

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—  
LOS ANGELES REGION**

101 CENTRE PLAZA DRIVE  
MONTEREY PARK, CA 91754-2156  
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CI 2171

March 9, 1993

Mr. George T. Ohara, Chief Engineer  
Wastewater Treatment Division  
Department of Public Works  
City of Los Angeles  
555 Terminal Way  
San Pedro, CA 90731

WASTE DISCHARGE REQUIREMENTS - CITY OF LOS ANGELES, TERMINAL ISLAND  
TREATMENT PLANT) (NPDES PERMIT NO. CA0053856)

On February 19, 1993, we transmitted a copy of the revised tentative requirements for your discharge to the Los Angeles Harbor.

Pursuant to Division 7 of the California Water Code, this Regional Board at a public hearing held on March 1, 1993, reviewed the tentative waste discharge requirements, considered all factors regarding this discharge, and adopted Order No. 93-014 for the waste discharge requirements. A copy of the Order is attached. Order No. 93-014 also serves as a permit under the National Pollutant Discharge Elimination System (NPDES).

You are required to implement the accompanying Monitoring and Reporting Program (which includes the Pretreatment and Sludge Reporting Programs, and the State Water Resources Control Board's General NPDES permit for discharge of storm water associated with industrial activity) on the effective date of Order No. 93-014. The first monitoring report under this program is due by May 1, 1993. Please note that any monitoring report due under your previous Monitoring and Reporting Program before transition to the new program is still required and must be submitted by the due date.

Please reference all technical and monitoring reports to our compliance file No. CI-2171 and submit to the attention of our Technical Support Unit. Do not combine other reports, such as progress or technical reports under Items E. 5 and F. with your monitoring reports but submit each type of report as a separate document.

To save printing and postage costs, we are not sending the following attachments to those on the mailing list:

1. Attachment 1 - Requirements for Pretreatment. Annual Report;
2. Attachment 2 - Standard Provisions;

3. Attachment 3 - Requirements for Sludge Reporting; and
4. Attachment 4 - State Board's Order No. 91-13-DWQ as amended by Order No. 92-12-DWQ for storm water discharge.

Copies of the above will be furnished to anyone who requests them.

If you have any questions, please contact me at (213) 266-7594 or Alex Fu at (213) 266-7593.

  
WINNIE D. JESENA, P.E.  
Chief, Coastal Surface  
Water Regulatory Unit

Enclosures

cc: Environmental Protection Agency, Region 9,  
Permit Branch (W-5)  
U.S. Army Corps of Engineers  
NOAA, National Marine Fisheries Service  
Department of Interior, U.S. Fish and Wildlife Service  
Mr. Archie Matthews, State Water Resources Control Board,  
Division of Water Quality  
Mr. Jorge Leon, State Water Resources Control Board, Office  
of Chief Counsel  
Department of Fish and Game, Marine Resources Region  
Department of Fish and Game, Region 5  
Department of Water Resources  
Department of Health Services, Sanitary Engineering Section  
California Coastal Commission, South Coast District  
South Coast Air Quality Management District  
Los Angeles County, Department of Public Works, Waste  
Management Division  
County Sanitation Districts of Los Angeles County

STATE OF CALIFORNIA  
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION

ORDER NO. 93-014  
NPDES NO. CA0053856

WASTE DISCHARGE REQUIREMENTS  
FOR  
CITY OF LOS ANGELES  
(Terminal Island Treatment Plant)

The California Regional Water Quality Control Board, Los Angeles Region, finds:

1. City of Los Angeles (hereinafter referred to as City) discharges wastes from Terminal Island Treatment Plant (TITP) under waste discharge requirements contained in Order No. 77-113, adopted on June 27, 1977. This Order, which serves as a National Pollutant Discharge Elimination System Permit (NPDES Permit No. CA0053856), was amended by Order No. 80-33, adopted on July 28, 1980, for the addition of "Standard Provisions and Reporting Requirements for a Pretreatment Program".
2. The City has filed a report of waste discharge in a timely manner for renewal of its waste discharge requirements and NPDES permit.
3. The City operates the TITP at 445 Ferry Street, San Pedro, California, with an average dry weather design treatment capacity of 30 million gallons per day (mgd). TITP currently discharges during dry weather an average of 20 mgd of secondarily treated municipal wastes through an outfall line into Los Angeles Outer Harbor, a water of the United States, about 1,500 feet east of Pier 301.
4. Existing treatment at TITP consists of bar screening, aerated grit removal, primary sedimentation, activated sludge biological treatment, secondary clarification, and an effluent chlorination system for emergency purposes. The discharge to the harbor is not chlorinated. Sludge is anaerobically digested, dewatered and hauled to a landfill.
5. The existing outfall line extends 440 feet beyond the shoreline into Los Angeles Outer Harbor and discharges at a depth of 21 feet at Latitude 33°44'14" and Longitude 118°15'33". To accommodate the Port of Los Angeles' expansion project (2020 Plan), the City has to relocate this outfall (but still within the harbor) in the near future. Currently the City is in the process of preparing the Environmental Impact Report (EIR) for the outfall relocation.

6. The circulation pattern of the discharge is such that the nearby inner harbor, public bathing beach areas and marinas may be affected by the discharge.
7. The State Water Resources Control Board adopted a Water Quality Control Policy for the Enclosed Bays and Estuaries of California on May 16, 1974. Los Angeles Harbor is defined by that policy as an enclosed bay. The policy provides that municipal wastewater discharges to enclosed bays shall be phased out at the earliest practicable date. Exceptions to this provision may be granted by a Regional Board only when it can be demonstrated that the wastewater in question would consistently be treated and discharged in such a manner that it would enhance the quality of receiving waters above that which would occur in the absence of the discharge.
8. On April 11, 1991, the State Water Resources Control Board adopted a Water Quality Control Plan for the Enclosed Bays and Estuaries of California. The plan incorporated the May 1974 Enclosed Bays and Estuaries Policy and contains narrative and numerical water quality objectives for the protection of beneficial uses. This Order implements the objectives of that Plan.
9. The State Water Resources Control Board adopted a revised Water Quality Control Plan for the Ocean Waters of California (Ocean Plan) on March 22, 1990, which contains bacteriological objectives for the coastal waters of California. The receiving water bacteriological limits in this Order are based on the Ocean Plan's objectives.
10. The Regional Board adopted a revised Water Quality Control Plan for the Los Angeles River Basin (4B) on June 3, 1991. The plan incorporates by reference the State Water Resources Control Board's water quality control plans and policies on antidegradation, ocean waters and temperature. The plan also contains water quality objectives for the Los Angeles Harbor.
11. The beneficial uses of the Los Angeles Harbor are:  
  
Outer Harbor - navigation, non-contact water recreation, commercial and sport fishing, marine habitat, preservation of rare and endangered species, and shellfish harvesting.  
  
Inner Harbor, Beach Areas and Marinas - in addition to the beneficial uses enumerated under the outer harbor the

surrounding receiving waters are also used for industrial service supply and contact water recreation.

12. Order No. 77-113 prohibited discharge of municipal wastewater into Los Angeles Harbor but provided that the City could attempt to show that the discharge enhances the quality of the receiving waters. However, studies conducted by the City through 1985 failed to demonstrate that continued discharge from TITP would fulfill the bioenhancement provision of the Bays and Estuaries Plan. Therefore, on November 25, 1985, the Regional Board adopted Order No. 85-77 requiring the City to comply with the discharge prohibition contained in Order No. 77-113 and to remove its discharge from the harbor as soon as practicable.

Since 1985 the City has conducted studies on alternatives to remove the discharge from the harbor, but has not yet made a final decision on the approach to solve the problem. The City is currently preparing an Environmental Impact Report on alternatives of removing the discharge from the harbor including water reclamation. The draft EIR was released for public comments on February 4, 1993.

The City is also pursuing an exemption from the Enclosed Bays and Estuaries Policy's discharge prohibition and, instead, proposing partial water reclamation of tertiary treated effluent in lieu of bioenhancement. If this exemption is not forthcoming by December 31, 1993, the City proposes to move rapidly ahead with the design of an outfall to remove the discharge out of the harbor by 1996.

In the meantime, until the discharge is removed from the harbor, the waste discharge requirements for TITP need to be updated to assure that the beneficial uses of the receiving waters are protected insofar as possible.

13. Cease and Desist Order No. 79-133 and Clean Up Abatement Order No. 83-5 were issued to the City on July 23, 1979, and May 4, 1983, respectively, mainly for violations of BOD, suspended solids, settleable solids, and/or turbidity. Currently, the City is not in consistent compliance with these orders.
14. The discharge from TITP intermittently violates effluent limits - BOD, suspended solids, settleable solids - for various reasons (power outage, slug flows from industrial users, operator's error). "Quick fix" corrective measures

December 21, 1992  
Revised Mar. 1, 1993

were implemented for each incident but there appears to be a pattern of long-term chronic violations that must be addressed to ensure consistent compliance with requirements.

15. Staff level discussions between Board and City staffs over the past two years indicate filtration may be a successful mitigation measure. On October 15, 1992, the President of the City's Department of Public Works informed the Regional Board the City will provide filtration facilities for the TITP effluent to mitigate the violations and also enhance the water reclamation effort.

In recent meetings, City representatives informed Board staff that the City is moving ahead with the design of filtration facilities, concurrent to its pursuit for an exemption to continue discharging to the harbor. The City's plans are formalized in a letter dated February 11, 1993, from the President of the Board of Public Works.

16. Effluent limitations, national standards of performance, toxic and pretreatment effluent standards, and ocean discharge criteria established pursuant to Section 208(b), 301, 302, 303(d), 304, 306, 307, and 403 of the Federal Clean Water Act and amendments thereto are applicable to this discharge.
17. The requirements contained in this Order were established by considering all the water quality control plans, policies, and regulations mentioned above. For some constituents (NH<sub>3</sub>, nitrogen, arsenic, cyanide, copper, mercury, silver, and zinc) effluent limitations are based on plant performance data from January 1987 to December 1991. The limitations were statistically derived with the long-term average limits (30-day averages) set at the 95<sup>th</sup> percentile of a log-normal distribution. This method recognizes normal variations in treatment efficiency, sampling and analytical techniques, and is based upon the assumption that up to 5 percent of the reported values may exceed the statistically derived limits over the life of the permit. Compliance will be determined as provided in the Order and Monitoring and Reporting Program. However, substantial departure from the treatment process used and/or quality of the influent wastewater on which the performance data were obtained are not considered in this method. Should this occur during the life of this Order, the City may petition the Board for appropriate modification of the aforementioned performance-based effluent limitations.

December 21, 1992  
Revised Mar. 1, 1993

18. Based on existing effluent data, the TITP effluent can not meet the limits for copper, mercury, silver and zinc which are based on the Enclosed Bays and Estuaries Plan. This Order contains interim limits and provisions dealing with requirements of the plan.
19. Chronic toxicity testing with marine organisms was conducted under the previous monitoring program but was unsuccessful primarily due to problems with brine controls. Under the proposed Order, the effluent will be tested for chronic toxicity using fresh water species according to protocols listed in the Inland Surface Waters Plan. Should the salt content of the effluent cause the fresh water chronic toxicity to be invalid or should the estuarine species be developed, the Regional Board shall re-evaluate alternatives to using freshwater species.

The State Water Resources Control Board is in the process of reviewing the toxicity requirements in the Water Quality Control Plan for Enclosed Bays and Estuaries.

20. The requirements contained in this Order, as they are met, will be in conformance with the goals of applicable water quality control plans and will protect and maintain the beneficial uses of the receiving water.
21. The issuance of waste discharge requirements for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 of the Public Resources Code in accordance with Water Code Section 13389.

The Board has notified the discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge and has provided them with an opportunity to submit their written views and recommendations.

The Board, in a public hearing, heard and considered all comments pertaining to the discharge and to the tentative requirements.

This Order shall serve as a National Pollutant Discharge Elimination System permit pursuant to Section 402 of the Federal Clean Water Act, or amendments thereto, and shall take effect at the end of ten days from the date of its adoption, provided the Regional Administrator, EPA, has no objections.

IT IS HEREBY ORDERED that the City of Los Angeles, in order to meet the provisions contained in Division 7 of the California Water Code and regulations adopted thereunder, and the provisions of the Federal Clean Water Act and regulations and guidelines adopted thereunder, shall comply with the following:

A. DISCHARGE PROHIBITION

The discharge of municipal wastewater to Los Angeles Harbor is prohibited and shall be eliminated at the earliest practicable date.

B. EFFLUENT LIMITATIONS

Pending elimination of the discharge from the Los Angeles Harbor, the discharger shall meet the following:

1. Wastes discharged shall be limited to tertiary treated municipal wastewater only, as proposed.
2. The discharge of an effluent in excess of the following limitations is prohibited: (See footnotes on pages 9 & 10)

a. Major Wastewater Constituents

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitations<sup>[1]</sup></u>		
		<u>30-Day Average</u>	<u>7-Day Average</u>	<u>Daily Maximum</u>
BOD <sub>5</sub> 20°C	mg/l	15 <sup>[2]</sup>	30 <sup>[2]</sup>	40 <sup>[2]</sup>
	lbs/day	3,750	7,500	10,000
Suspended solids	mg/l	15 <sup>[2]</sup>	30 <sup>[2]</sup>	40 <sup>[2]</sup>
	lbs/day	5,000	7,500	10,000
Oil and grease	mg/l	10	----	15
	lbs/day	2,500	----	3,750
Settleable solids	ml/l	0.1	----	0.3
Residual chlorine	mg/l	----	----	0.1
Ammonia nitrogen	mg/l	15 <sup>[7]</sup>	----	45
	lbs/day	3,750		11,250

December 21, 1992  
 Revised Mar. 1, 1993

b. Marine Aquatic Life Toxicants

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitations<sup>(1)</sup></u>		
		<u>30-Day Average</u>	<u>Daily Average</u>	<u>Instantaneous Maximum</u>
Arsenic	µg/l	10 <sup>[5]</sup>	20	30
	lbs/day	2.5	5.0	
Cadmium	µg/l	---	9.3	43
	lbs/day		2.33	
Chromium (VI) <sup>(4)</sup>	µg/l	---	50	1100
	lbs/day		12.5	
Copper	µg/l	---	---	2.7
	lbs/day			
Cyanide	µg/l	30 <sup>[5]</sup>	300	---
	lbs/day	7.5	75	
Lead	µg/l	---	5.6	140
	lbs/day		1.40	
Mercury	ng/l	25	---	2100
	lbs/day	0.0063		
Nickel	µg/l	---	8.3	75
	lbs/day		2.08	
Selenium	µg/l	---	71	300
	lbs/day		17.76	
Silver	µg/l	---	---	2.3
	lbs/day			
Zinc	µg/l	---	86	95
	lbs/day		21.52	
DDT <sup>[5]</sup>	pg/l	600	1000	---
	lbs/day	0.15x10 <sup>-3</sup>	0.25x10 <sup>-3</sup>	
Dieldrin	pg/l	140	1900	---
	lbs/day	35x10 <sup>-6</sup>	475x10 <sup>-6</sup>	

b. Marine Aquatic Life Toxicants(continued)

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitations<sup>[1]</sup></u>		
		<u>30-Day Average</u>	<u>Daily Average</u>	<u>Instantaneous Maximum</u>
Endosulfan <sup>[5]</sup>	ng/l lbs/day	---	8.7 $2.18 \times 10^{-3}$	34
Endrin <sup>[5]</sup>	ng/l lbs/day	---	2.3 $576 \times 10^{-6}$	37
Heptachlor	ng/l lbs/day	0.17 $42.5 \times 10^{-6}$	3.6 $0.9 \times 10^{-3}$	---
Hexachloro- cyclohexane Gamma	ng/l lbs/day	62 0.0155	160 0.040	---
PCBs <sup>[5]</sup>	pg/l lbs/day	70 $17.5 \times 10^{-6}$	30,000 $7.5 \times 10^{-3}$	---
Pentachlorophenol	$\mu$ g/l lbs/day	---	7.9 1.98	13
Toxaphene	ng/l lbs/day	---	0.02 $5 \times 10^{-6}$	210
Chlordane <sup>[5]</sup>	pg/l lbs/day	81 $20.3 \times 10^{-6}$	4000 $1.0 \times 10^{-3}$	---

c. Non-Carcinogens<sup>[6]</sup>

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitations<sup>[1]</sup></u>
		<u>30-Day Average</u>
1,2-dichloro- benzene	mg/l	18
1,3-dichloro- benzene	$\mu$ g/l	2600
Fluoranthene	$\mu$ g/l	42
Toluene	mg/l	300
Tributyltin	ng/l	5.0

d. Carcinogens<sup>[6]</sup>

<u>Constituent</u>	<u>Units</u>	<u>Discharge Limitations</u> <sup>[1]</sup>
		<u>30-Day Average</u>
Aldrin	pg/l	140
Benzene	µg/l	21
Chloroform	µg/l	480
Dichloromethane	µg/l	1600
1,4-dichloro- benzene	µg/l	64
Halomethanes <sup>[5]</sup>	µg/l	480
Heptachlor epoxide	ng/l	0.07
Hexachloro- benzene	pg/l	690
Hexachloro- cyclohexane		
Alpha	ng/l	13
Beta	ng/l	46
PAHs <sup>[5]</sup>	ng/l	31
TCDD <sup>[5]</sup>		
equivalents	pg/l	0.014
2,4,6-trichloro- phenol	µg/l	1.0

Footnotes to Effluent Limitations:

- [1] The mass emission rate limitations (in lbs/day) are based on design capacity of 30 million gallons per day. For constituents which do not have mass emission rate values these shall be determined using the tabulated concentration limits and the design capacity of 30 mgd flow rate of the effluent.
- [2] These are based on permits with comparable treatment level (tertiary).
- [3] Numerical Effluent Limitations were derived statistically using data in Discharge Monitoring Reports for the period January 1987 to December 1991. The discharge limit was set at the 95th percentile (Upper Confidence Limit) using the formula,

$$\text{Limit} = \bar{X} + [t(1, \alpha 0.05), V] * S\bar{X}$$

where,  $\bar{X}$  is the sample mean,

$[t(1, \alpha 0.05), V]$  is the one tailed t-value for 95% confidence, at V degrees of freedom, and

$\bar{S}_x$  is the standard deviation of the sample.

- [4] The discharger may at its option monitor for total chromium in lieu of chromium (VI). However, in that event, total chromium concentration in excess of the chromium(VI) limitation will be considered a violation unless the results of a chromium(VI) analysis of a replicate sample indicate otherwise.
- [5] As defined in the California Enclosed Bays and Estuaries Plan, 1991.
- [6] Other carcinogens and non-carcinogens are included in Marine Aquatic Life Toxicants.
- [7] Effluent Limitation for the 30-day average was derived statistically using performance data from January 1987 to December 1989 when the plant was operated under a partial nitrification mode. Thereafter, the plant has been operated under full nitrification mode. The City now proposes to operate alternately under both modes depending on the settleability of the activated sludge.
3. The arithmetic mean values, by weight, of BOD<sub>5</sub>20°C and suspended solids for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean values, by weight, of the respective constituents for influent samples collected at approximately the same time during the same period.
  4. The pH of wastes discharged shall at all times be within the range of 6.0 to 9.0.
  5. The temperature of wastes discharged shall not exceed 100°F.
  6. The acute toxicity of the effluent shall be such that the average survival in undiluted effluent for any three (3) consecutive 96-hour static or continuous flow bioassay tests shall be at least 90%, with no single test producing less than 70% survival.

7. The chronic toxicity of the effluent shall be such that the discharge does not cause toxicity in excess of 1.0 TU<sub>c</sub> in a critical life stage test.
8. If the effluent consistently exceeds acute or chronic toxicity limitation, a toxicity reduction evaluation (TRE) shall be conducted by the discharger. The TRE shall include all reasonable steps to identify the source(s) of toxicity. Once the source of toxicity is identified, the discharger shall take all reasonable steps necessary to reduce toxicity to the required level.
9. The wastes discharged shall at all times be adequately oxidized, coagulated, clarified, and filtered.

Filtered wastewater means an oxidized, coagulated, and clarified wastewater which has been passed through natural undisturbed soils or filter media, such as sand or diatomaceous earth, so that the turbidity as determined by an approved laboratory method does not exceed an average operating turbidity of 2 turbidity units and does not exceed 5 turbidity units more than 5 percent of the time during any 24-hour period.

12. Radioactivity in the effluent shall not exceed limits specified in Title 17, Chapter 5, Subchapter 4, Group 3, Article 3, Section 30269, of the California Code of Regulations or subsequent revisions.

C. RECEIVING WATER LIMITATIONS

1. The wastes discharged shall not cause the pH of the receiving water to be less than 6.5 nor more than 8.5. The wastes discharged shall not change the normal ambient pH levels of the receiving waters by more than 0.2 units within any given 24-hour period.
2. The wastes discharged shall not cause the dissolved oxygen concentrations in the receiving waters to be depressed below 5.0 mg/l, except when natural conditions cause lesser concentrations, in which case the wastes discharged shall not cause additional reduction of the dissolved oxygen concentration.

3. The wastes discharged shall not cause the following bacteriological limitations to be exceeded in the following areas:

- a. 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 farther from the shoreline, and in areas outside this zone used for body-contact sports, the following bacteriological objectives shall be maintained throughout the water column:

Samples of water from each sampling station shall have a density 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 density, based on a minimum of not less than five samples for any 30-day period, shall not exceed a geometric 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.
- c. At all areas where shellfish may be harvested for human consumption, the following bacteriological objectives shall be maintained throughout the water column:

The median total coliform concentration for any 30-day period shall not exceed 70 per 100 ml, and not more than 10 percent of the samples collected during any 30-day period shall exceed 230 per 100 ml for a 5-tube decimal dilution test or 330 per 100 ml when the a 3-tube decimal dilution test is used.

4. The wastes discharged shall not degrade enclosed bays and estuarine communities and populations, including vertebrate, invertebrate, and plant species.

5. The wastes discharged shall not impair the natural taste and odor of fish, shellfish, or other enclosed bays and estuarine resources used for human consumption.
6. The wastes discharged shall not contain toxic pollutants at levels that will bioaccumulate in aquatic resources to levels which are harmful to human health.
7. The wastes discharged shall not contain biostimulatory substances in concentrations that promote aquatic growth to the extent that such growth causes nuisance or adversely affects beneficial uses.
8. The wastes discharged shall not produce concentrations of toxic pollutants in the receiving waters that are toxic to or produce detrimental physiological responses in human, animal or aquatic life.
9. The wastes discharged shall not cause the appearance of grease, oil or oily slick, or foam in the receiving waters.
10. The wastes discharged shall not cause the formation of sludge banks or deposits or create a nuisance due to odors or unsightliness along shores or beaches.
11. The wastes discharged shall not cause objectionable odors to emanate from the receiving waters.
12. No sewage solids or other physical evidence of waste discharge shall be visible at any time in the water or on beaches, shores, rocks, or structures.
13. The wastes discharged shall not alter the color of the receiving waters, create a visual contrast with the natural appearance of the water, nor cause aesthetically undesirable discoloration of the water surface.
14. The wastes discharged shall not significantly reduce transmittance of natural light such that the mean of sampling results for any consecutive 30-day period would be beyond one standard deviation of the mean determined for natural levels for the same period.
15. The wastes discharged shall not increase the concentration in marine sediments of substances listed in

Item B.2 above that present under natural conditions.

16. The wastes discharged shall not change the rate of deposition of inert solids and the characteristics of inert solids in marine sediments such that benthic communities are degraded.
17. The wastes discharged shall not increase the concentration of organic materials in marine sediments above that which would degrade marine life.
18. The wastes discharged shall not increase the dissolved sulfide concentration of waters in and near sediments above that present under natural conditions.
19. The wastes discharged shall not cause a surface water temperature rise greater than 4° F above ambient temperature of the receiving water at any time.

D. PRETREATMENT REQUIREMENTS

1. This Order includes the discharger's pretreatment program as previously submitted to this Board. Any change to that program shall be reported to the Board in writing and shall not become effective until approved by the Executive Officer.
2. The discharger shall be responsible for the performance of all pretreatment requirements contained in Federal Regulations 40 CFR Part 403 and shall be subject to enforcement actions, penalties, fines, and other remedies as provided in the Federal Clean Water Act, as amended. The discharger shall implement and enforce its approved Pretreatment Program. Enforcement actions may be initiated against an industrial user for noncompliance with acceptable standards and requirements as provided in the Federal Clean Water Act.
3. The discharger shall enforce the requirements promulgated under sections 307(b), 307(c), 307(d), and 402(b) of the Federal Clean Water Act. The discharger shall cause industrial users subject to the Federal Categorical Standards to achieve compliance no later than the date specified in those requirements or, in the case of a new industrial user, upon commencement of the discharge.

4. The discharger shall perform the pretreatment functions as required in Federal Regulations 40 CFR Part 403 including, but not limited to:
  - a. Implement the necessary legal authorities as provided in 40 CFR 403.8 (f) (1);
  - b. Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6;
  - c. Implement the programmatic functions as provided in 40 CFR 403.8(f) (2); and
  - d. Provide the requisite funding of personnel to implement the pretreatment program as provided in 40 CFR 403.8(f) (3).
  
5. The discharger shall submit annually a report to the Regional Board with copies to the State Board and to the U.S. Environmental Protection Agency, Region IX, describing the discharger's pretreatment activities over the previous twelve months. In the event the discharger is not in compliance with any conditions or requirements of this permit, then the discharger will also include the reasons for noncompliance and state how and when the discharger shall comply with such conditions and requirements. This annual report is due on March 1 of each year and shall contain, but not be limited to, the information required in Attachment 1 "Requirements for Pretreatment Annual Report" or an approved revised version thereof.

E. REQUIREMENTS AND PROVISIONS

1. This Order includes the attached "Standard Provisions and General Monitoring and Reporting Requirements" ("Standard Provisions") (Attachment 2). If there is any conflict between provisions stated hereinbefore and said "Standard Provisions", those provisions stated hereinbefore prevail.
  
2. Should relocation of the outfall be completed within the life of this Order the City shall file a report of material change and this Order may be revised accordingly.
  
3. In the event of changes in the wastewater treatment process and/or in the quality of the wastewater influent

that would affect the quality of the effluent within the life of this Order, the City may petition the Board for appropriate modification of the performance-based limits.

4. In the event of changes in the toxicity requirements contained in the Water Quality Control Plan for Enclosed Bays and Estuaries, this Order may be revised accordingly.
5. The City shall conduct a study to identify the sources of copper, mercury, silver and zinc. Within 90 days after adoption of this Order, the plan and schedule of the study are to be submitted to the Executive Officer for approval prior to implementation. Once a source is identified, the City shall take the necessary steps to reduce the metals in the effluent.

In the duration of the study and, if warranted, until appropriate site specific limits are prescribed by the Board, the discharger shall comply with the following limits which are based on plant performance from 1987 to 1991:

Discharge Limitations<sup>(1)</sup>

<u>Constituent</u>	<u>Units</u>	<u>30-Day Average</u>	<u>Daily Average</u>	<u>Instantaneous Maximum</u>
Copper	µg/l lbs/day	27 6.75	---	---
Mercury	ng/l lbs/day	450 0.1125	---	2100
Silver	µg/l lbs/day	3.7 0.925	---	---
Zinc	µg/l lbs/day	151 37.75	---	---

<sup>(1)</sup> The mass emission rate limitations (in lbs/day) are based on design capacity of 30 million gallons per day. For constituents which do not have mass emission rate values these shall be determined using the tabulated concentration limits and the design capacity of 30 mgd flow rate of the effluent.

6. In the determination of compliance with the 30-day average limitations, the following provisions shall apply to all constituents except those which limits are statistically derived:

a. If the analytical result of a single sample obtained during the month does not exceed the 30-day average limit for that constituent, compliance with the 30-day average limit has been established for that month.

b. If the analytical result of a single sample obtained during the month exceeds the 30-day average limit for any constituent, the discharger shall collect five additional samples at about equal intervals during the month and on different days of the week. All six analytical results shall be reported in the monitoring report for that month.

If the numerical average of the analytical results of these six samples does not exceed the 30-day average limit for that constituent, compliance with the 30-day average limit has been demonstrated for that month.

c. In the event of noncompliance with a 30-day average effluent limit, the sampling frequency for that constituent shall be increased to a minimum of six times per month and shall continue at this level until compliance with the 30-day average limit has been demonstrated.

7. In the determination of compliance with statistically derived limits, normally occurring variation shall be considered. An analytical result that is in excess of the numerical effluent limits that were statistically derived, may not necessarily be a violation of that limit. Compliance with these numerical limits shall be determined by the use of an appropriate statistical method consistent with the methods used to determine the limit.

a. If more than three of the reported values for a particular constituent within a given 5-year period exceed a 30-day effluent concentration limitation

- or a 30-day effluent mass discharge limitation, only those exceedances for that constituent in excess of three for a concentration limit or in excess of three for a mass discharge limit shall be considered a violation of said limitation.
- b. If more than 5% of the reported values for a particular constituent within a given six-month period exceed a daily or instantaneous maximum effluent concentration or mass discharge limitation, only those exceedances in excess of 5% of the total number of reported values for that constituent shall be considered a violation of said limit.
  - c. The discharger shall report all exceedances and violations in the monthly monitoring report and provide a discussion of the cause of each exceedance/violation and any measure taken to prevent a recurrence of such an event.
8. Standby or emergency power facilities and/or storage capacity or other means shall be provided so that in the event of plant upset or outage due to power failure or other cause, discharge of raw or inadequately treated sewage does not occur.
  9. The discharger shall comply with all existing Federal and State laws and regulations that apply to its sewage sludge use and disposal practices and with the technical standards in Section 405 (d) of the Federal Clean Water Act when promulgated.
  10. This Order includes the "Requirements for Sludge Reporting" (Attachment 3). The discharger must submit all required information and comply with the monitoring, reporting, and record keeping programs as specified in these requirements.
  11. If an applicable "acceptable" management practice or numerical limitation for pollutants in sewage sludge promulgated under Section 405 (d) (2) of the Clean Water Act, as amended by the Water Quality Act. of 1987, is more stringent than the sludge pollutant limit or acceptable management practice in this permit, this permit may be reopened to include requirements

promulgated under Section 405 (d) (2). Regardless of whether or not the permit is modified, the discharger shall comply with the limitations by no later than the compliance deadline specified in the applicable regulations as required by Section 405 (d) (2) (D) of the Clean Water Act.

12. The discharge of municipal and industrial waste sludge directly to the harbor, or into a waste stream that discharges to the harbor, is prohibited.
13. The discharge of sludge digester supernatant and centrate directly to the harbor or into a waste stream that discharges to the harbor without further treatment is prohibited.
14. The Board shall be notified immediately by telephone of the presence of adverse conditions in the receiving waters or on beaches and shores as a result of this discharge; written confirmation shall follow as soon as possible but not later than five working days.
15. The discharger shall comply with the requirements of the State Water Resources Control Board's General NPDES permit for discharges of storm water associated with industrial activity (Order No. 91-13-DWQ and as amended by Order No. 92-12-DWQ, see Attachment 4).
16. The wastes discharged shall not cause a violation of any applicable water quality standard for receiving waters adopted by the Board or the State Water Resources Control Board as required by the Clean Water Act and regulations adopted thereunder. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the Clean Water Act or amendments thereto, the Board will revise and modify this Order and permit in accordance with such more stringent standards.
17. The discharger shall comply with all applicable effluent limitations, national standards of performance, toxic and pretreatment effluent standards, and all federal regulations established pursuant to Sections 301, 302, 303 (d), 304, 306, 307, 316, and 405 of the Federal Clean Water Act and amendments thereto.

18. Any diversion from or bypass of any facility, including the waste collection system, necessary to maintain compliance with the terms and conditions of this permit is prohibited, except (a) where unavoidable to prevent loss of life or sever property damage, or (b) where excessive storm drainage or runoff would damage any facilities necessary for compliance with the effluent limitations and prohibitions of this permit. The permittee shall immediately notify the Board by phone and in writing of each such diversion or bypass, in accordance with procedures outlined in the attached Standard Provisions. The written confirmation shall include information relative to the location, estimated volume, date and time, duration, cause, and remedial measures taken to effect cleanup and/or to prevent recurrence. Immediate measures shall be initiated to clean up wastes due to any such bypass or diversion and to abate the effect thereof, or, in the case of threatened pollution or nuisance, to take other necessary remedial action.

F. TIME SCHEDULE FOR COMPLIANCE

1. The discharger shall comply with the following time schedules to assure consistent compliance with the discharge prohibition in Item A, effluent limitations in Item B, and receiving water limitations in Item C of this Order:

<u>Task No.</u>	<u>Description</u>	<u>Completion Date</u>	<u>Report of Compliance</u>
I	Provide reliable temporary emergency power for all plant operations	March 30, 1993	April 15, 1993
II	Develop and implement an effective maintenance program on all equipment and accessories related to power supply	April 30, 1993	May 13, 1993

<u>Task No.</u>	<u>Description</u>	<u>Completion Date</u>	<u>Report of Compliance</u>
III	Provide a redundant & independent power source or permanent emergency power onsite for all plant operations.	March 30, 1995	April 15, 1995
IV	Develop and implement an Effective Wet Weather Operations Plan (including contingency operation procedures)	March 30, 1993	April 15, 1993
V	Develop and implement an effective Contingency Plan to address organic and toxic shock loadings	May 30, 1993	June 15, 1993
VI	Obtain an exemption to the State Board Policy prohibiting the discharge of municipal wastewater into the Los Angeles Harbor	Dec. 31, 1993	Jan. 15, 1994
VII a.	If an exemption is obtained (Task VI), complete construction and operate filtration facilities	June 30, 1996	July 15, 1996
b.	If an exemption is not granted (Task VI), complete construction of outfall, remove discharge from the harbor, and complete construction of modifications to the plant to ensure consistent compliance with requirements	June 30, 1996	July 15, 1996
2.	The discharger shall comply with the following interim limits until filtration is operational or discharge is remove from the harbor, i.e., until June 30, 1996:		

<u>Constituent</u>	<u>Unit</u>	<u>Discharge Limitations</u>		
		<u>30-Day Average</u>	<u>7-day Average</u>	<u>Daily Maximum</u>
BOD <sub>5</sub> 20°C	mg/l lbs/day	20 5,000	40 10,000	---- 10,000
Suspended solids	mg/l lbs/day	20 5,000	40 10,000	----- 10,000
Turbidity	NTU	15	30	45

3. The discharger shall submit quarterly reports of progress on the above tasks including if applicable, but not be limited to, permitting, engineering, construction and financing by January 15, April 15, July 15, and October 15 of each year until full compliance is achieved. The first quarterly report is due April 15, 1993.

G. EXPIRATION DATE

This Order expires on February 10, 1998.

The discharger must file a Report of Waste Discharge in accordance with Title 23, California Code of Regulations, not later than 180 days in advance of the expiration date as application for issuance of new waste discharge requirements.

H. RESCISSION

Except for enforcement purposes, Order No. 77-113 adopted on June 27, 1977, is hereby rescinded.

I, Robert P. Ghirelli, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on March 1, 1993.

  
ROBERT P. GHIRELLI, D.Env.  
Executive Officer

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD  
LOS ANGELES REGION  
MONITORING AND REPORTING PROGRAM NO. 2171  
for  
CITY OF LOS ANGELES  
(Terminal Island Treatment Plant)  
(NPDES No. CA0053856)

The discharger shall implement this monitoring program on the effective date of this permit.

Unless otherwise specified, quarterly monitoring shall be performed during the months of February, May, August, and November, semiannual monitoring during the months of February and August, and annual monitoring during the month of May. Weekly effluent analyses shall be performed on different weekdays during each month.

Influent, effluent and receiving water sampling shall be coordinated such that all samples are collected on the same date.

REPORTING REQUIREMENTS

1. Monthly monitoring reports shall be submitted to the Regional Board, Attention: Technical Support, by the first day of the second month following each monthly monitoring period. Water quality of receiving waters and bacteriological monitoring (shoreline and harbor components) data shall be included in the monthly report. The first monitoring report under this Program is due by May 1, 1993, and shall cover the monitoring period of March 1993.
2. Annual reports discussing the previous year's effluent and influent monitoring data shall be submitted by the fifteenth of March of the year following data collection. This report shall include graphical and tabular summaries of the data, and discussion of violations during the previous year and corrective measures implemented thereof.
3. Annual reports discussing the previous year's Harbor Bottom Monitoring, Harbor Water Quality, and Bacteriological Monitoring data (benthic, sediment, trawling and bioaccumulation components) shall be submitted by the first of July of the year following data collection.

This report shall include an in-depth discussion of the results from the Harbor Water Quality/Bacteriological Monitoring (shoreline and harbor sampling) and Harbor Bottom Monitoring (benthic and sediment sampling, trawling and priority pollutant analyses) programs conducted during the previous year. Temporal and spatial trends in the data shall be analyzed, with particular reference to comparisons between

stations with respect to distance from the outfall and comparisons to data collected during previous years. Appropriate statistical tests and indices, subject to approval by the Executive Officer, shall be calculated and included in the annual report.

4. Monthly and annual monitoring reports shall include the following information, if appropriate, at the minimum:
  - a. A description of climatic and receiving water characteristics at the time of sampling (weather observations, unusual or abnormal amounts of floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling or measurements, tidal stage and height, etc.).
  - b. the date, exact place and description of sampling stations, including differences unique to each station (e.g., station location, sediment grain size, distribution of bottom sediments, rocks, shell litter, calcareous worm tubes, etc.).
  - c. A list of individuals participating in field collection of samples or data and description of the sample collection and preservation procedures used in the various surveys.
  - d. A description of the specific method used for each laboratory analysis, the date(s) the analyses were performed and the individuals participating in these analyses.

#### EFFLUENT MONITORING

A sampling station shall be established for each point of discharge and shall be located where representative samples of that effluent can be obtained. Effluent samples may be obtained at a single station provided that station is representative of the effluent quality at all discharge points. Location of such stations and any changes thereof shall be submitted for the Executive Officer's approval.

All chemical analyses shall be conducted at a laboratory certified for such analyses by the State Department of Health Services and in accordance with current U. S. EPA guideline procedures or as specified in the Monitoring Program. For any analyses performed for which no procedure is specified in U. S. EPA "Guideline" or in the Monitoring Program, the constituent or parameter analyzed and

the analytical method or procedure used must also be listed in the report.

The following shall constitute the effluent monitoring program:  
 (for footnotes, see pages T-4, T-5, & T-6)

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Frequency of Analysis</u>
Total waste flow	mgd	continuous <sup>[1]</sup>	-----
Total chlorine residual	mg/l	continuous <sup>[1]</sup>	-----
Turbidity	TU	continuous <sup>[1]</sup>	-----
pH	pH units	grab	weekly
Temperature	°F	grab	weekly
Settleable solids	ml/l	grab	weekly <sup>[2]</sup>
Suspended solids	mg/l	24-hr. composite	weekly <sup>[2]</sup>
BOD <sub>5</sub> 20°C	mg/l	24-hr. composite	weekly <sup>[2]</sup>
Oil and grease	mg/l	grab	weekly
Acute toxicity <sup>[3]</sup>	TUa	grab	monthly
Toxicity(chronic) <sup>[4]</sup>	tu <sub>c</sub>	24-hr. composite	monthly
Ammonia nitrogen	mg/l	24-hr. composite	monthly
Cyanide	µg/l	grab	monthly
Arsenic	µg/l	24-hr. composite	monthly
Cadmium	µg/l	24-hr. composite	quarterly
Chlordane	pg/l	24-hr. composite	quarterly
Chloroform	µg/l	24-hr. composite	quarterly
Chromium (VI)	µg/l	24-hr. composite	quarterly
Copper	µg/l	24-hr. composite	quarterly <sup>[5]</sup>
Lead	µg/l	24-hr. composite	quarterly
Mercury	ng/l	24-hr. composite	quarterly <sup>[5]</sup>
Nickel	µg/l	24-hr. composite	quarterly
Selenium	µg/l	24-hr. composite	quarterly
Silver	µg/l	24-hr. composite	quarterly <sup>[5]</sup>
Zinc	µg/l	24-hr. composite	quarterly <sup>[5]</sup>
Aldrin	pg/l	24-hr. composite	quarterly
Benzene	µg/l	24-hr. composite	quarterly
DDT	pg/l	24-hr. composite	quarterly
1,2-dichloro-benzene	mg/l	24-hr. composite	quarterly
1,3-dichloro-benzene	µg/l	24-hr. composite	quarterly
1,4-dichloro-benzene	µg/l	24-hr. composite	quarterly
Dichloromethane	µg/l	24-hr. composite	quarterly
Dieldrin	pg/l	24-hr. composite	quarterly
Endosulfan	ng/l	24-hr. composite	quarterly

<u>Constituent</u>	<u>Unit</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Endrin	ng/l	24-hr. composite	quarterly
Fluoranthene	µg/l	24-hr. composite	quarterly
Halomethanes	µg/l	24-hr. composite	quarterly
Heptachlor	ng/l	24-hr. composite	quarterly
Heptachlor epoxide	ng/l	24-hr. composite	quarterly
Hexachloro-benzene	pg/l	24-hr. composite	quarterly
Hexachloro-cyclohexane			
Alpha	ng/l	24-hr. composite	quarterly
Beta	ng/l	24-hr. composite	quarterly
Gamma	ng/l	24-hr. composite	quarterly
PAHs	ng/l	24-hr. composite	quarterly
PCBs	pg/l	24-hr. composite	quarterly
Pentachlorophenol	µg/l	24-hr. composite	quarterly
TCDD equivalents	pg/l	24-hr. composite	quarterly
Toluene	mg/l	24-hr. composite	quarterly
Toxaphene	ng/l	24-hr. composite	quarterly
Tributyltin	ng/l	24-hr. composite	quarterly
2,4,6-trichloro-phenol	µg/l	24-hr. composite	quarterly
Radioactivity	pCi/l	24-hr. composite	semi-annually

Footnotes for effluent monitoring program:

- [1] Where continuous monitoring of a constituent is required, the following shall be reported:

Flow: Total daily flow and peak daily flow.

Turbidity: Maximum value recorded each day, total amount of time each day (in minutes) that turbidity exceeded 5 turbidity units, and the flow-proportioned average daily value and monthly mean.

Total Chlorine Residual: Maximum value recorded each day.

- [2] During the first year of operation of the filtration process, monitoring for suspended solids, settleable solids, and BOD shall be done daily.

- [3] By the method specified in "Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms" - March 1985 (EPA/600/4-85/013). Submission of bioassay results should include the information noted on pages 45-49 of the "Methods". The fathead minnow (Pimephales promelas) shall be used as the test species unless otherwise directed by the Executive Officer.

Except with prior approval from the Executive Officer, ammonia shall not be removed from bioassay samples. The wastewater used for the toxicity test shall be analyzed for ammonia, and the result along with an interpretation shall be submitted with the toxicity data. If the test result is less than 70%, parallel tests on 100% effluent without ammonia removal and 100% effluent with ammonia removed shall be conducted.

- [4] Initial screening shall be conducted using a minimum of three test species with approved test protocols listed in the California Inland Surface Waters Plan (State Water Resources Control Board, 1991) to determine the most sensitive test organism for chronic toxicity testing (other test species may be added to the Inland Surface Waters Plan list when approved by the State Board). The initial screening process shall be conducted for a minimum of three months to account for potential variability of the effluent. If possible, the test species used during the screening process should include a fish, an invertebrate and an aquatic plant.

After the initial screening period, chronic toxicity testing may be limited to the most sensitive test species. However, the initial screening process shall be repeated annually, with a minimum of three test species with approved test protocols, to ensure use of the most sensitive species for chronic toxicity testing.

Laboratory water may be used for dilution and control purposes. Standard dilution water may be used if the above source exhibits toxicity greater than 1.0  $tu_c$ . The sensitivity of the test organisms to a reference toxicant shall be determined concurrently with each bioassay test and reported with the test results.

Chronic toxicity shall be expressed and reported as toxic units, where:

$$tu_c = 100/NOEL$$

The No Observed Effect Level (NOEL) is expressed as the maximum percent effluent that causes no observable effect on

a test organism, as determined by the result of a critical life stage toxicity test listed on Page 16 of the Inland Surface Waters Plan.

- [5] Monitoring frequency shall be weekly while the discharger is on the interim limits.

INFLUENT SAMPLING

<u>Constituent</u>	<u>Units</u>	<u>Type of Sample</u>	<u>Minimum Frequency of Analysis</u>
Total waste flow	mgd	continuous	-----
BOD <sub>5</sub> 20°C <sup>[6]</sup>	mg/l	24-hr. composite	weekly
Suspended solids <sup>[6]</sup>	mg/l	24-hr. composite	weekly

- [6] Samples shall be obtained on the same day effluent samples are obtained in order to demonstrate percent removal.

RECEIVING WATER MONITORING

A. Receiving water stations

All receiving water stations, except the shoreline stations, shall be located by state of the art navigational methods (e.g., Mini-Ranger, Loran C instrumentation); other means (e.g., visual triangulation, fathometer readings) may be used to improve the accuracy of locating stations.

1. Three shoreline stations at Cabrillo Beach shall be maintained for bacteriological sampling as follows (see Figure 1):

Station    Location

S-1        Surf at 30th Street projected  
S-2        Surf at 34th Street projected  
S-3        Surf at 37th Street projected

2. Eighteen stations shall be maintained for water quality monitoring as follows (see Figure 2):

<u>Station</u>	<u>Location*</u>	<u>Latitude</u>	<u>Longitude</u>
H-10	SE of Navy Mole, LBOH	33°44'15"N	118°13'44"W
H-11	SE of SWH, LAOH	33°44'02"N	118°14'24"W
H-13	S of Ferry St. projected	33°43'48"N	118°15'08"W
H-15	S of Pier 300, LAOH	33°43'37"N	118°15'42"W
H-16	Mouth of LA Main Ch.	33°43'30"N	118°16'10"W
H-23	S of H-13, LAOH	33°43'32"N	118°14'53"W
H-30	SE of Navy Mole, LBOH	33°43'42"N	118°13'30"W
H-31	SE of SWH & H-11, LAOH	33°43'30"N	118°14'09"W
H-33	SE of H-23, LAOH	33°43'17"N	118°14'49"W
H-35	SE of H-15, LAOH	33°43'05"N	118°15'27"W
H-36	SE of LA Main Ch., LAOH	33°42'56"N	118°15'58"W
H-38	S of W Ch., Cabrillo Bch	33°42'41"N	118°16'35"W
H-40	SE of H-30, LBOH	33°43'14"N	118°13'17"W
H-41	SE of H-31, LAOH	33°43'02"N	118°13'56"W
H-43	SE of H-33, LAOH	33°42'49"N	118°14'34"W
H-45	SE of H-35, LAOH	33°42'36"N	118°15'13"W
H-46	SE of H-36, LAOH	33°42'26"N	118°15'43"W
H-47	SW of H-36, LAOH	33°42'26"N	118°15'14"W

\* SE-southeast, LBOH-Long Beach Outer Harbor, SWH-Shallow Water Habitat, LAOH-Los Angeles Outer Harbor, S-south, LA Main Ch.-Los Angeles Main Channel, W Ch.-West Channel, Cabrillo Bch-Cabrillo Beach, SW-southwest

3. Nine harbor stations shall be maintained for bacteriological monitoring as follows (see Figure 2):

Water quality stations H-13, H-33, H-35, H-36, H-38, H-41, H-43, H-46, and H-47

4. Seventeen harbor stations shall be maintained for benthos and sediment sampling as follows (see Figure 3):

<u>Station</u>	<u>Latitude</u>	<u>Longitude</u>
HA1	33°43'44"N	118°15'22"W
HA2	33°43'39"N	118°14'59"W
HA3	33°43'55"N	118°14'45"W
HB1	33°43'37"N	118°15'42"W
HB2	33°43'05"N	118°15'14"W
HB3	33°43'32"N	118°14'53"W
HB4	33°43'36"N	118°14'36"W
HB5	33°44'02"N	118°14'24"W
HC1	33°43'08"N	118°16'00"W
HC2	33°42'57"N	118°15'31"W
HC3	33°43'00"N	118°14'39"W
HC4	33°43'23"N	118°13'57"W
HC5	33°44'15"N	118°13'44"W

<u>Station</u>	<u>Latitude</u>	<u>Longitude</u>
HD1	33°43'30"N	118°16'10"W
HD2	33°42'41"N	118°16'35"W
HD3**	--	--
HD4	33°44'30"N	118°14'33"W

Note: Stations HB1, HB3, HB5, HC5, HD1, HD2 are in the same location as stations H-15, H-23, H-11, H-10, H-16, H-38, respectively.

\*\*Station HD3 to be located along the ocean side of the Middle Breakwater. Final station location to be determined after first sampling period. The location of station HD3 shall be submitted to the Executive Officer for approval.

5. Three harbor trawling stations shall be maintained on an exploratory basis to determine the feasibility of obtaining samples from the Los Angeles/Long Beach Outer Harbor area. The permanent trawling stations shall be determined after the first quarter sampling period and their locations shall be submitted to the Executive Officer for approval. If no permanent trawling station can be established because of the unfeasibility of obtaining samples, then a request to be exempted from trawling shall be submitted to the Executive Officer. This request shall include areas where trawling was attempted and the results of the sampling effort.
  6. One Cabrillo Beach station at the fishing pier and one control station shall be maintained for sport fish tissue sampling. The location of the control station shall be submitted to the Executive Officer for approval.
- B. Type and frequency of sampling  
(for footnotes, see pages T-12 to T-14)
1. Water Quality/Bacteriological Monitoring

- a. Three shoreline stations (S-1, S-2, S-3) shall be sampled daily for total coliform<sup>1</sup>, enterococcus<sup>1</sup>, and fecal coliform<sup>1</sup>. Visual observations<sup>2</sup> shall be recorded at the same time bacteriological samples are collected.

In the event of stormy weather that makes sampling hazardous or impractical, these samples can be omitted, provided that such omissions do not occur more than 10 days in any calendar year.

- b. Nine harbor stations (H-13, H-33, H-35, H-36, H-38, H-41, H-43, H-46, and H-47, Figure 2) shall be sampled a minimum of five times per month for total coliform<sup>1</sup>,

enterococcus<sup>1</sup>, and fecal coliform<sup>1</sup>. Visual observations<sup>2</sup> shall be recorded at the same time bacteriological samples are collected. Samples shall be collected at 0.5 meters below the surface (designated as surface sample) and within 2 meters of the seabed (designated as bottom sample).

The first year's data will be evaluated and the Executive Officer shall decide whether to eliminate bottom sampling. Until approval has been given to modify the program, these monitoring requirements shall remain in effect.

- c. Depth profiles<sup>3</sup> for temperature, dissolved oxygen, transmissivity and salinity shall be conducted monthly at 18 harbor stations (H-10, H-11, H-13, H-15, H-16, H-23, H-30, H-31, H-33, H-35, H-36, H-38, H-40, H-41, H-43, H-45 to H-47). Profiles shall be extended from the surface to as close to the bottom as practicable using standard oceanographic sampling procedures.

In the event of stormy weather that makes sampling hazardous or impractical, these samples can be omitted, provided that such omissions do not occur in consecutive weeks or in more than four weeks in a calendar year. Sampling may be conducted at deeper depths during periods of adverse weather.

If a kelp bed is present at any of the 18 harbor stations, sampling shall be conducted at the edge of the kelp bed. The actual location of all sampling stations shall be reported in the monthly monitoring reports.

Monthly depth profiling shall be conducted at the harbor stations on the same day, if practical.

Discrete samples shall be collected quarterly at five harbor water quality stations (H-11, H-15, H-31, H-33, H-35) for ammonia analyses. Discrete samples shall be collected at 0.5 meter below the surface (designated as surface sample) and as close to the seabed as practicable (designated as bottom sample). The first year's data will be evaluated and the Executive Officer shall decide whether to modify or eliminate ammonia sampling. Until approval has been given to modify the program, these monitoring requirements shall remain in effect.

Depth profiles<sup>3</sup> for pH shall be conducted quarterly at five stations: H-11, H-15, H-31, H-33, H-35.

## 2. Harbor Bottom Monitoring

- a. Seventeen harbor stations (HA1 to HA3, HB1 to HB5, HC1 to HC5, HD1 to HD4) shall be sampled biannually (during summer and winter) for benthic monitoring using a 0.1 square meter VanVeen sediment grab, or an equivalent device approved by the Executive Officer. One sample shall be taken at each station. The entire contents of each sample shall be passed through a 1.0 mm screen to retrieve the benthic organisms.

The following determinations shall be made for each sample:

- 1) Identification of all organisms to the lowest possible taxon;
  - 2) total biomass of:
    - (a) molluscs
    - (b) echinoderms
    - (c) annelids
    - (d) crustaceans
    - (e) all other macroinvertebrates
  - 3) community structure analysis for each station<sup>4</sup>.
- b. A separate grab sample shall be collected at each benthic station, whenever a benthic sample is collected, for sediment chemistry analyses. Sub-samples (upper two centimeters) shall be taken from the grab and analyzed for dissolved sulfides (porewater), TOC and grain size (sufficiently detailed to calculate percent weight in relation to phi size).
- c. Seventeen harbor stations (HA1 to HA3, HB1 to HB5, HC1 to HC5, HD1 to HD4) shall be sampled annually with a Van Veen sediment grab for selected priority pollutant analysis. Sub-samples (upper two centimeters) shall be taken from the grab and analyzed for the following parameters:

Arsenic  
Cadmium  
Chromium  
Copper

Lead  
Mercury  
Nickel  
Silver  
Zinc  
Cyanide  
Phenolic compounds (non-chlorinated)  
Phenolic compounds (chlorinated)  
Total halogenated organic compounds  
Aldrin and Dieldrin  
Endrin  
HCH  
Chlordane  
Total DDT  
DDT derivatives<sup>5</sup>  
Total PCB  
PCB derivatives<sup>6</sup>  
Toxaphene  
Total PAH  
PAH derivatives<sup>7</sup>  
Detected priority pollutants<sup>8</sup>.

- d. Three trawling stations shall be sampled quarterly. Trawling shall be conducted at each station with a standard 7.62-meter head rope otter trawl (1.5-inch mesh in the body of the net and 0.5-inch mesh in the cod end), towed parallel to the specified depth contour for a duration of 10 minutes (elapsed bottom time) at a uniform speed between 2.0 and 2.5 knots.

Fish and invertebrates collected by trawls shall be identified to the lowest possible taxon. Community structure analyses shall be conducted for each station<sup>9</sup>. Abnormalities and disease symptoms shall be described and recorded (e.g., fin erosion, lesions, tumors, parasites and color anomalies).

- e. The outfall shall be inspected a minimum of once every five years. Inspections shall include general observations and photographic records of the outfall pipes and the surrounding ocean bottom. A detailed structural analysis of the pipes shall be conducted using underwater television/videotape and submarine visual inspection, where appropriate, to provide a comprehensive report on the discharge pipe system from shallow water to its respective terminus.

- f. Muscle and liver tissue analyses for selected priority pollutants and lipids shall be conducted biannually on white croaker (Genyonemus lineatus) and another sport fish (e.g., kelp bass-Paralabrax clathratus). Ten individuals<sup>10</sup> shall be collected by divers with spearguns or by hand, hook and line, or trawl, from the Cabrillo Beach fishing pier and a designated control site.

Each individual muscle tissue sample shall be analyzed separately. Liver tissue samples from each site may be combined to form two composites representing five individuals each or each individual liver tissue may be analyzed separately.

- g. Tissue samples from white croaker and other sport fish shall be analyzed for the following priority pollutants and other parameters:

Total DDT  
DDT derivatives<sup>5</sup>  
Total PCB  
PCB derivatives<sup>6</sup>  
wet weight  
% lipid

Additional parameters for analysis may be added to this list by the Executive Officer.

Footnotes for Receiving Water Monitoring Program

- [1] In addition to reporting the actual concentration of bacterial organisms in each sample collected from shoreline and harbor stations, the median of the latest 6-month period shall also be determined and reported. Bacteriological data collected at shoreline and/or harbor stations within 48 hours following a major storm event need not be included in compliance calculations, but these data shall be provided in the appropriate monitoring reports.
- [2] Observations of conditions of wind, weather and tidal stage shall be recorded (every four hours during harbor sampling) at the time that samples of waters (shoreline and harbor stations) are collected. Observations of water color, turbidity, odor, and unusual or abnormal amounts of floating or suspended matter in the water or on the beach, rock and jetties or beach structures, shall also be made and recorded at stations or while in transit. The character and extent of

such matter shall be described. The dates, times and depths of sampling and observations shall also be reported.

- [3] Depth profile measurements shall be obtained by using multiple probes to measure parameters throughout the entire water column (from the surface to as close to the bottom as practicable) or by measurement of discrete samples collected at 1.0 meter (3.3 feet) below the surface, at 3.0-meter (9.9-foot) intervals within the pycnocline (when present), as close to the seabed as practicable, and at 6.0-meter (19.8-foot) intervals throughout the water column. Measurements for pH may be obtained from grab samples at 1.0 meter (3.3 feet) below the surface and as close to the seabed as practicable.
- [4] Including number of species, number of individuals per species, species richness, species diversity (e.g., Shannon-Wiener), species evenness and dominance, similarity analysis (e.g., Bray-Curtis, Jaccard or Sorenson), cluster analyses or other appropriate multivariate statistical techniques approved by the Executive Officer. Mean, standard deviation, and 95% confidence limits, if appropriate, shall be calculated for these values.
- [5] At a minimum, 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.
- [6] At a minimum, chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.
- [7] At a minimum, acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.
- [8] Detected priority pollutants are those previously measured in detectable concentrations in effluent, sludge, sediment and tissue analyses. A tentative list of detected priority pollutants shall be submitted to the Executive Officer for approval prior to conducting the priority pollutant analyses.
- [9] Including wet weight of fish and macroinvertebrate species (when combined weight of individuals of one species exceeds 0.2 kg), number of species, number of individuals per species, total numerical abundance per station, number of individuals in each 1-centimeter size class for each species of fish,

species richness, species diversity (e.g., Shannon-Wiener), species evenness, similarity analysis (e.g., Bray-Curtis, Jaccard, Sorenson), cluster analyses, or other appropriate multivariate statistical techniques approved by the Executive Officer. Mean, standard deviation, and 95% confidence limits, if appropriate, shall be calculated for these values.

- [10] The ten largest individuals of each fish species collected shall be analyzed. All white croaker shall be larger than 125 millimeters (standard length). If the other sport fish selected is kelp bass, then all kelp bass shall be larger than 225 millimeters (standard length). Standard length, weight and gonadal index shall be recorded.

Ordered by :

Robert P. Ghirelli  
Executive Officer

Date :

March 1, 1993

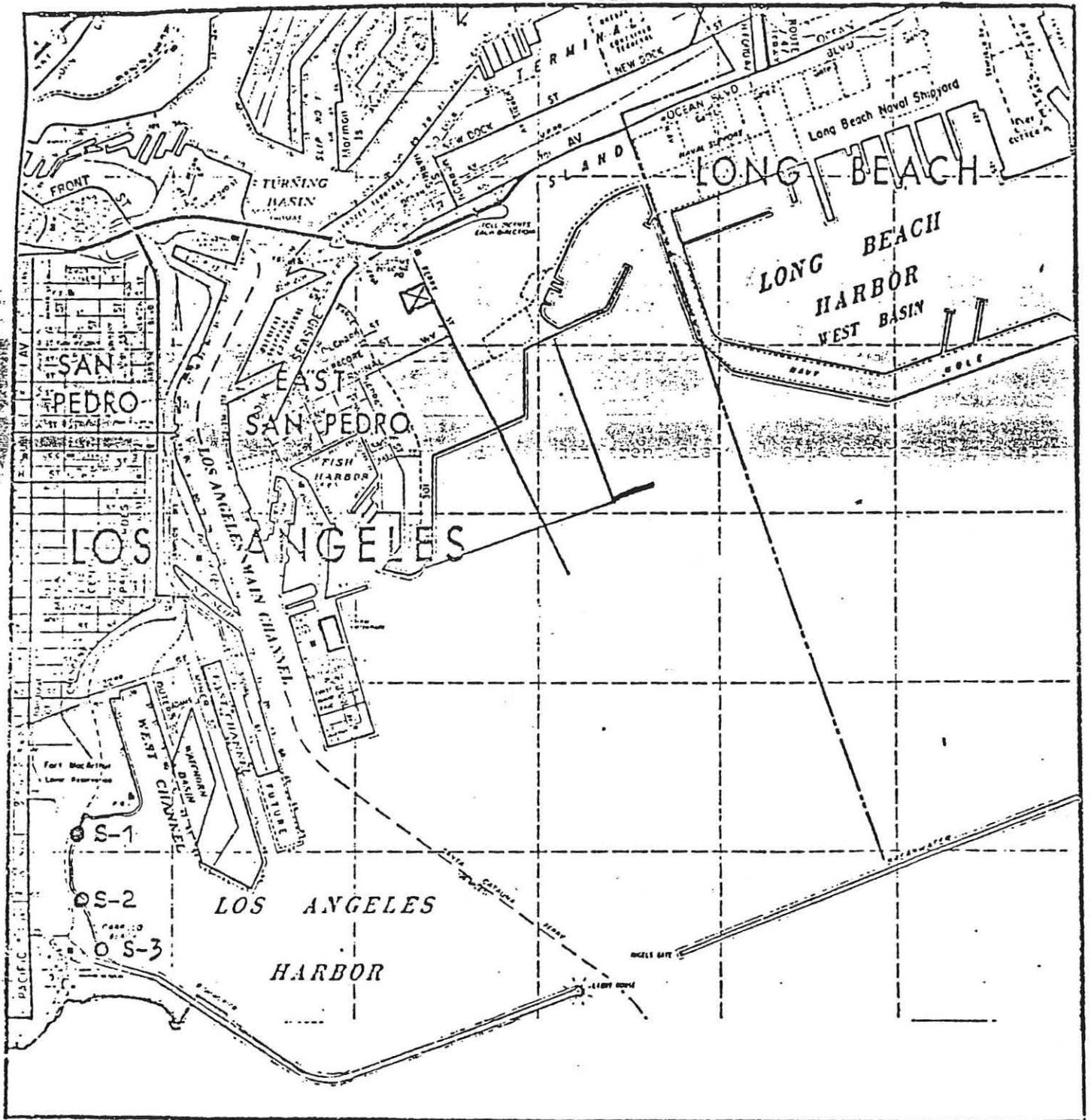


FIGURE 1. Shoreline stations at Cabrillo Beach

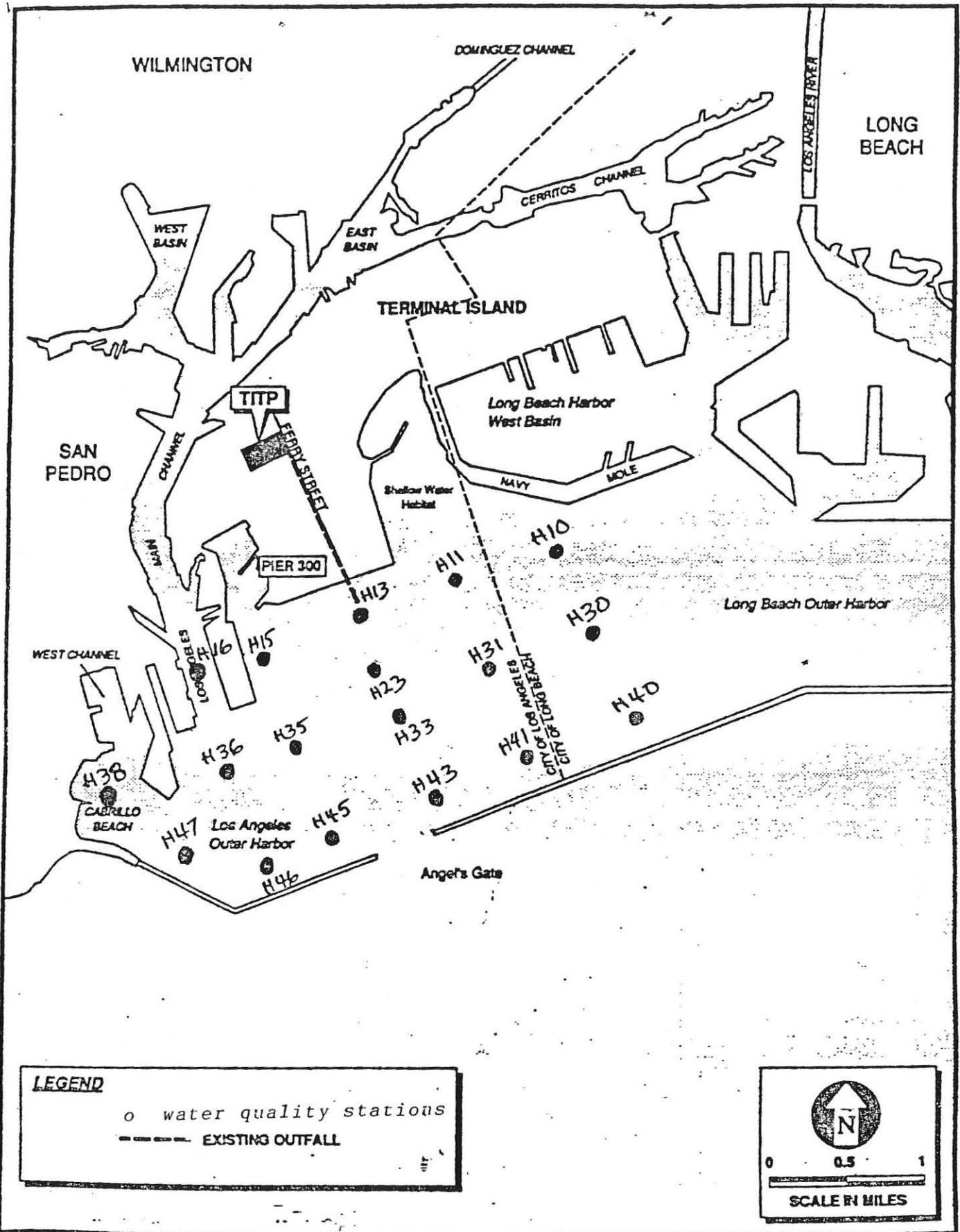


FIGURE 2. Water quality harbor stations

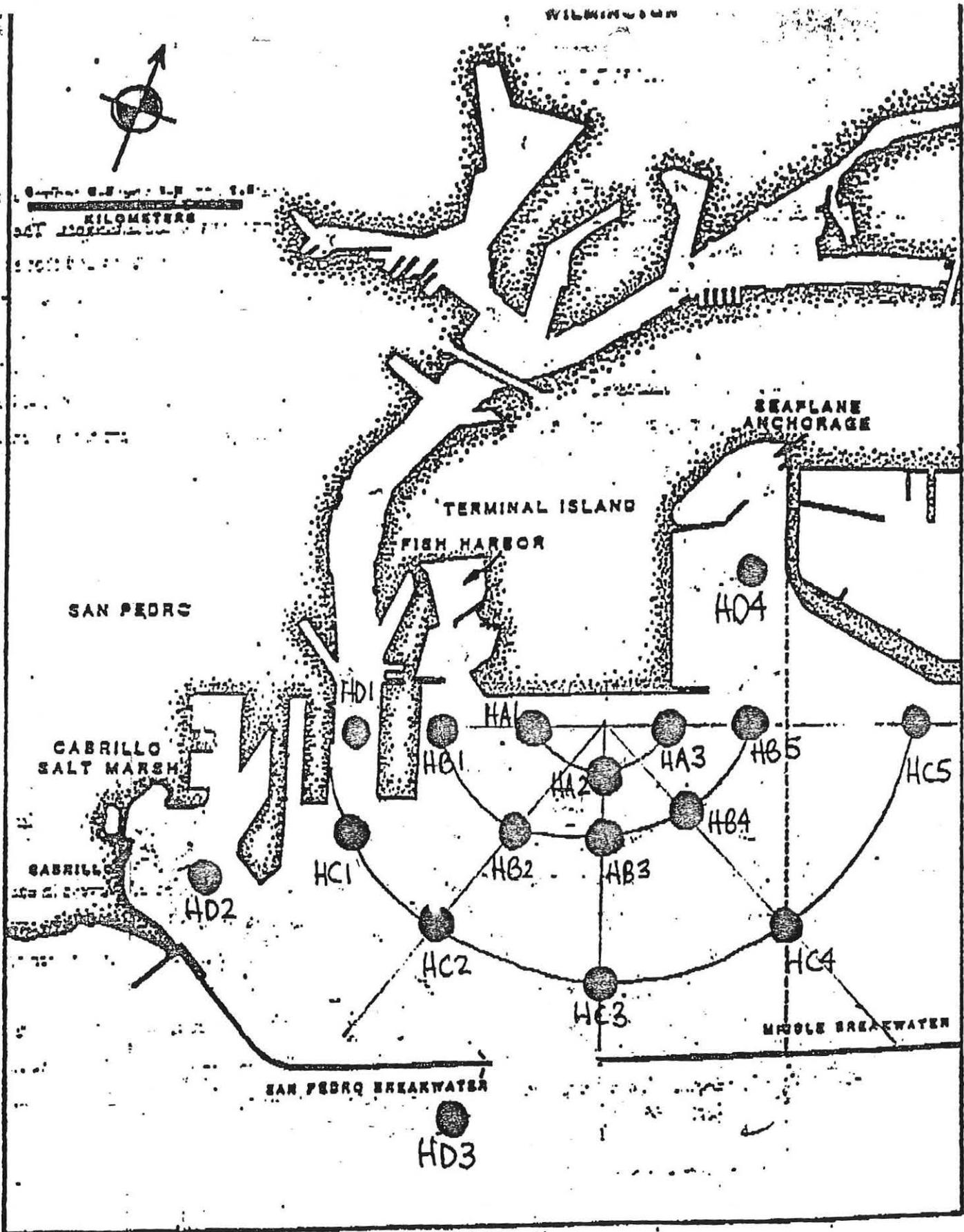


FIGURE 3. Bottom sampling stations