

State of California
STATE WATER RESOURCES CONTROL BOARD

1988

CALIFORNIA OCEAN PLAN

WATER QUALITY CONTROL PLAN

OCEAN WATERS OF CALIFORNIA

Adopted and Effective

September 22, 1988

STATE WATER RESOURCES CONTROL BOARD
RESOLUTION NO. 88-111

WATER QUALITY CONTROL PLAN FOR OCEAN WATERS OF CALIFORNIA
CALIFORNIA OCEAN PLAN

WHEREAS:

1. The State Board adopted the Ocean Plan on July 6, 1972 and revised the plan in 1978 and 1983.
2. The State Board is responsible for reviewing Ocean Plan water quality standards and for modifying and adopting standards in accordance with Section 303(c)(1) of the Federal Clean Water Act and Section 13170.2(b) of the California Water Code.
3. The State Board prepared and circulated a draft Functional Equivalent Document in accordance with the provisions of the California Environmental Quality Act, California Administrative Code 15251(g).
4. The State Board conducted a public hearing in Sacramento on June 20, 1988 to solicit comments regarding the proposed amendments of the Ocean Plan, has reviewed and considered carefully all comments and testimony received and considered the information contained in the Document prior to approval of the California Ocean Plan.
5. The California Ocean Plan as approved will not have a significant adverse effect on the environment.

THEREFORE BE IT RESOLVED:

1. That the State Board approves the Functional Equivalent Document for the amendment of the Water Quality Control Plan for Ocean Waters of California.
2. That the State Board hereby adopts the California Ocean Plan as amended (attached).
3. That the State Board authorizes the Executive Director, or his designee, to transmit the Plan to the Environmental Protection Agency, Region 9 in compliance with Section 303(c)(1) of the Clean Water Act.
4. That the State Board declares its intent to require continual monitoring of the marine environment to assure that the Plan reflects the latest available data and that the water quality objectives are adequate to fully protect indigenous marine species and to protect human health.

CERTIFICATION

The undersigned, Administrative Assistant to the Board, does hereby certify that the foregoing is a full, true, and correct copy of a resolution duly and regularly adopted at a meeting of the State Water Resources Control Board held on September 22, 1988.

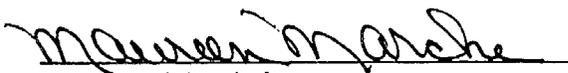

Maureen Marche
Administrative Assistant to the Board

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CALIFORNIA OCEAN PLAN
WATER QUALITY CONTROL PLAN FOR
OCEAN WATERS OF CALIFORNIA

INTRODUCTION

In furtherance of legislative policy set forth in Section 13000 of Division 7 of the California Water Code (Stats. 1969, Chap. 482) pursuant to the authority contained in Section 13170 and 13170.2 (Stats. 1971, Chap. 1288) the State Water Resources Control Board hereby finds and declares that protection of the quality of the ocean* waters for use and enjoyment by the people of the State requires control of the discharge of waste* to ocean* waters in accordance with the provisions contained herein. The Board finds further that this plan shall be reviewed at least every three years to guarantee that the current standards are adequate and are not allowing degradation* to marine species or posing a threat to public health.

This plan is applicable, in its entirety, to point source discharges to the ocean*. Nonpoint sources of waste* discharges to the ocean* are subject to Chapter I - Beneficial Uses, Chapter II - Water Quality Objectives, Chapter III - General Requirements, Chapter IV - Table B (wherein compliance with water quality objectives shall, in all cases, be determined by direct measurements in the receiving waters) and Chapter V - Discharge Prohibitions.

This plan is not applicable to discharges to enclosed* bays and estuaries* or inland waters nor is it applicable to vessel wastes, or the control of dredging spoil.

Provisions regulating the thermal aspects of waste* discharged to the ocean* are set forth in the Water Quality Control Plan for the Control of Temperature in the Coastal and Interstate Waters and Enclosed* Bays and Estuaries* of California.

Chapter I
BENEFICIAL USES

The beneficial uses of the ocean* waters of the State that shall be protected include industrial water supply, water contact and non-contact recreation, including aesthetic enjoyment, navigation, commercial and sport fishing, mariculture*, preservation and enhancement of Areas of Special Biological Significance, rare and endangered species, marine habitat, fish migration, fish spawning and shellfish* harvesting.

* See Appendix for definition of terms.

Chapter II WATER QUALITY OBJECTIVES

This chapter sets forth limits or levels of water quality characteristics for ocean* waters to ensure the reasonable protection of beneficial uses and the prevention of nuisance. The discharge of waste* shall not cause violation of these objectives.

The Water Quality Objectives and Effluent Quality Requirements are defined by a statistical distribution when appropriate. This method recognizes the normally occurring variations in treatment efficiency and sampling and analytical techniques and does not condone poor operating practices.

Compliance with the water quality objectives of this chapter shall be determined from samples collected at stations representative of the area within the waste field where initial* dilution is completed.

A. Bacteriological Characteristics

1. Body-Contact Standards

Within a zone bounded by the shoreline and a distance of 1,000 feet from the shoreline or the 30-foot depth contour, whichever is further from the shoreline, and in areas outside this zone used for body contact sports, as determined by the Regional Board, but including all kelp* beds, the following bacteriological objectives shall be maintained throughout the water column:

- a. Samples of water from each sampling station shall have a concentration of total coliform organisms less than 1,000 per 100 ml (10 per ml); provided that not more than 20 percent of the samples at any sampling station, in any 30-day period, may exceed 1,000 per 100 ml (10 per ml), and provided further that no single sample when verified by a repeat sample taken within 48 hours shall exceed 10,000 per 100 ml (100 per ml).
- b. The fecal coliform concentration based on a minimum of not less than five samples for any 30-day period, shall not exceed a log mean of 200 per 100 ml nor shall more than 10 percent of the total samples during any 60-day period exceed 400 per 100 ml.

The "Initial* Dilution Zone" of wastewater outfalls shall be excluded from designation as "kelp* beds" for purposes of bacteriological standards, and Regional Boards should recommend extension of such exclusion zone where warranted to the State Board (for consideration under Chapter VI.F.). Adventitious assemblages of kelp plants on waste discharge structures (e.g., outfall pipes and diffusers) do not constitute kelp* beds for purposes of bacteriological standards.

* See Appendix for definition of terms.

2. Shellfish* Harvesting Standards

At all areas where shellfish* may be harvested for human consumption, as determined by the Regional Board, the following bacteriological objectives shall be maintained throughout the water column:

The median total coliform concentration shall not exceed 70 per 100 ml, and not more than 10 percent of the samples shall exceed 230 per 100 ml.

B. Physical Characteristics

1. Floating particulates and grease and oil shall not be visible.
2. The discharge of waste* shall not cause aesthetically undesirable discoloration of the ocean* surface.
3. Natural* light shall not be significantly* reduced at any point outside the initial* dilution zone as the result of the discharge of waste*.
4. The rate of deposition of inert solids and the characteristics of inert solids in ocean* sediments shall not be changed such that benthic communities are degraded*.

C. Chemical Characteristics

1. The dissolved oxygen concentration shall not at any time be depressed more than 10 percent from that which occurs naturally, as the result of the discharge of oxygen demanding waste* materials.
2. The pH shall not be changed at any time more than 0.2 units from that which occurs naturally.
3. The dissolved sulfide concentration of waters in and near sediments shall not be significantly* increased above that present under natural conditions.
4. The concentration of substances set forth in Chapter IV, Table B, in marine sediments shall not be increased to levels which would degrade* indigenous biota.
5. The concentration of organic materials in marine sediments shall not be increased to levels which would degrade* marine life.
6. Nutrient materials shall not cause objectionable aquatic growths or degrade* indigenous biota.

* See Appendix for definition of terms.

D. Biological Characteristics

1. Marine communities, including vertebrate, invertebrate, and plant species, shall not be degraded*.
2. The natural taste, odor, and color of fish, shellfish*, or other marine resources used for human consumption shall not be altered.
3. The concentration of organic materials in fish, shellfish* or other marine resources used for human consumption shall not bioaccumulate to levels that are harmful to human health.

E. Radioactivity

1. Discharge of radioactive waste* shall not degrade* marine life.

Chapter III
GENERAL REQUIREMENTS FOR MANAGEMENT OF
WASTE* DISCHARGE TO THE OCEAN*

- A. Waste* management systems that discharge to the ocean* must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.
- B. Waste discharged* to the ocean* must be essentially free of:
 1. Material that is floatable or will become floatable upon discharge.
 2. Settleable material or substances that may form sediments which will degrade* benthic communities or other aquatic life.
 3. Substances which will accumulate to toxic levels in marine waters, sediments or biota.
 4. Substances that significantly* decrease the natural* light to benthic communities and other marine life.
 5. Materials that result in aesthetically undesirable discoloration of the ocean* surface.
- C. Waste* effluents shall be discharged in a manner which provides sufficient initial* dilution to minimize the concentrations of substances not removed in the treatment.
- D. Location of waste* discharges must be determined after a detailed assessment of the oceanographic characteristics and current patterns to assure that:

* See Appendix for definition of terms.

1. Pathogenic organisms and viruses are not present in areas where shellfish* are harvested for human consumption or in areas used for swimming or other body-contact sports.
2. Natural water quality conditions are not altered in areas designated as being of special biological significance or areas that existing marine laboratories use as a source of seawater.
3. Maximum protection is provided to the marine environment.

Waste* that contains pathogenic organisms or viruses should be discharged a sufficient distance from shellfishing* and body-contact sports areas to maintain applicable bacteriological standards without disinfection. Where conditions are such that an adequate distance cannot be attained, reliable disinfection in conjunction with a reasonable separation of the discharge point from the area of use must be provided. Disinfection procedures that do not increase effluent toxicity and that constitute the least environmental and human hazard should be used.

Chapter IV
QUALITY REQUIREMENTS
FOR WASTE* DISCHARGES
(EFFLUENT QUALITY REQUIREMENTS)

This chapter sets forth the quality requirements for waste* discharge to the ocean*.

Table A limitations apply only to publicly owned treatment works and industrial discharges for which Effluent Limitations Guidelines have not been established pursuant to Sections 301, 302, 304, or 306 of the Federal Clean Water Act.

Table B limitations apply to all discharges within the jurisdiction of this plan.

Table A limitations, and effluent concentrations calculated from Table B limitations, shall apply to a discharger's total effluent, of whatever origin (i.e. gross, not net, discharge), except where otherwise specified in this Plan.

The State Board is authorized to administer and enforce effluent requirements established pursuant to the Federal Clean Water Act. Effluent limitations established under Sections 301, 302, 306, 307, 316, 403, and 405 of the aforementioned Federal Act and administrative procedures pertaining thereto, are included in this plan by reference. Compliance with Table A limitations, or Environmental Protection Agency Effluent Limitations Guidelines for industrial discharges, based on Best Practicable Control Technology, shall be the minimum level of treatment acceptable under this plan, and shall define reasonable treatment and waste control technology.

* See Appendix for definition of terms.

TABLE A
MAJOR WASTEWATER CONSTITUENTS AND PROPERTIES

	<u>Unit of measurement</u>	<u>Limiting Concentrations</u>		
		<u>Monthly (30 day Average)</u>	<u>Weekly (7 day Average)</u>	<u>Maximum at any time</u>
Grease and Oil	mg/l	25	40	75
Suspended Solids			see below+	
Settleable Solids	ml/l	1.0	1.5	3.0
Turbidity	NTU	75	100	225
pH	units	within limits of 6.0 to 9.0 at all times		
Toxicity* Concentration	tu	1.5	2.0	2.5

+Suspended Solids: Dischargers shall, as a 30-day average, remove 75% of suspended solids from the influent stream before discharging wastewaters to the ocean*, except that the effluent limitation to be met shall not be lower than 60 mg/l. Regional Boards may, recommend that the State Board (Chapter VI.F.), with the concurrence of the Environmental Protection Agency, adjust the lower effluent concentration limit (the 60 mg/l above) to suit the environmental and effluent characteristics of the discharge. As a further consideration in making such recommendation for adjustment, Regional Boards should evaluate effects on existing and potential water* reclamation projects.

If the lower effluent concentration limit is adjusted, the discharger shall remove 75% of suspended solids from the influent stream at any time the influent concentration exceeds four times such adjusted effluent limit.

Effluent limitations shall be imposed in a manner prescribed by the State Board such that the concentrations set forth below as water quality objectives shall not be exceeded in the receiving water upon completion of initial* dilution, except that limitations indicated for radioactivity shall apply directly to the undiluted waste* effluent.

* See Appendix for definition of terms.

TABLE B
TOXIC MATERIALS LIMITATIONS

	<u>Limiting Concentrations</u>			
	<u>Unit of Measurement</u>	<u>6-Month Median</u>	<u>Daily Maximum</u>	<u>Instantaneous Maximum</u>
Arsenic	ug/l	8	32	80
Cadmium	ug/i	1	4	10
Chromium (Hexavalent) (see below, a)	ug/l	2	8	20
Copper	ug/l	3	12	30
Lead	ug/l	2	8	20
Mercury	ug/l	0.04	0.16	0.4
Nickel	ug/l	5	20	50
Silver	ug/l	0.7	2.8	7
Zinc	ug/l	20	80	200
Cyanide	ug/l	5	20	50
Total Chlorine Residual (For intermittent chlorine sources, see below b)	ug/l	2	11	126
Ammonia (expressed as nitrogen)	ug/l	600	2400	6000
Toxicity* Concentration	tu	0.05	-	-
Phenolic Compounds (non-chlorinated)	ug/l	30	120	300
Chlorinated Phenolics	ug/l	1	4	10
Aldrin and Dieldrin	ug/l	0.002	0.004	0.006
Chlordane* and Related Compounds	ug/l	0.003	0.006	0.009
DDT* and Derivatives	ug/l	0.001	0.002	0.003
Endrin	ug/l	0.002	0.004	0.006
HCH*	ug/l	0.004	0.008	0.012
PCBs	ug/l	0.003	0.006	0.009
Toxaphene	ug/l	0.007	0.014	0.021
Radioactivity	Not to exceed limits specified in Title 17, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269 of the California Administrative Code.			

- a) Dischargers may at their option meet this limitation as a total chromium limitation.
- b) Water quality objectives for total chlorine residual applying to intermittent discharges not exceeding two hours, shall be determined through the use of the following equation:

* See Appendix for definition of terms.

$$\log y = -0.33 (\log x) + 2.1$$

where: y = the water quality objective (in ug/l) to apply when chlorine is being discharged;
x = the duration of uninterrupted chlorine discharge in minutes.

Effluent limitations for substances identified in Table B with the exception of Radioactivity, shall be determined through the use of the following equation:

$$C_e = C_o + D_m (C_o - C_s) \quad (1)$$

where:

C_e = the effluent concentration limit,
C_o = the concentration to be met at the completion of initial* dilution,
C_s = background seawater concentration (see Table C below),
D_m = minimum probable initial* dilution expressed as parts seawater per part wastewater.

The Executive Director of the State Board shall identify standard dilution models for use in determining D_m, and shall assist the Regional Board in evaluating D_m for specific waste discharger. Dischargers may propose alternative methods of calculating D_m, and the Regional Board may accept such method upon verification of its accuracy and applicability.

TABLE C
BACKGROUND SEAWATER CONCENTRATIONS (C_s)

<u>Waste Constituent</u>	<u>C_s (ug/l)</u>
Arsenic	3
Cadmium	0
Chromium (Hexavalent)	0
Copper	2
Lead	0
Mercury	0.0005
Nickel	0
Silver	0.16
Zinc	8
Cyanide	0
Phenolic Compounds	0
Total Chlorine Residual	0
Ammonia (Expressed as nitrogen)	0
Toxicity* Concentration (in toxicity units)	0
Chlorinated Pesticides and PCB's	0

* See Appendix for definition of terms.

The six-month median effluent concentration limit shall apply as a moving median of daily values for any 180 day period in which daily values represent flow weighted average concentrations within a 24-hour period. For intermittent discharges, the daily value shall be considered to equal zero for days on which no discharge occurred.

The daily maximum effluent concentration limit shall apply to flow weighted 24 hour composite samples.

The instantaneous maximum shall apply to grab sample determinations.

Discharge requirements shall also specify effluent requirements in terms of mass emission rate limits utilizing the general formula:

$$\text{lbs/day} = 8.34 \times C_e \times Q \quad (2)$$

The six-month median limit on daily mass emissions shall be determined using the six-month median effluent concentration as C_e and the observed flow rate Q in millions of gallons per day. The daily maximum mass emission shall be determined using the daily maximum effluent concentration limit as C_e and the observed flow rate Q in millions of gallons per day.

Any significant change in waste* flow shall be cause for reevaluating effluent quality requirements.

If a calculated C_e value falls below the limit of detection of the test method specified in the Code of Federal Regulations, 40 CFR 136, the limit of detection shall serve as the limiting effluent concentration.

The State or Regional Board may, at their discretion, specify test methods which are more sensitive than those specified in 40 CFR 136. Total chlorine residual is likely to be a "limit of detection" effluent requirement in many cases. The limit of detection of total chlorine residual in standard test methods is less than, or equal to, 20 ug/l.

Due to the large total volume of powerplant and other heat exchange discharges, special procedures must be applied for determining compliance with Table B limitations on a routine basis. Effluent concentration values (C_e) shall be determined through the use of equation 1 considering the minimal probable initial* dilution of the combined effluent (in-plant waste streams plus cooling water flow). These concentration values shall then be converted to mass emission limitations as indicated in equation 2. The mass emission limits will then serve as requirements applied to all inplant waste* streams taken together which discharge into the cooling water flow, except that limitations on total chlorine residual, toxicity* concentration and instantaneous maximum limitations on Table B toxic materials shall apply to, and be measured in, the combined final effluent, as adjusted for dilution with ocean water. The Table B limitation on radioactivity shall apply to the undiluted combined final effluent.

* See Appendix for definition of terms.

Chapter V
DISCHARGE PROHIBITIONS

A. Hazardous Substances

The discharge of any radiological, chemical, or biological warfare agent or high-level radioactive waste* into the ocean* is prohibited.

B. Areas of Special Biological Significance

Waste* shall not be discharged to areas designated as being of special biological significance. Discharges shall be located a sufficient distance from such designated areas to assure maintenance of natural water quality conditions in these areas.

C. Sludge

Pipeline discharge of sludge to the ocean* is prohibited by federal law; the discharge of municipal and industrial waste* sludge directly to the ocean*, or into a waste* stream that discharges to the ocean*, is prohibited by this Plan. The discharge of sludge digester supernatant directly to the ocean*, or to a waste* stream that discharges to the ocean* without further treatment, is prohibited.

It is the policy of the State Board that the treatment, use and disposal of sewage sludge shall be carried out in the manner found to have the least adverse impact on the total natural and human environment. Therefore, if federal law is amended to permit such discharge, which could affect California waters, the State Board may consider requests for exceptions to this section under Chapter VI, F. of this Plan, provided further that an Environmental Impact Report on the proposed project shows clearly that any available alternative disposal method will have a greater adverse environmental impact than the proposed project.

D. By-Passing

The by-passing of untreated wastes* containing concentrations of pollutants in excess of those of Table A or Table B to the ocean* is prohibited.

Chapter VI
GENERAL PROVISIONS

A. Effective Date

This Plan is in effect as of the date of adoption by the State Water Resources Control Board.

* See Appendix for definition of terms.

B. Waste Discharge Requirements

The Regional Boards may establish more restrictive water quality objectives and effluent quality requirements than those set forth in this Plan as necessary for the protection of beneficial uses of ocean* waters.

Regional Boards may impose alternative less restrictive provisions than those contained within Table B of the Plan, provided an applicant can demonstrate that:

Reasonable control technologies (including source control, material substitution, treatment and dispersion) will not provide for complete compliance; or

Any less stringent provisions would encourage water* reclamation;

Provided further that:

- a) Any alternative water quality objectives shall be below the conservative estimate of chronic toxicity, as given in Table D below, and such alternative will provide for adequate protection of the marine environment;
- b) A receiving water toxicity* objective of 0.05 tu is not exceeded; and
- c) The State Board grants an exception (Chapter VI.F.) to the Table B limits as established in the Regional Board findings and alternative limits.

TABLE D
CONSERVATIVE ESTIMATES OF CHRONIC TOXICITY

<u>Constituent</u>	<u>Estimate of Chronic Toxicity (ug/l)</u>
Arsenic	19
Cadmium	8
Hexavalent Chromium	18
Copper	5
Lead	22
Mercury	0.4
Nickel	48
Silver	3
Zinc	51
Cyanide	a)(see below)
Total Chlorine Residual	10.0
Ammonia	4,000.0
Phenolic Compounds (non-chlorinated)	a)
Chlorinated Phenolics	a)
Chlorinated Pesticides and PCB's	b)

* See Appendix for definition of terms.

- a. There is insufficient data for cyanide and phenolics to estimate chronic toxicity levels. Requests for modification of water quality objectives for any of these three waste* constituents must be supported by chronic toxicity data for representative sensitive species. In such cases, applicants seeking modification of water quality objectives should consult the Regional Water Quality Control Board to determine the species and test conditions necessary to evaluate chronic effects.
- b. Limitations on chlorinated pesticides and PCB's shall not be modified so that the total of these compounds is increased above the limitations in Table B (6-Month Median = 0.022 ug/l, Daily Maximum = 0.044 ug/l, and Instantaneous Maximum = 0.066 ug/l).

C. Revision of Waste* Discharge Requirements

The Regional Board shall revise the waste* discharge requirements for existing discharges as necessary to achieve compliance with this Plan and shall also establish a time schedule for such compliance.

D. Monitoring Program

The Regional Board shall require dischargers to conduct self-monitoring programs and submit reports necessary to determine compliance with the waste* discharge requirements, and may require dischargers to contract with agencies or persons acceptable to the Regional Board to provide monitoring reports.

Where the Regional Board is satisfied that any substance(s) of Table B will not significantly occur in a discharger's effluent, the Regional Board may elect not to require monitoring for such substance(s), provided the discharger submits periodic certification that such substance(s) are not added to the waste* stream, and that no change has occurred in activities that could cause such substance(s) to be present in the waste* stream. Such election does not relieve the discharger from the requirement to meet the limitations of Table B.

The Regional Board may require monitoring of bioaccumulation of toxicants in the discharge zone. Organisms and techniques for such monitoring shall be chosen by the Regional Board on the basis of demonstrated value in waste* discharge monitoring.

E. Areas of Special Biological Significance

Areas of special biological significance shall be designated by the State Board after a public hearing by the Regional Board and review of its recommendations.

* See Appendix for definition of terms.

F. State Board Exceptions to Plan Requirements

The State Board may, in compliance with the California Environmental Quality Act, subsequent to a public hearing, and with the concurrence of the Environmental Protection Agency, grant exceptions where the Board determines:

1. The exception will not compromise protection of ocean* waters for beneficial uses, and
2. The public interest will be served.

* See Appendix for definition of terms.

APPENDIX

DEFINITION OF TERMS

CHLORDANE AND RELATED COMPOUNDS shall mean the sum of chlordane (cis + trans), trans-nonachlor, oxychlordane, heptachlor and heptachlor epoxide.

DDT AND DERIVATIVES shall mean the sum of the p,p' and o,p' isomers of DDT, DDD (TDE) and DDE.

DEGRADE: Degradation shall be determined by comparison of the waste field and reference site(s) for characteristics such as species diversity, population density, contamination, growth anomalies, debility, or supplanting of normal species by undesirable plant and animal species. Degradation occurs if there are significant differences in any of three major biotic groups, namely, demersal fish, benthic invertebrates, or attached algae. Other groups may be evaluated where benthic species are not affected, or are not the only ones affected.

ENCLOSED BAYS are indentations along the coast which enclose an area of oceanic water within distinct headlands or harbor works. Enclosed bays include all bays where the narrowest distance between headlands or outermost harbor works is less than 75 percent of the greatest dimension of the enclosed portion of the bay. This definition includes but is not limited to: Humboldt Bay, Bodega Harbor, Tomales Bay, Drakes Estero, San Francisco Bay, Morro Bay, Los Angeles Harbor, Upper and Lower Newport Bay, Mission Bay, and San Diego Bay.

ESTUARIES AND COASTAL LAGOONS are waters at the mouths of streams which serve as mixing zones for fresh and ocean waters during a major portion of the year. Mouths of streams which are temporarily separated from the ocean by sandbars shall be considered as estuaries. Estuarine waters will generally be considered to extend from a bay or the open ocean to the upstream limit of tidal action but may be considered to extend seaward if significant mixing of fresh and salt water occurs in the open coastal waters. The waters described by this definition include but are not limited to the Sacramento-San Joaquin Delta as defined by Section 12220 of the California Water Code, Suisun Bay, Carquinez Strait downstream to Carquinez Bridge, and appropriate areas of the Smith, Klamath, Mad, Eel, Noyo, and Russian Rivers.

HCH shall mean the sum of the alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

INITIAL DILUTION is the process which results in the rapid and irreversible turbulent mixing of wastewater with ocean water around the point of discharge.

For a submerged buoyant discharge, characteristic of most municipal and industrial wastes that are released from the submarine outfalls, the momentum of the discharge and its initial buoyancy act together to produce turbulent mixing. Initial dilution in this case is completed when the diluting

* See Appendix for definition of terms.

wastewater ceases to rise in the water column and first begins to spread horizontally.

For shallow water submerged discharges, surface discharges, and nonbuoyant discharges, characteristic of cooling water wastes and some individual discharges, turbulent mixing results primarily from the momentum of discharge. Initial dilution, in these cases, is considered to be completed when the momentum induced velocity of the discharge ceases to produce significant mixing of the waste, or the diluting plume reaches a fixed distance from the discharge to be specified by the Regional Board, whichever results in the lower estimate for initial dilution.

For the purpose of this Plan, minimum initial dilution is the lowest average initial dilution within any single month of the year. Dilution estimates shall be based on observed waste flow characteristics, observed receiving water density structure, and the assumption that no currents, of sufficient strength to influence the initial dilution process, flow across the discharge structure.

KELP BEDS, for purposes of the bacteriological standards of this plan, are significant aggregations of marine algae of the genera Macrocystis and Nereocystis. Kelp beds include the total foliage canopy of Macrocystis and Nereocystis plants throughout the water column.

MARICULTURE is the culture of plants and animals in marine waters independent of any pollution source.

NATURAL LIGHT: Reduction of natural light may be determined by the Regional Board by measurement of light transmissivity or total irradiance, or both, according to the monitoring needs of the Regional Board.

OCEAN WATERS are the territorial marine waters of the State as defined by California law to the extent these waters are outside of enclosed bays, estuaries, and coastal lagoons. If a discharge outside the territorial waters of the State could affect the quality of the waters of the State, the discharge may be regulated to assure no violation of the Ocean Plan will occur in ocean waters.

SHELLFISH are organisms identified by the California Department of Health Services as shellfish for public health purposes (i.e. mussels, clams and oysters).

SIGNIFICANT difference is defined as a statistically significant difference in the means of two distributions of sampling results at the 95 percent confidence level.

TOXICITY CONCENTRATION: This parameter shall be used to measure the acceptability of waters for supporting a healthy marine biota until improved methods are developed to evaluate biological response.

* See Appendix for definition of terms.

a. Toxicity Concentration (Tc)

Expressed in Toxicity Units (tu)

$$Tc (tu) = \frac{100}{96\text{-hr. TLM\%}}$$

b. Median Tolerance Limit (TLM%)

TLM (percent waste giving 50% survival of test organisms) shall be determined by static or continuous flow bioassay techniques using standard test species. If specific identifiable substances in wastewater can be demonstrated by the discharger as being rapidly rendered harmless upon discharge to the marine environment, but not as a result of dilution, the TLM may be determined after the test samples are adjusted to remove the influence of those substances.

When it is not possible to measure the 96-hour TLM due to greater than 50 percent survival of the test species in 100 percent waste, the toxicity concentration shall be calculated by the expression:

$$Tc (tu) = \frac{\log (100 - S)}{1.7}$$

S = percentage survival in 100% waste. If S > 99, Tc shall be reported as zero.

WASTE: As used in this Plan, waste includes a discharger's total discharge, of whatever origin, i.e. gross, not net, discharge.

WATER RECLAMATION: The treatment of wastewater to render it suitable for reuse, the transportation of treated wastewater to the place of use, and the actual use of treated wastewater for a direct beneficial use or controlled use that would not otherwise occur.

* See Appendix for definition of terms.