

**Summary of Water Quality
Otay Water Treatment Plant Effluent 2006-2010**

Parameters	Units	DLR*/MDL	Drinking Water Standards ¹		No. of Samples	Raw Water Quality			
			MCL	SMCL		Min	Max	Mean	Median
General Physical									
Calcium Hardness (CaCO3)	mg/L	20			55	99.5	197	139	140
Color	Color	1		15	368	nd	15	1	1
Conductivity	µmho/cm			1600	52	712	1330	932	944
Corrosivity ²	--				53	-0.22	1.27	0.571	0.59
Threshold odor number	Odor	1		3	1750	1	2	1.04	1
Total alkalinity	mg/L	20			53	80.9	143	118	118
Total Dissolved Solids	mg/L	10		1000	55	361	655	534	539
Total Hardness (CaCO3)	mg/L	20			55	169	276	233	230
Total Suspended Solids (TSS)	mg/L	1			55	1	5.9	1.13	1
Turbidity ³	ntu	0.07	0.5		1767	nd	1.4	0.086	0.08
pH	pH			6.5-8.5	898	6.24	10.6	8.16	8.22
Pathogens and Indicator Organisms									
E. Coli	/100 mL				1069	a	a	a	a
Heterotrophic Bacteria (HPC)	cfu/mL				231	1	46	1.26	1
Total Coliform	/100 mL		(4)		1069	a	a	a	a
Total Crypto Oocyst Count	/L				1	nd	nd	nd	nd
Total Giardia Cyst Count	/L				1	nd	nd	nd	nd
Metals									
Aluminum	µg/L	50	1000	200	55	nd	nd	nd	nd
Antimony	µg/L	6	6		21	nd	nd	nd	nd
Arsenic	µg/L	2	10		21	nd	nd	nd	nd
Barium	µg/L	100	1000		21	nd	nd	nd	nd
Beryllium	µg/L	1	4		20	nd	nd	nd	nd
Boron	µg/L	100			21	nd	164	134	141
Cadmium	µg/L	1	5		21	nd	nd	nd	nd
Chromium	µg/L	10	50		21	nd	nd	nd	nd
Copper	µg/L	50	1300 ⁷	1000	55	nd	nd	nd	nd
Iron	µg/L	100		300	54	nd	108	nd	nd
Lead	µg/L	5	15 ⁷		55	nd	nd	nd	nd
Magnesium	mg/L				55	3.8	30.4	22.4	22.3
Manganese	µg/L	20		50	56	nd	nd	nd	nd
Mercury	µg/L	1	2		15	nd	nd	nd	nd
Nickel	µg/L	10	100		21	nd	nd	nd	nd
Selenium	µg/L	5	50		21	nd	nd	nd	nd
Silver	µg/L	10		100	21	nd	nd	nd	nd
Sodium	mg/L	20			54	64.5	115	90.2	90.2
Thallium	µg/L	1	2		21	nd	nd	nd	nd
Vanadium	µg/L	3			21	nd	nd	nd	nd
Zinc	µg/L	50		5000	55	nd	nd	nd	nd
Radiological									
Gross Alpha	pCi/L	3	15		4	nd	nd	nd	nd
Gross Beta	pCi/L	4	50		5	nd	nd	nd	nd
Combined Radium-226 & Radium-228	pCi/L		5		4	nd	0.87	0.398	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	1.1	2.54	1.86	1.98
Inorganic Constituents									
Ammonia-N	mg/L	0.031			208	nd	1.14	0.503	0.517
Bicarbonate	mg/L				55	98	165	140	141
Bromate	µg/L	5	10		1	nd	nd	nd	nd
Bromide	mg/L	0.1			61	nd	0.182	nd	nd
Calcium	mg/L				55	39.8	78.8	55.7	56
Carbonate	mg/L				55	nd	19.7	0.84	nd
Chloride	mg/L	0.5		500	59	70.9	150	108	107
Cyanide, Total	mg/L	0.1	0.15		8	nd	nd	nd	nd
Fluoride	mg/L	0.1	2		57	0.177	0.353	0.256	0.261
MBAS (Detergents)	mg/L	0.05		0.5	5	nd	0.11	nd	nd
Nitrate (as NO3)	mg/L	2	45		264	nd	2.24	nd	nd
Nitrite (as NO2)	mg/L	1.31	3.29		212	nd	nd	nd	nd
Phosphate, Ortho (as PO4)	mg/L	0.2			59	nd	nd	nd	nd
Perchlorate	µg/L	4	6		12	nd	nd	nd	nd
Phosphorus	mg/L	0.078			55	nd	nd	nd	nd
Potassium	mg/L	0.5			54	3.06	5.69	4.52	4.59
Silica	mg/L	0.5			55	4.22	13.2	7.4	6.79
Sulfate	mg/L	0.5		500	59	95.8	212	157	158
Total Nitrogen	mg/L	0.156			55	nd	6.03	0.82	0.696
UV254 Filtered	aBS	0.003			3	0.041	0.044	0.042	0.042
UV254	aBS	0.004			547	0.021	0.142	0.047	0.044
Organic Constituents Regulated									
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
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		18	nd	nd	nd	nd
2,4-D	µg/L	10	70		18	nd	nd	nd	nd
Alachlor (ALANEX)	µg/L	1	2		23	nd	nd	nd	nd
Atrazine (AATREX)	µg/L	0.5	1		19	nd	nd	nd	nd
Bentazon (BASAGRAN)	µg/L	2	18		18	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			266	8.53	48	20.1	18.7
Bromoform	µg/L	1			265	nd	18	5.64	5.57
Carbofuran (FURADAN)	µg/L	5	18		18	nd	nd	nd	nd

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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			266	4.44	45.8	14.9	13.3	
cis-1,2-Dichloroethylene (c-1,2-DCE)	µg/L	0.5	6		19	nd	nd	nd	nd	
Dalapon	µg/L	10	200		45	nd	nd	nd	nd	
Di(2-ethylhexyl) Adipate	µg/L	5	400		19	nd	nd	nd	nd	
Dibromoacetic Acid (DBAA)	µg/L	1			46	1.16	8.21	3.78	3.61	
Dibromochloromethane	µg/L	1			266	8.62	48.5	21	20.4	
Dibromochloropropane (DBCP)	µg/L	0.01	0.2		25	nd	nd	nd	nd	
Dichloroacetic Acid (DCAA)	µg/L	1			46	2.94	16.4	7.14	6.92	
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		18	nd	nd	nd	nd	
Diquat	µg/L	4	20		17	nd	nd	nd	nd	
Endothall	µg/L	45	100		21	nd	nd	nd	nd	
Endrin	µg/L	0.1	2		27	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		26	nd	nd	nd	nd	
Glyphosate	µg/L	25	700		17	nd	nd	nd	nd	
Haloacetic Acids (five) (HAA5) ²	µg/L	1	60		45	6.76	41.4	16.8	15.5	
Heptachlor	µg/L	0.01	0.01		7	nd	nd	nd	nd	
Heptachlor Epoxide	µg/L	0.01	0.01		7	nd	nd	nd	nd	
Hexachlorobenzene	µg/L	0.5	1		26	nd	nd	nd	nd	
Hexachlorocyclopentadiene	µg/L	1	50		22	nd	nd	nd	nd	
Lindane (gamma-BHC)	µg/L	0.2	0.2		7	nd	nd	nd	nd	
m,p-Xylene	µg/L	0.5			38	nd	nd	nd	nd	
Methoxychlor	µg/L	10	30		27	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		16	nd	nd	nd	nd	
Monobromoacetic Acid (MBAA)	µg/L	1			45	nd	2.98	nd	nd	
Monochloroacetic Acid (MCAA)	µg/L	2			46	nd	nd	nd	nd	
Monochlorobenzene (Chlorobenzene)	µg/L	0.5	70		19	nd	nd	nd	nd	
Oxamyl (Vydate)	µg/L	20	50		18	nd	nd	nd	nd	
o-Xylene	µg/L	0.5			38	nd	nd	nd	nd	
Pentachlorophenol (PCP)	µg/L	0.2	1		18	nd	nd	nd	nd	
Picloram	µg/L	1	500		18	nd	nd	nd	nd	
Polychlorinated Biphenyls, Total, as DCB	µg/L	0.5			9	nd	nd	nd	nd	
Simazine (PRINCEP)	µg/L	1	4		18	nd	nd	nd	nd	
Styrene	µg/L	0.5	100		16	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			405	1.08	6.57	3.39	3.25	
Total Trihalomethanes (TTHMs) ³	µg/L	1	80		214	26.8	121	60.1	57	
Total Xylenes (m,p, & o)	µg/L	0.2	1750		38	nd	nd	nd	nd	
Toxaphene	µg/L	1	3		7	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			46	2.18	17.7	5.99	5.07	
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	
Organic Constituents Unregulated										
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	
1,2,3-Trichloropropane	ng/L	5			18	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	
1,3-Dichloropropane	µg/L	0.5			19	nd	nd	nd	nd	
1,3-Dinitrobenzene	µg/L	0.8			4	nd	nd	nd	nd	
2,2',4,4',5,5'-Hexabromodiphenyl Ether	µg/L	0.8			4	nd	nd	nd	nd	
2,2',4,4',5-Pentabromodiphenyl Ether	µg/L	0.9			4	nd	nd	nd	nd	
2,2',4,4',6-Pentabromodiphenyl Ether	µg/L	0.5			4	nd	nd	nd	nd	
2,2',4,4'-Tetrabromodiphenyl Ether	µg/L	0.3			4	nd	nd	nd	nd	
2,2-Dichloropropane	µg/L	0.5			19	nd	nd	nd	nd	
2,4,5-T	µg/L	3			18	nd	nd	nd	nd	
2,4,6-Trinitrotoluene (TNT)	µg/L	0.8			4	nd	nd	nd	nd	
2,4-DB	µg/L	3			18	nd	nd	nd	nd	
2-Chlorobiphenyl	µg/L	0.5			3	nd	nd	nd	nd	
2-Chlorotoluene	µg/L	0.5			19	nd	nd	nd	nd	
2-Methylisoborneol (MIB)	ng/L	5			218	nd	33.4	nd	nd	
3,5-Dichlorobenzoic acid	µg/L	3			18	nd	nd	nd	nd	
3-Hydroxycarbofuran	µg/L	3			18	nd	nd	nd	nd	
4-Chlorotoluene	µg/L	0.5			19	nd	nd	nd	nd	
Acenaphthylene	µg/L	5			14	nd	nd	nd	nd	
Acetochlor	µg/L	2			4	nd	nd	nd	nd	
Acetochlor Ethane Sulfonic Acid (ESA)	µg/L	1			4	nd	nd	nd	nd	
Acetochlor Oxanilic Acid (OA)	µg/L	2			4	nd	nd	nd	nd	
Acifluorfen	µg/L	3			18	nd	nd	nd	nd	
Alachlor Ethane Sulfonic Acid (ESA)	µg/L	1			4	nd	nd	nd	nd	
Alachlor Oxanilic Acid (OA)	µg/L	2			4	nd	nd	nd	nd	
Aldicarb (TEMIK)	µg/L	3			18	nd	nd	nd	nd	
Aldicarb Sulfone	µg/L	4			18	nd	nd	nd	nd	
Aldicarb Sulfoxide	µg/L	3			18	nd	nd	nd	nd	
Aldrin	µg/L	0.075			6	nd	nd	nd	nd	
Anthracene	µg/L	5			18	nd	nd	nd	nd	
Baygon	µg/L	0.4			18	nd	nd	nd	nd	
Benzo (a) Anthracene	µg/L	10			20	nd	nd	nd	nd	
Benzo (b) Fluoranthene	µg/L	10			19	nd	nd	nd	nd	
Benzo (g,h,i) Perylene	µg/L	10			19	nd	nd	nd	nd	
Benzo (k) Fluoranthene	µg/L	10			19	nd	nd	nd	nd	
Benzyl Butyl Phthalate	µg/L	10			19	nd	nd	nd	nd	

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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			18	nd	nd	nd	nd
Chloramben	µg/L	3			18	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			19	nd	nd	nd	nd
Dibromomethane	µg/L	0.5			19	nd	nd	nd	nd
Dicamba (BANVEL)	µg/L	1.5			18	nd	nd	nd	nd
Dichlorodifluoromethane (Freon 12)	µg/L	0.5			19	nd	nd	nd	nd
Dichloroprop	µg/L	3			18	nd	nd	nd	nd
Dieldrin	µg/L	0.02			7	nd	nd	nd	nd
Diethylphthalate	µg/L	5			19	nd	nd	nd	nd
Diisopropyl Ether (DIPE)	µg/L	3			19	nd	nd	nd	nd
Dimethoate (CYGON)	µg/L	0.7			4	nd	nd	nd	nd
Dimethyl phthalate	µg/L	5			16	nd	nd	nd	nd
di-n-Butylphthalate	µg/L	5			19	nd	nd	nd	nd
Ethyl-tert-Butyl Ether (ETBE)	µg/L	3			19	nd	nd	nd	nd
Fluorene	µg/L	5			19	nd	nd	nd	nd
Geosmin	ng/L	5			218	nd	7.3	nd	nd
Hexachlorobutadiene	µg/L	0.5			19	nd	nd	nd	nd
Indeno(1,2,3-cd)pyrene	µg/L	10			19	nd	nd	nd	nd
Isopropylbenzene (Cumene)	µg/L	0.5			19	nd	nd	nd	nd
MCPA	µg/L	3			18	nd	nd	nd	nd
MCPBP	µg/L	3			18	nd	nd	nd	nd
Methiocarb	µg/L	0.4			18	nd	nd	nd	nd
Methomyl	µg/L	2			18	nd	nd	nd	nd
Metolachlor	µg/L	1			4	nd	nd	nd	nd
Metolachlor Ethane Sulfonic Acid (ESA)	µg/L	1			4	nd	nd	nd	nd
Metolachlor Oxanilic Acid (OA)	µg/L	2			4	nd	nd	nd	nd
Naphthalene	µg/L	0.5			35	nd	nd	nd	nd
n-Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
N-Nitrosodiethylamine (NDEA)	µg/L	0.005			5	nd	nd	nd	nd
N-Nitrosodi-n-butylamine (NDBA)	µg/L	0.004			5	nd	nd	nd	nd
N-Nitrosomethylethylamine (NMEA)	µg/L	0.003			5	nd	nd	nd	nd
N-Nitrosopyrrolidine (NPYR)	µg/L	0.002			5	nd	nd	nd	nd
n-Propylbenzene	µg/L	0.5			19	nd	nd	nd	nd
Paraquat	µg/L	4			17	nd	nd	nd	nd
PCB-1016 (as DCB)	µg/L	0.5			5	nd	nd	nd	nd
PCB-1016 / 1242	µg/L	0.5			4	nd	nd	nd	nd
PCB-1221 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1232 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1242 (as DCB)	µg/L	0.5			5	nd	nd	nd	nd
PCB-1248 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1254 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
PCB-1260 (as DCB)	µg/L	0.5			9	nd	nd	nd	nd
Phenanthrene	µg/L	5			19	nd	nd	nd	nd
p-Isopropyltoluene	µg/L	0.2			19	nd	nd	nd	nd
Propachlor	µg/L	0.5			26	nd	nd	nd	nd
Pyrene	µg/L	0.5			19	nd	nd	nd	nd
RDX (Hexahydro-1,3,5-trinitro-1,3,5-triazine)	µg/L				4	nd	nd	nd	nd
sec-Butylbenzene	µg/L	0.5			19	nd	nd	nd	nd
Terbufos Sulfone	µg/L	0.4			4	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			19	nd	nd	nd	nd

NOTES:

* The State of California DLR values are used when available. Parameters without DLR values were reported at MDL levels.

- (1) State MCL and MCLG values may be more stringent than federal standards for treated water.
- (2) Based on the Langelier Index. A positive value indicates non-corrosive tendencies. A negative value indicates corrosive tendencies.
- (3) Turbidity of treated water is not to exceed 0.3 NTU 95% of the time.
- (4) No more than 5% of distribution system samples can be total coliform positive.
- (5) Haloacetic acids (five) is the sum of the concentrations of mono-, di-, and trichloroacetic acids and mono- and dibromoacetic acids. MCL based on annual average.
- (6) Total trihalomethanes is the sum of the concentrations of chloroform, bromodichloromethane, dibromochloromethane, and bromoform. MCL based on annual average.
- (7) Lead and Copper Rule Action Level.
a: absent
nd: non-detected at State DLR or MDL if DLR not available