



EMWD



WATER QUALITY
CONSUMER CONFIDENCE REPORT 2003

ISSUED JUNE 2004



ABOUT THIS CONSUMER CONFIDENCE REPORT

This brochure is a snapshot of the water quality Eastern Municipal Water District (EMWD) provided during calendar year 2003. We want you to have this information because informed customers make better decisions as regulations change. For more information about your water from EMWD, call Amy Mora, Environmental Compliance Analyst II, (951) 928-3777, ext. 6337.

This report explains:

- EMWD's drinking water sources and quality
- Regulations that protect our health
- Programs that protect the high quality of our supply sources

Eastern Municipal Water District is committed to providing a reliable supply of high-quality drinking water. Drinking water supplied by EMWD meets high standards established by state and federal agencies.

During 2003, EMWD staff collected 5,523 drinking water samples. EMWD's lab staff and contract laboratories performed 32,683 tests on those samples.

The operations budget for EMWD's laboratory is about \$1.1 million for the 2003-04 fiscal year. Highly trained microbiologists, chemists and water analysts work hard to make sure EMWD customers can depend on high-quality water.

Results of freshwater monitoring during 2003 are found in the tables of this report.

KNOWING THE SOURCE OF YOUR TAPWATER

The sources of drinking water (both tapwater and bottled water) include rivers, lakes, streams, ponds, reservoirs, springs and wells. As an EMWD customer, your tapwater comes from one of three service areas: the Mills Service area in the northwest portion of the District, the Skinner Service area in the southern portion of the District, and the East Valley Service area in the northeast portion of the District. To find your service area, see the map on the back cover.

In the Mills and Skinner service areas, the water is primarily imported surface water treated at regional treatment plants or is supplied from EMWD's own groundwater resources. Menifee and Sun City typically receive their tapwater from either the Skinner or Mills plants, or from EMWD's new Menifee Desalination Plant. This additional new supply draws on groundwater that is high in salts—specifically Total Dissolved Solids. Through reverse osmosis, any contaminants that exceed their maximum contaminant levels (MCL) are removed. The product water from desalination is similar in quality to distilled water. That water is blended with other local supplies to create drinking water that is comparable to imported water supplies.

In the East Valley service area, the water is entirely from EMWD wells.

The Henry J. Mills Filtration Plant and the Robert F. Skinner Filtration Plant are owned and operated by The Metropolitan Water District of Southern California. Treated water from these plants is purchased by EMWD and delivered to its customers through the areas listed below.

MILLS SERVICE AREA

Mills Filtration Plant

(Water supplied solely from Northern California through the State Water Project): Serves Moreno Valley, Menifee, Perris, Sun City, Good Hope, Mead Valley, Lakeview, Nuevo, Romoland, North Canyon Lake and Quail Valley.

Perris Water Filtration Plant and Well 55

(Eastern Perris area, blended Colorado River water with Mills water): Serves Perris, Romoland, Lakeview and Nuevo. Colorado River water is filtered through membranes to remove particulate contaminants and blended with Well 55 on site.

Well 44 and Well 49

(Moreno Valley area, blended with Mills water): Two wells serve only a small area in Moreno Valley.

Well 56 and Well 57

(Located in Perris, blended with Mills water): Service is limited to the immediate surrounding neighborhood.

Menifee Desalter

(Located in Sun City): Serves Sun City, Menifee, Canyon Lake and Quail Valley. Brackish well water is treated through Reverse Osmosis membranes to remove salts.

SKINNER SERVICE AREA

Skinner Filtration Plant

(Generally 80% Colorado River and 20% Northern California): Serves Murrieta, Murrieta Hot Springs, and occasionally Menifee and southern Sun City. This source is available to supplement supply in the East Valley area.

EAST VALLEY SERVICE AREA

This system of 13 wells serves most of the San Jacinto Valley, including much of Hemet and San Jacinto, Soboba Hot Springs, Valle Vista, Homeland, Juniper Flats, Green Acres, Diamond Valley and Winchester.



THE WATER WE DRINK

The U.S. Congress has directed the Environmental Protection Agency (EPA) to require public water systems to report annually on the quality of the drinking water they serve. Eastern Municipal Water District (EMWD) enthusiastically supports this requirement and has provided consumer confidence reports and other water quality data to all of its customers for many years.

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

EMWD DISTRIBUTION SYSTEM

Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	DIST'N SYSTEM-WIDE	MILLS AREA	EAST VALLEY AREA	SKINNER AREA	Major Sources in Drinking Water
PRIMARY STANDARDS—MANDATORY HEALTH-RELATED STANDARDS										
MICROBIOLOGICAL										
Total Coliform Bacteria	%	5.0 (a)	(0)	NA	Range Average	0 - 1.1 0.34	NA NA	NA NA	NA NA	Naturally present in the environment
Fecal Coliform and E. coli	(b)	(b)	(0)	NA	Range Average	0 0	NA NA	NA NA	NA NA	Human and animal fecal waste
DISINFECTION BY-PRODUCTS AND DISINFECTANT RESIDUALS										
Total Trihalomethanes (TTHM) (c)	ppb	80	NA	0.5	Range RAA	1.9-85 38.9	2.3-85 42.7	1.9-49 18.7	30-67 46.2	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5) (c,d)	ppb	60	NA	1 (d)	Range RAA	1.1-50.9 20.6	1.1-38 20.7	2.1-24 10.0	10-50.9 33.3	By-product of drinking water chlorination
Total Chlorine Residual	ppm	[4]	[4]	NA	Range Average	ND-3.8 1.6	ND-3.8 1.7	ND-3.6 0.9	ND-3.5 2.4	Drinking water disinfectant added for treatment
PHYSICAL PARAMETERS										
Color	Units	15	NA	NA	Range Average	<2.5-12.5 2.6	<2.5-7.5 2.66	<2.5-12.5 2.75	<2.5-5 2.38	Naturally occurring organic materials
Odor Threshold	Units	3	NA	NA	Range Average	1 1	1 1	1 1	1 1	Naturally occurring organic materials
Turbidity (Weekly)	NTU	5	NA	NA	Range Average	0.05-6.3 0.13	0.05-1.5 0.14	0.05-6.3 0.21	0.05-0.63 0.11	Soil runoff
pH	Units	NA	NA	--	Range Average	6.71-8.58 8.03	6.71-8.58 8.07	7.25-8.37 7.88	7.08-8.52 7.98	
METALS (e,m)										
Copper	ppm	AL=1.3	0.17	0.05	NA	90th percentile of 50 samples: 0.23 ppm				Internal corrosion of household pipes; erosion of natural deposits
Lead	ppb	AL=15	2	5	NA	90th percentile of 50 samples: 7 ppb One sample exceeded the AL.				Internal corrosion of household pipes; erosion of natural deposits

See page 4 for Footnotes and page 10 for Definitions.

NOTES

The Distribution System samples represent samples that were taken weekly (Microbiological, Physical and Disinfection Residuals), quarterly (Disinfection By-Products) or every three years (Metals) in our distribution system. The other tables in this report are of samples taken either at the source or just after treatment and before it enters the distribution system. We sample the distribution system to look for any changes in the water quality that may indicate excessive water age, contamination, or excessive corrosivity of the water.

- AL California Action Level
- CFU/mL Colony Forming Units per milliliter
- DLR Detection Limits for purposes of Reporting
- HAA5 Haloacetic Acids (five)
- MCL Maximum Contaminant Level
- MCLG Maximum Contaminant Level Goal
- MRDL Maximum Residual Disinfectant Level
- MRDLG Maximum Residual Disinfectant Level Goal
- N Nitrogen
- NA Not Applicable
- ND None Detected

ABBREVIATIONS

- NTU Nephelometric Turbidity Units
- pCi/L picoCuries per liter
- PHG Public Health Goal
- ppb parts per billion or micrograms per liter (µg/L)
- ppm parts per million or milligrams per liter (mg/L)
- ppt parts per trillion or nanograms per liter (ng/L)
- RAA Running Annual Average
- SI Saturation Index (Langelier)
- TOC Total Organic Carbon
- TTHM Total Trihalomethanes
- TT Treatment Technique
- µmho/cm micromho per centimeter

FOOTNOTES

- (a) 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 from all service areas. In 2003, 2,450 samples were analyzed. The MCL was not violated.
- (b) Fecal coliform/E.coli MCLs: The occurrence of 2 consecutive total coliform-positive samples, one of which contains fecal coliform/E. coli, constitutes an acute MCL violation. The MCL was not violated in 2003.
- (c) Average and range for the Mills and Skinner filtration plant effluents were taken from weekly samples for TTHM and monthly samples for HAA5. Distribution system-wide average and range were taken from 28 samples collected quarterly.
- (d) 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.
- (e) Data for Copper and Lead distribution system samples are from 2001.
- (f) The turbidity level of the filtered water shall be less than or equal to 0.3 NTU in 95% of the measurements taken each month and shall not exceed 1.0 NTU at any time. Turbidity is a measure of the cloudiness of the water and is a good indicator of water quality and filtration performance.
- (g) Aluminum and MTBE have both primary and secondary standards. The secondary MCL for aluminum is 200 ppb, and for MTBE is 5 ppb.
- (h) MTBE reporting level is 0.5 ppb.
- (i) State MCL is 45 mg/L as nitrate, which equals 10 mg/L as N.
- (j) Results based on the 2002-2003 four-quarter radiological monitoring program for Skinner and Mills Plants, and 2002 four-quarter radiological monitoring program for East Valley Wells and Wells 49, 56, 57 and 75, and 2001 four-quarter monitoring for Well 55.
- (k) Standard is for Radium-226 and -228 combined.
- (l) Bromate compliance monitoring began in October 2003. Range values based on weekly samples. Running annual average will be calculated after four consecutive quarters of samples have been collected by third quarter 2004.
- (m) A sequestering agent is added to the wells in East Valley to control the corrosivity of the water. All other wells listed as "corrosive" are blended with the "non-corrosive" waters either from Mills or Skinner Filtration Plants. Evidence of corrosion control is compliance with the Lead and Copper Action Levels listed in the Distribution System table. The sequestering agents are also used in East Valley to hold iron and manganese in solution.
- (n) Metropolitan has developed a flavor-profile analysis method that can more accurately detect odor occurrences. For more information, contact MWD at (213) 217-6850.
- (o) TOCs at the Mills and Skinner filtration plants were taken at the filter effluents.
- (p) Samples taken for perchlorate at Well 57 in 2002.
- (q) HPC values were based on the monthly averages of the Mills and Skinner plant effluent samples.



Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Skinner Plant Average (Range)	East Valley Wells Average (Range)	Major Sources in Drinking Water
Percent of total water delivered by EMWD	%	NA	NA	NA	27.61	14.14	
Percent State Project Water	%	NA	NA	NA	33 (19-46)	NA	
PRIMARY STANDARDS—MANDATORY HEALTH-RELATED STANDARDS							
CLARITY							
Combined Filter Effluent Turbidity	highest NTU %<0.3 NTU	0.3 (f) 95% (f)	NA NA	NA NA	0.09 100%	NA NA	Soil runoff
VOLATILE ORGANIC COMPOUNDS							
Methyl- <i>tert</i> -butyl ether (MTBE) (g,h)	ppb	13	13	3	ND (ND-0.5)	ND	Gasoline discharges from watercraft engines
INORGANIC CHEMICALS							
Aluminum (g)	ppb	1000	600	50	ND	ND (ND-54)	Residue from water treatment process; natural deposits; erosion
Arsenic	ppb	50	NA	2	ND	ND (ND-4)	Natural deposits erosion, glass & electronics production wastes
Barium	ppm	1	2	0.1	ND	ND (ND-0.11)	Oil and metal refineries discharges; natural deposits erosion
Fluoride	ppm	2	1	0.1	0.22 (0.15-0.27)	0.28 (0.1-0.6)	Erosion of natural deposits; water additive for tooth health
Lead	ppb	AL=15	2	5	ND	ND (ND-43)	Internal corrosion of household pipes; erosion of natural deposits
Nickel	ppb	100	12	10	ND	32 (11-48)	Erosion of natural deposits; discharge from metal factories
Nitrate (as N) (i)	ppm	10	10	0.4	ND	1.7 (ND-8.7)	Runoff and leaching from fertilizer use; sewage; natural erosion
Selenium	ppb	50	(50)	5	ND	ND (ND-8)	Refineries, mines, and chemical waste discharges; runoff
RADIOLOGICALS (j)							
Gross Alpha Particle Activity	pCi/L	15	NA	1	3.41 (2.99-3.96)	2.45 (ND-4.72)	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50	NA	4	ND (ND-4.08)	ND	Decay of natural and man-made deposits
Combined Radium (k)	pCi/L	5	NA	0.5	ND (ND-0.51)	ND	Erosion of natural deposits
Uranium	pCi/L	20	0.5	2	ND (ND-2.39)	ND	Erosion of natural deposits
DISINFECTION BY-PRODUCTS							
Total Trihalomethanes (TTHM)	ppb	80	NA	0.5	45 (32-61) (c)	ND	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5)	ppb	60	NA	1 (d)	16 (11-20) (c,d)	NA	By-product of drinking water chlorination
SECONDARY STANDARDS—AESTHETIC STANDARDS							
Chloride	ppm	500	NA	NA	81 (76-92)	23 (8.4-89)	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	NA	2 (1-3)	3.7 (<2.5-10)	Naturally occurring organic materials
Corrosivity (m)	SI	>0	NA	NA	0.30 (0.20-0.36)	0.03 (-0.41-0.43)	Elemental balance in water; affected by temperature, other factors
Corrosivity (m)	SI	corrosive	NA	NA	non-corrosive	non-corrosive	Elemental balance in water; affected by temperature, other factors
Iron	ppb	300	NA	100	ND	ND (ND-440)	Leaching from natural deposits; industrial wastes
Manganese	ppb	50	NA	20	ND	ND (ND-140)	Leaching from natural deposits
Odor Threshold	Units	3	NA	NA	(n)	1	Naturally occurring organic materials
Specific Conductance	µmho/cm	1600	NA	NA	820 (740-920)	450 (270-900)	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	171 (147-206)	50 (10-220)	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	ppm	1000	NA	NA	490 (440-560)	280 (180-580)	Runoff/leaching from natural deposits; seawater influence
Turbidity	NTU	5	NA	NA	0.06 (0.05-0.07)	0.3 (<0.1-1.9)	Soil runoff
UNREGULATED CHEMICALS REQUIRING MONITORING							
Boron	ppb	NA	AL=1,000	100	130 (110-140)	ND	Runoff/leaching from natural deposits; industrial wastes
Chromium VI	ppb	NA	NA	1	ND	1.5	Industrial waste discharge
Trichloropropane (1,2,3-TCP)	ppt	NA	AL=5	5	ND	6 (ND-53)	Industrial waste discharge and pesticide uses
Vanadium	ppb	NA	AL=50	3	ND	9.1	Naturally occurring; industrial waste discharge
ADDITIONAL PARAMETERS							
MICROBIAL CONTAMINANTS							
HPC (q)	CFU/mL	TT	NA	NA	<1 (<1-2)	NA	Naturally present in the environment
OTHER PARAMETERS							
Alkalinity	ppm	NA	NA	--	112 (100-124)	135 (100-200)	
Calcium	ppm	NA	NA	--	54 (49-64)	48 (24-87)	
Hardness	ppm	NA	NA	--	227 (209-264)	142 (68-290)	
Hardness	grains/gallon	NA	NA	--	13 (12-15)	8.3 (3.9-17)	
Magnesium	ppm	NA	NA	--	22.5 (21-26)	5.5 (1.8-17)	
pH	pH Units	NA	NA	--	8.06 (8.04-8.08)	7.6 (6.6-8.4)	
Potassium	ppm	NA	NA	--	3.9 (3.6-4.3)	3.5 (1.8-7.6)	
Radon (j)	pCi/L	NA	NA	100	ND	220 (8.68-293)	
Sodium	ppm	NA	NA	--	76 (66-89)	36 (12-83)	
TOC (o)	ppm	TT	NA	0.7	2.4 (2.0-2.7)	ND (ND-0.8)	Various natural and man-made sources

IMPORTANT HEALTH 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 USEPA's Safe Drinking Water Hotline (1-800-426-4791).

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised 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. USEPA/Center 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).

Nitrate in drinking water at levels above 45 parts per million, or 45 milligrams per liter (mg/L), is a health risk for infants of less than six months of age. Such nitrate levels in drinking water can interfere with the capacity of the infant's blood to carry oxygen, resulting in a serious illness; symptoms include shortness of breath and blueness of the skin. Nitrate levels above 45 mg/L may also affect the ability of the blood to carry oxygen in other individuals, such as pregnant women and those with certain specific enzyme deficiencies. If you are caring for an infant, or you are pregnant, you should ask advice from your health care provider. Untreated well water from Wells 44 and 49 located in Moreno Valley exceeds the nitrate MCL of 45 ppm. Under strict state guidelines, EMWD blends low nitrate water from the Mills system with this supply to meet the MCL (see table on opposite page).

Perchlorate is an oxygen-rich salt known in high concentrations to affect the thyroid gland. The California Office of Environmental Health Hazard Assessment (OEHHA) has revised a draft action level of 6 parts per billion, or 6 micrograms per liter (6µg/L).

EMWD has monitored for perchlorate since 1999-2000. EMWD has three water wells (Wells 57, 44 and 49) that contain a range of perchlorate levels from 4.7 to 12 ppb. All three of these wells are blended with State Project water from the Mills Filtration Plant until the perchlorate level is below the detection limit of 4 ppb. All blending is done at each of the well sites and before the first customer service. At no time has EMWD served unblended well water containing perchlorate to customers.

Radon is a radioactive gas that you can't see, taste or smell. It is found throughout the United States. Radon can move up through the ground and into a home through cracks and holes in the foundation. Radon can build up to high levels in all types of homes. Radon can also get into indoor air when released from tapwater from showering, washing dishes, and other household activities.

Radon entering the home through tapwater is in most cases a small source of radon in indoor air. Radon is a known human carcinogen. Breathing air containing radon can lead to lung cancer. Drinking water containing radon may also cause increased risk of stomach cancer.

If you are concerned about radon, you may test the air in your home. Testing is inexpensive and easy. If the level of radon in your air is 4 picocuries per liter of air (pCi/L) or higher, there are simple ways to fix the problem that aren't too costly. For additional information, call your State radon program or call EPA's Radon Hotline (800-SOS-RADON).



Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Moreno Valley		Perris Valley		Mills Plant	Major Sources in Drinking Water
					Well 44 Avg. (Range)	Well 49 Avg. (Range)	Well 56 Avg. (Range)	Well 57 Avg. (Range)		
Percent of total water delivered by EMWD	%	NA	NA	NA	0.74	0.16	1.44	1.32	49.35	
Percent State Project Water	%	NA	NA	NA	NA	NA	NA	NA	100	
PRIMARY STANDARDS—MANDATORY HEALTH-RELATED STANDARDS										
CLARITY										
Combined Filter Effluent Turbidity	highest NTU %<0.3 NTU	0.3 (f) 95% (f)	NA NA	NA NA	NA NA	NA NA	NA NA	NA NA	0.14 100%	Soil runoff
VOLATILE ORGANIC COMPOUNDS										
Dibromochloropropane (DBCP)	ppt	200	1.7	10	70	ND	ND	NA	ND	Banned nematocide that may still be present in soils
Methyl tert-butyl ether (MTBE) (g,h)	ppb	13	13	3	ND	ND	ND	NA	ND (ND-1)	Gasoline discharges from watercraft engines
Tetrachloroethylene (PCE)	ppb	5	0.06	0.5	1.45 (1.4-1.5)	2.6 (2.5-2.7)	ND	NA	ND	Discharge from factories, dry cleaners & auto shops
Trichloroethylene (TCE)	ppb	5	0.8	0.5	ND	ND	1.1 (0.5-1.4)	NA	ND	Metal degreasing site discharges & other factories
INORGANIC CHEMICALS										
Barium	ppm	1	2	0.1	NA	0.2	0.18	NA	ND	Oil and metal refineries discharges; natural deposits erosion
Fluoride	ppm	2	1	0.1	0.4	0.3	0.4	0.2	ND	Erosion of natural deposits; water additive for tooth health
Nickel	ppb	100	12	10	NA	ND	62	NA	ND	Erosion of natural deposits; discharge from metal factories
Nitrate (as N) (i)	ppm	10	10	0.4	14 (13-16)	22 (21-24)	4.9 (4.8-5.1)	5.8 (5.7-5.9)	0.7 (ND-1.3)	Runoff and leaching from fertilizer use; sewage; natural erosion
Nitrate after blending (as N)	ppm	10	10	0.4	6.1 (5.3-8.6)	5.4 (4.5-8.1)	NA	NA	NA	Runoff and leaching from fertilizer use; sewage; natural erosion
Selenium	ppb	50	(50)	5	NA	6	ND	NA	ND	Refineries, mines & chemical waste discharges; runoff
RADIOLOGICALS (j)										
Gross Alpha Particle Activity	pCi/L	15	NA	1	1.53 (1.06-2.57)	1.77 (1.52-2.03)	NA	NA	1.81 (ND-3.07)	Erosion of natural deposits
DISINFECTION BY-PRODUCTS AND DISINFECTION BY-PRODUCTS PRECURSORS										
Total Trihalomethanes (TTHM)	ppb	80	NA	0.5	ND	ND	ND	NA	49 (25-80) (c)	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5)	ppb	60	NA	1 (d)	NA	NA	NA	NA	15 (6-27) (c, d)	By-product of drinking water chlorination
Bromate (l)	ppb	10	(0)	5	NA	NA	NA	NA	6.6 (4.5-10.4)	By-product of drinking water ozonation
SECONDARY STANDARDS—AESTHETIC STANDARDS										
Chloride	ppm	500	NA	NA	155	252	242	372	70 (47-114)	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	NA	<2.5	5.6 (<2.5-10)	2.5	2.5	1 (1-2)	Naturally occurring organic materials
Corrosivity (m)	SI	>0	NA	NA	-0.755	-0.511	-0.283	0.0798	0.07 (-0.03-0.14)	Elemental balance in water; affected by temperature, other factors
Corrosivity (m)	SI	non-corrosive	NA	NA	corrosive	corrosive	corrosive	non-corrosive	non-corrosive	Elemental balance in water; affected by temperature, other factors
Odor Threshold	Units	3	NA	NA	1	1.5 (1-2)	1	1	(n)	Naturally occurring organic materials
Specific Conductance	µmho/cm	1600	NA	NA	790	1200	1070 (1070)	1570 (1400-1640)	480 (360-660)	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	19	28	35	41	48 (34-91)	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	ppm	1000	NA	NA	550	820	700	930 (840-1040)	260 (200-370)	Runoff/leaching from natural deposits; seawater influence
Turbidity	NTU	5	NA	NA	<0.1	2.17 (0.2-6)	0.2	0.1	0.05 (0.03-0.09)	Soil runoff
Zinc	ppm	5.0	NA	0.05	11	ND	ND	ND	ND	Runoff/leaching from natural deposits; industrial wastes
UNREGULATED CHEMICALS REQUIRING MONITORING										
Boron	ppb	NA	AL=1,000	100	ND	ND	400	400	150 (100-180)	Runoff/leaching from natural deposits; industrial wastes
Perchlorate	ppb	NA	AL=4	4	5.2 (5.0-5.5)	11.3 (11-12)	NA	5.8 (4.7-5.2) (p)	ND	Industrial waste discharge
Vanadium	ppb	NA	AL=50	3	NA	13	NA	NA	ND	Naturally occurring; industrial waste discharge
ADDITIONAL PARAMETERS										
MICROBIAL CONTAMINANTS										
HPC (q)	CFU/mL	TT	NA	NA	NA	NA	NA	NA	<1 (<1-8)	Naturally present in the environment
OTHER PARAMETERS										
Alkalinity	ppm	NA	NA	--	70	76	95	150	67 (57-80)	
Calcium	ppm	NA	NA	--	65	98	86	130	20 (16-25)	
Hardness	ppm	NA	NA	--	260	400	310	440	97 (81-122)	
Hardness	grains/gallon	NA	NA	--	15.2	23	18	26	5.7 (4.7-7.1)	
Magnesium	ppm	NA	NA	--	22	38	23	27	11.5 (9.5-15)	
pH	pH Units	NA	NA	--	7.0	6.9 (6.7-7.1)	7.3	7.3	8.41 (8.36-8.47)	
Potassium	ppm	NA	NA	--	2.8	3.3	2.6	3.4	2.6 (2.1-3.6)	
Radon (j)	pCi/L	NA	NA	100	1440	606	841 (779-914)	989 (918-1090)	ND	
Sodium	ppm	NA	NA	--	50	63	85	130	53 (37-82)	
TOC (o)	ppm	TT	NA	0.7	ND	ND	ND	ND	2.1 (1.6-3.1)	Various natural and man-made sources

Exceeds MCL Exceeds SMCL

WHAT ELSE SHOULD I KNOW ABOUT CONTAMINANTS & REGULATIONS?

As water travels over the surface of the land or soaks down 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:

- 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 by-products 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.
- Microbial contaminants, such as viruses and bacteria, that may come from sewage treatment plants, septic systems, agricultural livestock operations and wildlife.

In order to ensure that tapwater is safe to drink, the United States Environmental Protection Agency (USEPA) and the California Department of Health Services (CDHS) prescribe regulations that limit the amount of certain contaminants in water provided by public water systems.

VULNERABILITY ASSESSMENTS

In December 2002, EMWD completed a source water assessment of its potable production well supplies. The assessments evaluated 18 groundwater wells within the District's service area. Groundwater supplies are considered vulnerable to various urban and agricultural land uses.

Urban land uses include automobile gas stations and repair shops, transportation corridors, furniture repair and manufacturing, sewer collection systems, and sand and gravel mining operations. Agricultural land uses include irrigated crops and application of pesticides and herbicides. A copy of the assessments may be obtained by contacting EMWD by phone at (951) 928-3777 extension 6337.

Also in December 2002, Metropolitan Water District of Southern California completed a source water assessment of its Colorado River and State Water Project supplies. Colorado River supplies are considered to be most vulnerable to recreation, urban/storm water runoff, increasing urbanization in the watershed and wastewater. State Water Project supplies are considered to be most vulnerable to urban/storm water runoff, wildlife, agriculture, recreation and wastewater. A copy of the assessment may be obtained by contacting Metropolitan by phone at (213) 217-6850.



Parameter	Units	Perris Water Filtration Plant								Major Sources in Drinking Water
		State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Well 55 Avg. (Range)	San Jacinto Tunnel W. Portal Avg. (Range)	Silverwood Lake Avg. (Range)	Product Water Avg. (Range)	Mills Plant Avg. (Range)	
Percent of total water delivered by EMWD	%	NA	NA	NA	0.35	NA	NA	3.86	49.35	
Percent State Project Water	%	NA	NA	NA	NA	0	100	5 (0-100)	100	
PRIMARY STANDARDS—MANDATORY HEALTH-RELATED STANDARDS										
CLARITY										
Combined Filter Effluent Turbidity	highest NTU %<0.3 NTU	0.3 (f) 95% (f)	NA NA	NA NA	NA NA	NA NA	NA NA	1.0 99.84%	0.14 100%	Soil runoff
VOLATILE ORGANIC COMPOUNDS										
Methyl <i>tert</i> -butyl ether (MTBE) (g,h)	ppb	13	13	3	ND	ND	0.7 (ND -2)	NA	ND (ND -1)	Gasoline discharges from watercraft engines
INORGANIC CHEMICALS										
Aluminum (g)	ppb	1000	600	50	ND	119 (ND-1290)	58 (ND-146)	NA	ND	Residue from water treatment process; natural deposits; erosion
Arsenic	ppb	50	NA	2	ND	2.6 (2.4-3.0)	2.2 (ND -2.5)	NA	ND	Natural deposits erosion, glass and electronics production wastes
Barium	ppm	1	2	0.1	0.18	0.12 (0.11-0.12)	ND	NA	ND	Oil and metal refineries discharges; natural deposits erosion
Fluoride	ppm	2	1	0.1	0.5	0.29 (0.21-0.34)	ND (ND-0.11)	NA	ND	Erosion of natural deposits; water additive for tooth health
Nickel	ppb	100	12	10	53	ND	ND	NA	ND	Erosion of natural deposits; discharge from metal factories
Nitrate (as N) (i)	ppm	10	10	0.4	3.6 (3.2-3.9)	ND	0.7 (ND-1.4)	NA	0.7 (ND -1.3)	Runoff and leaching from fertilizer use; sewage; natural erosion
RADIOLOGICALS (j)										
Gross Alpha Particle Activity	pCi/L	15	NA	1	2.76 (ND-5.86)	4.12 (3.10-6.37)	1.72 (ND-2.81)	NA	1.81 (ND-3.07)	Erosion of natural deposits
Gross Beta Particle Activity	pCi/L	50	NA	4	NA	ND (ND-4.40)	ND	NA	ND	Decay of natural and man-made deposits
Uranium	pCi/L	20	0.5	2	NA	2.82 (ND-3.92)	ND (ND-4.68)	NA	ND	Erosion of natural deposits
DISINFECTION BY-PRODUCTS AND DISINFECTION BY-PRODUCTS PRECURSORS										
Total Trihalomethanes (TTHM)	ppb	80	NA	0.5	ND	NA	NA	28 (16 -37)	49 (25-80) (c)	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5)	ppb	60	NA	1 (d)	NA	NA	NA	18 (5.5-29)	15 (6-27) (c, d)	By-product of drinking water chlorination
Bromate (l)	ppb	10	(0)	5	NA	NA	NA	NA	6.6 (4.5-10.4)	By-product of drinking water ozonation
SECONDARY STANDARDS—AESTHETIC STANDARDS										
Chloride	ppm	500	NA	NA	131 (129-133)	81 (77-84)	64 (42-99)	NA	70 (47-114)	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	NA	3.3 (2.5-5)	3 (2-5)	10 (5-16)	NA	1 (1-2)	Naturally occurring organic materials
Corrosivity (m)	SI	>0	NA	NA	-0.56 (-0.84-0.271)	NA	NA	NA	0.07 (-0.03-0.14)	Elemental balance in water; affected by temperature, other factors
Corrosivity (m)	SI	non-corrosive	NA	NA	corrosive	NA	NA	NA	non-corrosive	Elemental balance in water; affected by temperature, other factors
Iron	ppb	300	NA	100	110 (ND-200)	ND	124 (ND-168)	NA	ND	Leaching from natural deposits; industrial wastes
Manganese	ppb	50	NA	20	ND	ND	22 (ND-36)	NA	ND	Leaching from natural deposits
Odor Threshold	Units	3	NA	NA	1	(n)	(n)	NA	(n)	Naturally occurring organic materials
Specific Conductance	µmho/cm	1600	NA	NA	790 (770-810)	970 (960-980)	450 (330-590)	650 (430-1000)	480 (360-660)	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	52 (50-53)	238 (234-242)	33 (19-43)	NA	48 (34 -91)	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	ppm	1000	NA	NA	490 (480-500)	600 (600-610)	240 (180-320)	390 (190-640)	260 (200-370)	Runoff/leaching from natural deposits; seawater influence
Turbidity	NTU	5	NA	NA	0.9 (0.3-1.5)	1.6 (0.39-10)	2.1 (0.85-5.7)	NA	0.05 (0.03-0.09)	Soil runoff
UNREGULATED CHEMICALS REQUIRING MONITORING										
Boron	ppb	NA	AL=1,000	100	200	120 (110-130)	150 (100-180)	NA	150 (100-180)	Runoff/leaching from natural deposits; industrial wastes
Perchlorate	ppb	NA	AL=4	4	ND	ND (ND-5.4)	ND	NA	ND	Industrial waste discharge
Vanadium	ppb	NA	AL=50	3	NA	ND (ND-32)	4.2 (3.8-4.7)	ND	ND	Naturally occurring; industrial waste discharge
ADDITIONAL PARAMETERS										
MICROBIAL CONTAMINANTS										
HPC (q)	CFU/mL	TT	NA	NA	NA	NA	NA	2 (<1-13)	<1 (<1-8)	Naturally present in the environment
OTHER PARAMETERS										
Alkalinity	ppm	NA	NA	--	120	134 (130-137)	78 (68-87)	95 (77-130)	67 (57-80)	
Calcium	ppm	NA	NA	--	67 (65-68)	71 (67-72)	20 (15-26)	NA	20 (16 -25)	
Hardness	ppm	NA	NA	--	250 (240-260)	293 (281-299)	99 (77-118)	NA	97 (81-122)	
Hardness	grains/gallon	NA	NA	--	14.6 (14-15)	17 (16 -17)	5.8 (4.5-6.9)	NA	5.7 (4.7-7.1)	
Magnesium	ppm	NA	NA	--	21 (20-22)	28 (27-29)	12 (9.5-15)	NA	11.5 (9.5-15)	
pH	pH Units	NA	NA	--	6.9 (6.6-7.2)	8.36 (8.26 -8.42)	8.11 (7.79 -8.27)	8.1	8.41 (8.36 -8.47)	
Potassium	ppm	NA	NA	--	3.8 (3.4-4.2)	4.4 (4.2-4.8)	2.6 (2.0-3.6)	NA	2.6 (2.1-3.6)	
Radon (j)	pCi/L	NA	NA	100	1520 (1500-1540)	ND	ND	NA	ND	
Sodium	ppm	NA	NA	--	53 (49-56)	89 (85-91)	47 (32-68)	NA	53 (37-82)	
TOC (o)	ppm	TT	NA	0.7	ND	4.1 (2.8-5.6)	3.7 (2.4-5.6)	2.6 (2-3.4)	2.1 (1.6-3.1)	Various natural and man-made sources

MICROBIAL WATER QUALITY AND DISINFECTION

Coliform bacteria are not generally considered harmful. They are used as indicators of potential problems because they are easily monitored and analyzed. It is not at all unusual for a water system to have an occasional positive sample for total coliform bacteria. And it is difficult—if not impossible—to assure that a water system will never get a positive sample.

The Maximum Contaminant Level (MCL) for total coliform bacteria is based on a monthly percent of no more than 5.0% of positive samples. The Maximum Contaminant Level Goal (MCLG) is 0%.

In 2003, the District's monthly percent of positive total coliform test results ranged from 0.0% to 1.1% (see EMWD Distribution System Table). No samples tested positive for E. coli in 2003.

Disinfection is typically accomplished using chlorine at wells prior to delivery to customers. Chloramine, a chlorine compound, is used for surface water that is treated at the Mills and Skinner plants. Ozone, an alternative form of disinfection, is used in the treatment process at the Mills plant.

High turbidity, or the measure of the cloudiness of water, can hinder the effectiveness of disinfectants. All surface water samples had turbidity levels within the required Treatment Technique (TT) level of 0.5 Nephelometric Turbidity Units (NTU).

All groundwater sample levels were below the TT level of 5 NTU.

Cryptosporidium is a microbial pathogen found in surface water throughout the U.S. Although filtration removes cryptosporidium, the most commonly used filtration methods cannot guarantee 100 percent removal. Current test methods do not determine if the organisms are dead or if they are capable of causing disease.

In 2003, a single Cryptosporidium oocyst was detected in one monthly sample of Mills plant influent that was equivalent to 10 oocysts/100 L.

Ingestion of Cryptosporidium may cause cryptosporidiosis, an abdominal infection. Symptoms of infection include nausea, diarrhea, and abdominal cramps. Most healthy individuals can overcome the disease within a few weeks. However, immunocompromised people are at greater risk of developing life-threatening illness. We encourage immunocompromised individuals to consult their doctor regarding appropriate precautions to take to avoid infection. Cryptosporidium must be ingested to cause disease, and it may be spread through means other than drinking water.

DEFINITIONS

Maximum Contaminant Level or MCL: 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 Contaminant Level Goal or 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 U.S. Environmental Protection Agency.

Maximum Residual Disinfectant Level or MRDL: The level of a disinfectant added for water treatment that may not be exceeded at the customer's tap.

Maximum Residual Disinfectant Level Goal or MRDLG: The level of a disinfectant added for water treatment below which there is no known or expected risk to health. MRDLs are set by the U. S. Environmental Protection Agency.

Public Health Goal or 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.

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

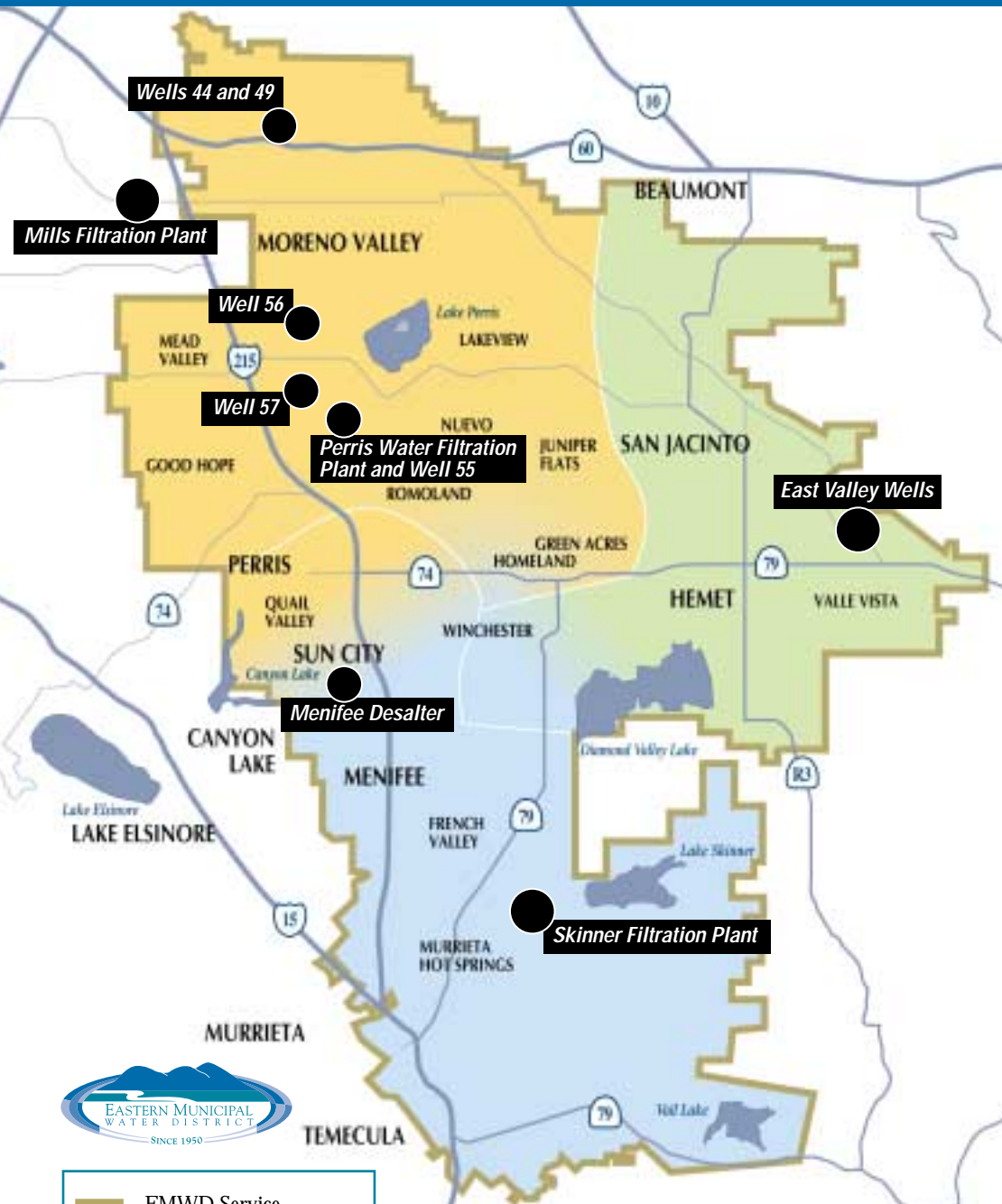
Regulatory Action Level or AL: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique or TT: A required process intended to reduce the level of a contaminant in drinking water.



Parameter	Units	State MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Desalter Wells 75 & 76 Average (Range)	Desalter Product Water Average (Range)	Mills Plant Average (Range)	Major Sources in Drinking Water
Percent of total water delivered by EMWD	%	NA	NA	NA	NA	1.03	49.35	
Percent State Project Water	%	NA	NA	NA	NA	0	100	
PRIMARY STANDARDS—MANDATORY HEALTH-RELATED STANDARDS								
CLARITY								
Combined Filter Effluent Turbidity	highest NTU %<0.3 NTU	0.3 (f) 95% (f)	NA NA	NA NA	NA NA	NA NA	0.14 100%	Soil runoff
VOLATILE ORGANIC COMPOUNDS								
Methyl <i>tert</i> -butyl ether (MTBE) (g, h)	ppb	13	13	3	ND	ND	ND (ND-1)	Gasoline discharges from watercraft engines
INORGANIC CHEMICALS								
Aluminum (g)	ppb	1000	600	50	ND (ND-76)	ND	ND	Residue from water treatment process; natural deposits; erosion
Barium	ppm	1	2	0.1	0.13 (0.11-0.14)	ND	ND	Oil and metal refineries discharges; natural deposits erosion
Nickel	ppb	100	12	10	50 (16-88)	22 (21-22)	ND	Erosion of natural deposits; discharge from metal factories
Nitrate (as N) (i)	ppm	10	10	0.4	4.8 (4.4-5.5)	1.0 (1.0-1.1)	0.7 (ND-1.3)	Runoff and leaching from fertilizer use; sewage; natural erosion
Selenium	ppb	50	(50)	5	8.3 (ND-20)	ND	ND	Refineries, mines, and chemical waste discharges; runoff
Thallium	ppb	2	0.1	1	ND (ND-1.3)	ND	ND	Leaching from ore-processing electronics factory discharges
RADIOLOGICALS (j)								
Gross Alpha Particle Activity	pCi/L	15	NA	1	13.6 (10.4-15.9)	NA	1.81 (ND-3.07)	Erosion of natural deposits
Combined Radium (k)	pCi/L	5	NA	0.5	0.297 (0.109-0.522)	NA	ND	Erosion of natural deposits
Uranium	pCi/L	20	0.5	2	12.6 (10.9-14.4)	NA	ND	Erosion of natural deposits
DISINFECTION BY-PRODUCTS AND DISINFECTION BY-PRODUCTS PRECURSORS								
Total Trihalomethanes (TTHM)	ppb	80	NA	0.5	ND	34 (1.3-74)	49 (25-80) (c)	By-product of drinking water chlorination
Haloacetic Acids (five) (HAA5)	ppb	60	NA	1 (d)	NA	22 (11-38)	15 (6-27) (c, d)	By-product of drinking water chlorination
Bromate (l)	ppb	10	(0)	5	NA	NA	6.6 (4.5-10.4)	By-product of drinking water ozonation
SECONDARY STANDARDS—AESTHETIC STANDARDS								
Chloride	ppm	500	NA	NA	767 (479-908)	210 (209-210)	70 (47-114)	Runoff/leaching from natural deposits; seawater influence
Color	Units	15	NA	NA	5.2 (<2.5-12)	5	1 (1-2)	Naturally occurring organic materials
Corrosivity (m)	SI	>0	NA	NA	0.05 (-0.06-0.237)	-0.06 (-1.43-1.02)	0.07 (-0.03-0.14)	Elemental balance in water; affected by temperature, other factors
Corrosivity (m)	SI	non-corrosive	NA	NA	non-corrosive	corrosive	non-corrosive	Elemental balance in water; affected by temperature, other factors
Iron	ppb	300	NA	100	140 (ND-410)	ND	ND	Leaching from natural deposits; industrial wastes
Manganese	ppb	50	NA	20	ND (ND-34)	ND	ND	Leaching from natural deposits
Odor Threshold	Units	3	NA	NA	1	1	(n)	Naturally occurring organic materials
Specific Conductance	µmho/cm	1600	NA	NA	3490 (3080-3720)	550 (100-990)	480 (360-660)	Substances that form ions in water; seawater influence
Sulfate	ppm	500	NA	0.5	489 (340-744)	105	48 (34-91)	Runoff/leaching from natural deposits; industrial wastes
Total Dissolved Solids (TDS)	ppm	1000	NA	NA	2360 (2170-2520)	460 (59-850)	260 (200-370)	Runoff/leaching from natural deposits; seawater influence
Turbidity	NTU	5	NA	NA	1.0 (<0.1-3)	0.8 (0.6-0.9)	0.05 (0.03-0.09)	Soil runoff
UNREGULATED CHEMICALS REQUIRING MONITORING								
Boron	ppb	NA	AL=1,000	100	100	ND	150 (100-180)	Runoff/leaching from natural deposits; industrial wastes
ADDITIONAL PARAMETERS								
MICROBIAL CONTAMINANTS								
HPC (q)	CFU/mL	TT	NA	NA	NA	NA	<1 (<1-8)	Naturally present in the environment
OTHER PARAMETERS								
Alkalinity	ppm	NA	NA	--	260 (250-270)	85 (57-160)	67 (57-80)	
Calcium	ppm	NA	NA	--	395 (290-450)	75 (22-160)	20 (16-25)	
Hardness	ppm	NA	NA	--	1450 (1100-1600)	365 (360-370)	97 (81-122)	
Hardness	grains/gallon	NA	NA	--	85 (64-94)	21 (21-22)	5.7 (4.7-7.1)	
Magnesium	ppm	NA	NA	--	112 (89-130)	28 (28-29)	11.5 (9.5-15)	
pH	pH Units	NA	NA	--	6.7 (6.5-6.8)	7.6 (6.2-8.3)	8.41 (8.36-8.47)	
Potassium	ppm	NA	NA	--	6.5 (6.2-6.6)	2.2 (2.1-2.2)	2.6 (2.1-3.6)	
Radon (j)	pCi/L	NA	NA	100	235	NA	ND	
Sodium	ppm	NA	NA	--	210 (180-290)	46 (45-46)	53 (37-82)	
TOC (o)	ppm	TT	NA	0.7	ND (ND-0.9)	1.6 (<1-2.3)	2.1 (1.6-3.1)	Various natural and man-made sources
N-Nitrosodimethylamine (NDMA)	ppb	NA	NA	0.002	ND	0.006 (ND-0.011)	NA	

Exceeds SMCL



- EMWD Service Area Boundary
- Mills Service Area
- Skinner Service Area
- East Valley Service Area
- Seasonal Variation: Mills, Skinner or East Valley Service Area Sources

PUBLIC MEETINGS

Regular public meetings of the EMWD Board of Directors are generally held on the 1st and 3rd Wednesdays of each month. Work sessions begin at 9:00 a.m. and the board meetings start at 1:00 p.m.

If you wish to attend a meeting, please call the board secretary during normal work hours at (951) 928-3777, ext. 4205 to be certain the meeting is being conducted on the normal date.

For more information, contact:
 (951) 928-3777, ext. 6337
www.emwd.org

The area code within EMWD's service area will change from 909 to 951 effective July 17, 2004.

MISSION STATEMENT

The mission of Eastern Municipal Water District is to provide safe and reliable water and wastewater management services to our community in an economical, efficient, and responsible manner, now and in the future.

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