PADRE DAM
Municipal Water District

2015 Water Quality Report

Important Information

In 2015, 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 from the Safe Drinking Water Hotline at 1-800-426-4791, or online at: http://water.epa.gov/drink/standards/hascience.cfm.

Your Water Quality

Padre Dam is proud to report that our water system meets all USEPA and California Drinking Water Health Standards. This report is a snapshot of last year's water quality (2015). Included are details about where your water comes from, what it contains, and how it compares to State and Federal standards.

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 2015 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.

Source Water Assessment

Metropolitan assessed the vulnerability of its imported water in 2010 and 2011, and concluded that water supplies from the Colorado River are most vulnerable to recreation, increasing urbanization and the resulting increase in wastewater, urban runoff and stormwater runoff. Supplies from the Delta are most vulnerable to urban and stormwater runoff, wastewater, agricultural runoff, recreation and wildlife. For a copy of this assessment, please contact Metropolitan at 213-217-6850.

Helix Water District assessed Lake Jennings in March 2016 and found the lake's vulnerabilities to be the same as those of the Colorado River. Contact Helix Water District at 619-466-0585 for more information on their assessment.

How to Read the Following Tables

The tables on the following pages are a summary of the testing performed on your water in 2015. To read the table, 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 table are explained below.

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 U.S. Environmental Protection Agency.

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.

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

Questions

This report follows the State Board Guidance for Consumer Confidence Reports dated January 15, 2016. It is our intent to provide this report to all of our consumers. Additional copies may be obtained by calling Padre Dam at 619-448-3111.

If you have any questions or concerns about this Water Quality Report, please contact Kyle Swanson, Operations Manager, at 619-258-4673 or kswanson@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.

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

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** 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 USEPA and the State Board prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

Primary Standards

		Water Quality Standards			Water Treatment Plants				
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	NTU	TT=1	NA	Highest	0.08	0.1	0.02	0.04	Naturally present in the environment
Effluent Turbidity	%	95% (a)	NA	% ≤ 0.3	100	100	100	100	Soil runoff
MICROBIOLOGICAL									
Total Coliform Bacteria (b)	%	5	(0)	Range	PD Distribution System ND - 2.6%				Naturally present in the environment
INORGANIC CHEMICALS									
Aluminum (c)	ppb	1,000	600	Range Highest RAA	160 - 430 278	ND ND	ND ND	ND ND	Residue from water treatment process; erosion of natural deposits
Arsenic	ppb	10	0.004	Range Average	ND SS	ND SS	3 SS	ND ND	Erosion of natural deposits, glass and electronics production wastes
Barium	ppb	1000	2000	Range Average	ND - 120 113	124 SS	120 SS	ND ND	Natural deposits erosion; Oil and metal refineries discharge
Chromium-6	ppb	10	0.02	Range Average	PD Distribution System 0.023-0.049 0.036				Industrial discharge; erosion of natural deposits
Fluoride (d) Treatment-related	ppm	2	1	Range Average	0.6 - 0.7 0.7	0.5 - 0.9 0.7	0.6 - 1.0 0.8	0.5 - 1.0 0.8	Control range: 0.7-1.2; Optimal Level 0.7 Additive for dental health
Nitrate (as N) (e)	ppm	10	10	Range Average	0.23 - 0.24 0.24	ND ND	ND - 0.3 ND	0.7 - 0.9 0.8	Runoff and leaching from fertilizer use; septic septic tank and sewage; natural deposits
RADIOLOGICALS (f)									
Gross Alpha Particle Activity	pCi/L	15	(0)	Range Average	3.3 (n) SS	ND - 5 ND	ND ND	ND ND	Erosion of natural deposits
Gross Beta Particle Activity (g)	pCi/L	50	(0)	Range Average	ND ND	5 5	ND ND	ND ND	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	Range Average	ND - 1 (n) ND	1 - 2 2	1.7 - 2.3 2	ND ND	Erosion of natural deposits
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCT PRECURSORS									
Total Trihalomethanes (TTHM) (h)	ppb	80	NA	Range Highest RAA	PD Distribution System 6.1 - 38 33				By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (i)	ppb	60	NA	Range Highest RAA	ND - 9.2 7				By-product of drinking water chlorination
Total Chloramine Residual (Cl2)	ppm	[4.0]	[4.0]	Range Highest RAA	0.30 - 3.5 1.91				Drinking water disinfectant added for treatment treatment
Bromate (j)	ppb	10	0.1	Range Highest RAA	ND - 9.8 ND	1.1 - 9.9 4.3	1.8 - 10 4.2	NA NA	By-product of drinking water ozonation

Secondary Standards

Parameter	Units	Water Quality Standards: State or Federal MCL(MRDL)	Water Quality Standards: PHG (MCLG) [MRDLG]		Water Treatment Plants: Helix Levy Plant	Water Treatment Plants: MWD Skinner Plant	Water Treatment Plants: SDCWA Twin Oaks Valley Plant	Water Treatment Plants: Carlsbad Desalination Plant	Major Sources
SECONDARY STANDARDS–Aesthetic Standards									
Aluminum (c)	ppb	200	NA	Range Highest RAA	160 - 430 278	ND ND	ND ND	ND ND	Residue from water treatment process; natural deposits erosion
Chloride	ppm	500	NA	Range Average	89 - 100 95	102 - 105 104	110 SS	40 - 54 44	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	Range Average	1 SS	1 SS	ND SS	ND ND	Naturally-occurring organic materials
Odor Threshold	TON	3	NA	Range Average	ND - 2 ND	2 SS	2 SS	ND ND	Naturally-occurring organic materials
Specific Conductance	µS/cm	1,600	NA	Range Average	1000 1000	1000 - 1050 1020	1000 SS	281 - 318 296	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	Range Average	240 - 260 250	237 - 249 243	250 SS	15.3 - 17.9 16.7	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	ppm	1,000	NA	Range Average	640 640	639 - 655 647	690 SS	120 - 218 194	Runoff/leaching from natural deposits; seawater influence
OTHER PARAMETERS - Chemical									
Alkalinity	ppm	NA	NA	Range Average	120 - 130 125	125 - 130 128	120 SS	46 - 56 50.3	Naturally occurring and adjusted during treatment processes
Boron	ppb	NL = 1,000	NA	Range Average	0.1 SS	130 SS	140 SS	0.3 - 0.74 0.41	Runoff/leaching from natural deposits; industrial wastes
Calcium	ppm	NA	NA	Range Average	61 - 74 69.3	75 - 78 77	77 SS	15.3 - 23.3 19.8	Naturally occurring
Chlorate	ppb	NL = 800	NA	Range Average	NA NA	97 SS	130 - 320 220	NA NA	By-product of drinking water chlorination; industrial processes
Corrosivity (l) (as Aggressiveness Index)	AI	NA	NA	Range Average	13 SS	12.5 SS	13 SS	11.3 - 12.1 11.8	Elemental balance in water; affected by temperature, other factors
Corrosivity (m) (as Saturation Index)	SI	NA	NA	Range Average	NA NA	0.63 - 0.74 0.69	0.91 SS	(-0.4) - 2.05 0.74	Elemental balance in water; affected by temperature, other factors
Hardness	ppm	NA	NA	Range Average	290 - 300 295	290 - 307 299	310 SS	39.5 - 60.3 50.3	Sum of polyvalent cations present in the water, usually natirally occuring.
Magnesium	ppm	NA	NA	Range Average	23 - 27 25.7	25 - 27 26	28 SS	0.29 - 0.57 0.4	Naturally occurring
pH	pH Units	NA	NA	Range Average	8.0 - 8.1 8.1	8.1 - 8.2 8.1	7.7 - 8.3 8.1	7.99 - 8.74 8.52	Naturally occurring and adjusted during treatment processes
Potassium	ppm	NA	NA	Range Average	4.3 - 4.7 4.5	4.7 - 5.1 4.9	4.9 SS	1.0 - 1.6 1.4	Naturally occurring
Sodium	ppm	NA	NA	Range Average	82 - 94 90	96 - 103 100	120 SS	32.1 - 94.1 39.9	Naturally occuring salt present in the water
TOC	ppm	TT	NA	Range Highest RAA	2.1 - 3.6 2.6	2.0 - 2.6 2.3	2.0 - 2.4 2.2	ND - 1.18 ND	Various natural and man-made sources
FEDERAL UNREGULATED CONTAMINANTS MONITORING RULE (UCMR3 List 1 and 2) (k)									
					PD Distribution System				
Bromochloromethane	ppb	NA	NA	Range Average	ND - 0.19 0.09				Fire-extinguishing fluid, explosive suppressant and as a solvent in the manufacturing of
Molybdenum	ppb	NA	NA	Range Average	2.4 - 3.9 3.4				Potential disinfection by-product
Strontium	ppb	NA	NA	Range Average	320 - 860 664				Naturally occuring
Chlorate	ppb	NL=800	NA	Range Average	ND - 190 84				Disinfection by–product
Vanadium	ppb	NL=50	NA	Range Average	ND - 2.2 1.5				Industrial discharge; naturally occuring

Sodium and Hardness

Parameter	Unit of Measure	Water Quality Standards: State or Federal MCL (MRDL)	Water Quality Standards: PHG (MCLG) (MRDLG)		Water Treatment Plants: Helix Levy Plant	Water Treatment Plants: MWD Skinner Plant	Water Treatment Plants: SDCWA Twin Oaks Valley Plant	Water Treatment Plants: Carlsbad Desalination Plant
			NA	Range	82 – 94	96 – 103	120	32.1 – 94.1
Sodium	ppm	NA	NA	Average	90	100	SS	39.9
				Range	290 – 300	290 - 307	310	39.5 – 60.3
Hardness (parts per million)	ppm	NA	NA	Average	295	299	SS	50.3
				Range	17 – 17.5	17 - 18	18.1	2.3 – 3.5
Hardness (grains per gallon)	gpg	NA	NA	Average	17.3	17.5	SS	2.9

Padre Dam Lead and Copper Results

There was considerable attention in the media around lead levels found in drinking water supplies in Flint, Michigan, in 2015. We want to let you know that Padre Dam is required to test lead and copper levels within our service area every three years. Padre Dam tested for lead and cooper in 2013. Fifty locations were sampled. The results were well below regulatory action levels and are provided in the table below.

90th percentile of all samples collected
Number of sample sites = **50 homes**
Most recent sampling: **2013**
Next sampling due: **2016**

Parameter	Units	State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]	90% percentile of all samples
Copper	ppm	1.3	0.3	0.49
Lead	ppb	15	0.2	0.99

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.

Footnotes to Tables

(a) As a Primary Standard, the turbidity levels of the filtered water were less than or equal to 0.3 NTU in 95% of the online measurements taken each month and did not exceed 1 NTU for more than one hour. Turbidity, a measure of the cloudiness of the water, is an indicator of treatment performance. The turbidity levels for grab samples at these locations were in compliance with the Secondary Standard. **(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, copper, MTBE, and thiobencarb have both primary and secondary standards. **(d)** All facilities were in compliance with all provisions of the State's Fluoridation System Requirements. **(e)** State MCL is 45 mg/L as nitrate, which is the equivalent of 10 mg/L as N. **(f)** SDCWA data collected (annually) from four consecutive quarters of monitoring in 2013. Required triennial monitoring (2016-2019) will be performed in 2016. **(g)** The State Board considers 50 pCi/L to be the level of concern for beta particles; the gross beta particle activity MCL is 4 millirem/year dose equivalent to the total body or any internal organ. **(h)** The State DLR is 1.0 ppb. **(i)** State DLR is 1.0 ppb for each of the following: dichloroacetic acid, trichloroacetic acid, monobromoacetic acid, and dibromoacetic acid; and 2.0 ppb for monochloroacetic acid. **(j)** Running annual average was calculated from quarterly results of monthly and daily samples. Bromate reporting level is 3 ppb. **(k)** Unregulated contaminant monitoring helps USEPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated. **(l)** AI <10.0 = Highly aggressive and very corrosive water. AI ≥12.0 = Non-aggressive water. AI (10.0 - 11.9) = Moderately aggressive water. **(m)** Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI index = corrosive; tendency to dissolve calcium carbonate. **(n)** Gross Alpha sample collected in 2013 and uranium in 2011 from Lake Jennings