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APPENDIX A GLOSSARY

Basin Plan - The plan for the protection of water quality prepared by the Regional Water Quality Control Board in response to the Porter-Cologne Water Quality Control Act. The Basin Plan for the San Diego Region is also known as the Water Quality Control Plan for the San Diego Basin (9) and contains Water Quality Standards for the federal Clean Water Act.

Beneficial Uses - The uses of water necessary for the survival or well being of man, plants, and wildlife. These uses of water serve to promote the tangible and intangible economic, social, and environmental goals "Beneficial Uses" of the waters of the State that may be protected against include, but are not limited to, domestic, municipal, agricultural and industrial supply; power generation; recreation; aesthetic enjoyment; navigation; and preservation and enhancement of fish, wildlife, and other aquatic resources or preserves. Existing beneficial uses are uses that were attained in the surface or ground water on or after November 28, 1975; and potential beneficial uses are uses that would probably develop in future years through the implementation of various control measures. "Beneficial Uses" are equivalent to "Designated Uses" under federal law. [California Water Code Section 13050(f)].

Best Management Practices (BMPs) - The practice or combination of practices that are determined to be the most effective, practicable means of preventing or reducing the amount of pollution generated by nonpoint sources to a level compatible with water quality goals (including technological, economic, and institutional considerations).

Bioaccumulation - The accumulation of contaminants in the tissues of organisms through any route, including respiration, ingestion, or direct contact with contaminated water, sediment, food, or dredged material.

California Water Code, Division 7 - a.k.a. Porter Cologne Water Quality Control Act

Capping - The controlled, accurate placement of contaminated material at an open-water site, followed by a covering or cap of clean isolating material.

CEQA - California Environmental Quality Act of 1970

Clean Water Act - a.k.a. Federal Water Pollution Control Act

Confined disposal - Placement of dredged material within dikes nearshore or upland confined disposal facilities that enclose the disposal area above any adjacent water surface, isolating the dredged material from adjacent waters during placement. Confined disposal does not refer to subaqueous capping or contained aquatic disposal.

Contaminant - A chemical or biological substance in a form that can be incorporated into, onto, or be ingested by and that harms aquatic organisms, consumers of aquatic organisms, or users of the aquatic environment.

Contaminated sediment or contaminated dredged material - Contaminated sediments or contaminated dredged materials are defined as those that have been demonstrated to cause an unacceptable adverse effect on human health or the environment.

Contamination - means an impairment of the quality of the waters of the state by waste to a degree which creates a hazard to the public health through poisoning or through the spread of disease. "Contamination" includes any equivalent effect resulting from the disposal of waste, whether or not waters of the state are affected.

Dredged material - Material excavated from waters of the United States or ocean waters. The term dredged material refers to material which has been dredged from a water body, while the term sediment refers to material in a water body prior to the dredging process.

Dredged material discharge - The term dredged material discharge means any addition of dredged material into waters of the United States or ocean waters. The term includes open- water discharges; discharges resulting from unconfined disposal operations (such as beach nourishment or other beneficial uses); discharges from confined disposal facilities that enter waters of the United States (such as effluent, surface runoff, or leachate); and overflow from dredge hoppers, scows, or other transport vessels.

Effluent Limitations - Limitations on the volume of each waste discharge, and the quantity and concentrations of pollutants in the discharge. The limitations are designed to ensure that the discharge does not cause water quality objectives to be exceeded in the receiving water and does not adversely affect beneficial uses.

Ephemeral - Water bodies, or segments thereof, that contain water only for a short period following precipitation events.

Hydrologic Area - A major logical subdivision of a hydrologic unit which includes both water-bearing and nonwater-bearing formations. It is best typified by a major tributary of a stream, a major valley, or a plain along a stream containing one or more ground water basins and having closely related geologic, hydrologic, and topographic characteristics. Area boundaries are based primarily on surface drainage boundaries. However, where strong subsurface evidence indicates that a division of ground water exists, the area boundary may be based on subsurface characteristics.

Hydrologic Subarea - A major logical subdivision of a hydrologic area which includes both water-bearing and nonwater-bearing formations.

Hydrologic Unit - A classification embracing one of the following features which are defined by surface drainage divides: (1) in general, the total watershed area, including water-bearing and nonwater-bearing formations, such as the total drainage area of the San Diego River Valley; and (2) in coastal areas, two or more small contiguous watersheds having similar hydrologic characteristics, each watershed being directly tributary to the ocean and all watersheds emanating from one mountain body located immediately adjacent to the ocean.

Implementation Plan - Basin Plan chapter which describes the actions by the Regional Board and others that are necessary to achieve and maintain the designated beneficial uses and water quality objectives of the Region's waters.

Intermittent - Water bodies, or segments thereof, that contain water for extended periods during the year, but not at all times.

Interrupted - Water bodies or streams that contain perennial segments or pools, with intervening intermittent or ephemeral segments.

Leachate - Water or any other liquid that may contain dissolved (leached) soluble materials, such as organic salts and mineral salts, derived from a solid material. For example, rainwater that percolates through a confined disposal facility and picks up dissolved contaminants is considered leachate.

Major federal action - Includes actions with effects that may be major and that are potentially subject to federal control and responsibility. Major refers to the context (meaning that the action must be analyzed in several contexts, such as the effects on the environment, society, regions, interests, and locality) and intensity (meaning the severity of the impact). It can include (a) new and continuing activities, projects, and programs entirely or partly financed, assisted, conducted, regulated, or approved by federal agencies; (b) new or revised agency rules, regulations, plans, policies, or procedures; and (c) legislative proposals. Action does not include funding assistance solely in the form of general revenue-sharing funds where there is no federal agency control over the subsequent use of such funds. Action does not include judicial or administrative civil or criminal enforcement action.

National Pollution Discharge Elimination System (NPDES) - These permits pertain to the discharge of waste to surface waters only. All State and Federal NPDES permits are also WDRs.

Nonpoint Sources - This refers to pollutants from diffuse sources that reach water through means other than a discernable, confined, and discrete conveyance.

Non-storm Water Discharge - Any discharge to a storm water conveyance system that is not composed entirely of storm water.

Nuisance - means anything which meets all of the following requirements: (1) Is injurious to health, or is indecent or offensive to the senses, or an obstruction to the free use of property, so as to interfere with the comfortable enjoyment of life or property; (2) Affects at the same time an entire community or neighborhood, or any considerable number of persons, although the extent of the annoyance or damage inflicted upon individuals may be unequal; and (3) Occurs during or as a result of the treatment or disposal of waste.

Open-water disposal - Placement of dredged material in rivers, lakes, estuaries, or oceans via pipeline or surface release from hopper dredges or barges.

Person - Also includes any city, county, district, the state or any department or agency thereof. "Person" includes the United States, to the extent authorized by federal law.

pH - Term used to refer to the hydrogen ion concentration of water. The acidity or alkalinity of water is measured by the pH factor.

Point Sources - This refers to pollutants discharged to water through any discernable, confined, and discrete conveyance.

Pollution - means an alteration of the quality of the waters of the state by wastes to a degree which unreasonably affects either of the following: (1) The waters for beneficial uses, or (2) Facilities which serve those beneficial uses. "Pollution" may include "contamination."

Porter-Cologne Water Quality Control Act (Porter-Cologne Act) - This is also known as the California Water Code.

Quality of the Water - or "quality of the waters" refers to chemical, physical, biological, bacteriological, radiological, and other properties and characteristics of water which affect its use.

Reclaimed water - or "recycled water" means water which, as a result of treatment of waste, is suitable for a direct beneficial use or a controlled use that would not otherwise occur and is therefor considered a valuable resource.

Regional Board - a.k.a. California Regional Water Quality Control Board

Region - a.k.a. San Diego Basin (9)

Sewage, Domestic - Waste and wastewater from humans or household operations that is discharged to or otherwise enters a treatment works. [40 CFR 503.9(g)]

Sewage Sludge - A solid, semi-solid, or liquid residue generated during the treatment of domestic sewage in a treatment works. Sewage sludge includes, but is not limited to, domestic septage; scum or solids removed in primary, secondary, or advanced wastewater treatment processes; and a material derived from sewage sludge. Sewage sludge does not include ash generated during the firing of sewage sludge in a sewage incinerator or grit and screenings generated during preliminary treatment of domestic sewage in a treatment works. [40 CFR 503.9(w)]

State Board - a.k.a. State Water Resources Control Board

Statewide Plan - A water quality control plan adopted by the State Water Resources Control Board in accordance with the provisions of Water Code Sections 13240 through 13244, for waters where water quality standards are required by the Federal Water Pollution Control Act. Such plans supersede regional water quality control plans for the same waters to the extent of a conflict. [California Water Code Section 13170].

Triennial Review - Review of the Basin Plan which is required to be done every three years by the federal Clean Water Act [Section 303(c)(1)].

Waste - Includes sewage and any and all other waste substances, liquid, solid, gaseous, or radioactive, associated with human habitation, or of human or animal origin, or from any producing, manufacturing, or processing operation of whatever nature, including waste placed within containers of whatever nature prior to, and for purposes of, disposal.

Waste Discharge Requirements (WDRs) - The name of permits issued by the Regional Board for the discharge of waste to land. The discharge of waste to land may potentially may impact ground water quality. These permits require that waste not be discharged in a manner that would cause an exceedance of applicable water quality objectives or adversely affect beneficial uses designated in the Basin Plan.

Water Quality Criteria - Numerical or narrative limits for constituents or characteristics of water designed to protect specific designated uses of the water. When criteria are met, water quality will generally protect the designated use [40 CFR Section 131.3(b)]. This term is also used to describe scientific information on the relationship that the effect of a constituent concentration has on human health, aquatic life, or other uses of water, such as the criteria in the USEPA "Gold Book". California's water quality criteria are called "water quality objectives". See "water quality standard".

Water Quality Control - means the regulation of any activity or factor which may affect the quality of the water of the state and includes the prevention and correction of water pollution and nuisance.

Water Quality Goal - The most stringent, applicable, numerical water quality limit for a constituent or parameter of concern in a specific body of ground or surface water at a specific site that is chosen to protect either (1) existing water quality or (2) beneficial uses of water. In the first case, the water quality goal is set equal to the background level in the body of water. In the second case, the water quality goal is set at the less stringent of either (a) the numerical limit which implements all applicable water quality objectives or (b) the background level.

Water Quality Objectives - Numerical or narrative limits on constituents or characteristics of water designed to protect designated beneficial uses of the water. [California Water Code Section 13050(h)]. California's water quality objectives are established by the State and Regional Water Boards in the *Water Quality Control Plans*. See "water quality standards".

Water Quality Standards - Provisions of State or federal law which consist of a designated use or uses for waters of the United States and water quality criteria for such waters based upon such uses. Water quality standards are to protect the public health or welfare, enhance the quality of water and serve the purposes of the Act [40 CFR Section 131.3(i)]. A water quality standard under the Federal Clean Water Act is equivalent to a beneficial use designation plus a water quality objective. In California, water quality standards are promulgated by the State and Regional Water Boards in *Water Quality Control Plans*. Water quality standards are enforceable limits for the bodies of surface or ground waters for which they are established.

Water Quality Control Plans - There are two types of water quality control plans - Basin Plans and Statewide Plans. Regional Boards adopt Basin Plans for each region based upon surface water hydrologic basin boundaries. The Regional Basin Plans designates or describes (1) existing and potential beneficial uses of ground and surface water; (2) water quality objectives to protect the beneficial uses; (3) implementation programs to achieve these objectives; and (4) surveillance and monitoring activities to evaluate the effectiveness of the water quality control plan. The Statewide Plans address water quality concerns for surface waters that overlap Regional Board boundaries, are statewide in scope, or are otherwise considered significant and contain the same four elements. Statewide Water Quality Control Plans include the Ocean Plan, the Enclosed Bays and Estuaries Plan, the Inland Surface Waters Plan, and the Thermal Plan. A water quality control plan consists of a designation or establishment for the waters within a specified area of (1) beneficial uses to be protected, (2) water quality objectives, and (3) a program of implementation needed for achieving water quality objectives. [California Water Code Section 13050(j)].

Waters of the State - Any water, surface or underground, including saline waters within the boundaries of the State [California Water Code Section 13050(e)].

ug microgram(s)
 ug/l micrograms per liter
 UHC Underwater Hull Cleaning
 USCG United States Coast Guard
 US EPA United States Environmental Protection Agency
 USGS United States Geologic Survey
 UST Underground Storage Tank
 WARM beneficial use of warm freshwater habitat
 WDR Waste Discharge Requirement
 WILD beneficial use of wildlife habitat
 WLA Waste Load Allocation
 WQA Water Quality Assessment
 WQLS Water Quality Limited Segment
 WQLZ Water Quality Limited Zone
 WRR Water Reclamation Requirement

APPENDIX B - 1. Summary of the Regional Growth Forecast for Various Land Uses Within the San Diego Association of Governments' Sphere of Influence.

HU 901 - 911	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	1,895,749	1,895,749	1,895,749	1,895,749
Developed Acres	395,746	428,622	539,895	660,646
Low Density Single Family	52,556	61,663	127,357	227,763
Single Family	141,512	159,132	194,286	207,021
Multiple Family	24,068	26,288	31,139	33,564
Mobile Homes	5,344	5,127	4,774	4,468
Other Residential	1,095	1,095	1,095	1,095
Industrial	35,043	36,167	38,790	40,034
Retail	24,850	25,733	27,238	28,084
Office	2,642	2,756	3,135	3,327
Schools	10,309	10,624	11,130	11,359
Agriculture	3,544	3,546	3,546	3,546
Parks	83,119	83,119	83,119	83,119
Roads & Freeways	11,665	13,372	14,288	17,267

APPENDIX B - 2. Summary of the Regional Growth Forecast for Various Land Uses Within the Southern California Association of Governments' Sphere of Influence.

HU 901 - 911	Year 1994
TOTAL ACRES	460,572
Developed Acres	121,766
Low Density Single Family	3,793
Single Family	24,395
Multiple Family	6,388
Mobile Homes	1,045
Other Residential	9,484
Industrial	3,087
Retail	20,060
Office	1,262
Schools	1,291
Agriculture	46,887
Parks	2,523
Roads & Freeways	1,551

APPENDIX B - 3. Regional Growth Forecast for Various Land Uses Within SANDAG's Sphere of Influence for the San Juan Hydrologic Unit (Hydrologic Unit Basin 901).*

HU 901	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	100,823	100,823	100,823	100,823
Developed Acres	6,137	6,137	6,137	6,137
Low Density Single Family	0	0	0	0
Single Family	152	152	152	152
Multiple Family	100	100	100	100
Mobile Homes	142	142	142	142
Other Residential	27	27	27	27
Industrial	2816	2816	2816	2816
Retail	0	0	0	0
Office	0	0	0	0
Schools	8	8	8	8
Agriculture	0	0	0	0
Parks	2487	2487	2487	2487
Roads & Freeways	405	405	405	405

Regional Growth Forecast for Various Land Uses Within SANDAG's Sphere of Influence for the Santa Margarita Hydrologic Unit (Hydrologic Unit Basin 902).*

HU 902	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	122,902	122,902	122,902	122,902
Developed Acres	8,600	9,011	11,957	13,362
Low Density Single Family	2,090	2,340	5,137	5,965
Single Family	727	879	1,013	1,548
Multiple Family	459	460	464	470
Mobile Homes	61	61	61	61
Other Residential	11	11	11	11
Industrial	4,573	4,580	4,585	4,588
Retail	330	332	337	340
Office	0	0	0	0
Schools	50	50	50	50
Agriculture	0	0	0	0
Parks	148	148	148	148
Roads & Freeways	151	151	151	182

* This is the Regional Growth Forecast for the area within SANDAG's Sphere of Influence only; that portion covered within SCAG's Sphere of Influence is not shown.

APPENDIX B - 3 (continued). Regional Growth Forecast for the Period 1990 through 2015 for the San Luis Rey Hydrologic Unit (Hydrologic Unit Basin 903).

HU 903	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	351,640	351,640	351,640	351,640
Developed Acres	37,262	42,289	60,999	79,877
Low Density Single Family	14,985	16,599	29,134	44,539
Single Family	5,019	8,196	13,963	17,066
Multiple Family	1,722	1,889	2,057	2,077
Mobile Homes	620	392	391	391
Other Residential	86	86	86	86
Industrial	1,531	1,543	1,634	1,653
Retail	1,068	1,144	1,295	1,364
Office	60	66	78	75
Schools	360	369	374	384
Agriculture	161	161	161	161
Parks	11,005	11,005	11,005	11,005
Roads & Freeways	646	786	825	1,052

Regional Growth Forecast for the Period 1990 through 2015 for the Carlsbad Hydrologic Unit (Hydrologic Unit Basin 904).

HU 904	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	132,554	132,554	132,554	132,554
Developed Acres	56,749	64,927	79,666	92,898
Low Density Single Family	6,834	8,348	12,617	19,299
Single Family	27,365	32,713	40,582	46,007
Multiple Family	5,385	5,863	7,097	7,181
Mobile Homes	1,715	1,715	1,448	1,389
Other Residential	103	103	103	103
Industrial	4,133	4,330	5,059	5,483
Retail	4,274	4,496	4,944	5,183
Office	376	420	556	612
Schools	1,517	1,568	1,759	1,841
Agriculture	274	274	274	274
Parks	3,387	3,387	3,387	3,387
Roads & Freeways	1,386	1,710	1,840	2,140

APPENDIX B - 3 (continued). Regional Growth Forecast for the Period 1990 through 2015 for the San Dieguito Hydrologic Unit (Hydrologic Unit Basin 905).

HU 905	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	217,586	217,586	217,586	217,586
Developed Acres	38,210	42,855	62,662	83,105
Low Density Single Family	9,559	12,482	24,900	42,295
Single Family	14,271	15,802	22,695	24,991
Multiple Family	1,146	1,220	1,379	1,492
Mobile Homes	140	140	140	140
Other Residential	8	8	8	8
Industrial	904	941	1,066	1,098
Retail	2,385	2,413	2,468	2,493
Office	142	147	218	269
Schools	442	466	481	488
Agriculture	770	772	772	772
Parks	8,011	8,011	8,011	8,011
Roads & Freeways	432	453	526	1,049

Regional Growth Forecast for the Period 1990 through 2015 for the Penasquitos Hydrologic Unit (Hydrologic Unit Basin 906).

HU 906	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	92,823	92,823	92,823	92,823
Developed Acres	47,609	50,663	56,484	61,032
Low Density Single Family	988	1,071	2,110	4,910
Single Family	20,740	22,441	25,240	25,484
Multiple Family	4,081	4,532	5,313	5,786
Mobile Homes	322	333	273	210
Other Residential	67	67	67	67
Industrial	4,736	4,954	5,701	6,051
Retail	3,641	3,882	4,107	4,243
Office	714	726	766	783
Schools	2,628	2,715	2,835	2,888
Agriculture	745	745	745	745
Parks	7,353	7,353	7,353	7,353
Roads & Freeways	1,595	1,844	1,974	2,515

APPENDIX B - 3 (continued). Regional Growth Forecast for the Period 1990 through 2015 for the San Diego Hydrologic Unit (Hydrologic Unit Basin 907).

HU 907	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	289,243	289,243	289,243	289,243
Developed Acres	82,095	84,372	99,269	118,659
Low Density Single Family	8,802	9,399	18,364	36,328
Single Family	27,121	26,068	33,000	33,468
Multiple Family	4,187	4,342	4,688	4,959
Mobile Homes	1,178	1,178	1,178	1,170
Other Residential	96	96	96	96
Industrial	5,524	5,524	5,823	6,001
Retail	5,079	5,168	5,347	5,408
Office	713	749	831	877
Schools	2,098	2,124	2,157	2,188
Agriculture	216	216	216	216
Parks	24,521	24,521	24,521	24,521
Roads & Freeways	2,590	2,936	3,049	3,427

Regional Growth Forecast for the Period 1990 through 2015 for the Pueblo San Diego Hydrologic Unit (Hydrologic Unit Basin 908).

HU 908	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	44,368	44,368	44,368	44,368
Developed Acres	33,226	33,402	34,177	34,374
Low Density Single Family	0	0	0	0
Single Family	15,950	15,902	15,780	15,548
Multiple Family	3,817	3,967	4,797	5,233
Mobile Homes	151	151	133	102
Other Residential	162	162	162	162
Industrial	4,340	4,373	4,394	4,399
Retail	4,235	4,251	4,289	4,296
Office	415	416	419	421
Schools	1,178	1,179	1,194	1,196
Agriculture	0	0	0	0
Parks	1,641	1,641	1,641	1,641
Roads & Freeways	1,337	1,361	1,368	1,376

APPENDIX B - 3 (continued). Regional Growth Forecast for the Period 1990 through 2015 for the Sweetwater Hydrologic Unit (Hydrologic Unit Basin 909).

HU 909	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	147,593	147,593	147,593	147,593
Developed Acres	56,400	59,870	73,470	90,120
Low Density Single Family	5,686	6,262	16,882	32,718
Single Family	22,859	25,084	27,149	27,329
Multiple Family	2,004	2,273	2,686	2,962
Mobile Homes	443	443	436	436
Other Residential	90	90	90	90
Industrial	1,229	1,302	1,364	1,380
Retail	2,380	2,500	2,644	2,712
Office	141	152	174	182
Schools	1,262	1,278	1,356	1,388
Agriculture	164	164	164	164
Parks	19,036	19,036	19,036	19,036
Roads & Freeways	1,104	1,285	1,490	1,723

Regional Growth Forecast for the Period 1990 through 2015 for the Otay Hydrologic Unit (Hydrologic Unit Basin 910).

HU 910	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	100,465	100,465	100,465	100,465
Developed Acres	15,762	19,416	30,411	45,290
Low Density Single Family	2,198	2,818	8,514	21,814
Single Family	4,729	6,785	11,040	11,628
Multiple Family	799	1,152	1,849	2,418
Mobile Homes	466	466	466	377
Other Residential	338	338	338	338
Industrial	3,664	3,737	3,897	3,964
Retail	1,044	1,106	1,239	1,354
Office	17	17	32	40
Schools	429	498	523	537
Agriculture	1,155	1,155	1,155	1,155
Parks	665	665	665	665
Roads & Freeways	257	679	692	998

APPENDIX B - 3 (continued). Regional Growth Forecast for the Period 1990 through 2015 for the Tijuana Hydrologic Unit (Hydrologic Unit Basin 911).

HU 911	Year 1990	Year 2000	Year 2010	Year 2015
TOTAL ACRES	295,751	295,751	295,751	295,751
Developed Acres	13,695	15,731	24,661	35,792
Low Density Single Family	1,411	2,344	9,700	19,895
Single Family	2,578	3,109	3,672	3,801
Multiple Family	398	489	710	885
Mobile Homes	108	108	108	51
Other Residential	107	107	107	107
Industrial	1,593	2,016	2,450	2,602
Retail	414	440	569	671
Office	62	63	63	64
Schools	339	370	393	393
Agriculture	57	57	57	57
Parks	4,866	4,866	4,866	4,866
Roads & Freeways	1,763	1,763	1,967	2,399

APPENDIX C

WATER QUALITY CRITERIA

The literature contains many different water quality criteria designed to protect specific beneficial uses of water. A summary of the specific numerical water quality criteria considered by the Regional Board for designation as water quality objectives is described in Table C-1, Water Quality Criteria - Inorganic Constituents; and Table C-2, Water Quality Criteria - Organic Constituents. The water quality criteria summarized in Tables C-1 and C-2 provided the basis for the Regional Board's designation of many of the specific numerical water quality objectives described earlier in this Chapter.

The water quality criteria presented in Tables C-1 and C-2 are not enforceable water quality objectives. The purpose of presenting the information summarized in these tables is to allow interested persons to compare available water quality criteria to the specific water quality objectives designated by the Regional Board described in Chapter 3.

A summary of the available types of numerical water quality criteria considered by the Regional Board for designation as numerical water quality objectives are summarized below.

- ***Maximum Contaminant Levels (MCLs):***

MCLs are part of the drinking water standards adopted both by the California Department of Health Services (DHS), Office of Drinking Water in Title 22 of the California Code of Regulations (CCR), Division 4, Chapter 15, "*Domestic Water Quality and Monitoring*" and by the US EPA under the Safe Drinking Water Act. The State MCL drinking water standards must be at least as stringent as those adopted by US EPA. Primary MCLs are derived from the one in a million incremental cancer risk estimate for carcinogens and from threshold toxicity levels for non-carcinogens. Secondary MCLs are derived from human welfare considerations (e.g., taste or odor).

- ***Maximum Contaminant Level Goals (MCL Goals):***

MCL Goals are promulgated by US EPA under the National Primary Drinking Water Regulations as the first step in establishing MCLs. MCL Goals are set at levels which represent no adverse health risks.

- ***State "Action" Levels:***

Action levels are published by the DHS's Office of Drinking Water and are based mainly on health effects. The 10^{-6} incremental cancer risk estimates are used for carcinogens and threshold toxicity limits are used for other constituents.

- ***Proposition 65 Regulatory Limits:***

Proposition 65 limits are established under the California Safe Drinking Water and Toxic Enforcement Act of 1986 for known human carcinogens and reproductive toxins. For carcinogens the No-Significant-Risk-Levels are set at the one-in-100,000 incremental cancer risk level. 1/1000 of the No-Observable-Effect Level (NOEL) is used for reproductive toxicants.

- ***National Ambient Water Quality Criteria:***

These criteria are published by US EPA under the federal Clean Water Act to protect human health and welfare and freshwater and marine aquatic life. These criteria are found in: *Quality Criteria for Water, 1986* - the "*Gold Book*"; the *Ambient Water Quality Criteria* volumes (1980, 1984, 1986, 1987, and 1989); *Quality Criteria for Water (1976)* - the "*Red*

Book"; and *Water Quality Criteria*, 1972 - the "*Blue Book*".

- ***Health Advisories and Water Quality Advisories:***

These advisories are published by US EPA's Office of Water. Short-term (10 days or less), long-term (7 years or less), and lifetime exposure health advisories for non-carcinogens and suspected human health carcinogens are included where sufficient data exist.

- ***Suggested No-Adverse-Response Levels (SNARLS):***

These human health-related criteria are published by the National Academy of Sciences in the *Drinking Water and Health Volumes*. Incremental cancer risk estimates are presented separately for carcinogens.

- ***Water Quality for Agriculture:***

Water Quality for Agriculture was published by the Food and Agriculture Organization of the United Nations in 1985, which contains criteria protective of agricultural uses of water.

- ***Water Quality Criteria:***

Water Quality Criteria was written by McKee and Wolf and published by the State Water Resources Control Board in 1963 and 1978. It contains criteria for human health and welfare, aquatic life, agricultural use, industrial use, and various other beneficial uses.

Table C-1. WATER QUALITY CRITERIA - INORGANIC CONSTITUENTS

Inorganic Constituent	BASIN PLAN				Drinking Water Standards (California & Federal) Maximum Contaminant Levels (MCLs)			
	Ocean Waters (1) "1" = carcinogen	Bays and Estuaries	Inland Surface Waters	Ground Water	California Dept. of Health Services	California Dept. of Health Services	US EPA	
					Primary MCL	Secondary MCL	Primary MCL	
Ammonia	600 (2)	NH3 not > 0.025 mg/l	NH3 not > 0.025 mg/l					
Antimony	1200							6 (8)
Arsenic	8				50			50
Beryllium	0.033 ‡							4 (8)
Boron			0.5 mg/l or as noted in Table 3-1	0.5 mg/l or as noted in Table 3-2				
Bromide								
Cadmium	1				10			5
Chloride			250 mg/l or as noted in Table 3-1	60 mg/l or as noted in Table 3-2		250,000 (7)		
Chlorine	2 (3)							
Chromium (III)	190,000							
Chromium (VI)	2 (4)							
Chromium (total)	2 (4)				50			100
Color			20 units or as noted in Table 3-1	15 units or as noted in Table 3-2		15 units		
Copper	3					1000		1300 (9)
Cyanide	1							200 (8)
Fluoride			1.0 mg/l or as noted in Table 3-1	1.0 mg/l or as noted in Table 3-2	1400 to 2400 (5)			4000
Iron			0.3 mg/l or as noted in Table 3-1	0.3 mg/l or as noted in Table 3-2		300		
Lead	2				50			15 (9)
Manganese			0.05 mg/l or as noted in Table 3-1	0.05 mg/l or as noted in Table 3-2		50		
Mercury(inorganic)	0.04				2			2
Nickel	5							100 (8)
Nitrate			5 mg/l or as noted in Table 3-1	5 mg/l or as noted in Table 3-2	45,000 (6)			10,000 (10)

Table C-1 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.
WATER QUALITY CRITERIA

Table C-1. WATER QUALITY CRITERIA - INORGANIC CONSTITUENTS

Inorganic Constituent	BASIN PLAN				Drinking Water Standards (California & Federal) Maximum Contaminant Levels (MCLs)		
	Ocean Waters (1) "1" = carcinogen	Bays and Estuaries	Inland Surface Waters	Ground Water	California Dept. of Health Services Primary MCL	Secondary MCL	US EPA Primary MCL
Oxygen, dissolved	Shall not be depressed > 10%	Shall not be less than 5.0 mg/l with designated MAR. The annual mean DO shall not be less than 7 mg/l more than 10% of the time.	Shall not be less than 5.0 mg/l in inland surface waters with WARM or less than 6.0 mg/l in waters with COLD beneficial use. The annual mean D.O. conc. shall not be less than 7 mg/l more than 10% of the time.				
pH	Shall not be ± 0.2 units of natural pH	Shall not be depressed below 7.0; nor raised above 9.0. Changes in normal ambient pH shall not exceed 0.2 units.	Shall not be depressed below 6.5 nor raised above 8.5. Changes in normal ambient pH levels shall not exceed 0.5 units in fresh waters with designated COLD or WARM beneficial uses.				
Phosphorus			Shall not exceed 0.05 mg/l in any stream at the point where it enters any standing body of water, nor 0.025 mg/l in any standing body of water; for flowing waters, shall not exceed 0.1 mg/l total P. These values not to be exceeded more than 10% of the time.				
Radioactivity, Gross Alpha					15 pCi/l		15 pCi/l (12)
Radioactivity, Gross Beta					50 pCi/l		4 mrem/yr
Radium 226 + 228					5 pCi/l		5 pCi/l / 20 pCi/l (13)
Selenium	15				10		50
Settleable solids			Shall not contain suspended and settleable solids in concentrations that result in the deposition of solids that cause nuisance or adversely affect beneficial uses.				
Silver	0.7				50		100
Sodium			60% Na; or as noted in Table 3-1	60% Na; or as noted in Table 3-2			
Strontium-90					8 pCi/l		
Sulfate			65 mg/l; or as noted in Table 3-1	60 mg/l; or as noted in Table 3-2		250,000 (7)	400,000-500,000 (13)
Total dissolved solids (TDS)			300 mg/l; or as noted in Table 3-1	350 mg/l; or as noted in Table 3-2		500,000 (11)	
Thallium	14						2 (8)
Tritium					20,000 pCi/l		
Turbidity		Shall not be less than 50% of the depth at locations where measurement is made by means of a standard Secchi disk, or as noted in Chapter 3 page 15.	20 NTU; or as noted in Table 3-1. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.	5 NTU; or as noted in Table 3-2. Waters shall be free of changes in turbidity that cause nuisance or adversely affect beneficial uses.		5 units	1 to 5 units
Uranium					20 pCi/l		20 μ g/l = 30 pCi/l (13)
Zinc	20					5000	

Table C-1 -- Values are in μ g/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.
WATER QUALITY CRITERIA

Table C-1. WATER QUALITY CRITERIA - INORGANIC CONSTITUENTS

Inorganic Constituent	Drinking Water Standards (Federal)		California Recommended Public Health Level (RPHL) Department of Health Services	Health Advisories or Suggested No-Adverse-Response Levels (SNARLs) for toxicity other than cancer risk		US EPA Integrated Risk Information System (IRIS) Reference Dose as a Water Quality Criterion (16)	One-In-a-Million Incremental Cancer Risk Estimates for Drinking Water		California Proposition 65 Regulatory Level as a Water Quality Criterion (19)	Agricultural Water Quality Goals (21)	
	Maximum Contaminant Levels (MCLs)			US EPA 30,000 (14)	National Academy of Sciences (NAS)		Cal/EPA Cancer Potency Factor as a Water Quality Criterion (17)	US EPA Integrated Risk Information System (IRIS)			US EPA Health Advisory or SNARL
	Secondary MCL	MCL Goal									
Ammonia									(D)		
Antimony		6 (8)		3		2.8			(D)		
Arsenic							0.02	0.02 (A,14)	5	100	
Beryllium		4 (8)		4000 / 20,000 (7-yr, 14, 15)			0.008	0.008 (B, 14)	(18)	100	
Boron				600 (14)		630			(D)	750 (22) / 700	
Bromide					2300						
Cadmium		5		5	5	3.5	(18)		(D)	10	
Chloride	250,000									106,000	
Chlorine						1050			(D)		
Chromium (III)											
Chromium (VI)							0.083		(A)	100	
Chromium (total)		100		100		35			(D)		
Color	15 units										
Copper	1000	1300							(D)	200	
Cyanide		200 (8)		200		150			(D)		
Fluoride	2000	4000				840			(D)	1000	
Iron	300									5000	
Lead		zero							(B)	5000	
Manganese	50					980				200	
Mercury(Inorganic)		2	2 (13)	2		2.1			(D)		
Nickel		100 (8)		100	(18)	140			(D)	200	
Nitrate		10,000 (2)		10,000 (2)		11,000 (2)			(D)		

Table C-1 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.
WATER QUALITY CRITERIA

Table C-1. WATER QUALITY CRITERIA - INORGANIC CONSTITUENTS

Inorganic Constituent	Drinking Water Standards (Federal)		California Recommended Public Health Level (RPHL) Department of Health Services	Health Advisories or Suggested No-Adverse-Response Levels (SNARLs) for toxicity other than cancer risk		US EPA Integrated Risk Information System (IRIS) Reference Dose as a Water Quality Criterion (16)	One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water			California Proposition 65 Regulatory Level as a Water Quality Criterion (19)	Agricultural Water Quality Goals (21)
	Maximum Contaminant Levels (MCLs)	US EPA		National Academy of Sciences (NAS)	Cal/EPA Cancer Potency Factor as a Water Quality Criterion (17)		US EPA Integrated Risk Information System (IRIS)	US EPA Health Advisory or SNARL			
Secondary MCL	MCL Goal										
Oxygen, dissolved											
pH	6.5 to 8.5 units										
Phosphorus				0.1 (23)					(D)		
Radioactivity, Gross Alpha		zero							(A)		
Radioactivity, Gross Beta		zero							0.04 mrem/yr (A, 14)		
Radium 226 + 228		zero (13)							0.22-0.26 pCi/l (A, 14)		
Selenium		50				35					20
Settleable solids											
Silver				100 (14)		35			(D)		
Sodium				2000 (24)							
Strontium-90									(A)		
Sulfate	250,000	400,000-500,000 (13)									
Total dissolved solids (TDS)	500,000										450,000
Thallium		0.5 (8)		0.4		0.5					
Tritium									(A)		
Turbidity											
Uranium		zero (13)			35						
Zinc	5000			2000		2100			1.7 pCi/l (A)		2000

Table C-1 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.

Table C-1. WATER QUALITY CRITERIA - INORGANIC CONSTITUENTS

Inorganic Constituent	U.S. EPA National Ambient Water Quality Criteria									
	Health and Welfare Protection			Freshwater Aquatic Life Protection						
	Non-Cancer Public Health Effects	One-in-a-Million Incremental Cancer Risk Estimate	Taste & Odor or Welfare	Recommended Criteria			Additional Toxicity Information			
				Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)	Maximum (Instantaneous)	Acute	Chronic	Other
				(26)		(26)				
Ammonia										
Antimony	14 / 4300 (25)			30 (13,27)		88 (13,27)		9000	1600	610 (42)
Arsenic		0.018 / 0.14 (25)		190 (27)		360 (27)		850 (41)		48 (43)
Beryllium								130	5.3	
Boron										
Bromide										
Cadmium				0.65 (28,29)		1.4 (28,36)				
Chloride	250,000			230,000 (30)		860,000 (30)				
Chlorine				11 (31)		19 (31)				
Chromium (III)				98 (28,32)		820 (28,37)				
Chromium (VI)				11		16				
Chromium (total)										
Color										
Copper			1000	5.4 (28,33)		7.5 (28,38)				
Cyanide	700 / 220,000 (25)			5.2		22				
Fluoride										
Iron			300				1000			
Lead				0.99 (28,34)		25 (28,39)				
Manganese			50							
Mercury(Inorganic)	0.14 / 0.15 (25)			0.012		2.4				
Nickel	610 / 4800 (25)			73 (28,35)		653 (28,40)				
Nitrate	10,000 (2)									

Table C-1 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.
WATER QUALITY CRITERIA

Table C-1. WATER QUALITY CRITERIA - INORGANIC CONSTITUENTS

Inorganic Constituent	U.S. EPA National Ambient Water Quality Criteria				Freshwater Aquatic Life Protection						
	Health and Welfare Protection			Recommended Criteria				Additional Toxicity			Information
	Non-Cancer Public Health Effects	One-in-a-Million Incremental Cancer Risk Estimate	Taste & Odor or Welfare	Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)	Maximum (Instantaneous)	Acute	Chronic	Other	
Oxygen, dissolved				(22)	(22)						
pH			5 to 9 units				6.5 to 9.0 units				
Phosphorus											
Radioactivity, Gross Alpha											
Radioactivity, Gross Beta											
Radium 226 + 228											
Selenium				5		20					
Settleable solids											
Silver				0.12 (13)		0.84 (28,44)			0.12		
Sodium											
Strontium-90											
Sulfate			250,000								
Total dissolved solids (TDS)											
Thallium	1.7 / 6.3 (25)							1400	40	20 (46)	
Tritium											
Turbidity											
Uranium											
Zinc						54 (28,45)					

Table C-1 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.

Table C-1. WATER QUALITY CRITERIA - INORGANIC CONSTITUENTS

Inorganic Constituent	US EPA National Ambient Water Quality Criteria Saltwater Aquatic Life Protection					California Ocean Plan Numerical Water Quality Objectives				
	Recommended Criteria		Additional Toxicity Information			Human Health Protection (30-day Average) "t" = carcinogen	Marine Aquatic Life Protection			
	Continuous Concentration (4-day Average)	Maximum Concentration (1-hour Average)	Maximum (Instantaneous)	Acute	Chronic	Other	6-month Median	30-day Average	7-day Average	Daily Maximum
Ammonia	35 (47)	233 (47)					600 (2)			2400 (2)
Antimony	500 (13,27)	1500 (13,27)				1200				
Arsenic	36 (27)	69 (27)		2319 (41)		13 (43)	8			32
Beryllium						0.033 †				
Boron										
Bromide										
Cadmium	9.3	43					1			4
Chloride										
Chlorine	7.5 (48)	13 (48)					2 (3)			8 (3)
Chromium (III)				10,300 (49)		190,000				
Chromium (VI)	50	1100					2 (4)			8 (4)
Chromium (total)							2 (4)			8 (4)
Color										
Copper	2.9	2.9					3			12
Cyanide	1	1					1			4
Fluoride										
Iron										
Lead	5.6	140					2			8
Manganese			100							
Mercury (inorganic)	0.025	2.1					0.04			0.16
Nickel	8.3	75					5			20
Nitrate										

Table C-1 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.
WATER QUALITY CRITERIA

Table C-1. WATER QUALITY CRITERIA - INORGANIC CONSTITUENTS

Inorganic Constituent	US EPA National Ambient Water Quality Criteria											
	Saltwater Aquatic Life Protection											
	Recommended Criteria					Additional Toxicity Information						
	Continuous Concentration (4-day Average)	Maximum Concentration (1-hour Average)	Maximum (Instantaneous)	Acute	Chronic	Other	Human Health Protection (30-day Average) "±" = carcinogen	6-month Median	30-day Average	7-day Average	Daily Maximum	Instantaneous Maximum
Oxygen, dissolved												
pH			6.5 to 8.5 units									6.0 to 9.0 units
Phosphorus			0.1 (50)									
Radioactivity, Gross Alpha												15 pCi/l (12)
Radioactivity, Gross Beta												50 pCi/l
Radium 226 + 228												5 pCi/l
Selenium	71	300						15			60	150
Settleable solids									1000	1500		3000
Silver	0.92 (13)	2.3						0.7			2.8	7
Sodium												
Strontium-90												8 pCi/l
Sulfate												
Total dissolved solids (TDS)												
Thallium				2130			14					
Tritium												20,000 pCi/l
Turbidity									75 NTU	100 NTU		225 NTU
Uranium												20 pCi/l
Zinc	86	95						20			80	200

Table C-1 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.
WATER QUALITY CRITERIA

ENDNOTES FOR TABLE C-1 - INORGANICS

- (7-day) For exposure of 7 days or less.
 (10-day) For exposure of 10 days or less.
 (24-hr) For exposure of 24 hours or less.
 (7-yr) For "longer-term" exposure (7 years or less, EPA).
- (A) Known human carcinogen; sufficient epidemiologic evidence in humans.
 (B) Probable human carcinogen; sufficient evidence from animal studies; no or inadequate human data.
 (C) Possible human carcinogen; limited evidence from animal studies; no human data.
 (D) Not classified as to human carcinogenicity; no data or inadequate evidence.
 (E) Evidence of non-carcinogenicity for humans.
- (1) Or as noted in the California Ocean Plan (Reference 28)
 (2) Expressed as nitrogen.
 (3) For total chlorine residual; for intermittent chlorine sources see Reference 26, Chapter IV, Table B.
 (4) Value developed for chromium VI; may be applied to total chromium if valence unknown.
 (5) MCL varies with air temperature; 2.4 mg/l (S 53.7 °F); 2.2 mg/l (53.8 - 58.3 °F); 2.0 mg/l (58.4 - 63.8 °F); 1.8 mg/l (63.9 - 70.6 °F); 1.6 mg/l (70.0 - 79.2 °F); 1.4 mg/l (79.3 - 90.5 °F).
 (6) As NO₃.
 (7) Recommended level; Upper level = 500 mg/l; Short-term level = 600 mg/l.
 (8) Effective 17 January 1994.
 (9) MCL includes this "Action level", to be exceeded in no more than 10 percent of samples.
 (10) As nitrogen; in addition, MCL for total nitrate and nitrite = 10,000 µg/l (as N).
 (11) Recommended level; Upper level = 1000; Short-term level = 1500 mg/l.
 (12) Includes Radium 226 but excludes Radon and Uranium.
 (13) Proposed.
 (14) Draft / tentative / provisional.
 (15) Calculated for child / for adult
 (16) Assumes 70 kg body weight, 2 liters/day water consumption, and 20% relative source contribution. An additional uncertainty factor of 10 is used for Class C carcinogens.
 (17) Assumes 70 kg body weight and 2 liters/day water consumption.
 (18) Determined not to pose a risk of cancer through ingestion (Title 22, CCR, Division 2).
 (19) Regulatory dose level divided by 2 liters per day average consumption; represents a 1-in-100,000 incremental cancer risk estimate unless otherwise noted.
 (20) Based on reproductive toxicity

- (21) Reference 19 unless noted otherwise.
 (22) See Reference 16.
 (23) For white phosphorus.
 (24) Guidance level (Reference 3) assumes relative source contribution of 10% from drinking water.
 (25) For consumption of water and aquatic organisms / for consumption of aquatic organisms only.
 (26) Varies with pH and temperature.
 (27) For the trivalent form.
 (28) Value based on hardness of 40 mg/l; value increases with increasing hardness.
 (29) For hardness in mg/l as CaCO₃, criterion = $e(0.7852[\ln(\text{hardness})] - 3.490)$ µg/l.
 (30) For dissolved chloride associated with sodium; criterion probably will not be adequately protective when chloride is associated with potassium, calcium, or magnesium, rather than sodium.
 (31) For total residual chlorine.
 (32) For hardness in mg/l as CaCO₃, criterion = $e(0.8190[\ln(\text{hardness})] + 1.561)$ µg/l.
 (33) For hardness in mg/l as CaCO₃, criterion = $e(0.8545[\ln(\text{hardness})] - 1.465)$ µg/l.
 (34) For hardness in mg/l as CaCO₃, criterion = $e(1.273[\ln(\text{hardness})] - 4.705)$ µg/l.
 (35) For hardness in mg/l as CaCO₃, criterion = $e(0.8460[\ln(\text{hardness})] + 1.1645)$ µg/l.
 (36) For hardness in mg/l as CaCO₃, criterion = $e(1.128[\ln(\text{hardness})] - 3.828)$ µg/l.
 (37) For hardness in mg/l as CaCO₃, criterion = $e(0.8190[\ln(\text{hardness})] + 3.688)$ µg/l.
 (38) For hardness in mg/l as CaCO₃, criterion = $e(0.9422[\ln(\text{hardness})] - 1.464)$ µg/l.
 (39) For hardness in mg/l as CaCO₃, criterion = $e(1.273[\ln(\text{hardness})] - 1.460)$ µg/l.
 (40) For hardness in mg/l as CaCO₃, criterion = $e(0.8460[\ln(\text{hardness})] + 3.3612)$ µg/l.
 (41) For the pentavalent form.
 (42) Toxicity to algae occurs.
 (43) Based on reproductive toxicity.
 (44) For hardness in mg/l as CaCO₃, criterion = $e(1.72[\ln(\text{hardness})] - 6.52)$ µg/l.
 (45) For hardness in mg/l as CaCO₃, criterion = $e(0.8473[\ln(\text{hardness})] + 0.8604)$ µg/l.
 (46) Toxicity to one species of fish after 2600 hours of exposure.
 (47) Unionized ammonia concentrations
 (48) For sum of chlorine-produced oxidants.
 (49) EC50 for eastern oyster embryos.
 (50) For elemental phosphorus; marine or estuarine.

Table C-2 WATER QUALITY CRITERIA - ORGANIC CONSTITUENTS

Organic Constituent	B A S I N P L A N				Drinking Water Standards (California & Federal) Maximum Contaminant Levels (MCLs)				California Recommended Public Health Level (RPHL) Department of Health Services	California State Action Levels Department of Health Services		Other Taste and Odor Thresholds	Health Advisories or Suggested No-Adverse-Response Levels (SNARLS) for toxicity other than cancer risk					
	Ocean Waters (1) *† = carcinogen	Bays and Estuaries	Inland Surface Waters and Ground Waters		California Dept. of Health Services		US Environmental Protection Agency			Toxicity	Taste & Odor		US EPA	National Academy of Sciences (NAS)				
			Primary MCL	Secondary MCL	Primary MCL	Secondary MCL	Primary MCL	Secondary MCL										
															Primary MCL	Secondary MCL	Primary MCL	Secondary MCL
Acenaphthylene	0.0088 ± (2)																	
Acenaphthylene	220																	
Acrylonitrile	0.10 ±																	
Aldrin	0.000022 ±																	
Anthracene	0.0088 ± (2)																	
Atrazine																		
Bentazon																		
Benz(a)anthracene	0.0088 ± (2)																	
Benzene	5.9 ±																	
Benzidine	0.000089 ±																	
Benzo(b)fluoranthene	0.0088 ± (2)																	
Benzo(k)fluoranthene	0.0088 ± (2)																	
Benzo(g,h,i)perylene	0.0088 ± (2)																	
Benzo(a)pyrene	0.0088 ± (2)																	
alpha-BHC	0.008 (3)																	
beta-BHC	0.008 (3)																	
Gamma-BHC (Lindane)	0.008 (3)																	
delta-BHC	0.008 (3)																	
technical-BHC	0.008 (3)																	
Bis(2-chloroethoxy) methane	4.4																	
Bis(2-chloroethyl) ether	0.045 ±																	
Bis(2-chloroisopropyl) ether	1200																	
Bromodichloromethane	130 ± (4)																	
Bromoform	130 ± (4)																	
Bromomethane	130 ± (4)																	
Carbofuran																		
Carbon tetrachloride	0.90 ±																	
Catechol	30 (5)																	
Chlordane	0.000023 ± (6)																	
Chlorobenzene	570																	
4-Chloro-m-cresol	1 (7)																	
4-Chloro-o-cresol	1 (7)																	
6-Chloro-m-cresol	1 (7)																	
Chloroform	130 ±																	
Chloromethane	130 ± (4)																	
2-Chlorophenol	1 (7)																	
3-Chlorophenol	1 (7)																	
4-Chlorophenol	1 (7)																	
Chrysene	0.0088 ± (2)																	
2,4-D																		
DBCP																		
DDD	0.00017 ± (8)																	
DDE	0.00017 ± (8)																	
DDT	0.00017 ± (8)																	
Dibenz(a,h)anthracene	0.0088 ± (2)																	
Dibromochloromethane	130 ± (4)																	
Dibutyl phthalate	3500																	
1,2-Dichlorobenzene	5100 (9)																	
1,3-Dichlorobenzene	5100 (9)																	

Table C-2 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.

WATER QUALITY CRITERIA

Table C-2 WATER QUALITY CRITERIA - ORGANIC CONSTITUENTS

Organic Constituent	B A S I N P L A N				Drinking Water Standards (California & Federal) Maximum Contaminant Levels (MCLs)						California Recommended Public Health Level (RPHL) Department of Health Services	California State Action Levels Department of Health Services		Other Taste and Odor Thresholds	Health Advisories or Suggested No-Adverse-Response Levels (SNARLS) for toxicity other than cancer risk	
	Ocean Waters (1) "±" = carcinogen	Bays and Estuaries	Inland Surface Waters and Ground Waters		California Dept. of Health Services			US Environmental Protection Agency				Toxicity	Taste & Odor		US EPA	National Academy of Sciences (NAS)
			Primary MCL	Secondary MCL	Primary MCL	Secondary MCL	MCL	MCL Goal								
1,4-Dichlorobenzene	18 ±		5		5	75	5 (11)	75	5 (11)			75	94 (15)			
3,3'-Dichlorobenzidine	0.0081 ±															
1,1-Dichloroethane			5		5											
1,2-Dichloroethane	130 ±		0.5		0.5	5			zero	0.3 (11)			700 (10-day)			
1,1-Dichloroethylene	7100		6		6	7			7	6 (11)			7	100		
cis-1,2-Dichloroethylene			6		6	70			70	6 (11)			70			
trans-1,2-Dichloroethylene			10		10	100			100	10 (11)			100			
Dichloromethane	450 ±					5 (12)			zero (12)		40		2000 (10-day)	5000 (7-day)		
2,3-Dichlorophenol	1 (7)												20	2000 / 7000 (13)		
2,4-Dichlorophenol	1 (7)															
2,5-Dichlorophenol	1 (7)															
2,6-Dichlorophenol	1 (7)															
3,4-Dichlorophenol	1 (7)															
1,2-Dichloropropane			5		5	5			zero	5 (11)			90 (10-day)			
1,3-Dichloropropane	8.9 ±		0.5		0.5					0.2 (11)			30 (10-day)			
Dieldrin	0.000040 ±										0.05 (LOQ)		0.5 (10-day)	4200		
Di(2-ethylhexyl)phthalate	3.5 ±		4		4	6 (12)			zero (12)	4 (11)			5000			
Diethyl phthalate	33,000								5000 (11)			400				
2,4-Dimethylphenol	30 (5) *															
Dimethyl phthalate	820,000															
4,6-Dinitro-o-cresol	30 (5)															
Dinitrophenol	4															
2,4-Dinitrophenol														110		
2,4-Dinitrotoluene	2.6 ±												500 (10-day)	110		
1,2-Diphenylhydrazine	0.16 ±															
Endosulfan	9 (16)															
Endosulfan sulfate	9 (16)															
Endrin	0.002		0.2		0.2	2 (12) / 0.2			2 (12)				2			
Ethylbenzene	4100		680		680	700	30 (11)		700	680 (11)			700			
Ethylene dibromide (EDB)			0.02		0.02	0.05			zero	0.01 (11)			8 (10-day)			
Fluoranthene	15															
Fluorene	0.0088 ± (2)															
Glyphosate			700		700	700 (12)			700 (12)	700 (11)			700			
Heptachlor	0.00072 ± (17)		0.01		0.01	0.4			zero	0.01 (11)			10 (10-day)			
Heptachlor epoxide	0.00072 ± (17)		0.01		0.01	0.2			zero	0.007 (11)			0.1 (7-yr)			
Hexachlorobenzene	0.00021 ±					1 (12)			zero (12)				50 (10-day)	30 (7-day)		
Hexachlorobutadiene	14 ±												1			
Hexachlorocyclopentadiene	58					50 (12)	8 (11)		50 (12)				1			
Hexachloroethane	2.5 ±															
Indeno(1,2,3-c,d)pyrene	0.0088 ± (2)					0.4 (11)			zero (11)				100			
Isochlorone	150,000															
Methanes, halo-	130 ± (4)					100 (10)										
Methoxychlor			100		100	40			40	20 (11)			40	700		
Molinate			20		20											
Nitrobenzene	4.9													5 (7-day)		
2-Nitrophenol	30 (5)													290 (7-day, 19)		
Nitrophenol	30 (5)													290 (7-day)		
4-Nitrophenol	30 (5)												60 (14)	290 (7-day, 19)		
N-Nitrosodimethylamine	7.3 ±															

Table C-2 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.
WATER QUALITY CRITERIA

Table C-2 WATER QUALITY CRITERIA - ORGANIC CONSTITUENTS

Organic Constituent	BASIN PLAN				Drinking Water Standards (California & Federal) Maximum Contaminant Levels (MCLs)						California Recommended Public Health Level (RPHL) Department of Health Services	California State Action Levels Department of Health Services		Other Taste and Odor Thresholds	Health Advisories or Suggested No-Adverse-Response Levels (SNARLS) for toxicity other than cancer risk	
	Ocean Waters (1) * ‡ = carcinogen	Bays and Estuaries	Inland Surface Waters and Ground Waters		California Dept. of Health Services			US Environmental Protection Agency				Toxicity	Taste & Odor			
			Primary MCL	Secondary MCL	Primary MCL	Secondary MCL	MCL Goal									
								Primary MCL	Secondary MCL							
										Primary MCL						
N-Nitrosodiphenylamine	2.5 ‡															
trans-Nonachlor	0.000023 ‡ (6)															
Oil & grease	25,000															
Oxychloridane	0.000023 ‡ (6)															
PAHs	0.0088 ‡ (2)															
Pentachlorophenol	1 (7)															
Phenanthrene	0.0088 ‡ (2)															
Phenol	30 (5)															
Phenols, chlorinated	1															
Phenols, nitro-	30 (5)															
Phenols, non-chlorinated	30															
Phthalate esters																
Phenanthrene	0.0088 ‡ (2)															
Phenazopyridine																
Phenazopyridine hydrochloride																
Phenesterin																
Phenobarbital																
Phenol	30 (5)															
Phenols, chlorinated	1															
Phenols, nitro-	30 (5)															
Phenols, non-chlorinated	30															
Phenoxybenzamine																
Phenoxybenzamine hydrochloride																
Phenyl glycidyl ether																
o-Phenylphenate, sodium																
Polychlorinated biphenyls	0.000019 ‡															
Pyrene	0.0088 ‡ (2)															
Resorcinol	30 (5)															
Simazine																
2,3,7,8-TCDD (Dioxin)	0.0000000039 ‡ (20)															
1,1,2,2-Tetrachloroethane	1200															
Tetrachloroethylene (PCE)	99 ‡															
2,3,4,6-Tetrachlorophenol	1 (7)															
2,3,5,6-Tetrachlorophenol	1 (7)															
Thiobencarb																
Toluene	85,000															
Toxaphene	0.00021 ‡															
2,4,5-TP (Silvex)																
Tributyltin	0.0014															
1,1,1-Trichloroethane	540,000															
1,1,2-Trichloroethane	43,000															
Trichloroethylene (TCE)	27 ‡															
Trichlorofluoromethane	1 (7)															
2,4,5-Trichlorophenol																
2,4,6-Trichlorophenol	0.29 ‡															
1,1,1,2-Trichloro-1,2,2-trifluoroethane																
Trinitrophenol	30 (5)															
Vinyl chloride	36 ‡															
Xylenes																

Table C-2 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.

WATER QUALITY CRITERIA

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Table C-2 WATER QUALITY CRITERIA - ORGANIC CONSTITUENTS

Organic Constituent	One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water						US EPA National Ambient Water Quality Criteria			
	US EPA Integrated Risk Information System (IRIS) Reference Dose as a Water Quality Criterion (23)	Cal/EPA Cancer Potency Factor as a Water Quality Criterion (24)	US EPA Integrated Risk Information System (IRIS)	US EPA Health Advisory or SNARL	National Academy of Sciences (NAS) Drinking Water and Health	California Proposition 65 Regulatory Level as a Water Quality Criterion	Agricultural Water Quality Goals (28)	Health and Welfare Protection		
								Non-Cancer Public Health Effects	One-in-a-Million Incremental Cancer Risk Estimate	Taste and Odor or Welfare
Acenaphthylene										
Acenaphthylene		0.035	0.07	(C)	0.38	0.35				
Acrylonitrile		0.0021	0.002	0.002 (B2,14)	0.003	0.02			0.059 / 0.66 (29)	
Aldrin	2100			(D)				9600 / 110,000 (29)	0.00013 / 0.00014 (29)	
Atrazine	3.5		0.14	(C)				25 (30)		
Bentazon	18			(D)						
Benz(a)anthracene		0.35	1	(B2)					0.0028 / 0.031 (32)	
Benzene		0.00007		1.0 (A)		3.5			1.2 / 71 (29)	
Benzidine				(A)		0.0005			0.00012 / 0.00064 (29)	
Benzo(b)fluoranthene				(B2)					0.0028 / 0.031 (32)	
Benzo(k)fluoranthene				(B2)					0.0028 / 0.031 (32)	
Benzo(g,h,i)perylene				(D)						
Benzo(a)pyrene		0.0029	0.003	(B2)		0.03			0.0028 / 0.031 (32)	
alpha-BHC					0.33	0.15			0.0039 / 0.013 (29)	
beta-BHC					0.12	0.25			0.014 / 0.046 (29)	
Gamma-BHC (Lindane)	0.2	0.032		0.03 (C)	0.054	0.3			0.019 / 0.063 (29)	0.08
delta-BHC		0.0088				0.1			0.0123	
Technical-BHC										
Bis(2-chloroethoxy) methane		0.014			0.42	0.15			0.031 / 1.4 (29)	
Bis(2-chloroethyl) ether	280			(D)				1400 / 170,000 (29)		
Bis(2-chloroisopropyl) ether		0.27	1.4	0.6 (B2,14)		2.5			0.27 / 22 (29)	
Bromodichloromethane			4	4 (B2,14)					4.3 / 360 (29)	
Bromoform	7			(D)				48 / 4000 (29)		
Bromomethane	35			(E)						
Carbofuran		0.23	0.3	0.3 (B2)		2.5			0.25 / 4.4 (29)	
Carbon tetrachloride					4.5					
Catechol		0.029 / 0.027	0.03	0.03 (B2)	0.028	0.25		680 / 21,000 (29)	0.00057 / 0.00059 (29)	0.0043
Chlordane	140			(D)	2.3 (25)					20
Chlorobenzene										3000
4-Chloro-m-cresol										1800
4-Chloro-o-cresol										20
6-Chloro-m-cresol		1.1 / 0.43	6	6.0 (B2,14)	0.26 / 5.6 (26)	10			5.7 / 470 (29)	
Chloroform				(C)						
Chloromethane	2.8			(D)						0.1
2-Chlorophenol	35			(D)						0.1
3-Chlorophenol										0.1
4-Chlorophenol				(B2)					0.0028 / 0.031 (32)	
Chrysene	70			(D)				100	0.025	
2,4-D		0.005	0.03	0.03 (B2)	0.051	0.05			0.00083 / 0.00084 (29)	
DBCP		0.15			1 (8)	1 (8)			0.00059 / 0.00059 (29)	
DDD		0.1							0.00059 / 0.00059 (29)	
DDE		0.1	0.1	(B2)	0.042	1 (8)			0.0028 / 0.031 (32)	0.0010
DDT				(B2)	0.1	0.1			0.41 / 34 (29)	
Dibenz(a,h)anthracene	14			(C)	0.6	3.5				
Dibromochloromethane	700			(D)				2700 / 12,000 (29)		
Dibutyl phthalate	620			(D)				2700 / 17,000 (29)		
1,2-Dichlorobenzene	620			(D)				400 / 2600 (31)		
1,3-Dichlorobenzene	620			(D)						

Table C-2 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.
WATER QUALITY CRITERIA

Table C-2 WATER QUALITY CRITERIA - ORGANIC CONSTITUENTS

Organic Constituent	US EPA Integrated Risk Information System (IRIS) Reference Dose as a Water Quality Criterion (23)	One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water					California Proposition 65 Regulatory Level as a Water Quality Criterion	Agricultural Water Quality Goals (28)	US EPA National Ambient Water Quality Criteria				
		Cal/EPA Cancer Potency Factor as a Water Quality Criterion (24)	US EPA Integrated Risk Information System (IRIS)	US EPA Health Advisory or SNARL	National Academy of Sciences (NAS) Drinking Water and Health	Health and Welfare Protection			Freshwater Aquatic Life Protection				
						Non-Cancer Public Health Effects			One-in-a-Million Incremental Cancer Risk Estimate	Taste and Odor or Welfare	Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)
1,4-Dichlorobenzene	70	0.88		(C)		10		400 / 2600 (31)					
3,3'-Dichlorobenzidine		0.029				0.3							
1,1-Dichloroethane						50			0.04 / 0.077 (29)				
1,2-Dichloroethane		0.5	0.4	0.4 (B2)	0.71	5			0.38 / 99 (29)				
1,1-Dichloroethylene	6.3		0.06	0.06 (C)					0.057 / 3.2 (29)				
cis-1,2-Dichloroethylene	70			(D)									
trans-1,2-Dichloroethylene	140			(D)									
Dichloromethane		2.5	5	5 (B2)		25			4.7 / 1600 (29)				
2,3-Dichlorophenol													
2,4-Dichlorophenol	21			(D)				93 / 790 (29)		0.04			
2,5-Dichlorophenol										0.3			
2,6-Dichlorophenol										0.5			
3,4-Dichlorophenol										0.2			
1,2-Dichloropropane		0.56	0.5	0.5 (B2)						0.3			
1,3-Dichloropropane		0.19	0.2	0.2 (B2)									
Dieldrin		0.0022	0.002	0.002 (B2)	0.45	0.02			0.00014 / 0.00014 (29)				
Di(2-ethylhexyl)phthalate		4.2	3	3 (B2)	2.4	40			1.8 / 5.9 (29)				
Diethyl phthalate	5600			(D)				23,000 / 120,000 (29)			360 (11)	0.0019	400 (11)
2,4-Dimethylphenol	140			(D)				313,000 / 2,900,000(29)					
Dimethyl phthalate								13.4 / 765 (29)					
4,6-Dinitro-o-cresol								70					
Dinitrophenol								70 / 14,000 (29)					
2,4-Dinitrophenol													
2,4-Dinitrotoluene		0.11	50	0.05 (B2)		1			0.11 / 9.1 (29)				
1,2-Diphenylhydrazine						0.4			0.040 / 0.54 (29)				
Endosulfan													
Endosulfan sulfate													
Endrin	2.1			(D)				0.93 / 2.0 (29)				0.056	
Ethylbenzene	700			(D)				0.93 / 2.0 (29)				0.056 (36)	
Ethylene dibromide (EDB)		0.0097	0.0004	0.0004 (B2)	0.055	0.1		0.76 / 0.81 (33.29)				0.0023	
Fluoranthene				(D)				3100 / 29,000 (29)					
Fluorene	280			(D)				300 / 370 (29)					
Glyphosate	700			(D)				1300 / 14,000 (29)					
Heptachlor		0.0061 / 0.0078	0.008	0.008 (B2)	0.012	0.1			0.00021 / 0.00021 (29)			0.0038	
Heptachlor epoxide		0.0027 / 0.0038	0.004	0.004 (B2)		0.04			0.00010 / 0.00011 (29)			0.0038	
Hexachlorobenzene		0.019		0.02 (B2)	0.017	0.2			0.00075 / 0.00077 (29)		3.68 (11)		6 (11)
Hexachlorobutadiene	1.4			(C)					0.44 / 50 (29)				
Hexachlorocyclopentadiene	49			(D)									
Hexachlorostyrene				(C)									
Indeno(1,2,3-c,d)pyrene				(B2)		10		240 / 17,000 (29)		1			
Isophorone	140			40 (C)					1.9 / 8.9 (29)				
Methanes, halo-									0.0028 / 0.031 (32.29)				
Methoxychlor	35			(D)					8.4 / 600 (29)				
Molinate	14							100					
Nitrobenzene													
2-Nitrophenol								17 / 1900 (29)		30			
Nitrophenol													
4-Nitrophenol				(D)									
N-Nitrosodimethylamine		0.0022				0.02			0.00069 / 8.1 (29)				

Table C-2 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.

WATER QUALITY CRITERIA

Table C-2 WATER QUALITY CRITERIA - ORGANIC CONSTITUENTS

Organic Constituent	One-in-a-Million Incremental Cancer Risk Estimates for Drinking Water					California Proposition 65 Regulatory Level as a Water Quality Criterion	U.S. EPA National Ambient Water Quality Criteria				
	US EPA Integrated Risk Information System (IRIS) Reference Dose as a Water Quality Criterion (23)	Cal/EPA Cancer Potency Factor as a Water Quality Criterion (24)	US EPA Integrated Risk Information System (IRIS)	US EPA Health Advisory or SNARL	National Academy of Sciences (NAS) Drinking Water and Health		Health and Welfare Protection			Freshwater Aquatic Life Protection	
							Non-Cancer Public Health Effects	One-in-a-Million Incremental Cancer Risk Estimate	Taste and Odor or Welfare	Continuous Concentration (4-day Average)	24-hour Average
N-Nitrosodiphenylamine		3.9				40		5.0 / 16 (29)			
trans-Nonachlor											
Oil & grease											
Oxychlorthane											
PAHs											
Pentachlorophenol		1.9	0.3	0.3 (B2)		20		0.0028 / 0.31 (29)	30	(34)	(36)
Phenanthrene								0.28 / 8.2 (29)		6.3 (11)	30 (11)
Phenol	4200			(D)			21,000 / 4,600,000 (29)		300		
Phenols, chlorinated											
Phenols, nitro-											
Phenols, non-chlorinated											
Phthalate esters											
Phenanthrene						2				6.3 (11)	
Phenazopyridine						2.5					
Phenazopyridine hydrochloride						0.0025					
Phenesterin						1					
Phenobarbital											
Phenol	4200			(D)			21,000 / 4,600,000 (29)		300		
Phenols, chlorinated											
Phenols, nitro-											
Phenols, non-chlorinated											
Phenoxybenzamine						0.1					
Phenoxybenzamine hydrochloride						0.15					
Phenyl glycidyl ether						2.5 (11)					
o-Phenylphenate, sodium						100					
Polychlorinated biphenyls		0.0045	0.005	0.005 (B2)	0.16 (37)	0.045		0.000044/0.000045 (29)		0.014	
Pyrene	210 (14)			(D)			960 / 11,000 (29)				
Resorcinol											
Simazine	3.5			(C)							
2,3,7,8-TCDD (Dioxin)		0.00000027	0.0000002	0.0000002 (B2)		0.0000025		1.3E-8 / 1.4E-8 (29)			
1,1,2,2-Tetrachloroethane				(C)		1.5		0.17 / 11 (29)			
Tetrachloroethylene (PCE)		0.69	0.7	0.7 (B2)	3.6	7		0.8 / 8.85 (29)			
2,3,4,6-Tetrachlorophenol									1		
2,3,5,6-Tetrachlorophenol											
Thiobencarb											
Toluene	1400			(D)		3500 (38)	6800 / 200,000 (29)				
Toxaphene		0.029	0.03	0.03 (B2)		0.3	10	0.00073 / 0.00075 (29)		0.0002	0.73
2,4,5-TP (Silvex)	53			(D)							
Tributyltin											
1,1,1-Trichloroethane	250			(D)	17 (25)						
1,1,2-Trichloroethane	2.8		0.6	0.6 (C)		5		0.60 / 42 (29)			
Trichloroethylene (TCE)		2.3 (11)	3	3 (B2)	1.5 (25)	25		2.7 / 81 (29)			
Trichlorofluoromethane	2100			(D)				0.19			
2,4,5-Trichlorophenol							2600		1	63 (100)	100 (11)
2,4,6-Trichlorophenol		0.5	3	3 (B2,14)		5		2.1 / 6.5 (29)	2		
1,1,2-Trichloro-1,2,2-trifluoroethane											
Trinitrophenol											
Vinyl chloride		0.13	0.015	0.015 (A)	1.1	1.5		2 / 525 (29)			
Xylenes(s)	14,000			(D)							

Table C-2 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.

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Table C-2 WATER QUALITY CRITERIA - ORGANIC CONSTITUENTS

Organic Constituent	US EPA Ambient Water Quality Criteria (cont.)				California Ocean Plan					US EPA National Ambient Water Quality Criteria							
	Freshwater Aquatic Life Protection (cont.)				Numerical Water Quality Objectives					Saltwater Aquatic Life Protection							
	Recommended Criteria (cont.)				Human Health Protection (30-day Average) ** = carcinogen	Marine Aquatic Life Protection				Recommended Criteria				Additional Toxicity Information			
	Maximum (Instantaneous)	Additional Toxicity Information				6-month Median	30-day Average	7-day Average	Daily Maximum	Instantaneous Maximum	Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)				Maximum (Instantaneous)
		Acute	Chronic	Other													
Acenaphthylene		68	21		0.0088 ± (2)										300 (32)		
Acenaphthylene		7550		2600 (44)	220											55	
Acrylonitrile					0.10 ±												
Aldrin	3				0.000022 ±												
Anthracene					0.0088 ± (2)											300 (32)	
Atrazine	1.0 (30)																
Bentazon																	
Benz(a)anthracene					0.0088 ± (2)											300 (32)	
Benzene		5300			5.9 ±											5100	700 (47)
Benzidine		2500			0.000069 ±												
Benz(b)fluoranthene					0.0088 ± (2)												
Benz(k)fluoranthene					0.0088 ± (2)											300 (32)	
Benzol(g,h,i)perylene					0.0088 ± (2)											300 (32)	
Benzol(a)pyrene					0.0088 ± (2)											300 (32)	
alpha-BHC						0.004 (3)			0.008 (3)	0.012 (3)							
beta-BHC						0.004 (3)			0.008 (3)	0.012 (3)							
Gamma-BHC (Lindane)						0.004 (3)			0.008 (3)	0.012 (3)							
delta-BHC						0.004 (3)			0.008 (3)	0.012 (3)							
technical-BHC		100				0.004 (3)			0.008 (3)	0.012 (3)						0.34	
Bis(2-chloroethoxy) methane					4.4												
Bis(2-chloroethyl) ether		238,000 (39)	122 (43)		0.045 ±												
Bis(2-chloroisopropyl) ether		238,000 (39)	122 (43)		1200												
Bromodichloromethane		11,000 (40)			130 ± (4)											12,000 (40)	6400 (40)
Bromoform		11,000 (40)			130 ± (4)											12,000 (40)	6400 (40)
Bromomethane		11,000 (40)			130 ± (4)											12,000 (40)	6400 (40)
Carboturan																	
Carbon tetrachloride		35,200			0.90 ±											50,000	6400 (40)
Catechol						30 (5)			120 (5)	300 (5)							
Chlordane												0.004					
Chlorobenzene	2.4	250 (41)		50 (41,45)	0.000023 ± (6)												
4-Chloro-m-cresol		30			670											160 (41)	129 (41)
4-Chloro-o-cresol						1 (7)			4 (7)	10 (7)							
6-Chloro-m-cresol						1 (7)			4 (7)	10 (7)							
Chloroform		28,900	1240		130 ±												
Chloromethane		11,000 (40)			130 ± (4)												
2-Chlorophenol				2000 (46)		1 (7)			4 (7)	10 (7)						12,000 (40)	6400 (40)
3-Chlorophenol		4380				1 (7)			4 (7)	10 (7)						12,000 (40)	6400 (40)
4-Chlorophenol						1 (7)			4 (7)	10 (7)							
Chrysene					0.0088 ± (2)											28,700	
2,4-D																300 (32)	
DBCP																	
DDD		0.6			0.00017 ± (8)												
DDE		1050			0.00017 ± (8)											3.6	
DDT					0.00017 ± (8)											14	
Dibenz(a,h)anthracene					0.0088 ± (2)							0.001		0.13			
Dibromochloromethane					130 ± (4)												
Dibutyl phthalate		11,000 (40)			3500											300 (32)	6400 (40)
1,2-Dichlorobenzene		1120 (31)	3 (42)													12,000 (40)	11,500 (40,48)
1,3-Dichlorobenzene		1120 (31)	763 (31)		5100 (9)											2944 (42)	3.4 (49,42)
		1120 (31)	763 (31)		5100 (9)											1970 (31)	129 (41)

Table C-2 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.

WATER QUALITY CRITERIA

Table C-2 WATER QUALITY CRITERIA - ORGANIC CONSTITUENTS

Organic Constituent	US EPA Ambient Water Quality Criteria (cont.)				California Ocean Plan						US EPA National Ambient Water Quality Criteria						
	Freshwater Aquatic Life Protection (cont.)				Numerical Water Quality Objectives						Saltwater Aquatic Life Protection						
	Recommended Criteria (cont.)				Human Health Protection (30-day Average) "±" = carcinogen	Marine Aquatic Life Protection				Recommended Criteria				Additional Toxicity Information			
	Maximum (Instantaneous)	Additional Toxicity Information				6-month Median	30-day Average	7-day Average	Daily Maximum	Instantaneous Maximum	Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)		Maximum (Instantaneous)		
		Acute	Chronic	Other												Acute	Chronic
1,4-Dichlorobenzene		1120 (31)	763 (31)		18 ±										1970 (31)	129 (41)	
3,3'-Dichlorobenzidine					0.0081 ±												
1,1-Dichloroethane																	
1,2-Dichloroethane		118,000	20,000		130 ±										113,000		
1,1-Dichloroethylene		11,600 (50)			7100										224,000 (50)		
cis-1,2-Dichloroethylene		11,600 (50)													224,000 (50)		
trans-1,2-Dichloroethylene		11,600 (50)													224,000 (50)		
Dichloromethane		11,600 (50)			450 ±										12,000 (40)	6400 (40)	11,500 (40,48)
2,3-Dichlorophenol						1 (7)				4 (7)	10 (7)						
2,4-Dichlorophenol		2020	365	70 (56)		1 (7)				4 (7)	10 (7)						
2,5-Dichlorophenol						1 (7)				4 (7)	10 (7)						
2,6-Dichlorophenol						1 (7)				4 (7)	10 (7)						
3,4-Dichlorophenol						1 (7)				4 (7)	10 (7)						
1,2-Dichloropropane		23,000 (51)	5700 (51)												10,300 (51)	3040 (51)	
1,3-Dichloropropene		6060 (52)	244 (52)		8.9 ±										790 (52)		
Dieldrin	2.5				0.000040 ±												
Di(2-ethylhexyl)phthalate		940 (42)	3 (42)		3.5 ±										2,944 (42)		3.4 (49,42)
Diethyl phthalate		940 (42)	3 (42)		33,000										2,944 (42)		3.4 (49,42)
2,4-Dimethylphenol		2120				30 (5)				120 (5)	300 (5)						
Dimethyl phthalate		940 (42)	3 (42)		820,000										2,944 (42)		3.4 (49,42)
4,6-Dinitro-o-cresol		230 (53)			220	30 (5)				120 (5)	300 (5)				4850 (53)		
Dinitrophenol		230 (53)				30 (5)				120 (5)	300 (5)				4850 (53)		
2,4-Dinitrophenol		230 (53)			4	30 (5)				120 (5)	300 (5)				4850 (53)		
2,4-Dinitrotoluene		330 (54)	230 (54)		2.6 ±										590 (54)		370 (54,48)
1,2-Diphenylhydrazine		270 (9)			0.16 ±												
Endosulfan	0.22					9 (16)				18 (16)	27 (16)		0.0087	0.034			
Endosulfan sulfate						9 (16)				18 (16)	27 (16)		0.0087 (35)				
Endrin	0.18				4100	0.002				0.004	0.006		0.0023	0.037	430		
Ethylbenzene		32,000															
Ethylene dibromide (EDB)					15										40	16	
Fluoranthene		3980			0.0088 ± (2)										300 (32)		
Fluorene																	
Glyphosate																	
Heptachlor	0.52				0.00072 ± (17)								0.0036	0.053			
Heptachlor epoxide	0.52				0.00072 ± (17)								0.0036	0.053			
Hexachlorobenzene		250 (41)	50 (41,45)		0.00021 ±										160 (41)	129 (41)	
Hexachlorobutadiene		90	9.3		14 ±										32		
Hexachlorocyclopentadiene		7.0	5.2		58										7		
Hexachloroethane		980	540		2.5 ±										940		
Indeno(1,2,3-c)pyrene					0.0088 ± (2)										300 (32)		
Isophorone		117,000			150,000										12,900		
Methanes, halo-		11,000			130 ± (4)										12,000	6400	11,500 (48)
Methoxychlor	0.03													0.03			
Mollinate																	
Nitrobenzene		27,000			4.9										6680		
2-Nitrophenol		230 (53)				30 (5)				120 (5)	300 (5)				4850 (53)		
Nitrophenol		230 (53)				30 (5)				120 (5)	300 (5)				4850 (53)		
4-Nitrophenol		230 (53)				30 (5)				120 (5)	300 (5)				4850 (53)		
N-Nitrosodimethylamine		5850 (55)			7.3 ±										3,300,000 (55)		

Table C-2 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.
WATER QUALITY CRITERIA

Table C-2 WATER QUALITY CRITERIA - ORGANIC CONSTITUENTS

Organic Constituent	US EPA Ambient Water Quality Criteria (cont.)				California Ocean Plan				US EPA National Ambient Water Quality Criteria										
	Freshwater Aquatic Life Protection (cont.)				Numerical Water Quality Objectives				Saltwater Aquatic Life Protection										
	Recommended Criteria (cont.)				Human Health Protection (30-day Average) "±" = carcinogen	Marine Aquatic Life Protection				Recommended Criteria									
	Additional Toxicity Information					6- month Median	30-day Average	7-day Average	Daily Maximum	Instantaneous Maximum	Continuous Concentration (4-day Average)	24-hour Average	Maximum Concentration (1-hour Average)	Maximum (Instantaneous)					
	Maximum (Instantaneous)	Acute	Chronic	Other															
N-Nitrosodiphenylamine	5850 (55)				2.5 ±														
trans-Nonachlor					0.000023 ± (6)		25,000	40,000		75,000									
Oil & grease					0.000023 ± (6)														
Oxychloridane					0.0088 ± (2)														
PAHs						1 (7)			4 (7)	10 (7)			13				300		
Pentachlorophenol				1.74 (57)															
Phenanthrene					0.0088 ± (2)	30 (5)			120 (5)	300 (5)							300 (32)		
Phenol	10,200	2560				1			4	10							5800		
Phenols, chlorinated						30 (5)			120 (5)	300 (5)									
Phenols, nitro-	230			150 (49)		30			120	300									
Phenols, non-chlorinated																	4850		
Phthalate esters																			
Phenanthrene	940	3															2944		3.4 (49,42)
Phenazopyridine					0.0088 ± (2)												300 (32)		
Phenazopyridine hydrochloride																			
Phenesterin																			
Phenobarbital																			
Phenol	10,200	2560				30 (5)			120 (5)	300 (5)							5800		
Phenols, chlorinated						1			4	10									
Phenols, nitro-	230			150 (49)		30 (5)			120 (5)	300 (5)							4850		
Phenols, non-chlorinated						30			120	300									
Phenoxybenzamine																			
Phenoxybenzamine hydrochloride																			
Phenyl glycidyl ether																			
o-Phenylphenate, sodium																			
Polychlorinated biphenyls	> 2				0.000019 ±												> 10		
Pyrene					0.0088 ± (2)												300 (32)		
Resorcinol						30 (5)			120 (5)	300 (5)									
Simazine	10 (58)																		
2,3,7,8-TCDD (Dioxin)					0.0000000039 ± (20)														
1,1,2,2-Tetrachloroethane	9320 (59)	2400			1200														
Tetrachloroethylene (PCE)	5280	840			99 ±												9020		
2,3,4,6-Tetrachlorophenol						1 (7)			4 (7)	10 (7)							10,200	450	
2,3,5,6-Tetrachlorophenol						1 (7)			4 (7)	10 (7)							440		
Thiobencarb																			
Toluene	17,000				85,000														
Toxaphene					0.00021 ±								0.21				6300	5000	
2,4,5-TP (Silvex)																			
Tributyltin	0.026 (30)				0.0014												0.010 (30)		
1,1,1-Trichloroethane	18,000			200 (60)	540,000														
1,1,2-Trichloroethane	18,000	9400			43,000												31,200		
Trichloroethylene (TCE)	45,000				27 ±														
Trichlorofluoromethane	11,000 (40)			21,900 (61)													2000		
2,4,5-Trichlorophenol						1 (7)			4 (7)	10 (7)							12,000 (40)	6400 (40)	11,500 (40,48)
2,4,6-Trichlorophenol					0.29 ±	1 (7)			4 (7)	10 (7)									
1,1,2-Trichloro-1,2,2-trifluoroethane						1 (7)			4 (7)	10 (7)									
Trinitrophenol	230 (53)			150 (49,53)		30 (5)			120 (5)	300 (5)									
Vinyl chloride					36 ±												4850 (53)		
Xylenes																			

Table C-2 -- Values are in µg/l (ppb) unless otherwise indicated. Numbers in parentheses indicate endnotes following the tables.

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ENDNOTES FOR TABLE C-2 ORGANICS

- (7-day) For exposure of 7 days or less.
 (10-day) For exposure of 10 days or less.
 (24-hr) For exposure of 24 hours or less.
 (7-yr) For "longer-term" exposure (7 years or less, EPA).
- (A) Known human carcinogen; sufficient epidemiologic evidence in humans.
 (B1) Probable human carcinogen; limited epidemiologic evidence in humans
 (B2) Probable human carcinogen; sufficient evidence from animal studies; no or inadequate human data.
 (C) Possible human carcinogen; limited evidence from animal studies; no human data.
 (D) Not classified as to human carcinogenicity; no data or inadequate evidence.
 (E) Evidence of non-carcinogenicity for humans.
- (1) For hardness in mg/l as CaCO₃, criterion = $e(0.8473[\ln(\text{hardness})] + 0.8604)$ µg/l.
 (2) For sum of acenaphthylene, anthracene, benz(a)anthracene, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(g,h,i)perylene, benzo(a)pyrene, chrysene, dibenz(a,h)anthracene, fluorene, indeno(1,2,3-c,d)pyrene, phenanthrene, and pyrene. For hardness in mg/l as CaCO₃, criterion = $e(1.273[\ln(\text{hardness})] - 1.460)$ µg/l.
 (3) For hardness in mg/l as CaCO₃, criterion = $e(1.273[\ln(\text{hardness})] - 1.460)$ µg/l.
 (4) For sum of bromoform, bromomethane, chloromethane, dibromochloromethane, and bromodichloromethane.
 (5) For sum of nonchlorinated phenolic compounds.
 (6) For hardness in mg/l as CaCO₃, criterion = $e(1.273[\ln(\text{hardness})] - 4.705)$ µg/l.
 (7) For the sum of oxychloridene and alpha and gamma isomers of chlordane, chlordene and nonachlor.
 (8) For sum of chlorinated phenolic compounds.
 (9) Instantaneous maximum.
 (10) For sum of 1,2- and 1,3-dichlorobenzenes.
 (11) From Reference 30.
 (12) Proposed.
 (13) Effective 17 January 1994.
 (14) For hardness in mg/l as CaCO₃, criterion = $e(0.8473[\ln(\text{hardness})] + 0.7614)$ µg/l.
 (15) MCL varies with air temperature: 2.4 mg/l (53.7 °F); 2.2 mg/l (53.8 - 58.3 °F); 2.0 mg/l (58.4 - 63.8 °F); 1.8 mg/l (63.9 - 70.6 °F); 1.6 mg/l (70.0 - 79.2 °F); 1.4 mg/l (79.3 - 90.5 °F).
 (16) Based on organoleptic considerations (taste, odor, color, laundry staining, etc.)
 (17) For hardness in mg/l as CaCO₃, criterion = $e(1.273[\ln(\text{hardness})] - 4.705)$ µg/l.
 (18) As CaCO₃; minimum concentration except where natural concentrations are less.
 (19) Toxicity to algae occurs.
 (20) For hardness in mg/l as CaCO₃, criterion = $e(0.8190[\ln(\text{hardness})] + 1.561)$ µg/l.
 (21) For "TCDD equivalents" calculated as the sum of 2,3,7,8-chlorinated dibenzodioxin and dibenzofuran concentrations multiplied by their respective U.S. EPA Toxicity Equivalency Factors.
 (22) Expressed as decachlorobiphenyl.
 (23) For hardness in mg/l as CaCO₃, criterion = $e(0.8190[\ln(\text{hardness})] + 3.688)$ µg/l.
 (24) Assumes 70 kg body weight, 2 liters/day water consumption, and 20% relative source contribution. An additional uncertainty factor of 10 is used for Class C carcinogens.
 (25) Assumes 70 kg body weight and 2 liters/day water consumption.
 (26) For sum of dichloropropanes.
 (27) Draft / tentative / provisional.
 (28) For sum of halomethanes.
 (29) Reference 19 unless noted otherwise.
 (30) For the sum of oxychloridene and alpha and gamma isomers of chlordane, chlordene and nonachlor.
 (31) For hardness in mg/l as CaCO₃, criterion = $e(0.7852[\ln(\text{hardness})] - 3.490)$ µg/l.
 (32) For hardness in mg/l as CaCO₃, criterion = $e(0.9422[\ln(\text{hardness})] - 1.464)$ µg/l.
 (33) For sum of dichlorobenzenes.
 (34) For total trihalomethanes (sum of bromoform, bromodichloromethane, chloroform and dibromochloromethane); based largely on technology and economics.
 (35) Based on endosulfan; U.S. EPA Water Quality Advisory (Reference 13).
 (36) Determined not to pose a risk of cancer through ingestion (Title 22, CCR, Division Includes Radium 226 but excludes Radon and Uranium.
 (37) Pentavalent arsenic (As(V)) effects on plants.
 (38) Recommended level; Upper level = 500 mg/l; Short-term level = 600 mg/l.
 (39) For sum of dichloroethylenes.
 (40) For sum of dichloropropanes.
 (41) As NO₃.
 (42) Effective 17 January 1994.
 (43) Toxicity to a fish species exposed for 7.5 days.
 (44) Adverse behavioral effects occur to one species.
 (45) For hardness in mg/l as CaCO₃, criterion = $e(1.72[\ln(\text{hardness})] - 6.52)$ µg/l.
 (46) Adverse effects on a fish species exposed for 168 days.
 (47) A decrease in the number of algal cells occurs.
 (48) Guidance level (Reference 3) assumes relative source contribution of 10% from drinking water.
 (49) For chlorinated systems.
 (50) For white phosphorus.
 (51) For sum of carcinogenic polynuclear aromatic hydrocarbons.
 (52) For sum of nitrophenols.
 (53) For hardness in mg/l as CaCO₃, criterion = $e(0.8460[\ln(\text{hardness})] + 3.3612)$ µg/l.
 (54) For total chlorine residual; for intermittent chlorine sources see Reference 26.
 (55) For consumption of water and aquatic organisms / for consumption of aquatic organisms only.
 (56) MCL includes this "Action level", to be exceeded in no more than 10 percent of samples.
 (57) For sum of nonchlorinated phenolic compounds.
 (58) Recommended level; Upper level = 1000; Short-term level = 1500 mg/l.
 (59) For sum of tetrachloroethanes.
 (60) Calculated from corn oil gavage animal study / from drinking water animal study.
 (61)

Table C-2

WATER QUALITY CRITERIA

Numerical Values for Table 3-5 valid as of September 8, 1994

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REFERENCES

Drinking Water Standards - Maximum Contaminant Levels (MCLs)

1. California Department of Health Services, California Administrative Code, Title 22, Division 4, Chapter 15, "Domestic Water Quality and Monitoring".
2. U. S. Environmental Protection Agency, 40 Code of Federal Regulations, Parts 141 and 143.
3. U. S. Environmental Protection Agency, Office of Water, "Drinking Water Regulations and Health Advisories" (December 1992).
4. U. S. Environmental Protection Agency, Region 9, Drinking Water Branch, "Drinking Water Standards and Health Advisory Table" (December 1992).
5. U. S. Environmental Protection Agency, Federal Register, Volume 56, No. 110 (Friday, 7 June 1991), pages 26460-26564. Corrected in FR, Vol. 56, No. 135 (Mon., 15 July 1991) pages 32112-32113.
6. U. S. Environmental Protection Agency, Federal Register, Volume 56, No. 128 (Monday, 1 July 1991), pages 30266-30281. Amended by Federal Register, Volume 57, pages 22178 et seq. (27 May 1992).
7. U. S. Environmental Protection Agency, Federal Register, Volume 56, No. 138 (Thursday, 18 July 1991), pages 33050-33127.
8. U. S. Environmental Protection Agency, Federal Register, Volume 57, No. 138 (Friday, 17 July 1992), pages 31776-31849.

California State Action Levels

9. California Department of Health Services, Office of Drinking Water, "Summary: Maximum Contaminant Levels (MCLs) and Action Levels (ALs)" (18 October 1990).

California Recommended Public Health Levels (RPHLs) in Drinking Water

10. California Department of Health Services, Office of Drinking Water, "Notice of Proposed Rulemaking, Recommended Public Health Levels (RPHLs) for Contaminants in Drinking Water (R-29-91)" (4 December 1991).

Health Advisories and Suggested No-Adverse-Response Levels (SNARLs)

- References 3 and 4.
11. U. S. Environmental Protection Agency, Office of Drinking Water "Health Advisory" documents (various dates).
12. National Academy of Sciences, "Drinking Water and Health", Vol. 1 (1977), Vol. 3 (1980), Vol. 4 (1982), Vol. 5 (1983), Vol. 6 (1986), and Vol. 7 (1987).
13. U. S. Environmental Protection Agency, "Water Quality Advisory" documents (March 1986, September 1987).

California Proposition 65 Regulatory Levels

14. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA), California Code of Regulations, Title 22, Division 2, Chapter 3, Articles 7 and 8.
15. California Environmental Protection Agency, Office of Environmental Health Hazard Assessment (OEHHA), Proposition 65 "Status Report" (January 1993).

One-in-a-Million Incremental Cancer Risk Estimates

- References 3, 4, 11, 12, and 13.
16. U. S. Environmental Protection Agency, "Quality Criteria for Water, 1986" (May 1986) plus updates (various dates).
17. U. S. Environmental Protection Agency, Federal Register, Vol. 49, No. 194 (Wednesday, 15 February 1984) [TCDD cancer risk level].
18. "California Environmental Protection Agency Criteria for Carcinogens", Office of Environmental Health Hazard Assessment (July 1992).

Agricultural Water Quality Goals

19. Ayers, R. S. and D. W. Westcott, "Water Quality for Agriculture", Food and Agriculture Organization of the United Nations - Irrigation and Drainage Paper No. 29, Rev. 1, Rome (1985).

U. S. EPA National Ambient Water Quality Criteria

- References 13 and 16.
20. U. S. Environmental Protection Agency, "Water Quality Criteria, 1972" (1973).
21. U. S. Environmental Protection Agency, Federal Register, Volume 55, No. 93, (Monday, 14 May 1990), pp. 19987-19992.
22. U. S. Environmental Protection Agency, Federal Register, Volume 57, No. 246 (Tuesday, 22 December 1992), pp. 60848-60923.
23. U. S. Environmental Protection Agency, "Ambient Water Quality Criteria" documents (various dates).

California Inland Surface Waters Plan - Numerical Water Quality Objectives

24. California State Water Resources Control Board, "Water Quality Control Plan for Inland Surface Waters of California", Document 91-12 WQ, Chapter II (11 April 1991).
25. California State Water Resources Control Board, "Functional Equivalent Document: Amendments of the Water Quality Control Plan for Inland Surface Waters of California", Draft (November 1992).

California Enclosed Bays and Estuaries Plan - Numerical Water Quality Objectives

26. California State Water Resources Control Board, "Water Quality Control Plan for Enclosed Bays and Estuaries of California", Document 91-13 WQ, Chapter II (11 April 1991).
27. California State Water Resources Control Board, "Functional Equivalent Document: Amendments of the Water Quality Control Plan for Enclosed Bays and Estuaries of California", Draft (November 1992).

California Ocean Plan - Numerical Water Quality Objectives

28. California State Water Resources Control Board, "Water Quality Control Plan: Ocean Waters of California", Chapter IV (22 March 1990).

Other References

29. McKee & Wolf, California State Water Resources Control Board, "Water Quality Criteria" (1963, 1978).
30. U.S. Environmental Protection Agency, Federal Register, Vol. 54, No. 97 (Mon., 22 May 1989), pp. 22138, 22139.

APPENDIX D

CONDITION(S) FOR CONDITIONAL WAIVER OF WASTE DISCHARGE REQUIREMENTS OF ITEMS IN TABLE 4-4

CONDITIONS FOR ITEM 21. SHORT-TERM USE OF RECLAIMED WATER:

1. Short-term water reclamation projects are projects that last one year or less. Short-term projects can include temporary use of reclaimed water for dust control, soil compaction, green belt irrigation, or any other temporary reuse project authorized by the Executive Officer, for which no permanent physical reclaimed water facilities or structures are installed; and
2. The reclaimed water producer must submit a written request for a waiver to the Regional Board. This request must include written notification from the local health department or the State Department of Health Services that the proposed project complies with all local and State health requirements for reclaimed water use and Title 22, Division 4, Chapter 3, Reclamation Criteria, Articles 1 - 10. This written notification shall also specify any monitoring required to demonstrate compliance with Title 22, Division 4, Chapter 3, Articles 2, 3, 4, 5, and 5.1. A new written request for a waiver must be submitted to the Regional Board if the temporary project exceeds one year. New written requests must be received 60 days prior to expiration of the one year project. If no new request is received the short-term project must cease immediately.

CONDITIONS FOR ITEM 24. TEMPORARY DISCHARGE OF SPECIFIED CONTAMINATED SOILS:

a. General Conditions for All Temporary Waste Piles

- (1) The discharger shall file a Report of Waste Discharge which provides the technical information necessary to demonstrate that the discharge meets the criteria set forth herein. The discharger shall submit a fee of \$750.00 pursuant to Section 2200, Title 23 of the California Code of Regulations.
- (2) This waiver specifically does not apply to hazardous waste, as defined in Section 66261.3, Division 4.5, Title 22 of the California Code of Regulations, or as amended.
- (3) All waste piles used for treatment or storage shall be bermed to prevent surface runoff/runon from contacting wastes and to prevent erosion and transport of contaminated soils by surface runoff. Berm material shall consist of clean, noncontaminated soil.
- (4) All waste piles used for treatment or storage shall be protected against 100-year peak stream flows as defined by the County flood control agency.
- (5) Wastes discharged to waste piles established under this waiver, together with any containment materials used at the temporary waste pile, and any underlying geologic materials contaminated by the discharge, shall be removed within the maximum time period allowed under the applicable Special Conditions. Subsequently the site shall be restored to its original state within 30 days following the removal of all treatment facilities, related equipment, etc. and shall be disposed of or stored in accordance with applicable regulations.
- (6) If return water or ponded water contained within the treatment or storage area of the temporary waste pile will be disposed of at a location other than to a sanitary sewer system, then the discharger shall submit written notification to the Executive Officer prior to initiating the discharge and either: 1) obtain waste discharge requirements; 2) obtain a waiver of waste

discharge requirements or 3) obtain a written determination from the Executive Officer that the disposal of the return water or ponded water is not subject to regulation by the Regional Board.

b. *Special Conditions Applicable to Waste Piles for Treatment or Storage of Soils Contaminated with Petroleum Hydrocarbons*

- (1) Temporary waste piles established under this waiver shall be limited to a maximum time period of four months or 120 days.
- (2) All waste piles shall be overlain by a suitable heavy gauge plastic sheeting (not less than 10 mils thick) to adequately prevent rainwater infiltration, control fugitive dust, and other nuisances.
- (3) All waste piles shall be underlain by either a suitable heavy gauge plastic sheeting (not less than 10 mils thick) or a liner of low permeability approved by the Executive Officer.
- (4) Unless otherwise stated herein, waste piles shall conform to provisions in the state's Local Oversight Program (LOP) for Orange, Riverside, and San Diego Counties.

c. *Special Conditions Applicable to Waste Piles for Treatment or Storage of Dredge Spoils Contaminated with Heavy Metals*

- (1) Temporary waste piles established under this waiver shall be limited to a maximum time period of nine months or 270 days.
- (2) All waste piles shall be overlain by either a suitable heavy gauge plastic sheeting or an alternative approved by the Executive Officer to adequately prevent rainwater infiltration, control fugitive dust, and other nuisances. The control methods shall be subject to approval by the Executive Officer.
- (3) All waste piles shall be underlain by a liner of low permeability (not less than 20 mils thick). The liner and containment facility shall be designed to contain all waste and fluids, and shall be subject to approval by the Executive Officer.
- (4) Materials used in containment structures shall have the appropriate chemical and physical properties to ensure that such structures do not fail to contain waste because of: the stress of installation, pressure gradients, physical contact with the waste or leachate, or chemical reactions with soil and rock.

CONDITIONS FOR ITEM 25. DISPOSAL / REUSE OF DREDGE SPOILS IN INDUSTRIAL OR COMMERCIAL APPLICATIONS

a. *General Conditions for Disposal/Reuse of Treated Dredge Spoil in Industrial or Commercial Applications*

- (1) The discharger shall file a report of waste discharge which provides the technical information necessary to demonstrate that the residual concentrations of constituents of concern meet the criteria set forth herein. The discharger shall submit a fee of \$750.00 pursuant to CCR Title 23, Section 2200.
- (2) All sampling and analytical procedures, including documentation of waste characterization, shall be in accordance with the indicated methods described in *Test Methods for Evaluating Solid Waste, Physical/Chemical Methods*, SW-846, U.S. Environmental Protection Agency (current edition). Reported concentrations levels shall be mean average, with an 80% upper confidence interval, and the total range within each constituent.
- (3) The Waste Extraction Test (WET) shall be used for all metal elements, polychlorinated biphenols (PCB's), tributyltin (TBT), and their compounds to determine the amount of extractable substance

from a contaminated soil. Procedures for the WET are described in Section 66261.24, Article 3, Chapter 11, Division 4.5, Title 22 of the California Code of Regulations, or as amended. Concentration limits are based on the modified WET methodology (using deionized water in place of sodium citrate buffer solution) and then multiplied by the ten fold dilution rate used in the test.

- (4) The Toxicity Characteristic Leaching Procedure (TCLP) shall be used for all volatile organic compounds to determine the amount of extractable substance from a contaminated soil. Procedures for the TCLP are described in Appendix I, Chapter 18, Division 4.5, Title 22 of the California Code of Regulations, or as amended. Concentration limits are based on the modified TCLP methodology (using deionized water in place of sodium acetate buffer solution) and then multiplied by the twenty fold dilution rate used in the test.
- (5) This waiver specifically does not apply to hazardous waste, as defined in Section 66261.3, Division 4.5, Title 22 of the California Code of Regulations, or as amended.
- (6) The discharge shall meet the additional conditions outlined under the exact type of discharge proposed. The levels of contaminants in the soil shall not exceed any of the maximum concentration limits listed under the type of discharge proposed for the soil.
- (7) The discharge shall be protected against 100-year peak stream flows as defined by the County flood control agency.
- (8) The discharger shall file a certification report when disposal/reuse is completed, on a form approved by the Executive Officer.
- (9) This waiver applies only to the contaminants specified under each disposal use category. These may not be the only pollutants found in contaminated soils that could threaten water quality. Contaminated soils from other sources including, but not limited to; solvents, pesticides, other metals, salts, and nutrients, are excluded from this waiver. Contaminants that are suspected constituents of concern that are not listed may need to be evaluated based on knowledge of the site cleanup and on a case by case basis until such time as numerical limits applicable for a waiver can be established.

b. Special Conditions Applicable to Use of Treated Dredge Spoil for Industrial or Commercial Reuse/Fill near Groundwater, Bays and Estuaries, and Pacific Ocean

- (1) Soil shall be covered by either (1) **constructed** materials (e.g. used as roadbase, fill beneath buildings, bridge abutments), or (2) not less than 2 feet of **noncontaminated clean** fill to minimize surface water infiltration, preclude exposure by erosion, and control leaching effects.
- (2) Soil shall be placed a minimum of 100 feet away from any surface water.
- (3) Soil shall be placed a minimum of 5 feet above the highest anticipated elevation of ground water [CCR, Title 23, Section 2530 (c)].
- (4) This waiver does not apply to basins that are designated for municipal and domestic supply.
- (5) The applicable standards for the underlying ground water basins shall not only be based upon the water quality of those basins, but also the surface water of an enclosed bay, estuary, or Pacific Ocean that it is in contact with.

(6) The average concentration of contaminants in the soil shall not exceed any of the following concentration limits (mean average with an 80% upper confidence interval):

	Ground Water ¹	Bays and Estuaries ⁴	Pacific Ocean ^{5a}
<u>Constituents</u>	<u>Concentration Limit (Numerical Objective Multiplied by 10-fold Attenuation)</u>		
Metals			
Chromium (VI)	500 ug/l	500 ug/l ^{4a}	20 ug/l
Copper	10000 ug/l ³	29 ug/l ^{4b}	30 ug/l
Lead	500 ug/l	56 ug/l ^{4a}	20 ug/l
Mercury	20 ug/l	0.25 ug/l ^{4c}	0.4 ug/l
Silver	500 ug/l	23 ug/l ^{4d}	7 ug/l ^{5c}
Zinc	50000 ug/l ³	860 ug/l ^{4a}	200 ug/l
Synthetic			
PCBs	5 ug/l	0.0007 ug/l ^{4c}	0.00019 ug/l ^{5b}
TBT	0.2 ug/l	0.05 ug/l ^{4c}	0.014 ug/l ^{5b}
Hydrocarbons			
TPH	100 mg/kg ⁶	100 mg/kg ⁶	100 mg/kg ⁶
TRPH	1000 mg/kg ⁶	1000 mg/kg ⁶	1000 mg/kg ⁶
Benzene	10 ug/l	210 ug/l ^{4c}	59 ug/l ^{5b}
Toluene	10000 ug/l	3000000 ug/l ^{4c}	850000 ug/l ^{5b}
Ethylbenzene	6800 ug/l	290000 ug/l ^{4c}	4300 ug/l ^{5b}
Total Xylenes	17500 ug/l	--	--
Naphthalene	200 ug/l ²	200 ug/l ²	200 ug/l ²

Water Quality Objectives are derived from the following sources.

1. California Drinking Water Standards, primary maximum contaminant levels
2. US EPA suggested no adverse response levels (SNARLs)
3. California Drinking Water Standards, secondary maximum contaminant levels
4. Best Professional Judgement for Bays and Estuaries
 - a. 4-day Average Concentration - Saltwater Aquatic Life Protection
 - b. 1-hour Average Concentration - Saltwater Aquatic Life Protection
 - c. 30-day Average Concentration - Human Health Protection
 - d. Instantaneous Maximum Concentration - Saltwater Aquatic Life Protection
5. California Ocean Plan Criteria, Marine Aquatic Life Protection
 - a. 6-month Median Concentration - Saltwater Aquatic Life Protection
 - b. 30-day Average Concentration - Human Health Protection
 - c. Instantaneous Maximum Concentration - Saltwater Aquatic Life Protection
6. No Numerical Objectives Used - Constituent is an Indicator of Other Contaminants

DEFINITION OF TERMS IN CONDITIONS FOR ITEM 25

Total Petroleum Hydrocarbon (TPH): Determination of concentration of residual gasoline and diesel in a soil shall utilize US EPA test method 8015 (carbon ranges C₄ through C₂₄), based on wet-weight total concentrations.

Total Recoverable Petroleum Hydrocarbons (TRPH): Determination of concentration of residual hydrocarbons in a soil shall utilize US EPA test method 418.1, based on wet-weight total concentrations.

Solute concentrations: Concentrations of the constituents of concern in deionized water using modified Waste Extraction Test (WET) or the Toxicity Characteristic Leaching Procedure (TCLP) methodologies.

Solute: Deionized water used as extraction solution in the WET and TCLP methodologies.

Limit: A concentration value not to be exceeded which is necessary to protect water quality and beneficial uses for the San Diego Region (This limit may be based on water quality objectives or a water quality objective multiplied by an appropriate attenuation factor).

Clean Fill: Soil containing no waste or leachate in accordance with CCR Title 23 Section 2581 (a)(3).

Attenuation: The amount of reduction in the concentration of a constituent as it moves through a soil. The reduction may result from a combination of processes, including; assimilation, adherence, adsorption, degradation, and separation of the waste from water.

CONDITIONS FOR ITEM 26. COMPOSTING AND PROCESSING, MULCHING, OR GRINDING FACILITIES

A. APPLICABILITY

1. Types of Facilities

- a. *Facilities composting Green Waste, Agricultural Waste, Food Processing Waste or Paper Waste*
- b. *Facilities processing, mulching or grinding Green Waste, or Agricultural Waste*

2. Size of Facilities

- a. *Composting and Processing, Mulching, or Grinding Operations Less than Five Hundred (500) Cubic Yards*

The submittal of a report of waste discharge and the issuance of waste discharge requirements are waived for discharges from the following:

- (1) Green waste, food processing waste, agricultural waste, or paper waste composting operations that do not exceed five hundred (500) cubic yards at any given time;
- (2) Green waste or agricultural waste processing, mulching or grinding operations that do not exceed a total volume of five hundred (500) cubic yards at any given time.

- b. *Composting and Processing, Mulching, or Grinding Operations Greater than Five Hundred (500) Cubic Yards*

For dischargers who comply with the following *Reporting, Site, Operational, and General Conditions*, the issuance of waste discharge requirements are waived for discharges resulting from the following:

- (1) The storage and treatment by composting of greater than five hundred (500) cubic yards at any given time of green waste, food processing waste, agricultural waste, or paper waste, and any additives as approved by the RWQCB; or
- (2) The storage and treatment by processing, mulching, or grinding of greater than five hundred (500) cubic yards of green waste, or agricultural waste.

B. REPORTING CONDITIONS

1. Report of Waste Discharge

The discharger shall file a report of waste discharge that includes a technical report containing a requirement-by-requirement analysis based on acceptable engineering standards and best management practices, of how the process and physical designs of the facility will ensure compliance with the conditions listed herein. The discharger shall submit a fee pursuant to CCR Title 23, Section 2200 for a Threat to Water Quality and Complexity Rating 3-C, Chapter 15.

2. General Industrial Storm Water Permit

The discharger shall file either a Notice of Intent to comply with the requirements set forth in State Water Resources Control Board (SWRCB) NPDES General Permit No. CAS000001 for the discharge of storm water or submit documentation that the NPDES storm water permit requirements are not applicable to the discharger's facility.

3. Changes in Operation

The discharger shall notify the RWQCB of:

- a. any significant change in the nature and quantity of waste composted or processed, area of operation, or season of operation; or
- b. termination of operation.

C. SITE CONDITIONS

1. Control and Management

All areas upon which green waste, food processing waste, agricultural waste, or paper waste and any feedstock additives are discharged for composting or processing, mulching, grinding, storing and treating shall be designed, constructed and maintained to prevent the degradation of waters of the state. Such facility operations shall be equivalent to the water quality protection achieved through the implementation of the following measures:

a. Precipitation

All precipitation and surface drainage from outside the compost, process, treatment or storage areas including that collected from roofed areas, and runoff from tributary areas resulting from a 25-year, 24-hour storm shall be diverted away from the such areas.

b. Runoff

The discharger shall develop and implement a plan to reduce or eliminate the discharge of pollutants into surface waters including storm water. The plan shall describe measures taken to prevent contaminated process water and reduce or eliminate contaminated storm water from being discharged from the site.

c. Water Quality Protection

All compost, process and storage areas shall be sited where soil characteristics, distance from waste to ground water, and other factors will ensure no impairment of beneficial uses of surface waters or ground waters beneath or adjacent to the facility.

d. Stream Flow

The facilities shall be protected from inundation or washout by overflow from any stream channel during a 25-year peak stream flow.

e. Surface Maintenance

If the equipment operating near or on compost, process, storage, or treatment areas produces subsidence, cracking, or otherwise compromises any surface, the discharger shall repair any damaged areas immediately.

D. OPERATIONAL CONDITIONS

1. Additives

Dischargers who use additives as defined in this document shall report to the RWQCB's Executive Officer for his approval the type, and quantity of the additive. The use of additives shall comply with the *CONDITIONS* listed in this document.

2. Discharge Specifications

The discharge of green waste, food processing waste, agricultural waste, or paper waste for storage and treatment by composting or processing, grinding, or mulching shall not cause or threaten to cause a condition of contamination, pollution or nuisance.

3. Maintenance

Containment structures such as embankments, liners or surface impoundments shall be maintained in order to ensure proper performance whenever wastes are discharged.

4. Wet Weather Preparations

Prior to the rainy season, the discharger shall conduct a survey of the operation to ensure that the site has been graded and prepared to prevent erosion and to prevent ponding of waste water at any location not designed and operated to retain water.

5. Inspections

The discharger shall inspect compost, process, storage and treatment areas for emergence of leachate, ponding, or surface failures such as cracking or subsidence; such inspections shall be frequent enough to ensure compliance with the Conditions of this waiver. If visible leachate, ponding, cracking, or subsidence of surfaces is observed, the discharger shall immediately take necessary measures to maintain the performance standards described in *SITE CONDITIONS C*.

E. GENERAL CONDITIONS

1. Prohibitions

The inclusion of the following wastes for treatment by composting or processing under the conditions of this waiver are prohibited:

- a. municipal solid waste;
- b. sludges (including sewage sludge, water treatment sludge, and industrial sludge);
- c. septage;
- d. liquid wastes, unless specifically approved by the Regional Board;
- e. animal waste, except manure when used as an additive;
- f. oil and grease; and
- g. hazardous, designated, and any other wastes determined by the Regional Board to pose a potential threat to water quality.

2. Entry and Inspection

The discharger shall allow the RWQCB, or an authorized representative upon the presentation of credentials and other documents as may be required by law, to:

- a. Enter upon the discharger's premises where a conditionally waived facility or activity is located or conducted, or where records must be kept under the conditions of this waiver;
- b. Have access to and copy, at reasonable times, any records that must be kept under the conditions of this waiver;
- c. Inspect at reasonable times any facilities, equipment (including monitoring and control equipment), practices, or operations regulated or required under this waiver; and
- d. Sample or monitor at reasonable times, for the purposes of assuring compliance with this waiver or as otherwise authorized by the California Water Code, any substances or parameters at any location.

DEFINITION OF TERMS IN CONDITIONS FOR ITEM 26

GREEN WASTE: Material that consists of or contains waste from plants, including leaves, clippings, cuttings, trimmings of grass, weeds, shrubbery, bushes, or trees, residential or community garden wastes, and untreated wood wastes.

FOOD PROCESSING WASTE: Material that consists of or contains only pre-processed and post-processed waste derived from plants, or foods processed or produced at restaurants, hospitals and food distributors.

AGRICULTURAL WASTE: Material that consists of the plant waste coming directly from an agricultural commodity, and is the product of farms and ranches and by-products processed from these products, as defined in Division 21, Part 2, Chapter 1 Section 58619 of the Food and Agriculture Code. Agricultural waste includes agricultural, floricultural, silvicultural, vermicultural or viticultural products.

PAPER WASTE: Material that consists of nonhazardous paper and paper by-products.

ADDITIVE: Material that consists of waste or products which are approved by the RWQCB's Executive Officer for mixture with feedstock or treated waste to adjust the moisture level, the carbon to nitrogen ratio, or the porosity of the wastes to create a condition favorable to the processing, or to improve the end-product. Additives may include manures, fertilizers, and chemical amendments.

DISCHARGER: Any person who discharges waste which could affect the quality of waters of the state, and includes any person who owns a waste management unit or who is responsible for the operation of a waste management unit pursuant to Title 23, California Code of Regulations, Section 2601.

CONDITIONS FOR ITEM 28. PERMANENT RECLAIMED WATER PROJECTS:

1. The discharger shall submit a report of waste discharge pursuant to Section 13260 or 13522.5 of the California Water Code. This report shall contain sufficient technical information from which the Regional Board can determine if the proposed discharge complies with all applicable reclamation regulations; and
2. The proposed discharge of reclaimed water must be in compliance with the California Code of Regulations, Title 22, Division 4, Chapter 3, Articles 1 - 10; and
3. The proposed discharge of reclaimed water must be in compliance with the Water Quality Control Plan, San Diego Basin (9); and
3. The report of waste discharge must contain a letter from the local health department of the State Department of Health Services stating that the proposed project complies with all State and local Health requirements for the use of reclaimed water. This letter shall also specify any monitoring required to demonstrate compliance with Title 22, Division 4, Chapter 3, Reclamation Criteria, Articles 2, 3, 4, 5 and 5.1; and
5. Temporary waiver's of waste discharge requirements remain in effect for a project until the Regional Board is able to adopt permanent requirements. The Regional Board will adopt requirements, as appropriate, at the earliest possible opportunity, and in accordance with Regional Board priorities.

