

**Summary of Raw Water Quality\***  
**Miramar System Reservoir<sup>1</sup> 2006-2010**

Parameters	Units	DLR**/MDL	Drinking Water Standards <sup>2</sup>		No. of Samples	Raw Water Quality			
			MCL	SMCL		Min	Max	Mean	Median
<b>General Physical</b>									
Calcium Hardness (CaCO <sub>3</sub> )	mg/L	20			19	120	190	156	155
Color	Color	1		15	20	2	5	2.8	3
Conductivity	µmho/cm			1600	19	799	1140	938	932
Corrosivity <sup>3</sup>	--				19	0.17	0.86	0.43	0.42
pH	pH			6.5-8.5	20	7.81	8.39	8.05	8.02
Total Alkalinity	mg/L	20			20	88.6	129	110	113
Total Dissolved Solids	mg/L	10		1000	20	442	643	548	559
Total Hardness (CaCO <sub>3</sub> )	mg/L	20			19	199	296	246	244
Turbidity	ntu	0.07	0.5		20	0.24	0.78	0.35	0.30
<b>Pathogens and Indicator Organisms</b>									
E. Coli	/100 mL				241	10	110	16.2	10
Enterococcus	/100 mL				241	1	69	4.36	2
Total Coliform	/100 mL				241	10	17000	726	200
Total Crypto Oocyst Count	/L				4	nd	nd	nd	nd
Total Giardia Cyst Count	/L				4	nd	1	0.25	nd
<b>Metals</b>									
Aluminum	µg/L	50	1000	200	19	nd	78.2	nd	nd
Antimony	µg/L	6	6		19	nd	nd	nd	nd
Arsenic	µg/L	2	10		20	nd	nd	nd	nd
Barium	µg/L	100	1000		19	nd	127	105	105
Beryllium	µg/L	1	4		19	nd	nd	nd	nd
Boron	µg/L	100			18	nd	149	125	129
Cadmium	µg/L	1	5		19	nd	nd	nd	nd
Chromium	µg/L	10	50		21	nd	nd	nd	nd
Copper	µg/L	50	1300 <sup>4</sup>	1000	20	nd	nd	nd	nd
Hexavalent Chromium	µg/L	1			1	nd	nd	nd	nd
Iron	µg/L	100		300	20	nd	322	39	nd
Lead	µg/L	5	15 <sup>4</sup>		21	nd	nd	nd	nd
Magnesium	mg/L				25	7.6	29.7	22.1	22.2
Manganese	µg/L	20		50	19	nd	79.3	24.3	nd
Mercury	µg/L	1	2		16	nd	nd	nd	nd
Nickel	µg/L	10	100		19	nd	nd	nd	nd
Selenium	µg/L	5	50		20	nd	nd	nd	nd
Silver	µg/L	10		100	19	nd	nd	nd	nd
Sodium	mg/L	20			20	65.1	96.5	82.8	84.3
Thallium	µg/L	1	2		20	nd	nd	nd	nd
Vanadium	µg/L	3			20	nd	nd	nd	nd
Zinc	µg/L	50		5000	20	nd	nd	nd	nd
<b>Radiological</b>									
Combined Radium-226 & Radium-228	pCi/L		5		5	nd	0.828	0.221	nd
Gross Alpha	pCi/L	3	15		6	nd	4.36	3.14	3.6
Gross Beta	pCi/L	4	50		6	nd	5.87	nd	nd
Strontium 90	pCi/L	2	8		1	nd	nd	nd	nd
Tritium	pCi/L	1000	20000		1	nd	nd	nd	nd
Uranium	pCi/L	1	20		5	2.97	4.66	3.83	3.76
<b>Inorganic Constituents</b>									
Ammonia-N	mg/L	0.031			21	nd	0.075	nd	nd
Bicarbonate	mg/L				25	108	157	132	135
Bromate	µg/L	5	10		1	nd	nd	nd	nd
Bromide	mg/L	0.1			20	nd	0.29	nd	0.108
Calcium	mg/L				25	47.8	76	62.4	62
Carbonate	mg/L				25	nd	14.4	1.17	nd
Chloride	mg/L	0.5		500	20	70.7	104	91	94.4
Cyanide, Total	mg/L	0.1	0.15		8	nd	nd	nd	nd
Fluoride	mg/L	0.1	2		20	0.194	0.32	0.245	0.235
MBAS (Detergents)	mg/L	0.05		0.5	5	nd	0.26	0.057	nd
Nitrate (as NO <sub>3</sub> )	mg/L	2	45		42	nd	nd	nd	nd
Nitrite (as NO <sub>2</sub> )	mg/L	1.31	3.29		22	nd	nd	nd	nd
Perchlorate	µg/L	4	6		40	nd	nd	nd	nd
Phosphate, Ortho (as PO <sub>4</sub> )	mg/L	0.2			40	nd	nd	nd	nd
Phosphorus	mg/L	0.078			77	nd	nd	nd	nd
Potassium	mg/L	0.5			20	3.35	4.87	4.2	4.18
Silica	mg/L	0.5			20	5.41	10.1	7.9	8.03
Sulfate	mg/L	0.5		500	20	123	225	187	193
Total Nitrogen	mg/L	0.156			77	nd	1.93	0.368	0.338
<b>Organic Constituents Regulated</b>									
1,1,1-Trichloroethane (1,1,1-TCA)	µg/L	0.5	200		19	nd	nd	nd	nd
1,1,2,2-Tetrachloroethane	µg/L	0.5	1		19	nd	nd	nd	nd
1,1,2-Trichloroethane (1,1,2-TCA)	µg/L	0.5	5		19	nd	nd	nd	nd
1,1-Dichloroethane (1,1-DCA)	µg/L	0.5	5		19	nd	nd	nd	nd

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			MCL	SMCL		Min	Max	Mean	Median	
1,1-Dichloroethylene (1,1-DCE)	µg/L	0.5	6		19	nd	nd	nd	nd	
1,2,4-Trichlorobenzene	µg/L	0.5	5		19	nd	nd	nd	nd	
1,2-Dichlorobenzene (o-DCB)	µg/L	0.5	600		19	nd	nd	nd	nd	
1,2-Dichloroethane (1,2-DCA)	µg/L	0.5	0.5		19	nd	nd	nd	nd	
1,2-Dichloropropane	µg/L	0.5	5		19	nd	nd	nd	nd	
1,4-Dichlorobenzene (p-DCB)	µg/L	0.5	5		19	nd	nd	nd	nd	
2,4,5-TP (SILVEX)	µg/L	1	50		20	nd	nd	nd	nd	
2,4-D	µg/L	10	70		20	nd	nd	nd	nd	
Alachlor (ALANEX)	µg/L	1	2		20	nd	nd	nd	nd	
Atrazine (AATREX)	µg/L	0.5	1		20	nd	nd	nd	nd	
Bentazon (BASAGRAN)	µg/L	2	18		20	nd	nd	nd	nd	
Benzene	µg/L	0.5	1		19	nd	nd	nd	nd	
Benzo(a)pyrene	µg/L	0.1	0.2		19	nd	nd	nd	nd	
Bromodichloromethane	µg/L	1			19	nd	2.32	1.29	1.29	
Bromoform	µg/L	1			19	nd	1.57	nd	nd	
Carbofuran (FURADAN)	µg/L	5	18		20	nd	nd	nd	nd	
Carbon Tetrachloride	µg/L	0.5	0.5		19	nd	nd	nd	nd	
Chlordane	µg/L	0.1	0.1		8	nd	nd	nd	nd	
Chloroform (Trichloromethane)	µg/L	1			19	nd	1.84	nd	nd	
cis-1,2-Dichloroethylene (c-1,2-DCE)	µg/L	0.5	6		19	nd	nd	nd	nd	
Dalapon	µg/L	10	200		1	nd	nd	nd	nd	
Di(2-ethylhexyl) Adipate	µg/L	5	400		20	nd	nd	nd	nd	
Dibromoacetic Acid (DBAA)	µg/L	1			1	nd	nd	nd	nd	
Dibromochloromethane	µg/L	1			19	nd	3.57	1.61	1.51	
Dibromochloropropane (DBCP)	µg/L	0.01	0.2		30	nd	nd	nd	nd	
Dichloroacetic Acid (DCAA)	µg/L	1			1	nd	nd	nd	nd	
Dichloromethane (Methylene Chloride)	µg/L	0.5	5		19	nd	nd	nd	nd	
Diethylhexylphthalate (DEHP)	µg/L	3	4		19	nd	nd	nd	nd	
Dinoseb (DNBP)	µg/L	2	7		20	nd	nd	nd	nd	
Diquat	µg/L	4	20		1	nd	nd	nd	nd	
Endothall	µg/L	45	100		1	nd	nd	nd	nd	
Endrin	µg/L	0.1	2		29	nd	nd	nd	nd	
Ethyl Benzene	µg/L	0.5	300		19	nd	nd	nd	nd	
Ethylene Dibromide (EDB)	µg/L	0.02	0.05		31	nd	nd	nd	nd	
Glyphosate	µg/L	25	700		20	nd	nd	nd	nd	
Haloacetic Acids (five) (HAA5) <sup>5</sup>	µg/L	1	60		1	1.45	1.45	1.45	1.45	
Heptachlor	µg/L	0.01	0.01		10	nd	nd	nd	nd	
Heptachlor Epoxide	µg/L	0.01	0.01		10	nd	nd	nd	nd	
Hexachlorobenzene	µg/L	0.5	1		31	nd	nd	nd	nd	
Hexachlorocyclopentadiene	µg/L	1	50		25	nd	nd	nd	nd	
Lindane (gamma-BHC)	µg/L	0.2	0.2		20	nd	nd	nd	nd	
m,p- Xylene	µg/L	0.5			19	nd	nd	nd	nd	
Methoxychlor	µg/L	10	30		28	nd	nd	nd	nd	
Methyl-tert-butyl ether (MTBE)	µg/L	3	13	5	19	nd	nd	nd	nd	
Molinate (ORDRAM)	µg/L	2	20		15	nd	nd	nd	nd	
Monobromoacetic Acid (MBAA)	µg/L	1			1	nd	nd	nd	nd	
Monochloroacetic Acid (MCAA)	µg/L	2			1	nd	nd	nd	nd	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	70		19	nd	nd	nd	nd	
Oxamyl (Vydate)	µg/L	20	50		20	nd	nd	nd	nd	
o- Xylene	µg/L	0.5			19	nd	nd	nd	nd	
Pentachlorophenol (PCP)	µg/L	0.2	1		20	nd	nd	nd	nd	
Picloram	µg/L	1	500		20	nd	nd	nd	nd	
Polychlorinated Biphenyls, Total, as DCB	µg/L	0.5	0.5		7	nd	nd	nd	nd	
Simazine (PRINCEP)	µg/L	1	4		16	nd	nd	nd	nd	
Styrene	µg/L	0.5	100		19	nd	nd	nd	nd	
Tetrachloroethylene (PCE)	µg/L	0.5	5		19	nd	nd	nd	nd	
Thiobencarb (BOLERO)	µg/L	1	70	1	20	nd	nd	nd	nd	
Toluene	µg/L	0.5	150		19	nd	nd	nd	nd	
Total Organic Carbon (TOC)	mg/L	0.3			57	2.51	3.42	2.79	2.76	
Total Trihalomethanes (TTHMs) <sup>6</sup>	µg/L	1	80		1	8.84	8.84	8.84	8.84	
Total Xylenes (m,p, & o)	µg/L		1750		19	nd	nd	nd	nd	
Toxaphene	µg/L	1	3		8	nd	nd	nd	nd	
trans-1,2-Dichloroethylene (t-1,2-DCE)	µg/L	0.5	10		19	nd	nd	nd	nd	
Trichloroacetic Acid (TCAA)	µg/L	1			1	1.45	1.45	1.45	1.45	
Trichloroethylene (TCE)	µg/L	0.5	5		19	nd	nd	nd	nd	
Trichlorofluoromethane (FREON 11)	µg/L	5	150		19	nd	nd	nd	nd	
Trichlorotrifluoroethane (FREON 113)	µg/L	10	1200		19	nd	nd	nd	nd	
Vinyl Chloride (VC)	µg/L	0.5	0.5		19	nd	nd	nd	nd	
<b>Organic Constituents Unregulated</b>										
1,1,1,2-Tetrachloroethane	µg/L	0.5			19	nd	nd	nd	nd	
1,1-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd	
1,2,3-Trichlorobenzene	µg/L	0.5			19	nd	nd	nd	nd	
1,2,4-Trimethylbenzene	µg/L	0.4			19	nd	nd	nd	nd	
1,3,5-Trimethylbenzene	µg/L	0.5			19	nd	nd	nd	nd	
1,3-Dichlorobenzene (m-DCB)	µg/L	0.5			19	nd	nd	nd	nd	

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1,3-Dichloropropane	µg/L	0.5			19	nd	nd	nd	nd
2,2-Dichloropropane	µg/L	0.5			19	nd	nd	nd	nd
2,4,5-T	µg/L	3			20	nd	nd	nd	nd
2,4-DB	µg/L	3			20	nd	nd	nd	nd
2-Chlorotoluene	µg/L	0.5			19	nd	nd	nd	nd
2-Methylisoborneol (MIB)	ng/L	5			189	nd	19.4	nd	nd
3,5-Dichlorobenzoic acid	µg/L	3			20	nd	nd	nd	nd
3-Hydroxycarbofuran	µg/L	3			20	nd	nd	nd	nd
4-Chlorotoluene	µg/L	0.5			19	nd	nd	nd	nd
Acenaphthylene	µg/L	5			13	nd	nd	nd	nd
Acifluorfen	µg/L	3			20	nd	nd	nd	nd
Aldicarb (TEMIK)	µg/L	3			20	nd	nd	nd	nd
Aldicarb sulfone	µg/L	4			20	nd	nd	nd	nd
Aldicarb sulfoxide	µg/L	3			20	nd	nd	nd	nd
Aldrin	µg/L	0.075			11	nd	nd	nd	nd
Anthracene	µg/L	5			20	nd	nd	nd	nd
Baygon	µg/L	0.4			20	nd	nd	nd	nd
Benzo (a) Anthracene	µg/L	10			20	nd	nd	nd	nd
Benzo (b) Fluoranthene	µg/L	10			20	nd	nd	nd	nd
Benzo (g,h,i) Perylene	µg/L	10			20	nd	nd	nd	nd
Benzo (k) Fluoranthene	µg/L	10			20	nd	nd	nd	nd
Benzyl Butyl Phthalate	µg/L	10			20	nd	nd	nd	nd
Bromobenzene	µg/L	0.5			19	nd	nd	nd	nd
Bromochloromethane	µg/L	0.5			19	nd	nd	nd	nd
Bromomethane (Methyl Bromide)	µg/L	0.5			19	nd	nd	nd	nd
Carbaryl (Sevin)	µg/L	5			20	nd	nd	nd	nd
Chloramben	µg/L	3			20	nd	nd	nd	nd
Chloroethane	µg/L	0.5			19	nd	nd	nd	nd
Chloromethane (Methyl Chloride)	µg/L	0.5			19	nd	nd	nd	nd
Chrysene	µg/L	5			20	nd	nd	nd	nd
cis-1,3-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd
Dibenzo (a,h) anthracene	µg/L	5			20	nd	nd	nd	nd
Dibromomethane	µg/L	0.5			19	nd	nd	nd	nd
Dicamba (BANVEL)	µg/L	1.5			20	nd	nd	nd	nd
Dichlorodifluoromethane (Freon 12)	µg/L	0.5			19	nd	nd	nd	nd
Dichloroprop	µg/L	3			20	nd	nd	nd	nd
Dieldrin	µg/L	0.02			10	nd	nd	nd	nd
Diethylphthalate	µg/L	5			20	nd	nd	nd	nd
Diisopropyl Ether (DIPE)	µg/L	3			19	nd	nd	nd	nd
Dimethyl phthalate	µg/L	5			14	nd	nd	nd	nd
di-n-Butylphthalate	µg/L	5			17	nd	nd	nd	nd
Ethyl-tert-butyl ether (ETBE)	µg/L	3			19	nd	nd	nd	nd
Fluorene	µg/L	5			20	nd	nd	nd	nd
Geosmin	ng/L	5			189	nd	27.7	nd	nd
Hexachlorobutadiene	µg/L	0.5			19	nd	nd	nd	nd
Indeno (1,2,3-cd) Pyrene	µg/L	10			20	nd	nd	nd	nd
Isopropylbenzene (Cumene)	µg/L	0.5			19	nd	nd	nd	nd
MCPA	µg/L	3			20	nd	nd	nd	nd
MCPP	µg/L	3			20	nd	nd	nd	nd
Methiocarb	µg/L	0.4			20	nd	nd	nd	nd
Methomyl	µg/L	2			20	nd	nd	nd	nd
Naphthalene	µg/L	0.5			34	nd	nd	nd	nd
n-Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
n-Propylbenzene	µg/L	0.5			19	nd	nd	nd	nd
Paraquat	µg/L	4			1	nd	nd	nd	nd
PCB 1016 / 1242	µg/L	0.5			3	nd	nd	nd	nd
PCB 1016 (as DCB)	µg/L	0.5			4	nd	nd	nd	nd
PCB-1221 (as DCB)	µg/L	0.5			7	nd	nd	nd	nd
PCB-1232 (as DCB)	µg/L	0.5			7	nd	nd	nd	nd
PCB-1242 (as DCB)	µg/L	0.5			4	nd	nd	nd	nd
PCB-1248 (as DCB)	µg/L	0.5			7	nd	nd	nd	nd
PCB-1254 (as DCB)	µg/L	0.5			7	nd	nd	nd	nd
PCB-1260 (as DCB)	µg/L	0.5			7	nd	nd	nd	nd
Phenanthrene	µg/L	5			20	nd	nd	nd	nd
p-Isopropyltoluene	µg/L	0.2			19	nd	nd	nd	nd
Propachlor	µg/L	0.5			30	nd	nd	nd	nd
Pyrene	µg/L	0.5			20	nd	nd	nd	nd
sec-Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
tert-Amyl Methyl Ether (TAME)	µg/L	3			19	nd	nd	nd	nd
tert-Butyl Alcohol (TBA)	µg/L	2			19	nd	nd	nd	nd
tert-Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
trans-1,3-Dichloropropene	µg/L	0.5			19	nd	nd	nd	nd
Trifluralin	µg/L	0.5			20	nd	nd	nd	nd

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			MCL	SMCL		Min	Max	Mean	Median

NOTES:

\*The acceptance criteria in this table apply to finished, potable water, and are for reference only.  
 \*\* The State of California DLR values are used when available. Parameters without DLR values were reported at MDL levels.

- (1) The sampling points summarized are: MMA-0.
- (2) State MCL and MCLG values may be more stringent than federal standards for treated water.
- (3) Based on the Langelier Index. A positive value indicates non-corrosive tendencies. A negative value indicates corrosive tendencies.
- (4) Lead and Copper Rule Action Level.  
 a: absent  
 nd: non-detect at State DLR or MDL if DLR not available