramps, diarrhea, and associated headaches.

WHERE YOUR WATER COMES FROM

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 2019 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.

YOUR DRINKING WATER SYSTEM

23,059 Drinking Water Connections

392 Miles of Main

29 Reservoirs

16 Pumping Stations

108.25 Million Gallon Storage

2,000+ Ft. Elevation Gain

SOURCE WATER ASSESSMENT

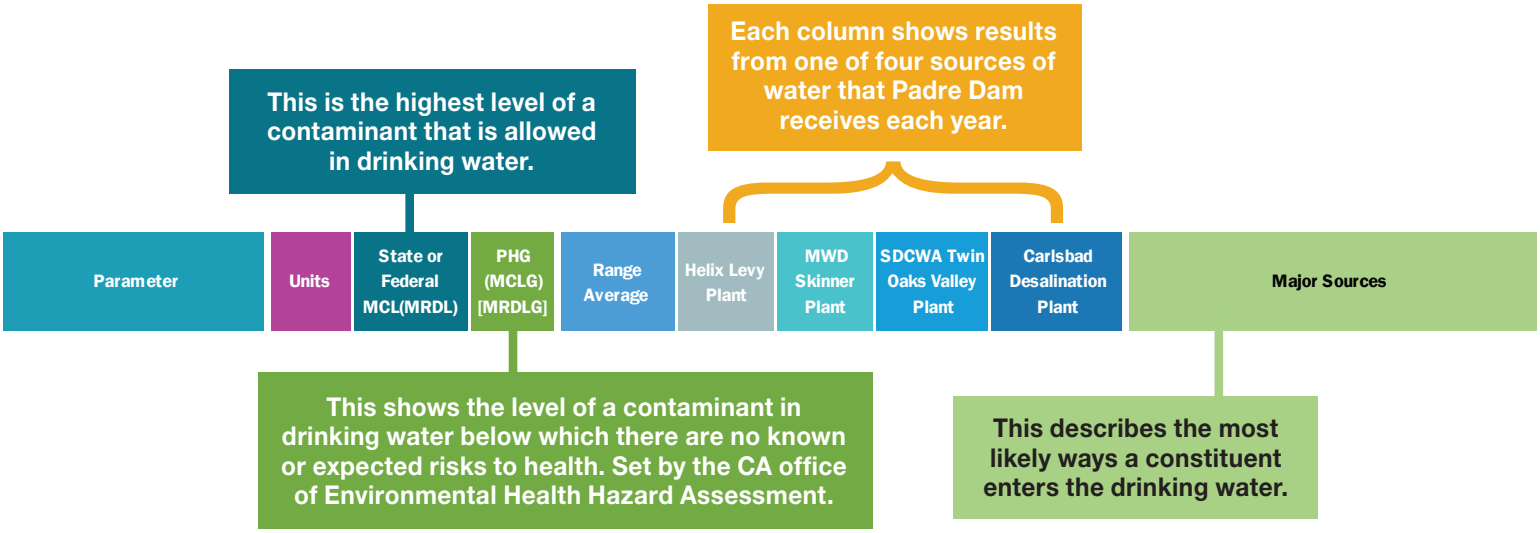
Metropolitan assessed the vulnerability of its imported water in 2015 for the Colorado River and 2016 for the State Water Project. These source waters are both exposed to stormwater runoff, recreational activities, wastewater discharges, wildlife, fires and other watershed-related factors that could 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 2016. 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.

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 2019. 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) 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

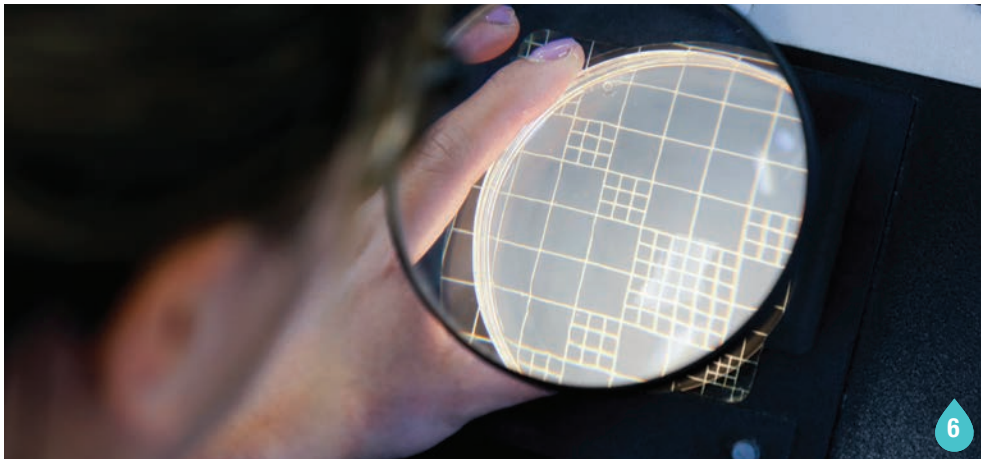
AI	Aggressiveness index
AL	Action level
CFU	Colony-forming units
DBP	Disinfection by-products
DLR	Detection limits for reporting purposes
GPG	Grains per gallon
HPC	Heterotrophic plate count
N	Nitrogen
NA	Not applicable
ND	Not detected
NL	Notification level
NTU	Nephelometric turbidity units
pCi/L	Picocuries 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=1	NA	Highest	0.16	0.07	0.01 - 0.02	0.06	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	0.00 - 0.86				Naturally present in the environment
INORGANIC CHEMICALS									
Aluminum (c)	ppb	1,000	600	Range	ND - 210	ND - 94	ND	ND	Residue from water treatment process; erosion of natural deposits
				Average	104	51	ND	ND	
Arsenic	ppb	10	0.004	Range	ND	ND	3	ND	Erosion of natural deposits, glass and electronics production wastes
				Average	ND	ND	SS	ND	
					PD Distribution System				
Chromium-6	ppb	NA	0.02	Range	0				Industrial discharge; erosion of natural deposits
				Average	0				
Fluoride (d) Treatment-related	ppm	2	1	Range	0.6 - 0.7	0.3 - 0.8	0.5 - 0.7	0.6 - 0.8	Control range: 0.7-1.2; Optimal Level 0.7 Additive for dental health
				Average	0.7	0.7	0.7	0.7	
Nitrate (as N) (e)	ppm	10	10	Range	ND	ND	0.2 - 0.4	ND	Runoff and leaching from fertilizer use; septic/sewage; natural deposits, erosion
				Average	ND	ND	0.3	ND	
Selenium	ppb	50	30	Range	ND	ND	ND	ND - 5.9	Refineries, mines and chemical waste discharge; runoff from livestock lots
				Average	ND	ND	ND	ND	
RADIOLOGICALS (f)									
Gross Alpha Particle Activity	pCi/L	15	0	Range	5.3 - 8.0	ND - 4	ND	ND	Erosion of natural deposits
				Average	6.5	ND	ND	ND	
Gross Beta Particle Activity (g)	pCi/L	50	0	Range	NA	ND - 5	ND - 3.5	ND	Decay of natural and man-made deposits
				Average	NA	ND	2.3	ND	
Combined Radium-226/228	pCi/L	5	0	Range	ND	ND	ND	0.09 - 0.45	Erosion of natural deposits
				Average	ND	ND	ND	0.21	
Uranium	pCi/L	20	0.43	Range	1.4 - 5.4	ND - 3	1.0 - 1.1	ND	Erosion of natural deposits
				Average	3.3	ND	1.1	ND	
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCT PRECURSORS									
					PD Distribution System				
Total Trihalomethanes (TTHM) (h)	ppb	80	NA	Range	6.6 - 55				
				Highest RAA	34				
Haloacetic Acids (five) (HAA5) (i)	ppb	60	NA	Range	0 - 15				By-product of drinking water chlorination
				Highest RAA	27				
Total Chloramine Residual (Cl2)	ppm	[4.0]	[4.0]	Range	0.46 - 3.8				By-product of drinking water chlorination Drinking water disinfectant added for treatment
				Highest RAA	1.87				
Bromate (j)	ppb	10	0.1	Range	ND	ND - 10	2 - 4.8	NA	By-product of drinking water ozonation
				Highest RAA	ND	2.8	3.1	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	ND - 210	ND - 94	ND	ND	Residue from water treatment process; natural deposits erosion
				Highest RAA	104	51	ND	ND	
Chloride	ppm	500	NA	Range	62 - 77	68 - 78	75	65 - 94	Runoff/leaching from natural deposits; seawater influence
				Average	68	73	SS	79	
Color	Units	15	NA	Range	ND	ND - 2	ND	ND	Naturally occurring organic materials
				Average	ND	1	ND	ND	
Odor Threshold	TON	3	NA	Range	ND	1	1	ND	Naturally occurring organic materials
				Average	ND	1	SS	ND	
Specific Conductance	µS/cm	1,600	NA	Range	516 - 769	576 - 644	600	345 - 495	Substances that form ions in water; seawater influence
				Average	620	610	SS	408	
Sulfate	ppm	500	NA	Range	71 - 140	90 - 108	89	10 - 19	Runoff/leaching from natural deposits; industrial wastes
				Average	96	99	SS	12	
Total Dissolved Solids (TDS)	ppm	1,000	NA	Range	319 - 466	330 - 379	340	147 - 282	Runoff/leaching from natural deposits; seawater influence
				Average	385	354	SS	212	
OTHER PARAMETERS - Chemical									
Alkalinity as $CaCO_3$	ppm	NA	NA	Range	86 - 118	84 - 87	86	37 - 75	Naturally occurring and adjusted during treatment processes
				Average	103	86	SS	62	
Boron	ppb	NL = 1,000	NA	Range	ND	120	120	460 - 733	Runoff/leaching from natural deposits; industrial wastes
				Average	ND	120	SS	596	
Calcium	ppm	NA	NA	Range	29 - 48	33 - 39	34	15 - 24	Naturally occurring
				Average	37	36	SS	19	
Chlorate	ppb	NL = 800	NA	Range	ND - 26	35	190 - 450	NA	By-product of drinking water chlorination; industrial processes
				Average	ND	35	251	NA	
Corrosivity (k) (as Aggressiveness Index)	AI	NA	NA	Range	ND	12	12	12 - 13	Elemental balance in water; affected by temperature, other factors
				Average	SS	12	SS	12	
Corrosivity (l) (as Saturation Index)	SI	NA	NA	Range	ND	0.20 - 0.28	0.11	0.05 - 0.51	Elemental balance in water; affected by temperature, other factors
				Average	ND	0.24	SS	0.27	
Hardness as $CaCO_3$	ppm	NA	NA	Range	92 - 257	139 - 164	140	39 - 62	Sum of polyvalent cations present in the water, usually naturally occurring
				Average	166	152	SS	48	
Magnesium	ppm	NA	NA	Range	12 - 20	14 - 16	14	0.6 - 1.3	Naturally occurring
				Average	16	15	SS	0.8	
pH	pH Units	NA	NA	Range	7.9 - 8.3	8.1 - 8.2	7.6 - 8.5	6.0 - 8.7	Naturally occurring and adjusted during treatment processes
				Average	8.2	8.1	8.2	8.5	
Potassium	ppm	NA	NA	Range	3.0 - 4.5	3.3 - 3.6	3.2	1.9 - 3.6	Naturally occurring
				Average	3.7	3.4	SS	2.4	
Sodium	ppm	NA	NA	Range	52 - 71	62 - 69	64	48 - 78	Naturally occurring salt present in the water
				Average	60	66	SS	62	
TOC	ppm	TT	NA	Range	2.1 - 2.6	2.0 - 2.7	1.9 - 2.5	NA	Various natural and man-made sources
				Highest RAA	2.4	2.4	2.2	NA	
N-Nitrosodimethylamine (NDMA)	ppt	NL = 10	3	single sample	NA	3.9 SS	2.3 SS	NA	By-product of drinking water chloramination; industrial processes
FEDERAL UNREGULATED CONTAMINANTS MONITORING RULE (UCMR4) (m)									
					PD Distribution System				
Manganese	ppb	NA	NA	Range	ND - 2.5				Leaching from natural deposits
				Average	0.99				
HAA5	ppb	NA	NA	Range	0.25 - 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	11.38				



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 2019. Forty two locations were sampled. The results were well below regulatory action levels and are provided in the table below.

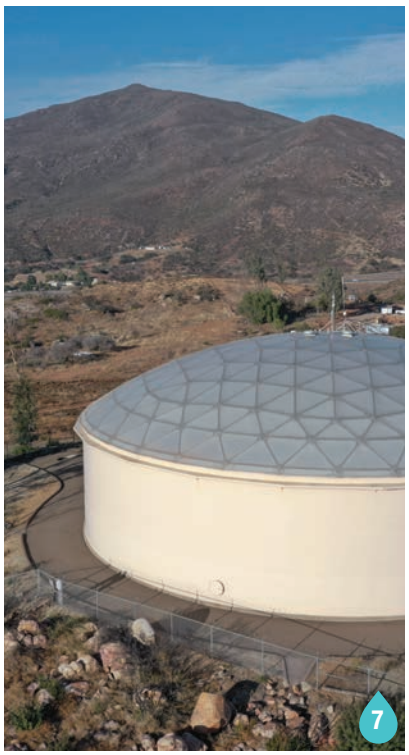
In response to new permitting requirements from the State Water Resources Control Board, Padre Dam contacted all public schools within our service area in 2017 and offered lead testing. All 21 public schools within Padre Dam's service area participated in testing in 2017. Please contact each school for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

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	90% percentile of all samples
Copper	ppm	1.3	0.3	0.285
Lead	ppb	15	N/D	N/D

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	Unit of Measure	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	52 - 71	62 - 69	64	48 - 78
				Average	60	66	SS	62
Hardness (parts per million)	ppm	NA	NA	Range	92 - 257	139 - 164	140	39 - 62
				Average	166	152	SS	48
Hardness (grains per gallon)	gpg	NA	NA	Range	5.4 - 15	8.1 - 9.6	8.2	2.3 - 3.6
				Average	9.7	8.9	SS	2.8



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 within water distributed to consumers. Skinner: Flouride systems were temporarily out of service during treatment plant shutdowns and/or maintenance work in 2019, resulting in occasional fluoride levels below 0.6 mg/L.

(e) State MCL is 45 mg/L as nitrate, which equals 10 mg/L as N.

(f) Twin Oaks - Data collected (annually) from four consecutive quarters of monitoring in 2013 TOVWTP's required triennial monitoring (2016-2019) was performed in 2016. Skinner – Data are from samples collected in 2017 for the required triennial monitoring (2017-2019) until the next samples are collected. Current monitoring results are from 2011.

(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 50pCi/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) 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.

(l) 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.

(m) 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.

PADRE DAM
Municipal Water District