2013 Water Quality Report

PADRE DAM
Municipal Water District

Important Information

In 2013, Padre Dam water met or surpassed every public health requirement set by the California Department of Public Health 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.

Potential Source Water Contaminants

Padre Dam's drinking water, like all tap and bottled drinking 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.

The sources of drinking water in San Diego County 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 animal 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 California Department of Public Health (CDPH) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. CDPH regulations also establish limits for contaminants in bottled water that provide the same protection for public health.

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 (2013). 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, 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 each agency's Water Quality Report.

The tap water you received from Padre Dam in 2013 was blended water from the Colorado River System, the California State Water Project, and local watersheds within San Diego County.

Source Water Assessment

Metropolitan assessed the vulnerability of its imported water in December 2002, 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 February 2011 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.

Since 2002, water quality issues have impacted the reliability of both of these water resources. In 2009, the legislature mandated the development of the Bay Delta Conservation Plan, a 50-year plan to restore the Delta's ecosystem, water quality and species, and functionality as a water resource. In a 2010 report, however, the National Academy of Sciences concluded that identifying the Delta's water quality and environmental issues may not be possible. The Draft Bay Delta Conservation Plan is now available to the public. To review the plan visit www.baydeltaconservationplan.com.

Questions

This report follows the California Department of Public Health Guidance for Consumer Confidence Reports dated January 2, 2014. 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.

How to Read the Following Tables

The tables on the following pages are a summary of the testing performed on your water in 2013. 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 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 U.S. Environmental Protection Agency.

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 Environmental Protection Agency.

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 California Department of Public Health 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.

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 Drinking Water Standards

The following table lists the water quality parameters that are a potential health risk. The table shows the water quality standards for each parameter and the amount detected at each water treatment plant. The table also shows the source(s) of each parameter and its potential health risk.

	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	Major Sources
PRIMARY STANDARDS--Mandatory Health-Related Standards								
CLARITY								
Combined Filter	NTU	TT=1		Highest	0.1	0.09	0.04	
Effluent Turbidity	%	TT (a)	NA	% ≤ 0.3	100	100	100	Soil runoff
MICROBIOLOGICAL								
Total Coliform Bacteria (b)	%	5		Range	PD Distribution System ND - 1.0%			Naturally present in the environment
INORGANIC CHEMICALS								
Aluminum (c)	ppb	1,000	600	Range Highest RAA	87 - 260 179	ND ND	ND ND	Residue from water treatment process; erosion of natural deposits
Arsenic	ppb	10	0.004	Range Average	ND - 2.5 ND	ND ND	2 SS	Erosion of natural deposits, glass and electronics production wastes
Fluoride (d) Treatment-related	ppm	2	1	Range Average	0.6 - 0.9 0.8	0.7 - 1.0 0.8	0.5 - 0.9 0.7	Control range: 0.7-1.3; Optimal Level 0.8 Additive for dental health
Nitrate (as N) (e)	ppm	10	10	Range Average	ND ND	ND ND	ND - 0.3 ND	Runoff and leaching from fertilizer use; septic septic tank and sewage; natural deposits
RADIOLOGICALS (f)								
Gross Alpha Particle Activity	pCi/L	15		Range Average	3.3 SS	ND - 3 ND	ND ND	Erosion of natural deposits
Gross Beta Particle Activity (g)	pCi/L	50		Range Average	ND ND	ND - 5 ND	ND ND	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.43	Range Average	ND - 1 ND	ND - 2 1	1.7 - 2.3 2	Erosion of natural deposits
DISINFECTION BY-PRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BY-PRODUCT PRECURSORS (h)								
Total Trihalomethanes (TTHM) (i)	ppb	80	NA	Range Average	PD Distribution System 26 - 62 35			By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (j)	ppb	60	NA	Range Average	ND - 12 4.6			By-product of drinking water chlorination
Total Chloramine Residual (Cl2)	ppm	[4.0]	[4.0]	Range Highest RAA	0.2 - 3.4 1.86			Drinking water disinfectant added for treatment
Bromate (k)	ppb	10	0.1	Range Highest RAA	ND ND	1.0 - 11 5.9	1.4 - 4.9 2.6	By-product of drinking water ozonation

Secondary Drinking Water Standards – Aesthetic Standards

Secondary Standards are set by the California Department of Public Health for constituents that affect the aesthetic quality of water, such as taste, odor and color. These water quality parameters do not pose a health risk.

	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	Major Sources
SECONDARY STANDARDS--Aesthetic Standards								
Aluminum (c)	ppb	200	NA	Range Highest RAA	87 - 260 179	ND ND	ND ND	Residue from water treatment process; natural deposits erosion
Chloride	ppm	500	NA	Range Average	75 - 91 84	83 - 86 84	86 SS	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	Range Average	1 1	1 - 2 2	ND ND	Naturally-occurring organic materials
Odor Threshold (I)	TON	3	NA	Range Average	1 - 2 1	2 2	2 SS	Naturally-occurring organic materials
Specific Conductance	µS/cm	1,600	NA	Range Average	600 - 790 695	830 - 870 850	840 SS	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	Range Average	83 - 160 128	170 - 180 170	170 SS	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	ppm	1,000	NA	Range Average	340 - 470 417	500 - 520 510	490 SS	Runoff/leaching from natural deposits; seawater influence

Sodium and Hardness

	Water Quality Standards				Water Treatment Plants		
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
Sodium	ppm	NA	NA	Range Average	62 - 87 76	78 – 81 80	82 SS
Hardness (parts per million)	ppm	NA	NA	Range Average	150 – 230 190	230 – 240 230	230 SS
Hardness (grains per gallon)	gpg	NA	NA	Range Average	8.8 – 13.5 11.11	13.5 – 14.0 13.45	13.5 SS

Padre Dam Lead and Copper Results

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. 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 http://www.epa.gov/safewater/lead.

Parameter	Units	Water Quality Standards: State or Federal MCL(MRDL)	PHG (MCLG) [MRDLG]		Water Treatment Plants: Helix Levy Plant	MWD Skinner Plant	SDCWA Twin Oaks Valley Plant	Major Sources
FEDERAL UNREGULATED CONTAMINANTS MONITORING RULE (UCMR2) (m)								
List 2 - Screening Survey								
N-Nitrosodimethylamine (NDMA)	ppt	10 NA	3 NA	Range Average	ND - 4 ND	ND - 4 ND	ND ND	By-product of drinking water chloramination, industrial processes
OTHER PARAMETERS								
CHEMICAL								
Alkalinity	ppm	NA	NA	Range Average	85 - 100 93	72 - 130 110	110 SS	Naturally occurring and adjusted during treatment processes
Boron	ppb	NL = 1,000	NA	Range Average	0.14 SS	120 120	120 SS	Runoff/leaching from natural deposits; industrial wastes
Calcium	ppm	NA	NA	Range Average	34 - 51 44	56 - 59 58	57 SS	Naturally occurring
Chlorate	ppb	NL = 800	NA	Range Range	NA	51	180 - 280 228	By-product of drinking water chlorination; industrial processes
Corrosivity (n) (as Aggressiveness Index)	AI	NA	NA	Range Average	NA NA	12.4 - 12.5 12.4	12 SS	Elemental balance in water; affected by temperature, other factors
Corrosivity (o) (as Saturation Index)	SI	NA	NA	Range Average	NA NA	0.51 - 0.66 0.58	0.8 SS	Elemental balance in water; affected by temperature, other factors
Hardness	ppm	NA	NA	Range Average	150 - 230 190	230 - 240 230	230 SS	Sum of polyvalent cations present in the water, usually natirally occuring.
Magnesium	ppm	NA	NA	Range Average	16 - 24 21	20 - 21 20	22 SS	Naturally occurring
pH	pH Units	NA	NA	Range Average	7.9 - 8.2 8.1	8.2 8.2	7.5 - 8.8 8.3	Naturally occurring and adjusted during treatment processes
Potassium	ppm	NA	NA	Range Average	3.5 - 4.6 4.2	3.9 - 4.3 4.1	4.1 SS	Naturally occurring
Sodium	ppm	NA	NA	Range Average	62 - 87 76	78 - 81 80	82 SS	Naturally occuring salt present in the water
TOC	ppm	TT	NA	Range Highest RAA	2.2 - 2.3 2.2	2.1 - 2.4 2.2	2.0 - 2.5 2.3	Various natural and man-made sources
Vanadium	ppb	NL = 50	NA	Range Average	3.2 - 3.4 3.3	ND ND	ND ND	Naturally-occurring; industrial waste discharge
N-Nitrosodimethylamine (NDMA)	ppt	NL = 10	3	Range Average	ND - 4 ND	ND - 6.5 ND	ND ND	By-product of drinking water chloramination; industrial processes

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)** Metropolitan was 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)** Helix data is for 2013. MWD Data are from samples collected (triennially) during four consecutive quarters of monitoring in 2011 and reported for three years until the next samples are collected. SDCWA Data collected (annually) from four consecutive quarters of monitoring in 2013. **(g)** CDPH 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) Metropolitan was in compliance with all provisions of the Stage 2 Disinfectants and Disinfection By-Products Rules (D/DBPR). **(i)** The State DLR is 1.0 ppb. **(j)** 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. **(k)** Metropolitan used EPA method 326.0 which has a State DLR of 1.0 ppb. Compliance was based on the RAA. **(l)** In May 2012, monitoring frequency for Skinner was reduced from quarterly to annually when RAA returned to <3 TON. Per CDPH requirements, quarterly monitoring was conducted following a secondary MCL exceedance in April 2008. **(m)** Data were collected from February 2009 to August 2009 and reported per UCMR guidance. Minimum reporting levels are as stipulated in the Federal UCMR 2. List 1 - Assessment Monitoring consists of 10 chemical contaminants for which standard analytical methods were available. List 2 - Screening Survey consists of 15 contaminants for which new analytical methods were used. All analyses were conducted by contract laboratories. **(n)** AI <10.0 = Highly aggressive and very corrosive water. AI ≥12.0 = Non-aggressive water. AI (10.0 - 11.9) = Moderately aggressive water.
(o) Positive SI index = non-corrosive; tendency to precipitate and/or deposit scale on pipes. Negative SI index = corrosive; tendency to dissolve calcium carbonate.