2022 Consumer Confidence Report Data — Carlsbad Desalination Plant Effluent
Data Date: January 1, 2022 to December 31, 2022

Parameter	Units	State or Federal MCL [MRDL]	PHG (MCLG) [MRDLG]	State DLR	Range Average	Treatment Plant Effluent: Carlsbad Desalination Plant	Major Sources in Drinking Water
PRIMARY STANDARDS—Mandatory Health-Related Standards							
CLARITY							
Combined Filter Effluent Turbidity	NTU %	TT = 0.1 (a) TT (a)	NA	NA	Highest % ≤ 0.1	0.05 100%	Soil runoff
MICROBIOLOGICAL							
Total Coliform Bacteria (b)	(c)	5.0	(0)	NA	Highest positive count	0	Naturally present in the environment
E. coli	(c)	(c)	(0)	NA	Total annual positive count	0	Human and animal fecal waste
Heterotrophic Plate Count (HPC) (d)	CFU/ml	TT	NA	NA	Range Average	NA NA	Naturally present in the environment
Cryptosporidium	oocysts/ 200 L	TT	(0)	NA	Range Average	NA NA	Human and animal fecal waste
Giardia	cysts/ 200 L	TT	(0)	NA	Range Average	NA NA	Human and animal fecal waste
ORGANIC CHEMICALS							
Pesticides/PCBs							
Alachlor	ppb	2	4	1	Range Average	ND ND	Runoff from herbicide used on row crops
Atrazine	ppb	1	0.15	0.5	Range Average	ND ND	Runoff from herbicide used on row crops and along highways
Bentazon	ppb	18	200	2	Range Average	ND ND	Runoff/leaching from herbicide used on rice, alfalfa, and grapes
Carbofuran	ppb	18	0.7	5	Range Average	ND ND	Leaching of soil fumigant used on rice, alfalfa, and grapes
Chlordane	ppt	100	30	100	Range Average	ND ND	Residue of banned insecticide
2,4-D	ppb	70	20	10	Range Average	ND ND	Runoff from herbicide used on row crops, rangeland, lawns, and aquatic weeds
Dalapon	ppb	200	790	10	Range Average	ND ND	Runoff from herbicide used on rights-of-way, crops, and landscapes
Dibromochloropropane (DBCP)	ppt	200	3	10	Range Average	ND ND	Banned nematocide that may still be present in soils
Dinoseb	ppb	7	14	2	Range Average	ND ND	Runoff from herbicide used on soybeans, vegetables, and fruits
Diquat	ppb	20	6	4	Range Average	ND ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endothall	ppb	100	94	45	Range Average	ND ND	Runoff from herbicide used for terrestrial and aquatic weeds
Endrin	ppb	2	0.3	0.1	Range Average	ND ND	Residue of banned insecticide and rodenticide
Ethylene dibromide (EDB)	ppt	50	10	20	Range Average	ND ND	Petroleum refinery discharges; underground gas tank leaks
Glyphosate	ppb	700	900	25	Range Average	ND ND	Runoff from herbicide use
Heptachlor	ppt	10	8	10	Range Average	ND ND	Residue of banned insecticide
Heptachlor Epoxide	ppt	10	6	10	Range Average	ND ND	Breakdown product of heptachlor
Lindane	ppt	200	32	200	Range Average	ND ND	Runoff/leaching from insecticide used on cattle, lumber, and gardens
Methoxychlor	ppb	30	0.09	10	Range Average	ND ND	Runoff/leaching from insecticide uses
Molinate (Ordram)	ppb	20	1	2	Range Average	ND ND	Runoff/leaching from herbicide used on rice
Oxamyl (Vydate)	ppb	50	26	20	Range Average	ND ND	Runoff/leaching from insecticide uses
Pentachlorophenol	ppb	1	0.3	0.2	Range Average	ND ND	Discharge from wood preserving factories other insecticidal and herbicidal uses
Picloram	ppb	500	166	1	Range Average	ND ND	Herbicide runoff
Polychlorinated Biphenyls (PCBs)	ppt	500	90	500	Range Average	ND ND	Runoff from landfills; discharge of waste chemicals
Simazine	ppb	4	4	1	Range Average	ND ND	Herbicide runoff
Thiobencarb	ppb	70	42	1	Range Average	ND ND	Runoff leaching from rice herbicide
2,4,5-TP (Silvex)	ppb	50	3	1	Range Average	ND ND	Residue of banned herbicide

					Range	ND	Runoff/leaching from insecticide used on
Toxaphene	ppb	3	0.03	1	Average	ND	cotton and cattle
Semi-Volatile Organic Compounds							
					Range	NA	
Acrylamide	NA	TT	(0)	NA	Average	NA	Water treatment chemical impurities
					Range	ND	Leaching from water storage tank linings
Benzo(a)pyrene	ppt	200	7	100	Average	ND	and distribution lines
					Range	ND	
Di(2-ethylhexyl)adipate	ppb	400	200	5	Average	ND	Discharge from chemical factories
					Range	ND	Chemical factory discharge; inert ingredient
Di(2-ethylhexyl)phthalate	ppb	4	12	3	Average	ND	in pesticides
					Range	NA	
Epichlorohydrin	NA	TT	(0)	NA	Average	NA	Water treatment chemical impurities
					Range	ND	Discharge from metal refineries & agrichemicals
Hexachlorobenzene	ppb	1	0.03	0.5	Average	ND	factories; wastewater chlorination reaction byproduct
					Range	ND	
Hexachlorocyclopentadiene	ppb	50	2	1	Average	ND	Discharge from chemical factories
2,3,7,8-TCDD					Range	ND	Waste incineration emissions; chemical factory
(Dioxin)	ppq	30	0.05	5	Average	ND	discharge
Volatile Organic Compounds							
					Range	ND	Plastics factory discharge; gas tanks
Benzene	ppb	1	0.15	0.5	Average	ND	and landfill leaching
					Range	ND	Discharge from chemical plants and other industrial
Carbon Tetrachloride	ppt	500	100	500	Average	ND	waste
					Range	ND	
1,2-Dichlorobenzene	ppb	600	600	0.5	Average	ND	Discharge from industrial chemical factories
					Range	ND	
1,4-Dichlorobenzene	ppb	5	6	0.5	Average	ND	Discharge from industrial chemical factories
					Range	ND	
1,1-Dichloroethane	ppb	5	3	0.5	Average	ND	Extraction and degreasing solvent; fumigant
					Range	ND	
1,2-Dichloroethane	ppt	500	400	500	Average	ND	Discharge from industrial chemical factories
					Range	ND	
1,1-Dichloroethylene	ppb	6	10	0.5	Average	ND	Discharge from industrial chemical factories
					Range	ND	Industrial chemical factory discharge;
cis-1,2-Dichloroethylene	ppb	6	13	0.5	Average	ND	byproduct of TCE and PCE biodegradation
					Range	ND	Industrial chemical factory discharge;
trans-1,2-Dichloroethylene	ppb	10	50	0.5	Average	ND	byproduct of TCE and PCE biodegradation
Dichloromethane					Range	ND	Discharge from pharmaceutical
(Methylene Chloride)	ppb	5	4	0.5	Average	ND	and chemical factories
					Range	ND	Industrial chemical factory discharge;
1,2-Dichloropropane	ppb	5	0.5	0.5	Average	ND	primary component of some fumigants
					Range	ND	Runoff/leaching from nematocide used on
1,3-Dichloropropene	ppt	500	200	500	Average	ND	croplands
					Range	ND	Petroleum refinery discharge; industrial
Ethylbenzene	ppb	300	300	0.5	Average	ND	chemical factories
Methyl-tert-butyl ether					Range	ND	
(MTBE)	ppb	13	13	3	Average	ND	Gasoline discharge from watercraft engines
					Range	ND	Discharge from industrial, agricultural, and chemical
Monochlorobenzene	ppb	70	70	0.5	Average	ND	factories, and dry cleaners
					Range	ND	Rubber and plastics factories discharge;
Styrene	ppb	100	0.5	0.5	Average	ND	landfill leaching
					Range	ND	Discharge from industrial, agricultural, and chemical
1,1,2,2-Tetrachloroethane	ppb	1	0.1	0.5	Average	ND	factories; solvent uses
Tetrachloroethylene					Range	ND	Discharge from factories, dry cleaners,
(PCE)	ppb	5	0.06	0.5	Average	ND	and auto shops
					Range	ND	
Toluene	ppb	150	150	0.5	Average	ND	Discharge from petroleum and chemical refineries
					Range	ND	
1,2,4-Trichlorobenzene	ppb	5	5	0.5	Average	ND	Discharge from textile-finishing factories
					Range	ND	Metal degreasing site discharge; manufacture
1,1,1-Trichloroethane	ppb	200	1,000	0.5	Average	ND	of food wrappings
					Range	ND	
1,1,2-Trichloroethane	ppb	5	0.3	0.5	Average	ND	Discharge from industrial chemical factories
Trichloroethylene					Range	ND	Discharge from metal degreasing sites and
(TCE)	ppb	5	1.7	0.5	Average	ND	other factories
Trichlorofluoromethane					Range	ND	Industrial factory discharge; degreasing solvent;
(Freon-11)	ppb	150	1300	5	Average	ND	propellant
1,1,2-Trichloro-1,2,2-					Range	ND	Discharge from metal degreasing sites and other
trifluoroethane (Freon-113)	ppm	1.2	4	0.01	Average	ND	factories; dry cleaning solvent; refrigerant
					Range	ND	Leaching from PVC piping; plastic factory
Vinyl Chloride	ppt	500	50	500	Average	ND	discharge; byproduct of TCE and PCE biodegradation
					Range	ND	Discharge from petroleum and chemical refineries;
Xylenes	ppm	1.750	1.8	0.0005	Average	ND	fuel solvent
INORGANIC CHEMICALS							
					Range	ND	Residue from water treatment process;
Aluminum	ppm	1	0.6	0.05	Average	ND	natural deposits erosion

					Range	ND	Petroleum refinery discharges; fire retardants;
Antimony	ppb	6	1	6	Average	ND	solder; electronics
					Range	ND	Natural deposits erosion, glass and electronics
Arsenic	ppb	10	0.004	2	Average	ND	production wastes
					Range	NA	Asbestos cement pipes internal corrosion;
Asbestos (e)	MFL	7	7	0.2	Average	NA	natural deposits erosion
					Range	ND	Oil and metal refineries discharge;
Barium	ppb	1,000	2,000	100	Average	ND	natural deposits erosion
					Range	ND	Discharge from metal refineries, aerospace,
Beryllium	ppb	4	1	1	Average	ND	and defense industries
					Range	ND	Internal corrosion of galvanized pipes;
Cadmium	ppb	5	0.04	1	Average	ND	natural deposits erosion
					Range	ND	Discharge from steel and pulp mills;
Chromium	ppb	50	(100)	10	Average	ND	natural deposits erosion
					Range	ND	Runoff/leaching from natural deposits;
Chromium VI (f)	ppb	NA	0.02	NA	Average	ND	discharge from industrial waste factories
					Range	ND	Internal corrosion of household pipes;
Copper	ppm	AL = 1.3	0.3	0.05	Average	ND	natural deposits erosion
					Range	ND	Discharge from steel/metal, plastic, and
Cyanide	ppb	150	150	100	Average	ND	fertilizer factories
Fluoride (g)					Range	ND-0.797	Erosion of natural deposits;
Treatment-related	ppm	2.0	1	0.1	Average	0.667	water additive that promotes strong teeth
					Range	ND	House pipes internal corrosion;
Lead	ppb	AL = 15	0.2	5	Average	ND	erosion of natural deposits
					Range	ND	Erosion of natural deposits; factory discharge;
Mercury	ppb	2	1.2	1	Average	ND	landfill runoff
					Range	ND	Erosion of natural deposits; discharge from
Nickel	ppb	100	12	10	Average	ND	metal factories
					Range	ND	Runoff and leaching from fertilizer use; septic tank
Nitrate (as Nitrogen)	ppm	10	10	0.4	Average	ND	and sewage; natural deposits erosion
					Range	ND	Runoff and leaching from fertilizer use; septic tank
Nitrite (as Nitrogen)	ppm	1	1	0.4	Average	ND	and sewage; natural deposits erosion
					Range	ND	
Perchlorate	ppb	6	1	2	Average	ND	Industrial waste discharge
					Range	ND	Refineries, mines, and chemical
Selenium	ppb	50	30	5	Average	ND	waste discharge; runoff from livestock lots
					Range	ND	Leaching from ore processing; electronics
Thallium	ppb	2	0.1	1	Average	ND	factory discharge
RADIOLOGICALS							
Gross Alpha					Range	ND	
Particle Activity	pCi/L	15	(0)	3	Average	ND	Erosion of natural deposits
Gross Beta					Range	ND	
Particle Activity	pCi/L	50 (l)	(0)	4	Average	ND	Decay of natural and man-made deposits
					Range	ND	
Radium-226	pCi/L	NA	0.05	1	Average	ND	Erosion of natural deposits
					Range	ND	
Radium-228	pCi/L	NA	0.019	1	Average	ND	Erosion of natural deposits
Combined					Range	-0.190-0.430	
Radium-226/228	pCi/L	5	(0)	NA	Average	0.2	Erosion of natural deposits
					Range	ND	
Strontium-90	pCi/L	8	0.35	2	Average	ND	Decay of natural and man-made deposits
					Range	ND	
Tritium	pCi/L	20000	400	1,000	Average	ND	Decay of natural and man-made deposits
					Range	ND	
Uranium	pCi/L	20	0.43	1	Average	ND	Erosion of natural deposits
DISINFECTION BYPRODUCTS, DISINFECTANT RESIDUALS, AND DISINFECTION BYPRODUCT PRECURSORS							
Total Trihalomethanes					Range	ND	
(TTHM)	ppb	80	NA	1.0	Average	ND	Byproduct of drinking water chlorination
Total Trihalomethanes					Range	ND	
(TTHM)	ppb	80	NA	1.0	Highest LRAA	ND	Byproduct of drinking water chlorination
Total Trihalomethanes					Range	ND	
(TTHM)	ppb	80	NA	1.0	Highest LRAA	ND	Byproduct of drinking water chlorination
Haloacetic Acids (five)					Range	ND	
(HAA5)	ppb	60	NA	1.0	Average	ND	Byproduct of drinking water chlorination
Haloacetic Acids (five)					Range	ND	
(HAA5)	ppb	60	NA	1.0	Highest LRAA	ND	Byproduct of drinking water chlorination
Haloacetic Acids (five)					Range	ND	
(HAA5)	ppb	60	NA	1.0	Highest LRAA	ND	Byproduct of drinking water chlorination
					Range	2.95-3.58	
Total Chlorine Residual	ppm	[4.0]	[4.0]	NA	Highest RAA	3.18	Drinking water disinfectant added for treatment
					Range	NA	
Bromate	ppb	10	0.1	1.0	Highest RAA	NA	Byproduct of drinking water ozonation
DBP Precursors Control					Range	NA	Various natural and man-made sources;
as Total Organic Carbon (TOC)	ppm	TT	NA	0.30	Average	NA	TOC as a medium for the formation of disinfection byproducts
SECONDARY STANDARDS—Aesthetic Standards							
					Range	ND	Residue from water treatment process;
Aluminum	ppm	1	0.6	0.05	Average	ND	natural deposits erosion

					Range	20-119	Runoff/leaching from natural deposits;
Chloride	ppm	250	NA	NA	Average	90	seawater influence
	Color				Range	ND	
Color	Units	15	NA	NA	Average	ND	Naturally-occurring organic materials
					Range	ND	Internal corrosion of household pipes; natural
Copper (h)	ppm	1.0	0.3	0.05	Average	ND	deposits erosion; wood preservatives leaching
Foaming Agents					Range	ND	
(MBAS)	ppm	0.5	NA	NA	Average	ND	Municipal and industrial waste discharges
					Range	ND	
Iron	ppm	0.3	NA	0.1	Average	ND	Leaching from natural deposits; industrial wastes
					Range	ND	
Manganese	ppm	0.5	NL = 500	20	Average	ND	Leaching from natural deposits
					Range	ND	
MTBE (i)	ppb	5	13	3	Average	ND	Gasoline discharge from watercraft engines
					Range	ND	
Odor Threshold	TON	3	NA	1	Average	ND	Naturally-occurring organic materials
					Range	ND	
Silver	ppb	100	NA	10	Average	ND	Industrial discharges
					Range	345.40-484.58	Substances that form ions in water;
Specific Conductance (j)	µS/cm	900	NA	NA	Average	400.77	seawater influence
					Range	13-15	Runoff/leaching from natural deposits;
Sulfate (k)	ppm	250	NA	0.5	Average	13.5	industrial wastes
					Range	ND	
Thiobencarb (l)	ppb	1	70	1	Average	ND	Runoff/leaching from rice herbicide
Total Dissolved Solids					Range	138-285	Runoff/leaching from natural deposits;
(TDS) (m)	ppm	500	NA	NA	Average	210.66	seawater influence
					Range	ND-0.32	Turbidity is a measure of the cloudiness of the water,
Turbidity	NTU	5	NA	0.1	Average	0.19	an indicator of the effectiveness of our filtration system
					Range	ND	Runoff/leaching from natural deposits;
Zinc	ppm	5.0	NA	0.05	Average	ND	industrial wastes
OTHER PARAMETERS							
MICROBIOLOGICAL							
					Range	NA	
HPC	CFU/ml	TT	NA	NA	Median	NA	Naturally present in the environment
CHEMICAL							
					Range	46-87	
Alkalinity	ppm	NA	NA	NA	Average	61	
					Range	0.47-0.91	Runoff/leaching from natural deposits;
Boron (j)	ppm	NA	NA	NA	Average	0.62	industrial wastes and naturally occurring in seawater
					Range	16.76-30.44	
Calcium	ppm	NA	NA	NA	Average	20.69	
					Range	NA	Byproduct of drinking water chlorination;
Chlorate	ppb	NL = 800	NA	20	Average	NA	industrial processes
Corrosivity					Range	10.34-11.24	Elemental balance in water; affected
(as Aggressiveness Index)	AI	NA	NA	NA	Average	10.53	by temperature, other factors
Corrosivity					Range	0.04-0.59	Elemental balance in water; affected
(as Saturation Index)	SI	NA	NA	NA	Average	0.23	by temperature, other factors
					Range	41.9-76.3	
Total Hardness	ppm	NA	NA	NA	Average	51.74	
					Range	0.95-1.6	
Magnesium	ppm	NA	NA	NA	Average	1.26	
	pH				Range	8.34-8.71	
pH	Units	NA	NA	NA	Average	8.53	
					Range	0.000-31.015	
Potassium 40	ppm	NA	NA	NA	Average	6.811	
					Range	NA	
Radon	pCi/L	NA	NA	100	Average	NA	
					Range	52.7-64.6	
Sodium	ppm	NA	NA	NA	Average	58.9	
					Range	NA	Various natural and man-made sources;
TOC	ppm	TT	NA	0.30	Highest RAA	NA	TOC as a medium for the formation of disinfection byproducts
					Range	NA	
Vanadium	ppb	NL = 50	NA	3	Average	NA	Naturally-occurring; industrial waste discharge
N-Nitrosodimethylamine					Range	NA	Byproduct of drinking water chloramination;
(NDMA)	ppt	NL = 10	3	2	Range	NA	industrial processes
Dichlorodifluoromethane					Range	NA	
(Freon 12)	ppb	NL = 1,000	NA	0.5	Average	NA	Industrial waste discharge
Ethyl-tert-butyl ether					Range	NA	
(ETBE)	ppb	NA	NA	3	Average	NA	Used as gasoline additive
tert-Amyl-methyl ether					Range	NA	
(TAME)	ppb	NA	NA	3	Average	NA	Used as gasoline additive
tert-Butyl alcohol					Range	NA	MTBE breakdown product; used as gasoline
(TBA)	ppb	NL = 12	NA	2	Average	NA	additive
ABBREVIATIONS AND FOOTNOTES							

Abbreviations

AI	Aggressiveness Index	MRDL	Maximum Residual Disinfectant Level

AL	Action Level	MRDLG	Maximum Residual Disinfectant Level Goal
CDPH	California Department of Public Health	NA	Not Applicable
CFU	Colony-Forming Units	ND	Not Detected
DBP	Disinfection Byproducts	NL	Notification Level
DLR	Detection Limits for Purposes of Reporting	NTU	Nephelometric Turbidity Units
HPC	Heterotrophic Plate Count	pCi/L	picoCuries per Liter
LRAA	Locational Running Annual Average; highest LRAA is the highest of all Locational Running Annual Averages calculated as average of all samples collected within a 12-month period	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)
		SI	Saturation Index
MBAS	Methylene Blue Active Substances	TOC	Total Organic Carbon
MCL	Maximum Contaminant Level	TON	Threshold odor number
MCLG	Maximum Contaminant Level Goal	TT	Treatment Technique
MFL	Million Fibers per Liter	µS/cm	microSiemens per centimeter

Footnotes

(a) The reverse osmosis filter effluent turbidity must be equal to or less than 0.1 NTU in 95% of the measurements taken each month, shall not exceed 0.5 NTU in more than two (2) consecutive 15-minute samples and shall not exceed 1.0 NTU at any time. Turbidity is an indicator of the effectiveness of the filters.

(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 from all the treatment plants.

(c) E. coli MCL: The occurrence of two consecutive total coliform-positive samples, one of which contains E. coli, constitutes an acute MCL violation. The MCL was not violated.

(d) All product water tank effluent samples collected had detectable total chlorine residuals and no HPC was required. HPC reporting level is 1 CFU/ml. Values are based on monthly median per State guidelines and recommendations.

(e) Not used.

(f) The State MCL for Chromium 6 was repealed in September of 2017. There is currently not a State MCL for Chromium 6. The current Federal MCL for Chromium 6 is 100 ppb. The State DLR for Chromium 6 was also repealed in September of 2017. There is currently no official State DLR for Chromium 6. The current Federal DLR for Chromium 6 is 0.03 ppb according to the UCRM3.

(g) Fluoride samples that were below target ranges were blended with other water supply sources to maintain compliance in water distributed to consumers.

(h) There is no PHG for copper as a secondary standard, because secondary standards are set on basis of aesthetic concerns. Values referred to as MCLs for copper are not actual MCLs; instead they are called "Action Levels under the lead and copper rule.

(i) There is no PHG for MTBE as a secondary standard, because secondary standards are set on basis of aesthetic concerns.

(j) The State expresses MCL for secondary standards as a range. The recommended MCL for specific conductance is 900 uS/cm with an upper threshold limit of 1600 uS/cm.

(k) The State expresses MCL for secondary standards as a range. The recommended MCL for sulfate is 250 ppm with an upper threshold limit of 500 ppm

(l) There is no PHG for thiobencarb as a secondary standard, because secondary standards are set on basis of aesthetic concerns.

(m) The State expresses MCL for secondary standards as a range. The recommended MCL for TDS is 500 ppm with an upper threshold limit of 1,000 ppm

(n) Boron analysis is included as seawater is a natural source for this constituent.

(o) This Consumer Confidence Report (CCR) reflects changes in drinking water regulatory requirements during 2022. These revisions add the requirements of the federal Revised Total Coliform Rule, effective since April 1, 2016, to the existing state Total Coliform Rule. The revised rule maintains the purpose to protect public health by ensuring the integrity of the drinking water distribution system and monitoring for the presence of microbials (i.e., total coliform and E. coli bacteria). The U.S. EPA anticipates greater public health protection as the rule requires water systems that are vulnerable to microbial contamination to identify and fix problems. Water systems that exceed a specified frequency of total coliform occurrences are required to conduct an assessment to determine if any sanitary defects exist. If found, these must be corrected by the water system. The state Revised Total Coliform Rule became effective July 1, 2021.