

**Appendix 5.16 - Summary of Otay Water Treatment Plant Effluent  
Drinking Water Constituents 2016 - 2020**

CSD

Group/Constituents	Units	CSD MDL	Federal/California Drinking Water Standards <sup>1</sup>			2016 - 2020 Drinking Water Quality			
			DLR	Primary MCL	Secondary SMCL	No. of Samples	Min	Max	Mean
<b>General Physical</b>									
Alkalinity, (Total) (as CaCO <sub>3</sub> equivalents)	MG/L	20				57	71	139	105
Calcium Hardness (CaCO <sub>3</sub> )	MG/L	10				56	74.9	185	126
Color, Apparent (Unfiltered)	COLOR	1			15	55	ND	2	ND
Corrosivity <sup>2</sup>	-					54	-4.18	0.86	0.244
Hydroxide Alkalinity	MG/L					57	ND	ND	ND
MBAS (Foaming Agents)	MG/L			0.5		5	ND	ND	ND
Odor Threshold @ 60 C (TON)	ODOR	1	1		3	1812	ND	1	ND
pH	PH					1278	6.92	9.13	8.07
Specific Conductance (E.C.)	UMHO/CM				1600	56	495	1070	757
Total Filterable Residue @ 180 C (TDS)	MG/L	10			1000	57	291	668	464
Total Hardness (CaCO <sub>3</sub> )	MG/L	10				56	127	308	211
Turbidity, Laboratory	NTU	0.07	0.1		5	1868	ND	0.45	ND
<b>Microbiological</b>									
Heterotrophic Bacteria (HPC)	CFU/ML					249	< 1	53	< 1
Escherichia Coli	/100 ML	1		Present		1181	A	P	A
Total Coliform	/100 ML	1		Present		1181	A	P	A
<b>Radiologicals</b>									
Gross Alpha	PCI/L		3	15		3	ND	3.40	2.23
Gross Beta	PCI/L		4	50 <sup>5</sup>		3	ND	5.73	3.44
Uranium	PCI/L		1	20		1	1	1	1

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<b>Metals <sup>3</sup></b>									
Aluminum (Al)	UG/L	5	50	1000	200	28	ND	24.5	ND
Antimony	UG/L	1	6	6		12	ND	ND	ND
Arsenic	UG/L	1	2	10		14	ND	ND	ND
Barium (Ba)	UG/L	2	100	1000		13	47.9	138	88.7
Beryllium	UG/L	0.5	1	4		13	ND	ND	ND
Boron	UG/L	5	100			13	119	158	133
Cadmium (Cd)	UG/L	0.5	1	5		13	ND	ND	ND
Calcium (Ca)	MG/L	5				60	30	74.4	50.9
Chromium (Total Cr)	UG/L	1	10	50		13	ND	ND	ND
Chromium, Hexavalent	UG/L	1				5	ND	ND	ND
Copper (Cu) <sup>4</sup>	UG/L	1	50	1300	1000	38	ND	3.32	1.37
Iron (Fe)	UG/L	100	100		300	59	ND	ND	ND
Lead (Pb) <sup>4</sup>	UG/L	0.5	5	15		38	ND	ND	ND
Magnesium (Mg)	MG/L	3				118	10.8	29.5	19.6
Manganese (Mn)	UG/L	0.5	20		50	42	ND	5.78	0.689
Mercury (Hg)	UG/L	0.2	1	2		13	ND	ND	ND
Nickel	UG/L	1	10	100		13	ND	1.38	ND
Potassium (K)	MG/L	0.5				58	2.99	5.05	4.12
Selenium (Se)	UG/L	2	5	50		13	ND	ND	ND
Silver	UG/L	1	10	50		13	ND	ND	ND
Sodium (Na)	MG/L	20				59	53.4	99.2	78.2
Thallium	UG/L	0.5	1	2		13	ND	ND	ND
Vanadium	UG/L	1	3			13	ND	ND	ND
Zinc (Zn)	UG/L	5	50		5000	37	ND	ND	ND

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<b>Inorganic Constituents</b>									
Ammonia-N	MG/L	0.031				208	ND	1.32	0.575
Asbestos Chrysotile Fibers >10 microns	MFL	0.2	0.2	7		1	ND	ND	ND
Bicarbonate (as HCO3)	MG/L					58	86	169	127
Bromate	UG/L	5	5	10		244	ND	ND	ND
Bromide	MG/L	0.1				305	ND	0.336	ND
Carbonate (as CO3)	MG/L					58	ND	2.98	0.172
Chloride	MG/L	0.5			500	57	63.1	108	89.4
Cyanide	UG/L		100	150		5	ND	ND	ND
Fluoride	MG/L	0.02	0.1	2		57	0.122	0.718	0.529
Nitrate (as NO3)	MG/L		2	45		288	ND	ND	ND
Nitrite (NO2)	MG/L	0.0156	0.131	0.328		235	ND	0.035	ND
Perchlorate	UG/L	4	4	6		20	ND	ND	ND
Phosphate, Ortho (as PO4)	MG/L	0.2				53	ND	ND	ND
Phosphorus	MG/L	0.078				52	ND	0.194	ND
Silica	MG/L	0.625				58	6.02	9.64	7.85
Sulfate (SO4)	MG/L	0.5	0.5		500	56	68.5	313	147
Total Nitrogen	MG/L	0.156				53	0.553	1.12	0.803

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<b>Organic Constituents, Regulated</b>									
1,1,1-Trichloroethane (1,1,1-TCA)	UG/L	0.4	0.5	200		17	ND	ND	ND
1,1,2,2-Tetrachloroethane	UG/L	0.4	0.5	1		17	ND	ND	ND
1,1,2-Trichloroethane (1,1,2-TCA)	UG/L	0.4	0.5	5		17	ND	ND	ND
1,1-Dichloroethane (1,1-DCA)	UG/L	0.4	0.5	5		17	ND	ND	ND
1,1-Dichloroethylene (1,1-DCE)	UG/L	0.4	0.5	6		17	ND	ND	ND
1,2,4-Trichlorobenzene	UG/L	0.4	0.5	5		17	ND	ND	ND
1,2-Dichlorobenzene (o-DCB)	UG/L	0.4	0.5	600		17	ND	ND	ND
1,2-Dichloroethane (1,2-DCA)	UG/L	0.4	0.5	0.5		17	ND	ND	ND
1,2-Dichloropropane	UG/L	0.4	0.5	5		17	ND	ND	ND
1,4-Dichlorobenzene (p-DCB)	UG/L	0.4	0.5	5		17	ND	ND	ND
2,3,7,8-tetra CDD	UG/L		0.000005	0.00003		2	ND	ND	ND
2,4,5-TP (SILVEX)	UG/L	1	1	50		15	ND	ND	ND
2,4-D	UG/L	3	10	70		15	ND	ND	ND
Alachlor (ALANEX)	UG/L	0.5	1	2		11	ND	ND	ND
Atrazine (AATREX)	UG/L	0.4	0.5	1		11	ND	ND	ND
Bentazon (BASAGRAN)	UG/L	2	2	18		15	ND	ND	ND
Benzene	UG/L	0.4	0.5	1		17	ND	ND	ND
Benzo(a)pyrene	UG/L	0.1	0.1	0.2		11	ND	ND	ND
Bromodichloromethane	UG/L	0.4	1			315	3.4	32.9	12
Bromoform	UG/L	0.4	1			314	ND	9.71	3.17
Carbofuran (FURADAN)	UG/L	0.4	5	18		15	ND	ND	ND
Carbon Tetrachloride	UG/L	0.4	0.5	0.5		17	ND	ND	ND
Chlordane	UG/L	0.1	0.1	0.1		18	ND	ND	ND
Chlorodibromomethane	UG/L	0.4	1			315	3.96	26.4	11.9
Chloroform (Trichloromethane)	UG/L	1	1			315	2.03	50.3	10.3
cis-1,2-Dichloroethylene (c-1,2-DCE)	UG/L	0.4	0.5	6		17	ND	ND	ND
Dalapon	UG/L	2	10	200		46	ND	ND	ND
Di(2-ethylhexyl) Adipate	UG/L	2	5	400		11	ND	ND	ND
Di(2-ethylhexyl)phthalate (DEHP)	UG/L	3	3	4		11	ND	ND	ND
Dibromoacetic Acid (DBAA)	UG/L	1	1			48	1.52	5.9	2.66
Dibromochloropropane (DBCP)	UG/L	0.01	0.01	0.2		35	ND	ND	ND

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Dichloroacetic Acid (DCAA)	UG/L	1	1			48	3.41	23.6	7.24
Dichloromethane (Methylene Chloride)	UG/L	0.4	0.5	5		17	ND	ND	ND
Dinoseb (DNBP)	UG/L	2	2	7		15	ND	ND	ND
Diquat	UG/L	3	4	20		14	ND	ND	ND
Endothall	UG/L	15	45	100		10	ND	ND	ND
Endrin	UG/L	0.1	0.1	2		29	ND	ND	ND
Ethyl Benzene	UG/L	0.4	0.5	300		17	ND	ND	ND
Ethylene Dibromide (EDB)	UG/L	0.02	0.02	0.05		35	ND	ND	ND
Glyphosate	UG/L	10	25	700		15	ND	ND	ND
Haloacetic Acids (five) (HAA5) <sup>6</sup>	UG/L	1		60		48	7.92	37.7	13.8
Heptachlor	UG/L	0.01	0.01	0.01		18	ND	ND	ND
Heptachlor Epoxide	UG/L	0.01	0.01	0.01		18	ND	ND	ND
Hexachlorobenzene	UG/L	0.5	0.5	1		29	ND	ND	ND
Hexachlorocyclopentadiene	UG/L	0.211	1	50		28	ND	ND	ND
Lindane (gamma-BHC)	UG/L	0.2	0.2	0.2		18	ND	ND	ND
meta,para xylenes	UG/L	0.4	0.5			17	ND	ND	ND
Methoxychlor	UG/L	0.5	10	30		28	ND	ND	ND
Methyl tert-Butyl Ether (MTBE)	UG/L	0.4	3	13	5	17	ND	ND	ND
Molinate (ORDRAM)	UG/L	0.5	2	20		11	ND	ND	ND
Monobromoacetic Acid (MBAA)	UG/L	1	1			48	ND	3.9	ND
Monochloroacetic Acid (MCAA)	UG/L	2	2			48	ND	ND	ND
Monochlorobenzene (Chlorobenzene)	UG/L	0.4	0.5	70		17	ND	ND	ND
Oxamyl (Vydate)	UG/L	0.4	20	50		15	ND	ND	ND
o-Xylene	UG/L	0.4	0.5			17	ND	ND	ND
Pentachlorophenol (PCP)	UG/L	0.2	0.2	1		15	ND	ND	ND
Picloram	UG/L	1	1	500		15	ND	ND	ND
Polychlorinated Biphenyls, Total, as DCB	UG/L	0.5		0.5		10	ND	ND	ND
Simazine (PRINCEP)	UG/L	0.5	1	4		11	ND	ND	ND
Styrene	UG/L	0.4	0.5	100		17	ND	ND	ND
Tetrachloroethylene (PCE)	UG/L	0.4	0.5	5		17	ND	ND	ND
Thiobencarb (BOLERO)	UG/L	0.5	1	70	1	11	ND	ND	ND
Toluene	UG/L	0.4	0.5	150		17	ND	ND	ND

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Total Organic Carbon (TOC)	MG/L	0.3				228	ND	ND	ND
Total Toxaphene	UG/L	1	1	3		18	ND	ND	ND
Total Trihalomethanes (TTHMs) <sup>6</sup>	UG/L	0.4		80		243	11.8	71.7	36.1
trans-1,2-Dichloroethylene (t-1,2-DCE)	UG/L	0.4	0.5	10		17	ND	ND	ND
Trichloroacetic Acid (TCAA)	UG/L	1	1			48	1.56	11.6	3.46
Trichloroethylene (TCE)	UG/L	0.4	0.5	5		17	ND	ND	ND
Trichlorofluoromethane (FREON 11)	UG/L	0.4	5	150		17	ND	ND	ND
Trichlorotrifluoroethane (FREON 113)	UG/L	0.4	10	1200		17	ND	ND	ND
Vinyl Chloride (VC)	UG/L	0.4	0.5	0.5		17	ND	ND	ND

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<b>Organic Constituents, Unregulated</b>									
1,1,1,2-Tetrachloroethane	UG/L	0.4	0.5			17	ND	ND	ND
1,1-Dichloropropene	UG/L	0.4	0.5			17	ND	ND	ND
1,2,3-Trichlorobenzene	UG/L	0.4	0.5			17	ND	ND	ND
1,2,3-Trichloropropane	NG/L	5	5			6	ND	ND	ND
1,2,4-Trimethylbenzene	UG/L	0.4	0.5			17	ND	ND	ND
1,3,5-Trimethylbenzene	UG/L	0.4	0.5			17	ND	ND	ND
1,3-Dichlorobenzene (m-DCB)	UG/L	0.4	0.5			17	ND	ND	ND
1,3-Dichloropropane	UG/L	0.4	0.5			17	ND	ND	ND
2,2-Dichloropropane	UG/L	0.4	0.5			17	ND	ND	ND
2,4,5-T	UG/L	3				15	ND	ND	ND
2,4-DB	UG/L	3				15	ND	ND	ND
2-Chlorotoluene	UG/L	0.4	0.5			17	ND	ND	ND
2-Methylisoborneol	NG/L	5				246	ND	8.25	ND
3,5-Dichlorobenzoic Acid	UG/L	3				15	ND	ND	ND
3-Hydroxycarbofuran	UG/L	0.4	3			15	ND	ND	ND
4-Chlorotoluene	UG/L	0.4	0.5			17	ND	ND	ND
4-Nitrophenol	UG/L	3	5			15	ND	ND	ND
Acenaphthylene	UG/L	0.5				10	ND	ND	ND
Acifluorfen	UG/L	3				15	ND	ND	ND
Aldicarb (TEMIK)	UG/L	0.4	3			15	ND	ND	ND
Aldicarb Sulfone	UG/L	0.4	4			15	ND	ND	ND
Aldicarb Sulfoxide	UG/L	0.4	3			15	ND	ND	ND
Aldrin	UG/L	0.1	0.075			18	ND	ND	ND
Anthracene	UG/L	0.5				10	ND	ND	ND
Baygon	UG/L	0.4				18	ND	ND	ND
Benzo (a) Anthracene	UG/L	0.5				10	ND	ND	ND
Benzo (b) Fluoranthene	UG/L	0.5				10	ND	ND	ND
Benzo (ghi) Perylene	UG/L	0.5				10	ND	ND	ND
Benzo (k) Fluoranthene	UG/L	0.5				10	ND	ND	ND
Benzyl Butyl Phthalate	UG/L	0.5				10	ND	ND	ND
Bromobenzene	UG/L	0.4	0.5			17	ND	ND	ND

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Bromochloromethane	UG/L	0.4	0.5			17	ND	ND	ND
Bromomethane (Methyl Bromide)	UG/L	0.4	0.5			17	ND	ND	ND
Carbaryl (Sevin)	UG/L	0.4	5			15	ND	ND	ND
Chloramben	UG/L	3				15	ND	ND	ND
Chloroethane	UG/L	0.4	0.5			17	ND	ND	ND
Chloromethane (Methyl Chloride)	UG/L	0.4	0.5			17	ND	ND	ND
Chrysene	UG/L	0.5				10	ND	ND	ND
cis-1,3-dichloropropene	UG/L	0.4	0.5			17	ND	ND	ND
Dibenzo (a,h) anthracene	UG/L	0.5				10	ND	ND	ND
Dibromomethane	UG/L	0.4	0.5			16	ND	ND	ND
Dicamba (BANVEL)	UG/L	1.5	1.5			15	ND	ND	ND
Dichlorodifluoromethane (Freon 12)	UG/L	0.4	0.5			17	ND	ND	ND
Dichloroprop	UG/L	3				15	ND	ND	ND
Dieldrin	UG/L	0.02	0.02			18	ND	ND	ND
Diethylphthalate	UG/L	0.5				10	ND	ND	ND
Diisopropyl Ether (DIPE)	UG/L	0.4	3			17	ND	ND	ND
Dimethyl phthalate	UG/L	0.5				10	ND	ND	ND
di-n-Butylphthalate	UG/L	2				10	ND	ND	ND
Ethyl-tert-Butyl Ether (ETBE)	UG/L	0.4	3			17	ND	ND	ND
Fluorene	UG/L	0.5				10	ND	ND	ND
Geosmin	NG/L	5				246	ND	6.56	ND
Hexachlorobutadiene	UG/L	0.4	0.5			17	ND	ND	ND
Indeno (1,2,3-cd) Pyrene	UG/L	0.5				10	ND	ND	ND
Isopropylbenzene (Cumene)	UG/L	0.4	0.5			17	ND	ND	ND
MCPA	UG/L	3				15	ND	ND	ND
MCPP	UG/L	3				15	ND	ND	ND
Methiocarb	UG/L	0.4				15	ND	ND	ND
Methomyl	UG/L	0.4	2			15	ND	ND	ND
Naphthalene	UG/L	0.4	0.5			27	ND	ND	ND
n-Butylbenzene	UG/L	0.4	0.5			17	ND	ND	ND
n-Propylbenzene	UG/L	0.4	0.5			17	ND	ND	ND
Paraquat	UG/L	4	20			14	ND	ND	ND



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PCB-1016 (as DCB)	UG/L	0.26	0.5	0.5		10	ND	ND	ND
PCB-1221 (as DCB)	UG/L	0.19	0.5	0.5		10	ND	ND	ND
PCB-1232 (as DCB)	UG/L	0.23	0.5	0.5		10	ND	ND	ND
PCB-1242 (as DCB)	UG/L	0.26	0.5	0.5		10	ND	ND	ND
PCB-1248 (as DCB)	UG/L	0.3	0.5	0.5		10	ND	ND	ND
PCB-1254 (as DCB)	UG/L	0.33	0.5	0.5		10	ND	ND	ND
PCB-1260 (as DCB)	UG/L	0.36	0.5	0.5		10	ND	ND	ND
Phenanthrene	UG/L	0.5				10	ND	ND	ND
p-Isopropyltoluene	UG/L	0.4				17	ND	ND	ND
Propachlor	UG/L	0.5	0.5			27	ND	ND	ND
Pyrene	UG/L	0.5				10	ND	ND	ND
sec-Butylbenzene	UG/L	0.4	0.5			17	ND	ND	ND
tert-Amyl Methyl Ether (TAME)	UG/L	0.4	3			17	ND	ND	ND
tert-Butyl Alcohol (TBA)	UG/L	1	2			17	ND	ND	ND
tert-Butylbenzene	UG/L	0.4	0.5			17	ND	ND	ND
trans-1,3-dichloropropene	UG/L	0.4	0.5	0.5		17	ND	ND	ND
Trifluralin	UG/L	0.5				10	ND	ND	ND

**End Notes:**

CSD MDL: City of San Diego Water Quality Laboratory minimum detection level, DLR: detection level for reporting, MCL: maximum contaminant level, SMCL: Secondary MCL, ND: not detected. Calculated mean below CSD MDL reported as ND.

<sup>1</sup> DLR, MCL, SMCL are obtained from California OEHHA and SWRCB and apply to drinking water and are for reference only. California MCL and SMCL values may be more stringent than federal standards for drinking water.

<sup>2</sup> Based on the Langelier index. A positive value indicates non-corrosive tendencies. A negative value indicates corrosive tendencies.

<sup>3</sup> Trace metal values were from filtered and unfiltered samples. Differences in values were negligible.

<sup>4</sup> Values referred to as MCLs for Lead and Copper are actually called Action Levels under the Lead and Copper Rule.

<sup>5</sup> DDW considers 50 pCi/L to be the level of concern for Beta particles.

<sup>6</sup> Total Trihalomethane and HAA5 compliance is based on quarterly Locational Running Annual Averages (LRAA)