Attachment F

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
320 West 4th Street, Suite 200, Los Angeles

FACT SHEET

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

NPDES No. CA0053856
Public Notice No.: 04-061

PLANT ADDRESS	**MAILING ADDRESS**
Terminal Island Treatment Plant	City of Los Angeles, Bureau of Sanitation
445 Ferry Street	433 South Spring Street, Suite 400
San Pedro, CA 90731	Los Angeles, CA 90013
Contact Person: Mr. George Raymond	Contact Person: Ms. Rita L. Robinson
Title: Plant Manager	Title: Director
Phone No.: 310-732-4705	Phone No.: 213-473-7999

I. PUBLIC PARTICIPATION

1. The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) is considering issuance of waste discharge requirements (WDRs) that will serve as a National Pollutant Discharge Elimination System (NPDES) permit for the above-referenced plant. As an initial step in the WDR process, the Regional Board staff has developed tentative WDRs. The Regional Board encourages public participation in the WDR adoption process.

   A. Public Comment Period

      Interested persons are invited to submit written comments on the tentative WDRs for the City of Los Angeles (City or Discharger), Terminal Island Treatment Plant (TITP or Plant). Comments should be submitted either in person or by mail to:

      EXECUTIVE OFFICER
      California Regional Water Quality Control Board, Los Angeles Region
      320 W. 4th Street, Suite 200
      Los Angeles, CA 90013
      ATTN: Don Tsai

      To be fully responded to by staff and considered by the Regional Board, written comments regarding the revised tentative Order should be received by 5:00 p.m. on March 13, 2005.

B. Public Hearing

The Regional Board will consider the tentative WDRs and NPDES permit during a public hearing on the following date, time and place:

Date: April 7, 2005
Time: 9:00 a.m.
Location: Council Chambers
Metropolitan Water District of Southern California
700 N. Alameda Street
Los Angeles, California

Interested parties and persons are invited to attend. At the public hearing, the Regional Board will hear testimony, if any, pertinent to the waste discharge that will be regulated and the proposed WDRs and permit. Oral testimony will be heard; however, for accuracy of the record, important testimony should be in writing.

Please be aware that dates and venues may change. Our web address is www.swrcb.ca.gov/rqcb4 where you can access the current agenda for changes in dates and locations.

C. Information and Copying

Copies of the tentative WDRs and NPDES permit, report of waste discharge, Fact Sheet, comments received, and other documents relative to this tentative WDRs and permit are available at the Regional Board office. Inspection and/or copying of these documents are by appointment scheduled between 8:00 a.m. and 4:50 p.m., Monday through Friday, excluding holidays. For appointment, please call the Los Angeles Regional Board at (213) 576-6600.

D. Register of Interested Persons

Any person interested in being placed on the mailing list for information regarding this NPDES permit should contact the Regional Board, reference this facility, and provide a name, address, and phone number.

E. Waste Discharge Requirements Appeals

Any aggrieved person may petition the State Water Resources Control Board (State Board) to review the decision of the Regional Board regarding the final WDRs. The petition must be submitted within 30 days of the Regional Board's action to the following address:

State Water Resources Control Board
Office of Chief Counsel
ATTN: Elizabeth Miller Jennings
P.O. Box 100
Sacramento, CA 95812

II. PURPOSE OF ORDER

The City discharges tertiary-treated municipal wastewater from TITP under waste discharge requirements contained in Order No. 93-014, adopted by this Regional Board on March 1, 1993. This Order serves as the permit under the National Pollutant Discharge Elimination System Program (NPDES No. CA0053856). The Discharger's permit was administratively extended beyond the February 10, 1998 expiration date. The City filed a Report of Waste Discharge (ROWD) and applied for renewal of its WDRs and NPDES permit on November 25, 1997. Upon request by this Regional Board, the City on October 17, 2001, filed an updated ROWD using the new United States Environmental Protection Agency (USEPA) Form 2A. Therefore, the Discharger's permit has been administratively extended until the Regional Board acts on the new WDRs and NPDES permit.

III. DESCRIPTION OF FACILITY AND TREATMENT PROCESS

1. The City owns and operates the TITP, a publicly owned treatment work (POTW). The TITP is located at 445 Ferry Street, San Pedro, California, approximately 20 miles south of downtown Los Angeles. Figure P1 shows the vicinity map for the TITP. The Plant was originally built in 1935 with a treatment process comprised of preliminary treatment and primary treatment with the effluent discharged into the Harbor. TITP was upgraded to secondary treatment employing an activated sludge process in 1977, and further upgraded to tertiary treatment in 1996. The start-up operation at the tertiary wastewater treatment process began in January 1997. TITP has an average dry weather design treatment capacity of 30 million gallons per day (mgd) and peak wet weather design flow capacity of 50 mgd. For the last seven years (1997 to 2004), sewage flow to the Plant averaged approximately 17 mgd. The Plant discharge of tertiary treated municipal wastewater to the Harbor averaged approximately 16 mgd for the same period.

2. Discharge to the Harbor is also subject to the State Water Resources Control Board's (State Board) Enclosed Bays and Estuaries Policy established in 1974, which requires POTW discharges to enclosed bays and estuaries to cease at the earliest practicable date. (The Los Angeles Harbor has been defined as an enclosed bay. See Finding 15.) On June 27, 1977, this Regional Board issued Order No. 77-113 requiring the City to phase out the TITP discharge to the Harbor at the earliest practicable date or demonstrate that the discharge enhances the quality of the receiving water. The City opted for the latter approach but was not successful in demonstrating that the TITP effluent enhances the water quality in the Harbor. On November 25, 1985, this Regional Board issued Order No 85-77, requiring the City to cease the TITP discharge to the Harbor at the earliest practicable date. Additionally, on October 31, 1994, the Regional Board issued the Resolution No. 94-009 to approve the proposal by the City to phase out the discharge of tertiary-treated wastewater effluent from the TITP into the Harbor through implementation of a water recycling plan.

3. Treatment at the TITP consists of wastewater processing, advanced wastewater treatment processing, and biosolids processing. Figure P2 depicts the schematics of the TITP wastewater flow.

A. Wastewater Processing - consists of preliminary treatment (bar screening and aerated grit removal), primary treatment (primary sedimentation), secondary treatment (secondary clarification and activated sludge biological treatment), tertiary treatment (effluent filtration). Under normal operating conditions, the discharge of the tertiary-treated effluent to the Harbor is not chlorinated.

a. ***Preliminary treatment –*** The main objective of preliminary treatment is to remove coarse solids (by bar screening), sand and silt (by grit removal system) from wastewater.

b. ***Primary sedimentation -*** The main objective of primary sedimentation is to remove solids from the wastewater by gravity. The heavier solids (settleable solids) precipitate out and are scraped out of the primary sedimentation basin. The lighter solids float to the top and are skimmed off. However, some solids remain in suspension.

c. ***Secondary clarification -*** The main objective of secondary sedimentation is to remove biological floc from the wastewater. Chemicals, such as aluminum sulfate (alum), may be added as part of the treatment process to enhance solids removal. Alum causes the biological floc to combine into larger clumps (coagulate). This makes it easier to remove the floc.

d. ***Activated sludge biological treatment -*** Activated sludge converts non-settleable and dissolved organic contaminants into biological floc, which can then be removed from the wastewater with further treatment.

e. ***Tertiary treatment -*** The filtration process is used to remove or reduce suspended or colloidal matter from a liquid stream, by passing the water through a bed of graded granular material. Filters remove the solids that the secondary sedimentation process did not remove, thus, improving the disinfection efficiency and reliability.

B. Advanced Treatment Processing – includes microfiltration and reverse osmosis.

a. ***Microfiltration -*** Tertiary treated wastewater is fed into automatic self cleaning 500-micron strainers and then the wastewater flow is split into two parallel trains. Each train contains five parallel Memcor microfiltration units. The microfiltration units are periodically backwashed to clean the membranes. The backwash is sent back to TITP's headworks for reprocessing. The microfiltration water is reclaimed for irrigation, industrial, and recreational use in accordance with other Water Recycling Requirements.

b. ***Reverse Osmosis (RO)-*** The microfiltration filtrate is fed into two separate RO process trains. Each RO process train has two stages in series and use thin-filmed membranes. The RO water is chlorinated prior to being transported via pipeline and injected into the ground, under

separate Water Recycling Requirements contained in Order No. R4-2003-0134, adopted on October 2, 2003. The RO water is injected into the Dominguez Gap Barrier Project to control seawater intrusion. This discharge is located at Latitude 33° 44' 34" and Longitude 118° 15' 36". In addition, this water is recycled for irrigation, industrial, and recreational use in accordance with other Water Recycling Requirements contained in Order No. R4-2003-0025, adopted on January 30, 2003.

c. Disinfection: A sodium hypochlorite (chlorine) contact basin has been designed to provide a contact time (CT) value of 450 mg/L-min with a modal contact time of at least 150 minutes for a flow of 5 mgd RO treated water.

The brine waste stream generated from the AWTF is allowed to be discharged into the Harbor. Sodium bisulfate is added to neutralize any chlorine added to the brine prior to discharge to the Los Angeles Harbor.

C. Biosolids Processing – Sludge is thickened, anaerobically digested, dewatered, and hauled to Kern County for land application and reused as soil amendment.

4. The TITP treats the wastewater generated from industries in the Harbor area and serves approximately 130,000 people in the San Pedro, Wilmington, and Harbor City areas. Flow to the TITP consists of domestic, commercial and industrial wastewater. Industrial wastewater sources are from the fish processing industries, petroleum industries, and docking and storage facilities. For Fiscal Year 2003, industrial wastewater represented approximately 60% of the total flow to the plant. Raw wastewater reaches the TITP through a series of pumping plants and force mains.

5. The USEPA and the Regional Board have classified the TITP as a major discharger. It has a Threat to Water Quality and Complexity rating of 1-A pursuant to CCR, Title 23, Section 2200.

6. Pursuant to 40 CFR, Part 403, the City developed, and has been implementing, an industrial wastewater pretreatment program for TITP, which has been approved by the USEPA and the Regional Board.

7. The TITP has two bypass points: one for primary effluent and the other for secondary effluent. The primary effluent bypass point is operated by a valve and has never been used since it was put in service in 1977. The secondary bypass has been used several times since the filter facility was put into service in January 1997. The secondary effluent can be automatically overflowed to the filtered effluent discharge channel if the filter influent pumps are inoperable or overloaded. The latest unfiltered secondary effluent discharged into the Harbor was on August 26, 2004.

If a bypass occurs, the City is required to meet the final effluent limitation at end of pipe (see Section I.2. of this Order).

8. ***Water Recycling Facility -*** The Harbor Water Recycling Project – Dominguez Gap Barrier Project, adopted on October 2, 2003, is permitted to inject up to 5 mgd

recycled water, produced at the TITP's Advanced Wastewater Treatment Facility (AWTF), to Dominguez Gap to prevent seawater intrusion. The Harbor Water Recycling Project – Nonpotable Reuse Project, adopted on January 30, 2003, is permitted to use the recycled water for irrigation, industrial, and recreational uses. These two projects are being undertaken by the City to comply with Regional Board Resolution No. 94-009 to ultimately phase out discharge of the tertiary-treated wastewater into the Harbor.

Pursuant to Provisions 4a and 4b of Resolution No. 94-009 adopted on October 31, 1994, the discharge of wastewater effluent from TITP into the Harbor must be phased out at the earliest practicable date through implementation of a water recycling plan (by installing tertiary treatment facilities, reverse osmosis, pumps, and a distribution network) to provide recycled water to industrial and commercial users. The following represent the City's milestones for phase-out discharge:

A. The tertiary treatment facilities were installed at the TITP in 1996 and start-up operation at the tertiary wastewater treatment process began in January 1997.

B. The AWTF was installed at the TITP in January 1998 and completed in August 2001. The test of the AWTF system was finished in June 2002. An estimated 6.75 mgd is treated by RO, generating an estimated 1.75 mgd of brine water for discharge through the existing outfall Serial No. 001 into the Harbor. Approximately 5 mgd of RO treated water is permitted to be delivered to the City's Department of Water and Power Harbor Generating Station and the County's Dominguez Gap salt water intrusion barrier. This usage is anticipated to double in six years. Total reuse of the TITP effluent is projected by 2020.

C. A recycled water pump station, equipped with three pumps with constant speed drivers, was built for the Harbor Water Recycling Project (HWRP) - Phase I in November of 1999 and completed in May of 2001. The pump station is designed to pump 5 mgd with two pumps operating and the other pump on stand-by. Additional recycled water pumps will be installed for future HWRP Phases II and III.

D. The HWRP-Phase I recycled water transmission pipeline constructed on April 26, 1999 consists of approximately 18,000 linear feet of 36-inch and 24-inch diameter ductile iron and steel pipeline. The distribution lateral to the Barrier is a 12-inch diameter pipe. The completion of the last reach of pipeline (Phase III) occurred in June of 2002.

9. ***Storm Water Management -*** The City collects storm water runoff at the TITP and directs it to a lift station where it is pumped to the facility headworks for treatment. On July 22, 1993, the City filed a Notice of Intent, and currently implements a Storm Water Pollution Prevention Plan (SWPPP) to comply with the State Board's General NPDES permit NO. CAS000001 and Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities (Order No. 97-03-DWQ). The discharge of storm water runoff is regulated under Order No. 97-03-DWQ, adopted by the State Board on April 17, 1997.

IV. DISCHARGE OUTFALL AND RECEIVING WATER DESCRIPTION

1. Pursuant to Provision 4.c. of Resolution No. 94-009, and to accommodate the Port of Los Angeles' expansion project (2020 Plan) which deepens and widens the main channels of the Los Angeles Harbor, Discharge Serial No. 001 of the TITP effluent discharge location during the construction was modified three times and extended to 900 feet beyond the shoreline near Pier 400 and to a depth of 32 feet (Table F1). The Outfall flow in the old 60-inch pipe was diverted to the modified/extended 72-inch pipe on July 10, 1996. The new discharge point is through an 800-foot multi-port diffuser consisting of 100, 4-inch ports to improve initial dilution of the discharge, which begins at Latitude 33° 43' 27.3" and Longitude 118° 14' 40.2" and ends at Latitude 33° 43' 19.6" and Longitude 118° 14' 36.2". The original discharge point was at located Latitude 33° 44' 14" and Longitude 118° 15' 33".

Table F1 - The TITP Outfall Interim Discharge Coordinates and Associated Construction Activities

Time Period	Geographic Coordinates	Comments
February 1995	Lat. 33° 43' 58.9" Long. 118° 15' 10.3"	Pier 400 Dredging and Landfill Project
May 1995	Lat. 33° 43' 59.3" Long. 118° 15' 10.5"	Pier 300 Container Wharf Construction project
August 1996	Lat. 33° 43' 19.6" Long. 118° 14' 36.2"	Final TITP Outfall with a diffuser, Discharge Serial No. 001

2. The receiving water for the TITP discharge is a part of the Harbor of the Regional Board-designated Dominguez Channel – Los Angeles/Long Beach Watershed Management Area (WMA) and a part of Dominguez Channel Watershed. The Los Angeles Harbor has been defined as an enclosed bay listed in *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan)*.

3. The Los Angeles Harbor is located in the southern portion of the Los Angeles Basin. Along the northern portion of San Pedro Bay is a natural embayment formed by a westerly extension of the coastline. It contains the Los Angeles Harbor, with the Palos Verdes Hills the dominant onshore feature. Historically, the area consisted of marshes and mudflats with a large marshy area, Dominguez Slough, to the north, and flow from the Los Angeles River entering where Dominguez Channel now drains.

4. Several locations in the Harbors, including the Long Beach Outer Harbor, have been listed as impaired or sites of concern under the Bay Protection and Toxic Cleanup Program (BPTCP) due to benthic community effects, DDT, PCBs (sediments and tissue), PAHs (sediment), sediment toxicity (not recurrent), and metals (zinc in tissue samples; zinc, lead, and copper in sediments). Two areas within the Harbor are considered to be toxic hot spots under the BPTCP: Dominguez Channel/Consolidated Slip, based on sediment concentrations of DDT, PCBs, cadmium, copper, lead, mercury, zinc, dieldrin, chlordane (all exceed sediment

quality guidelines), sediment toxicity, and degraded benthic infaunal community; and Cabrillo Pier area, based on sediment concentrations of DDT, PCBs and copper, sediment toxicity and issuance of a human health (fishing) advisory for DDT and PCBs in white croaker, and exceedances of National Academy of Science guidelines for DDT in fish and shellfish. More detailed information of pollutants in the receiving water of the Los Angeles Harbor is available in the section IX.14 of this Fact Sheet.

V. DISCHARGE QUALITY DESCRIPTION

1. The Discharger's data from the 2003 Annual Monitoring Report show that the average annual removal rate of BOD and total suspended solids has been >99.1% and >99.4%, respectively. The long-term average annual flow rate of the treated wastewater was 15.3 mgd.

2. Table F2 records the characteristics of the wastewater discharged, based on data submitted in the 2003 Annual NPDES Report.

Table F2 – Characteristics of the Wastewater Discharged of the Year 2003

CTR#	Constituent	Unit	Average	Maximum	Minimum
	Flow	mgd	15.3	23.1	10.8
	PH-Effluent	pH units	7.3	7.6	6.9
	Temperature	°F	78	90	76
	$BOD_{5@20°C}$	mg/L	2	12	---
	Suspended solids	mg/L	1	2	---
	Settleable solids	ml/L	<0.03	0.05	---
	Total Chlorine Residual	mg/L	<0.01	0.05	---
	Turbidity	NTU	---	1	---
	Oil and grease	mg/L	0.1	4	---
	Ammonia-N	mg/L	0.5	3.2	---
1	Antimony	ug/L	<1.11	1.8	0.4
2	Arsenic	ug/L	2.04	4.1	0.4
3	Beryllium	ug/L	<0.086	0.73	<0.06
4	Cadmium	ug/L	<0.083	0.39	<0.08
5a	Chromium (III)	ug/L	<0.7	<0.7	<0.7
5b	Chromium (VI)	ug/L	<2.43	5	3
6	Copper	ug/L	<3.78	15	2
7	Lead	ug/L	<2.65	4.9	0.72
8	Mercury	ug/L	<0.071	0.22	0.022
9	Nickel	ug/L	7.98	22.5	3.5
10	Selenium	ug/L	9.93	17.6	4.9
11	Silver	ug/L	<0.3	1.6	0.036
12	Thallium	ug/L	<0.85	4.3	0.11
13	Zinc	ug/L	21.28	72	5.55
14	Cyanide	ug/L	<0.84	5.1	0.005
16	2,3,7,8-TCDD (Dioxin)	ng/L	<0.13	<0.63	<0.000057
17	Acrolein	ug/L	<2	<2	<2
18	Acrylonitrile	ug/L	<0.31	<0.31	<0.31

Table F2 – Characteristics of the Wastewater Discharged of the Year 2003					
19	Benzene	ug/L	< 0.22	< 0.22	< 0.22
20	Bromoform	ug/L	<0.19	<0.19	<0.19
21	Carbon tetrachloride	ug/L	<0.15	<0.15	<0.15
22	Chlorobenzene	ug/L	<0.12	<0.12	<0.12
23	Dibromochloromethane	ug/L	<0.17	0.58	<0.12
24	Chloroethane	ug/L	<0.13	<0.13	<0.13
25	2-Chloroethylvinyl ether	ug/L	<0.5	<0.5	<0.5
26	Chloroform	ug/L	<0.24	0.57	<0.13
27	Bromodichloromethane	ug/L	<0.12	0.26	<0.1
28	1,1-Dichloroethane	ug/L	<0.08	<0.08	<0.08
29	1,2-Dichloroethane	ug/L	<0.05	<0.05	<0.05
30	1,1-Dichloroethylene	ug/L	<0.13	<0.13	<0.13
31	1,2-Dichloropropane	ug/L	<0.16	<0.16	<0.16
32	1,3-Dichloropropylene	ug/L	<0.07	<0.07	<0.07
33	Ethylbenzene	ug/L	<0.08	<0.08	<0.08
34	Methyl bromide (Bromomethane)	ug/L	<0.28	<0.28	<0.28
35	Methyl chloride (Chloromethane)	ug/L	<0.14	<0.14	<0.14
36	Methylene chloride	ug/L	<0.25	1.42	<0.13
37	1,1,2,2-Tetrachloroethane	ug/L	<0.11	<0.11	<0.11
38	Tetrachloroethylene	ug/L	<0.18	0.4	<0.16
39	Toluene	ug/L	<0.088	0.17	< 0.08
40	1,2-Trans-dichloroethylene	ug/L	<0.15	<0.15	<0.15
41	1,1,1-Trichloroethane	ug/L	<0.18	<0.18	<0.18
42	1,1,2-Trichloroethane	ug/L	<0.14	<0.14	<0.14
43	Trichloroethylene	ug/L	<0.17	<0.17	<0.17
44	Vinyl chloride	ug/L	<0.08	<0.08	<0.08
45	2-Chlorophenol	ug/L	<0.09	<0.09	<0.09
46	2,4-Dichlorophenol	ug/L	<0.09	<0.09	<0.09
47	2,4-Dimethylphenol	ug/L	<0.17	<0.17	<0.17
48	2-Methyl-4,6-dinitrophenol	ug/L	<0.4	<0.4	<0.4
49	2,4-Dinitrophenol	ug/L	<0.21	<0.21	<0.21
50	2-Nitrophenol	ug/L	<0.09	<0.09	<0.09
51	4-Nitrophenol	ug/L	<0.06	<0.06	<0.06
52	3-Methyl-4-chlorophenol	ug/L	<0.18	<0.18	<0.18
53	Pentachlorophenol	ug/L	<0.4	<0.4	<0.4
54	Phenol	ug/L	<0.4	<0.4	<0.4
55	2,4,6-Trichlorophenol	ug/L	<0.09	<0.09	<0.09
56	Acenaphthene	ug/L	<0.04	<0.04	<0.04
57	Acenaphthylene	ug/L	<0.06	<0.06	<0.06
58	Anthracene	ug/L	<0.06	<0.06	<0.06
59	Benzidine	ug/L	<5	<5	<5
60	Benzo[a]anthracene	ug/L	<0.09	<0.09	<0.09
61	Benzo[a]pyrene	ug/L	<0.06	<0.06	<0.06
62	Benzo[b]fluoranthene	ug/L	<0.07	<0.07	<0.07
63	Benzo[g,h,I]perylene	ug/L	<0.05	<0.05	<0.05

Table F2 – Characteristics of the Wastewater Discharged of the Year 2003					
64	Benzo[k]fluoranthene	ug/L	<0.19	<0.19	<0.19
65	Bis(2-chloroethoxy)methane	ug/L	<0.05	<0.05	<0.05
66	Bis(2-chloroethyl)ether	ug/L	<0.09	<0.09	<0.09
67	Bis(2-chloroisopropyl)ether	ug/L	<0.05	<0.05	<0.05
68	Bis(2-ethylhexyl)phthalate	ug/L	<1.98	6.95	<0.3
69	4-Bromophenyl phenyl ether	ug/L	<0.07	<0.07	<0.07
70	Butylbenzyl phthalate	ug/L	<0.04	<0.04	<0.04
71	2-Chloronaphthalene	ug/L	<0.07	<0.07	<0.07
72	4-Chlorophenyl phenyl ether	ug/L	<0.04	<0.04	<0.04
73	Chrysene	ug/L	<0.05	<0.05	<0.05
74	Dibenzo[a,h]anthracene	ug/L	<0.05	<0.05	<0.05
75	1,2-Dichlorobenzene	ug/L	<0.06	<0.06	<0.06
76	1,3-Dichlorobenzene	ug/L	<0.05	<0.05	<0.05
77	1,4-Dichlorobenzene	ug/L	<0.085	0.24	<0.07
78	3,3'-Dichlorobenzidine	ug/L	<0.11	<0.11	<0.11
79	Diethyl phthalate	ug/L	<0.071	0.17	<0.06
80	Dimethyl phthalate	ug/L	<0.27	<0.27	<0.27
81	Di-n-butyl phthalate	ug/L	<0.13	0.28	<0.07
82	2,4-Dinitrotoluene	ug/L	<0.08	<0.08	<0.08
83	2,6-Dinitrotoluene	ug/L	<0.02	<0.02	<0.02
84	Di-n-octyl phthalate	ug/L	<0.42	2.88	<0.15
85	1,2-Diphenylhydrazine	ug/L	<0.06	<0.06	<0.06
86	Fluoranthene	ug/L	<0.06	<0.06	<0.06
87	Fluorene	ug/L	<0.05	<0.05	<0.05
88	Hexachlorobenzene	ug/L	<0.07	<0.07	<0.07
89	Hexachlorobutadiene	ug/L	<0.07	<0.07	<0.07
90	Hexachlorocyclopentadiene	ug/L	<2.9	<2.9	<2.9
91	Hexachloroethane	ug/L	<0.07	<0.07	<0.07
92	Indeno[1,2,3-cd]pyrene	ug/L	<0.07	<0.07	<0.07
93	Isophorone	ug/L	<0.07	<0.07	<0.07
94	Naphthalene	ug/L	<0.03	<0.03	<0.03
95	Nitrobenzene	ug/L	<0.05	<0.05	<0.05
96	N-Nitrosodimethylamine (NDMA)	ug/L	<0.17	<0.17	<0.17
97	N-Nitrosodi-n-propylamine	ug/L	<0.13	<0.13	<0.13
98	N-Nitrosodiphenylamine	ug/L	<0.09	<0.09	<0.09
99	Phenanthrene	ug/L	<0.08	<0.08	<0.08
100	Pyrene	ug/L	<0.07	<0.07	<0.07
101	1,2,4-Trichlorobenzene	ug/L	<0.08	<0.08	<0.08
102	Aldrin	ug/L	<0.0016	<0.0016	<0.0016
103	alpha-BHC	ug/L	<0.0023	<0.0023	<0.0023
104	beta-BHC	ug/L	<0.0019	<0.0019	<0.0019
105	gamma-BHC (Lindane)	ug/L	<0.002	0.002	<0.002
106	delta-BHC	ug/L	<0.0007	<0.0007	<0.0007
107	Chlordane	ug/L	<0.065	<0.07	<0.06
108	4,4-DDT	ug/L	<0.006	<0.006	<0.006

Table F2 – Characteristics of the Wastewater Discharged of the Year 2003					
109	4,4-DDE	ug/L	<0.0018	<0.0018	<0.0018
110	4,4-DDD	ug/L	<0.0017	<0.0017	<0.0017
111	Dieldrin	ug/L	<0.0012	0.004	<0.0009
112	alpha-Endosulfan	ug/L	<0.0016	0.003	<0.0014
113	beta-Endosulfan	ug/L	<0.0011	<0.0011	<0.0011
114	Endosulfan sulfate	ug/L	<0.004	<0.004	<0.004
115	Endrin	ug/L	<0.007	<0.007	<0.007
116	Endrin aldehyde	ug/L	<0.0027	<0.0027	<0.0027
117	Heptachlor	ug/L	<0.002	<0.002	<0.002
118	Heptachlor epoxide	ug/L	<0.0018	<0.0018	<0.0018
	Polychlorinated biphenyls (PCBs)				
119	Aroclor 1016	ug/L	<0.08	<0.08	<0.08
120	Aroclor 1221	ug/L	<0.3	<0.3	<0.3
121	Aroclor 1232	ug/L	<0.04	<0.04	<0.04
122	Aroclor 1242	ug/L	<0.05	<0.05	<0.05
123	Aroclor 1248	ug/L	<0.12	<0.12	<0.12
124	Aroclor 1254	ug/L	<0.05	<0.05	<0.05
125	Aroclor 1260	ug/L	<0.1	<0.1	<0.1
126	Toxaphene	ug/L	<0.13	<0.13	<0.13
	Tributyltin	ug/L	<2.24	<3	<1

3. **Chronic Toxicity -** Prior to November 2002, TITP experienced a series of exceedances for chronic toxicity. In September 2002, the TITP manager formed a Toxicity Reduction Evaluation (TRE) and Toxicity Identification Evaluation (TIE) investigation group to develop a TRE Workplan and initiate a TIE to determine the cause(s) of chronic toxicity. The results of the TIE/TRE efforts could not establish a correlation between compounds present in the influent, or in the effluent. There is, however, a toxic effect observed and the potential association between the AWTF and the exceedances of chronic toxicity, because during the periods when the AWTF was online, there appeared to be a higher incidence of exceedances. However, it has not been conclusively determined that the operation of the AWTF caused the exceedances of chronic toxicity.

4. **Bacteria –** High bacteria counts at Cabrillo Beach have been found not to be caused by the TITP effluent. The Environmental Monitoring Division of the Bureau of Sanitation, Department of Public Works, City of Los Angeles conducted two water quality studies in 1999. The study data suggested that the source(s) of bacterial contamination was not a result of effluent, sewage origin, or from storm drains. In addition, the study identified that the bird population inhabiting the Cabrillo Beach area is one of the potential sources of bacterial contamination. In September 2000, the Department of Recreation and Parks constructed an anti-bird structure over part of the inner Cabrillo sandy beach, resulting in a reduction of bacterial counts at Cabrillo Beach.

VI. MIXING ZONE STUDIES/DILUTION RATIOS

1. On November 12, 2002, the Regional Board staff held a meeting with Bureau of Sanitation staff to discuss issues pertaining to the upcoming reissuance of the TITP NPDES Permit and requested that the City submit a Work Plan for a Mixing Zone Study (Study), which would address the eleven conditions under which a mixing zone is allowed, according to Section 1.4.2.2.A. of the State Implementation Plan (SIP). On February 21, 2003, the City submitted the Work Plan, which included an 8-week schedule for completing the study. Regional Board staff approved the Work Plan on March 28, 2003. The final report of the Study was not received until May 28, 2004, because the City experienced unexpected technical difficulties in collecting the data for the Study.

2. The Study for the TITP outfall was conducted by Larry Walker Associates (LWA) for the City's Bureau of Sanitation Regulatory Affairs Division. The Study contains the results of a mixing zone study and a dilution credits study. The Study reveals that the effluent discharged into the Harbor would post insignificant or minimal impacts on eleven SIP conditions. The dilution ratios consist of two parts: acute mixing zone dilution ratios (D_a); and chronic mixing zone dilution ratios (D_c), which resulted from Near-Field Plume Model: UM3 – a component model of Visual Plumes and Far-Field Tracer Model: CH3D plus ICM, respectively. Table P3 cited from the final report of the dilution credits study, dated May 14, 2004, shows the different dilution ratios for the five cases of different blended flows discharged into the Harbor.

Table F3 – Dilution Ratios of the Five Different Cases					
Case	A[1]	B[2]	C[3]	D[4]	E[5]
Tertiary Flow	17 mgd	17 mgd	30 mgd	30 mgd	17 mgd
RO Product	5 mgd	12.6 mgd	22.2 mgd	0 mgd	0 mgd
Brine Water	1.75 mgd	4.4 mgd	7.8 mgd	0 mgd	0 mgd
Effluent	12 mgd	4.4 mgd	7.8 mgd	30 mgd	17 mgd
D_a	86	66	61	72	82
D_c[6]	215	165	153	180	205

Footnote:

[1]. Case A is the current situation and is based on Phase I water reuse of TITP's effluent of 17 mgd by utilizing 5 mgd of recycled water.

[2]. Case B is the future situation and is based on Phase II (by 2009) water reuse of TITP's effluent of 17 mgd by utilizing 12.6 mgd of recycled water.

[3]. Case C is the future situation and is based on Phase III (by 2020) water reuse of TITP's effluent of 30 mgd by utilizing 22.2 mgd of recycled water.

[4]. Case D is based on the maximum dry weather design capacity without producing recycled water.

[5]. Case E is based on the TITP's current effluent of 17 mgd without producing recycled

water.

[6]. D_c results from D_a divided by 0.4 (contour line).

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3. On September 3, 2004, the State Board partially approved the results of the Study for the TITP Outfall conducted by LWA for the City's Bureau of Sanitation Regulatory Affairs Division. The resulting acute dilution rations D_a ranged from 86:1 for Case A (15% brine – 85% effluent blend discharged at 12 mgd) to 82:1 for Case E (100% tertiary flow discharged at 17 mgd). ***These dilution ratios appear to be appropriate for establishing an acute mixing zone and dilution credit as defined in the SIP*.**

4. The Study did not discuss why the 0.4 contour line was selected to delineate the chronic zone, as opposed to a contour line closer to the Outfall, such as the 0.6 or 0.8 contour line. The Study also did not discuss the possibility of overstating the chronic dilution ration by combining the results of the nearfield and farfield simulations in an additive manner. In light of the above uncertainties related to the farfield dilution simulation, the State Board suggests the use of a chronic dilution ration conservative applied as the unmodified acute dilution ration, i.e.,

$$D_c = D_a$$

This will result in a single dilution credit, similar to the minimum initial dilution ration D_m found in most ocean discharge permits.

5. The current quantity of tertiary-treated effluent discharged into the Harbor fluctuates and ranges between 15 and 23 mgd. The dilution ratio study (see Table F3) did not provide the sufficient information to cover the current daily maximal flow. Therefore, the most conservative dilution credit of 61 was chosen for calculating the final effluent limits for the purpose of protecting aquatic life, human health, and receiving water quality, and for the consideration of simplicity.

VII. TIME SCHEDULE FOR COMPLIANCE

In accordance with the requirements of the TITP NPDES Permit No. CA0053856 adopted March 1, 1993, the Regional Board provided a time schedule for implementing various operational improvements at TITP and for reaching a final decision on how to comply with the discharge prohibition to remove the TITP discharge from the Harbor at the earliest practicable date. The City has complied with the time schedule. Table F4 shows the summary of the compliance history.

Table F4 – Time Schedule for Compliance

Task No.	Description	Completion Date (Permit)	Report of Compliance	Comments	Actual Date Completed
I	Provide reliable temporary power for all plant operations.	3/30/93	4/15/93	Completed on schedule.	3/30/93
II	Develop and implement an	4/30/93	5/13/93	CLAMMS is 100% complete.	3/30/93

Table F4 – Time Schedule for Compliance					
	effective maintenance program on all equipment and accessories related to power supply.			Initial implementation of the Electric System Life Cycle Replacement Program has completed. Continuation of the Life Cycle program is ongoing.	
III	Provide a redundant and independent power source or permanent emergency power on-site all plant operations.	3/30/95	4/15/95	Phase I completed November 1992. Phase II completed December 1996.	12/01/96
IV	Develop and implement an effective Wet Weather Operations Plan (including contingency operation procedures).	3/30/93	4/15/93	Plans completed on schedule. Wet Weather Planning is continually under review, revision, and refinement.	3/30/93
V	Develop and implement an effective Contingency Plan to address organic and toxic shock loadings.	5/30/93	6/15/93	Completed on schedule.	5/30/93
VI	Obtain an exemption from State Board Policy prohibiting the discharge of Municipal Wastewater into the Los Angeles Harbor.	6/30/94	7/15/94	Resolution No. 94-009 adopted by the Regional Board on October 31, 1994.	10/31/94
VII	a. If an exemption is obtained (Task VI), complete construction and operate filtration facilities.	6/30/96	7/15/96	Filtration facility is fully operational.	12/12/96
	b. If an exception 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 the requirements.	6/30/96	7/15/96	Item b. as exemption was obtained based on Resolution No. 94-009.	

VIII. APPLICABLE LAWS, PLANS, POLICIES, AND REGULATIONS

The requirements contained in the proposed Order are based on the requirements and authorities contained in the following:

1. ***Federal Clean Water Act –*** Section 301(a) of the federal Clean Water Act (CWA) requires that point source discharges of pollutants to a water of the United States must be done in conformance with a NPDES permit. NPDES permits establish effluent limitations that incorporate various requirements of the CWA designed to protect water quality. CWA section 402 authorizes the USEPA or States with an approved NPDES program to issue NPDES permits. The State of California has an approved NPDES program.

2. ***Basin Plan –*** The Regional Board adopted a revised *Water Quality Control Plan for the Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) on June 13, 1994, and amended by various Regional

Board resolutions. This updated and consolidated plan represents the Board's master quality control planning document and regulations. The State Board and the State of California Office of Administrative Law (OAL) approved the revised Basin Plan on November 17, 1994, and February 23, 1995, respectively. On May 26, 2000, the USEPA approved the revised Basin Plan except for the implementation plan for potential municipal and domestic supply (P* MUN) designated surface waters, which is not applicable to this discharge.

Ammonia Water Quality Objective (WQO) – The 1994 Basin Plan contained water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on March 4, 2004, by the Regional Board with the adoption of Resolution No. 2004-022. The amendment revised the Basin Plan by updating the ammonia objectives for inland surface waters not characteristic of freshwater such that they are consistent with the U.S. EPA "Ambient Water Quality Criteria for Ammonia (Saltwater)-1989." The amendment revised the regulatory provisions of the Basin Plan by adding language to Chapter 3 "Water Quality Objectives."

For inland surface waters not characteristic of freshwater (including enclosed bays, estuaries, and wetlands), the proposed objectives are a 4-day average concentration of unionized ammonia of 0.035 mg/L, and a one-hour average concentration of unionized ammonia of 0.233 mg/L. The proposed objectives are fixed concentrations of unionized ammonia, independent of pH, temperature, or salinity. The proposed amendment includes an implementation procedure to convert un-ionized ammonia objectives to total ammonia effluent limits. The proposed amendment also simplifies the implementation procedures for translating ammonia objectives into effluent limits in situations where a mixing zone has been authorized by the Regional Board. Finally, the proposed amendment revises the implementation procedure for determining saltwater, brackish or freshwater conditions, to be consistent with the proposed objectives. The proposed objectives will apply only to inland surface waters not characteristic of freshwater (including enclosed bays, estuaries and wetlands) and do not impact the Ammonia Water Quality Objectives for ocean waters contained in the California Ocean Plan.

The Office of Administrative Law approved the amendment on September 15, 2004. USEPA has 60 calendar days to approve this amendment. The amendment will become final when staff files the Notice of Decision document and final Certificate of Fee Exemption with the California Department of Fish and Game.

The final effluent limitations for ammonia prescribed in this Order are based on USEPA's ammonia saltwater criteria, and the revised ammonia criteria apply at the end of pipe.

The Basin Plan (i) designates beneficial uses for surface and groundwater, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and conform to the State's antidegradation policy, and (iii) includes implementation provisions, programs, and policies to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) all applicable State and Regional Board plans and policies and other

pertinent water quality policies and regulations. The 1994 Basin Plan was prepared to be consistent with all State and Regional Board plans and policies adopted in 1994 and earlier. This Order implements the plans, policies, and provisions of the Regional Board's Basin Plan.

3. ***State Implementation Plan (SIP) and California Toxics Rule (CTR) –*** The State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (also known as the State Implementation Plan or SIP) on March 2, 2000. The SIP incorporated the May 16, 1974 *Enclosed Bays and Estuaries Policy*, which contains narrative and numerical water quality objectives for the protection of beneficial uses. The SIP was amended by Resolution No. 2000-30, on April 26, 2000, and the Office of Administrative Law approved the SIP on April 28, 2000. The SIP applies to discharges of toxic pollutants in the inland surface waters, enclosed bays and estuaries of California, which are subject to regulation under the State's Porter-Cologne Water Quality Control Act (Division 7 of the California Water Code) and the Federal Clean Water Act (CWA). This Policy also establishes the following:

   A. Implementation provisions for priority pollutant criteria promulgated by USEPA through the CTR and for priority pollutant objectives established by Regional Boards in their Basin Plans;

   B. Monitoring requirements for priority pollutants with insufficient data to determine reasonable potential;

   C. Monitoring requirements for 2, 3, 7, 8 – TCDD equivalents; and,

   D. Chronic toxicity control provisions.

   The CTR became effective on May 18, 2000 (codified as 40 CFR Part 131.38). Toxic pollutant limits are prescribed in this Order to implement the CTR and Basin Plan.

   In the CTR, USEPA promulgated criteria that protects the general population at an incremental cancer risk level of one in a million (10^{-6}), for all priority toxic pollutants regulated as carcinogens. USEPA recognizes that adoption of a different risk factor is outside of the scope of the CTR. However, states have the discretion to adopt water quality criteria that result in a higher risk level, if it can demonstrate that the chosen risk level is adequately protective of the most highly exposed subpopulation, and has completed all necessary public participation. This demonstration has not happened in California. Further, the information that is available on highly exposed subpopulations in California supports the need to protect the general population at the 10^{-6} level. The Discharger may undertake a study, in accordance with the procedures set forth in Chapter 3 of USEPA's Water Quality Standards Handbook: Second Edition (EPA-823-B-005a, August 1994) to demonstrate that a different risk factor is more appropriate. Upon completion of the study, the State Board will review the results and determine if the risk factor needs to be changed. In the interim, the State will continue using a 10^{-6} risk level, as it has done historically, to protect the population against carcinogenic pollutants.

4. ***Thermal Plan –*** The State Board adopted the *Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California (Thermal Plan)* on January 7, 1971, and amended this Thermal Plan (State Board Resolution No. 75-89) on September 18, 1975. The Thermal Plan was developed in order to minimize the effects of wastes on the temperature objectives, effluent limits, and discharge prohibitions related to thermal characteristics of interstate waters, enclosed bays, and estuaries.

5. ***Alaska Rule –*** On March 30, 2000, USEPA revised its regulation that specifies when new and revised State and Tribal water quality standards (WQS) become effective for CWA purposes (40 CFR 131.21, 65 FR 24641, April 27, 2000). Under USEPA's new regulation (also known as the *Alaska rule*), new and revised standards submitted to USEPA after May 30, 2000, must be approved before being used for CWA purposes. The final rule also provides that standards already in effect and submitted to USEPA by May 30, 2000, may be used for CWA purposes, whether or not approved by EPA.

6. ***Beneficial Uses –*** Table F5 lists the designated beneficial uses in the Basin Plan for the Outer Harbor consisting of the Los Angeles and Long Beach Harbors, which are considered to be one oceanographic unit.

Table F5 – Los Angeles/Long Beach Harbor - Hydrologic Unit 405.12		
Outer Harbor	Existing:	navigation, water contact and non contact recreation, commercial, marine habitat, threatened or endangered species,
	Potential:	shellfish harvesting
Marinas	Existing:	Industry water supply, navigation, water contact and non contact recreation, commercial, marine habitat, threatened or endangered species,
	Potential:	shellfish harvesting
Public Beach Area	Existing:	navigation, water contact and non contact recreation, commercial, marine habitat, wildlife habitat, threatened or endangered species, shellfish harvesting
	Potential:	Spawning, reproduction, and/or early development
All Other Inner Areas	Existing:	Industry water supply, navigation, non contact recreation, commercial, marine habitat, threatened or endangered species
	Potential:	water contact recreation, shellfish harvesting
Dominguez Channel Estuary	Existing:	water contact and non contact recreation, commercial, estuary habitat, marine habitat, wildlife habitat, threatened or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development
	Potential:	navigation

Table F5 – Los Angeles/Long Beach Harbor - Hydrologic Unit 405.12		
Los Angeles River Estuary	Existing:	Industry water supply, navigation, water contact and non contact recreation, commercial, estuary habitat, marine habitat, wildlife habitat, threatened or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, wetland habitat
	Potential:	shellfish harvesting

The requirements in this Order are intended to protect designated beneficial uses and enhance the water quality of the watershed. Effluent limits must protect both existing and potential beneficial uses.

7. ***Antidegradation Policy –*** On October 28, 1968, the State Board adopted Resolution No. 68-16*, Maintaining High Quality Water*, which established an antidegradation policy for State and Regional Boards. The State Board has, in State Board Order No. 86-17 and an October 7, 1987 guidance memorandum, interpreted Resolution No. 68-16 to be fully consistent with the federal antidegradation policy. Similarly, the CWA (section 304(d)(4)(B)) and USEPA regulations (40 CFR, Section 131.12) require that all permitting actions be consistent with the federal antidegradation policy. Together, the State and Federal policies are designed to ensure that a water body will not be degraded resulting from the permitted discharge, except under the conditions established in the State Antidegradation Policy and the federal regulation. The provisions of this Order are consistent with the antidegradation policies.

8. ***Watershed Management –*** This Regional Board has been implementing a Watershed Management Approach (WMA) to address water quality protection in the Los Angeles and Ventura Counties. The approach is in accordance with the USEPA guidance on *Watershed Protection: A Project Focus* (EPA841-R-95-003, August 1995). The objective is to provide a comprehensive and integrated strategy resulting in water resource protection, enhancement, and restoration while balancing economic and environmental impacts within a hydrologically defined drainage basin or watershed. The Management Approach emphasizes cooperative relationships between regulatory agencies, the regulated community, environmental groups, and other stakeholders in the watershed to achieve the greatest environmental improvements with the resources available. This Order and the accompanying *Monitoring and Reporting Program* fosters implementation of this approach. The *Monitoring and Reporting Program* requires the Discharger to participate in regional water quality monitoring programs in the Southern California Bight.

IX. REGULATORY BASIS FOR EFFLUENT AND RECEIVING WATER LIMITS AND OTHER DISCHARGE REQUIREMENTS

1. ***Water Quality Objectives and Effluent Limits -*** *Water* Quality Objectives (WQOs) and effluent limitations in this permit are based on:

   A. Applicable State Regulations/Policies/Guidances*

a. The plans, policies and water quality standards (beneficial uses + objectives + antidegradation policy) contained in the 1994 *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, as amended;

b. California Toxics Rule (40 CFR 131.38);

c. The State Board's "Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California" (the State Implementation Plan or SIP), 2000;

d. Water Quality Control Plan for Control of Temperature in the Coastal and Interstate Waters and Enclosed Bays and Estuaries of California, 1975; and,

e. Administrative Procedures Manual and Administrative Procedure Updates; and,

f. Porter-Cologne Water Quality Act (Water Code §13000 et. Seq.).

B. Applicable Federal Regulations/Policies/Guidances*

a. Federal Clean Water Act;

b. 40 CFR, Parts 122, 125, 131, among others;

c. Best Professional Judgment (pursuant to 40 CFR 122.44);

d. USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996;

e. USEPA Whole Effluent Toxicity (WET) Control Policy (EPA-833-B-94-002), July 1994;

f. Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms (EPA-821-R-02-012), October 2002;

g. Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms (EPA-821-R-02-014), October 2002;

h. Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136, August 1995;

i. Inspectors Guide for Evaluation of Municipal Wastewater Treatment Plants (EPA/430/9-79-010), April 1979;

j. Fate of Priority Pollutants in Publicly Owned Treatment Works Pilot Study (EPA-440/1-79-300), October 1979;

k. Technical Support Document for Water Quality Based Toxics Control (EPA-505/ 2-90-001), March 1991;

l. U.S. EPA NPDES Permit Writers' Manual (EPA-833-B-96-003), December 1996; and,

m. Ambient Water Quality Criteria for Ammonia (Saltwater) (EPA-440/5-88-004), April 1989.

*: Please note that guidance documents are not binding, but are used solely for guidance, using BPJ, for permit development.

Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR Part 122.44(d) specifies that water quality based effluent limits may be set based on USEPA criteria and supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

2. ***Mass and Concentration Limits –*** 40 CFR section 122.45(f)(1) requires that, except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. 40 CFR section 122.45(f)(2) allows the permit writer, at their discretion, to express limits in additional units (e.g., concentration units). The regulations mandate that, where limits are expressed in more than one unit, the permittee must comply with both.

Generally, mass-based limits ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limits. Concentration-based effluent limits, on the other hand, discourage the reduction in treatment efficiency during low-flow periods and require proper operation of the treatment units at all times. In the absence of concentration-based effluent limits, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low-flow periods and still meet its mass-based limits. To account for this, this permit includes mass and concentration limits for some constituents, except during wet-weather, storm events that cause flows to the treatment plant to exceed the plant's design capacity.

3. ***Maximum Daily Effluent Limitations –*** Pursuant to 40 CFR section 122.45(d)(2), for POTW continuous discharges, all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall, unless impracticable, be stated as average weekly and average monthly discharge limitations. It is impracticable to only include average weekly and average monthly effluent limitations in the permits, because a single daily discharge of certain pollutants, in excess amounts, can cause violations of water quality objectives. The effects of certain pollutants on aquatic organisms are often rapid. For many pollutants, an average weekly or average monthly effluent limitation alone is not sufficiently protective of beneficial uses. As a result, maximum daily effluent

limitations, as referenced in 40 CFR section 122.45(d)(1), are included in the permit for certain constituents as discussed in the Fact Sheet accompanying this Order.

4. ***Pretreatment –*** Pursuant to 40 CFR section 403, the City developed and has been implementing an approved industrial wastewater Pretreatment Program This Order requires implementation of the approved Pretreatment Program.

5. ***Sludge Disposal –*** To implement CWA Section 405(d), on February 19, 1993, the USEPA promulgated 40 CFR Part 503 to regulate the use and disposal of municipal sewage sludge. This regulation was amended on September 3, 1999. The regulation requires that producers of sewage sludge meet certain reporting, handling, and disposal requirements. It is the responsibility of the City to comply with said regulations that are enforceable by USEPA, because California has not been delegated the authority to implement this program.

6. ***Stormwater Management –*** CWA section 402(p), as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges. Pursuant to this requirement, in 1990, USEPA promulgated 40 CFR section 122.26 that established requirements for storm water discharges under an NPDES program. To facilitate compliance with federal regulations, on November 1991, the State Board issued a statewide general permit, *General NPDES Permit No. CAS000001 and Waste Discharge Requirements for Discharges of Storm Water Associated with Industrial Activities.* This permit was amended in September 1992 and reissued on April 17, 1997 in State Board Order No. 97-03-DWQ. The TITP is covered by general NPDES permit No. CAS000001.

7. ***Clean Water Act Effluent Limitations –*** Numeric and narrative effluent limitations are established pursuant to Section 301 (Effluent Limitations), Section 302 (Water Quality-Related Effluent Limitations), Section 303 (Water Quality Standards and Implementation Plans), Section 304 (Information and Guidelines [Effluent]), Section 305 (Water Quality Inventory), Section 307 (Toxic and Pretreatment Effluent Standards), and Section 402 (NPDES) of the CWA. The CWA and amendments thereto are applicable to the discharges herein.

8. ***Antibacksliding Policies –*** Antibacksliding provisions are contained in Sections 303(d)(4) and 402(o) of the CWA and in 40 CFR, Section 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions. Section 402(o)(2) outlines six exceptions where effluent limitations may be relaxed.

9. ***Applicable Water Quality Objectives –*** 40 CFR, Section 122.44(d)(vi)(A) requires the establishment of numeric effluent limitations to attain and maintain applicable narrative water quality criteria to protect the designated beneficial use.

   The Basin Plan includes narrative and numeric WQOs. The CTR promulgates numeric aquatic life criteria for 24 toxic pollutants and numeric human health criteria for 92 toxic pollutants. A compliance schedule provision in the CTR and the SIP authorizes the State to issue schedules of compliance for new or revised NPDES permit limits based on the federal CTR criteria when certain conditions are met.

Where numeric water quality objectives have not been established in the Basin Plan, 40 CFR, Section 122.44(d) specifies that WQBELs may be set based on USEPA criteria and supplemented, where necessary, by other relevant information to attain and maintain narrative water quality criteria to fully protect designated beneficial uses.

10. ***Types of Pollutants –*** For CWA regulatory purposes, pollutants are grouped into three general categories under the NPDES program: conventional, toxic, and non-conventional. By definition, there are five conventional pollutants (listed in 40 CFR 401.16) – 5-day biochemical oxygen demand, total suspended solids, fecal coliform, pH, and oil and grease. Toxic or "priority" pollutants are those defined in Section 307(a)(1) of the CWA (and listed in 40 CFR 401.15 and 40 CFR 423, Appendix A) and include heavy metals and organic compounds. Non-conventional pollutants are those which do not fall under either of the two previously described categories and include such parameters as ammonia, phosphorous, chemical oxygen demand, whole effluent toxicity, etc.

11. ***Technology-Based Limits for Municipal Facilities (POTWs) –*** Technology-based effluent limits require a minimum level of treatment for industrial/municipal point sources based on currently available treatment technologies while allowing the Discharger to use any available control techniques to meet the effluent limits. The 1972 CWA required POTWs to meet performance requirements based on available wastewater treatment technology. Section 301 of the CWA established a required performance level - referred to as "secondary treatment" - that all POTWs were required to meet by July 1, 1977. More specifically, Section 301(b)(1)(B) of the CWA required that USEPA develop secondary treatment standards for POTWs as defined in Section 304(d)(1). Based on this statutory requirement, USEPA developed national secondary treatment regulations, which are specified in 40 CFR 133. These technology-based regulations apply to all POTWs and identify the minimum level of effluent quality to be attained by secondary treatment in terms of five-day biochemical oxygen demand, total suspended solids, and pH.

12. ***Water Quality Based Effluent Limits (WQBELs) –*** Water quality-based effluent limits are designed to protect the quality of the receiving water by ensuring that State water quality standards are met by discharges from an industrial/municipal point source. If, after technology-based effluent limits are applied, a point source discharge will cause, have the reasonable potential to cause, or contribute to an exceedance of an applicable water quality criterion, then 40 CFR 122.44(d)(1) requires that the permit contain a WQBEL. Although the CWA establishes explicit technology-based requirements for POTWs, Congress did not exempt POTWs from additional regulation to protect water quality standards. As a result, POTWs are also subject to WQBELs. Applicable water quality standards for the Outer Harbor are contained in the Basin Plan and CTR, as described in previous findings.

13. ***Water Quality Based Effluent Limitations for Toxic Pollutants –*** Toxic substances are regulated in this permit by water quality based effluent limitations derived from the 1994 Basin Plan, the CTR, and/or best professional judgment (BPJ) pursuant to Part 122.44. If a discharge causes, has a reasonable potential to cause, or contribute to a receiving water excursion above a narrative or numeric objective

within a State water quality standard, federal law and regulations, as specified in 40 CFR 122.44(d)(1)(i), and in part, the SIP, require the establishment of WQBELs that will protect water quality. As documented in the fact sheet, pollutants exhibiting reasonable potential in the discharge, authorized in this Order, are identified in the Reasonable Potential Analysis (RPA) section and have final effluent limits. Reasonable potential was not triggered for some of the 126 priority pollutants and final limits cannot be determined at this time. The Discharger is required to gather the appropriate data and the Regional Board will determine if final effluent limits are needed. If final limits are needed, the permit will be reopened and limits will be included in the permit.

14. ***303(d) List Pollutants –*** On July 25, 2003, USEPA approved the State's most recent list of impaired waterbodies. The list (hereinafter referred to as the 303(d) list) was prepared in accordance with Section 303(d) of the Federal Clean Water Act to identify specific impaired waterbodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations on point sources.

    The Los Angeles Harbor and nearby locations are on the 303(d) list for the following pollutants/ stressors, from point and non-point sources:

    A. Los Angeles Fish Harbor -- California Water Watershed No. 40518000: water column contamination (DDT, PAHs, and PCBs);

    B. Los Angeles Harbor Consolidated Slip -- California Water Watershed No. 40512000: benthic community effects, sediment contamination (cadmium, chromium, copper, lead, mercury, nickel, PAHs, toxaphene, and zinc), tissue and sediment contamination (chlordane, DDT, and PCBs), tissue contamination (dieldrin), and sediment toxicity;

    C. Los Angeles Harbor Inner Breakwater -- California Water Watershed No. 40512000: water column contamination (DDT, PAHs, and PCBs);

    D. Los Angeles Harbor Main Channel -- California Water Watershed No. 40518000: beach closures, tissue and sediment contamination (copper, zinc, DDT, PAHs, and PCBs), and sediment toxicity;

    E. Los Angeles Harbor Southwest Slip -- California Water Watershed No. 40512000: water column contamination (DDT and PCBs), and sediment toxicity; and,

    F. Los Angeles River Estuary -- California Water Watershed No. 40512000: sediment contamination (chlordane, DDT, lead, PCBs, and zinc).

    The Regional Board revised the 303(d) list in 2002 and submitted the draft to the State Board for approval. The State Board had scheduled the draft 303(d) list, dated October 15, 2002, for approval at two of its meetings, however the item was postponed to hold additional workshops and to allow more time for the public to submit comments. The draft 303(d) list dated October 15, 2002, was revised on

January 13, 2003, based on comments received. The draft 303(d) list, dated January 13, 2003, was adopted by the State Board at its February 4, 2003 meeting. The adopted 303(d) list was approved by USEPA on July 25, 2003.

15. ***Total Maximum Daily Load (TMDL) –*** A TMDL is a determination of the amount of a pollutant, from point, nonpoint, and natural background sources, including a margin of safety, that may be discharged to a water quality-limited body. Section 303(d) of the CWA established the TMDL process and the statutory requirements are codified at 40 CFR Part 130.7. States are required to develop a "303(d) list" of water-quality-limited waterbodies in the State. The State of California 303(d) list can be viewed at http://www.swrcb.ca.gov/tmdl/303d_lists.html. TMDLs must be developed for each pollutant water body combination on the 303(d) list. A TMDL development schedule, which includes TMDLs in Region 4, has been set by consent decree, Heal the Bay, Santa Monica Bay Keeper, et al. V. Browner, et al. (March 23, 1999). There are 13 pollutants on the 303(d) list for the Dominguez Channel above Vermont Avenue and 12 listed for Dominguez Channel below Vermont Avenue. No Dominguez Channel TMDL has yet been developed.

16. ***Mixing Zones and Dilution Credits –*** With the exception of effluent limitations derived from TMDLs, in establishing and determining compliance with effluent limitations for applicable human health, acute aquatic life, or chronic aquatic life priority pollutant criteria/objectives or the toxicity objective for aquatic life protection in a Regional Board's Basin Plan, the Regional Board may grant mixing zone and dilution credits to dischargers in accordance with the provisions of Section 1.4.2 in the SIP. To the extent permitted by applicable law, mixing zones may be considered for TMDL-derived effluent limitations. Effluent limitations based on a TMDL shall meet the mixing zone conditions specified in Section 1.4.2.2.A in the SIP. The State Board granted the a mixing zone for the TITP effluent discharge on September 3, 2004 (see Section VI.3. of this Fact Sheet).

    The applicable priority pollutant criteria and objectives are to be met throughout a water body except within any mixing zone granted by a Regional Board. The allowance of mixing zones is discretionary and shall be determined on a discharge-by-discharge basis. The Regional Board may consider allowing mixing zones and dilution credits only for discharges with a physically identifiable point of discharge that are regulated through an NPDES permit issued by the Regional Board.

17. Specific effluent limitations for each constituent contained in this Order were developed in accordance with the foregoing laws, regulations, plans, policies, and guidance. The specific methodology and example calculations are documented in the Fact Sheet prepared by Regional Board staff that accompanies this Order.

X. REASONABLE POTENTIAL ANALYSIS

1. As specified in 40 CFR Part 122.44(d)(1)(i), permits are required to include limits for all pollutants "which the Director (defined as the Regional Administrator, State Director, or authorized representative in 40 CFR Part 122.2) determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard."

A. Using the method described in the TSD, the Regional Board has conducted Reasonable Potential Analysis (RPA) for:

a. Chronic Toxicity ∗ - RPA was conducted for Chronic Toxicity (Table F6 of the accompanying Fact Sheet) using the discharger's effluent data (January 2000 to June 2004). Chronic Toxicity effluent data is summarized in Table F7 of the accompanying Fact Sheet. The RPA compares the effluent data with USEPA's 1.67 TUc (60% of effluent) water quality criteria. The Discharger's effluent demonstrated Chronic Toxicity during the last permit cycle. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause toxicity in the receiving water and, consistent with SIP section 4, the Order contains a narrative effluent limitation for Chronic Toxicity. The circumstances warranting a numeric Chronic Toxicity effluent limitation were reviewed by the State Board in SWRCB/OCC Files A-1496 & A-1496(a) [Los Coyotes/Long Beach Petitions]. On September 16, 2003, the State Board adopted Order No. WQO 2003-0012, deferring the numeric chronic toxicity effluent limitation issue until the adoption of Phase II of the SIP, and replaced the numeric chronic toxicity effluent limitation with a narrative effluent limitation for the time being.

b. Ammonia ∗ – RPA was conducted for ammonia nitrogen (Table F6 of the accompanying Fact Sheet) using the Discharger's receiving water data of Years 2000 and 2002 in Table F8 of the accompanying Fact Sheet and total ammonia nitrogen effluent data in Table F9 of the accompanying Fact Sheet. The RPA compares the projected effluent data with the Basin Plan WQOs. The Discharger's projected effluent from TITP exceeded the Basin Plan WQOs for Ammonia during the last permit cycle. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause or contribute to an exceedance of the Basin Plan WQOs and, consistent with 40 CFR 122.44(d), the Order contains numeric effluent limitations for ammonia, based on the corresponding Basin Plan WQOs.

c. MBAS ∗ – RPA was conducted for MBAS (Table F6 of the accompanying Fact Sheet) using the Discharger's effluent data (January 1998 to June 2004) from their self-monitoring reports. MBAS is summarized in Table F10 of the accompanying Fact Sheet. The RPA compares the effluent data with the Basin Plan water quality objective (WQOs). The Discharger's projected effluent exceeded the Basin Plan WQOs for MBAS during the last permit cycle. Based on this information, the Regional Board has determined that there is a reasonable potential that the discharge will cause or contribute to an exceedance of the Basin Plan WQOs and, consistent with 40 CFR 122.44(d), therefore, the Order contains a numeric effluent limitation for MBAS.

* Receiving water (background) concentrations are not available. Therefore, the dilution ratios are not applicable. The Discharger shall submit monthly receiving water data for one year. Once the data are available, the permit will be reopened and the dilution ratio for these constituents will be granted, if the City demonstrates that the concentrations of these constituents in the receiving water are less than the relevant WQOs.

B. Using the method described in the SIP, the Regional Board has conducted a RPA using the discharger's effluent data contained in Table F12. The RPA compares the effluent data with water quality objectives in the Basin Plan and CTR.

a. ***Reasonable Potential Determination –*** The RPA (per the SIP) involves identifying the observed maximum pollutant concentration in the effluent (MEC) for each constituent based on the effluent concentration data. There are three tiers to determining reasonable potential. If any of the following three tiers is triggered, then reasonable potential exists:

i. For the first tier, the MEC is compared with the lowest applicable Water Quality Objective (WQO), which has been adjusted for pH, hardness and translator data, if appropriate. If the MEC is greater than the (adjusted) WQO, then there is reasonable potential for the constituent to cause or contribute to an excursion above the WQO and a WQBEL is required. However, if the pollutant was not detected in any of the effluent samples and all of the reported detection limits are greater than or equal to the WQO, proceed with Tier 2. The Regional Board exercised its discretion in identifying all available, valid, relevant, representative data and information in accordance with SIP Section 1.2 (Page 8).

ii. For the second tier, if the MEC is less than the adjusted WQO, then the observed maximum ambient background concentration (B) for the pollutant is compared with the adjusted WQO. If B is greater than the adjusted WQO, then a WQBEL is required. If B is less than the WQO, then a limit is only required under certain circumstances to protect beneficial uses. If a constituent was not detected in any of the effluent samples and all of the detection limits are greater than or equal to the adjusted WQO, then the ambient background water quality concentration is compared with the adjusted WQO. The Regional Board exercised its discretion in identifying all available, applicable ambient background data in accordance with SIP Section 1.4.3 (Page 16).

iii. For the third tier, other information is used to determine RPA, such as the current CWA 303(d) List. Section 1.3 of the SIP describes the type of information that can be considered in Tier 3.

For all parameters that have reasonable potential to cause or contribute to an exceedance of a WQO/criteria, numeric WQBELs are required. Section 1.4, Step 5 of the SIP (Page 8) states that maximum daily effluent limitations (MDELs) shall be used for POTWs in place of average weekly limitations. WQBELs are based on CTR, USEPA water quality criteria, and Basin Plan objectives.

If the data are unavailable or insufficient to conduct the RPA for the pollutant, or if all reported detection limits of the pollutant in the effluent are greater than or equal to the WQO, the Regional Board shall establish interim requirements, in accordance with Section 2.2.2. of the SIP, that require additional monitoring for the pollutant in place of a WQBEL. The effluent monitoring data from July 1997 to May 2004 indicate that dioxin, benzidine, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, dibenzo(a,h)anthracene, 3,3-dichlorobenzidine, indeno(1,2,3-cd)pyrene, aldrin, chlordane, 4,4'-DDT, 4,4'-DDE, 4,4'-DDD, heptachlor, heptachlor epoxide, PCB 1016, PCB 1221, PCB 1232, PCB 1242, PCB 1248, PCB 1254, PCB 1260, and toxaphene were not detected and their lowest detection limits were greater than their WQO.

Therefore these constituents require interim requirements. Section 2.4.5 of the SIP discusses how compliance will be determined in those cases. The Discharger should work with the laboratory to lower detection levels to meet applicable and reliable detection limits; follow procedures set forth in 40 CFR Part 136; and, report the status of their findings in the annual report. During the term of the permit, if and when monitoring with lowered detection limits shows any of the priority pollutants at levels exceeding the applicable WQOs, the Discharger will be required to initiate source identification and control for the particular pollutant. Appendix 4 of the SIP lists the minimum levels and laboratory techniques for each constituent.

Upon completion of the required monitoring, the Regional Board shall use the gathered data to conduct RPA and determine if a WQBEL is required. However, if Tier 1 or Tier 3 triggered reasonable potential for a pollutant, then the lack of receiving water data for Tier 2 evaluation would not prohibit the establishing of WQBELs in the permit.

A numerical limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. However, if the constituent had a limit in the previous permit, and if none of the Antibacksliding exceptions apply, then the limit will be retained. A narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants, which have no available numeric criteria.

b. ***RPA Data.*** Regional Board staff used tertiary-treated effluent data collected between July 1997 and June 2004 (summarized in Table F11 of

the accompanying Fact Sheet) and the most conservative dilution credit of 61 approved by the State Board on September 3, 2004 to run the Reasonable Potential Analysis. Table F12 of the Fact Sheet summarizes the RPA, lists the constituents, and where available, the lowest, adjusted WQO, the MEC, the "Reasonable Potential" result, and the limits from the previous permit.

i. **Metals Water Quality Objective**. For metals, the lowest applicable WQO was expressed as total recoverable, and where applicable, adjusted for hardness. Regional Board Staff used a hardness value of 400 mg/L, which is the highest value allowed to convert the dissolved metal CTR criteria into the total recoverable metal form.

ii. **Interim Monitoring Requirements**. In accordance with the SIP, the Regional Board may impose interim monitoring requirements upon the Discharger, so that the Discharger obtains adequate ambient, background water data for priority pollutants upstream of the discharge point as well as suitable effluent data. The Executive Officer directed the Discharger to begin an interim monitoring program for the duration of 18 months, beginning in July 2001. The Discharger collected samples on a monthly basis for all priority pollutants, with the exception of asbestos and 2,3,7,8-TCDD that were sampled semiannually, and reported the results quarterly to the Regional Board. Section 1.3, Step 8, of the SIP authorizes the Regional Board to use the gathered data to conduct a RPA, as outlined in Steps 1 through 7, and to determine if a water quality-based effluent limitation is required.

A reopener provision is included in this Order that allows the permit to be reopened to allow the inclusion of new numeric limitations for any constituent that exhibits reasonable potential to cause or contribute to exceedance of applicable water quality objectives.

C. The numeric limitations contained in this Order are intended to protect and maintain existing and potential beneficial uses of the receiving waters. Environmental benefits provided by these limitations are reasonable and necessary.

D. Regional Board staff have determined that copper, lead, mercury, nickel, silver, cyanide, bis(2ethylhexyl)phthalate, and dieldrin showed reasonable potential to exceed respective CTR objectives, and, therefore, CTR-based effluent limitations are required.

a. There are no dilution credits applied for the final effluent limits of copper, lead, mercury, and silver, because these priority pollutants have been detected in the receiving water, at least once, at a concentration greater than the CTR objectives prescribed in this Order.

b. There are no dilution credits applied for the final effluent limits of cyanide and dieldrin. Although these pollutants were not detected in the receiving water, their lowest detection limits were greater than their WQO.

c. The most conservative dilution credit of 61 is applied for nickel and bis(2-ethylhexyl)phthalate final effluent limits, because nickel and bis(2-ethylhexyl)phthalate concentrations detected in the receiving water are less than the CTR objective prescribed in this Order.

Once a TMDL has been developed, the permit can be reopened and WLA and compliance schedule will be incorporated into the permit.

2. This Order is consistent with State and Federal antidegradation policies in that it does not authorize a change in the quantity of wastewater discharged by the facility, nor does it authorize a change or relaxation in the manner or level of treatment. As a result, both the quantity and quality of the discharge are expected to remain the same consistent with antidegradation policies. The accompanying Monitoring and Reporting Program requires continued data collection, and if monitoring data show a reasonable potential for a constituent to cause or contribute to an exceedance of water quality standards, the permit will be reopened to incorporate appropriate WQBELs. Such an approach ensures that the discharge will adequately protect water quality standards for potential and existing uses, and conforms with antidegradation policies and antibacksliding provisions.

XI. PROPOSED EFFLUENT LIMITATIONS

1. Numeric toxic constituent limitations are based on the Basin Plan the narrative water quality objective for toxic constituents, “All waters shall be maintained free of toxic substances in concentrations that are toxic to, or that produce detrimental physiological responses in, human, plant, animal, or aquatic life”; on the CTR; and, the interpretation of the Basin Plan narrative criteria using USEPA’s 304(a) nationally recommended water quality criteria. For toxic constituents that have no reasonable potential to cause or contribute to excursions of water quality objectives, no numerical limitations are prescribed.

2. Pursuant to 40 CFR 122.45(d)(2), for a POTWs continuous discharges, all permit effluent limitations, standards, and prohibitions, including those necessary to achieve water quality standards, shall, unless impracticable, be stated as average weekly and average monthly discharge limitations for POTWs. It is impracticable to only include average weekly and average monthly effluent limitations in the permit, because a single daily discharge of a pollutant, in excess amounts, can cause violations of water quality objectives. The effects of pollutants on aquatic organisms are often rapid. For many pollutants, an average weekly or average monthly effluent limitation alone is not sufficiently protective of beneficial uses. As a result, maximum daily effluent limitations, as referenced in 40 CFR 122.45(d)(1), are included in the permit.

3. Furthermore, Section 1.4 of the SIP requires the step-by-step procedure to "adjust" or convert CTR numeric criteria into Average Monthly Effluent Limitations (AMELs) and Maximum Daily Effluent Limitations (MDELs), for toxics.

   A. Step 3 of Section 1.4 of the SIP (Page 6) lists the statistical equations that adjust CTR criteria for effluent variability.

   B. Step 5 of Section 1.4 of the SIP (Page 8) lists the statistical equations that adjust CTR criteria for averaging periods and exceedance frequencies of the criteria/objectives. This section also reads, "For this method only, maximum daily effluent limitations shall be used for publicly-owned treatment works (POTWs) in place of average weekly limitations.

4. Table F12 is the spreadsheet that staff used to calculate the AMELs and MDELs for priority pollutants.

5. 40 CFR, Section 122.45(f)(1) requires that except under certain conditions, all permit limits, standards, or prohibitions be expressed in terms of mass units. 40 CFR, Section 122.45(f)(2) allows the permit writer, as its discretion, to express limits in additional units (e.g., concentration units). The regulations mandate that, where limits are expressed in more than one unit, the permittee must comply with both.

6. Generally, mass-based limits ensure that proper treatment is employed to comply with the final effluent concentration limits. Concentration-based effluent limits, on the other hand, discourage the reduction in treatment efficiency during low-flow periods and require proper operation of the treatment units at all times. In the absence of concentration-based effluent limits, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low-flow periods and still meets its mass-based limits. To account for this, this permit includes mass and concentration limits for some constituents, except during wet-weather, storm events that cause flows to the treatment plant to exceed the plant's design capacity.

   A. Effluent Limitations

      a. <u>Conventional and nonconventional pollutants</u>

Constituent	Units	Discharge Limitations		
		Monthly Average[1]	Weekly Average[1]	Daily Maximum[2]
BOD_5 20°C	mg/L	15[3]	30[3]	40[3]
	lbs/day[4]	3,800	7,500	10,000
Suspended solids	mg/L	15[3]	30[3]	40[3]
	lbs/day[4]	3,800	7,500	10,000
Settleable solids	ml/L	0.1[3]	--	0.3[3]
Oil and grease	mg/L	10[3]	--	15[3]
	lbs/day[4]	2,500	--	3,800
Total residual chlorine	mg/L	--	--	0.1[5]

Constituent	Units	Discharge Limitations		
		Monthly Average[1]	Weekly Average[1]	Daily Maximum[2]
MBAS	mg/L	0.5[6, 7]	--	--
	lbs/day[4]	130	--	--
Summer total ammonia	mg/L	0.71[6,8]		4.7[6,9]
(May - October)	lbs/day[4]	180		1,200
Winter total ammonia	mg/L	1.3[6,10]	--	8.4[6,11]
(November - April)	lbs/day[4]	330	--	2,100
Radioactivity[12]				
Gross alpha	pCi/L	--	--	15
Gross beta	pCi/L	--	--	50
Combined radium 226 & 228	pCi/L	--	--	5
Tritium	pCi/L	--	--	20,000
Strontium	pCi/L	--	--	8
Uranium	pCi/L	--	--	20

Footnotes:

[1]. Average Monthly Discharge Limitation means the highest allowable average of daily discharge over a calendar month, calculated as the sum of all daily discharges measured during that month divided by the number of days on which monitoring was performed.

Average Weekly Discharge Limitation means the highest allowable average of daily discharge over a calendar week, calculated as the sum of all daily discharges measured during that week divided by the number of days on which monitoring was performed.

[2]. The daily maximum effluent concentration limit shall apply to flow weighted 24-hour composite samples and grab samples It may apply to grab samples if the collection of composite samples for those constituents is not appropriate because of instability of the constituents.

[3]. The existing permit limit is carried over.

[4]. The mass emission rates are calculated as follows: 30 (mgd) x Concentration (mg/L) x 8.366 (conversion factor) = lbs/day. During wet-weather storm events in which the flow exceeds the design capacity, the mass discharge rate limitations shall not apply, and concentration limitations will provide the only applicable effluent limitations.

[5]. The existing permit limit is carried over. For the determination of compliance with total residual chlorine limit, one of the following applies:

Total residual chlorine concentration excursions of up to 0.3 mg/L, at the point in treatment train immediately following dechlorination, shall not be considered violations of this requirement provided the total duration of such excursions do not exceed 15 minutes during any calendar day. Peaks in excess of 0.3 mg/L lasting less than one minute shall not be considered a violation of this

requirement; or

For continuous total residual chlorine recording devices that require greater than one minute to level off after the detection of a spike: if it can be demonstrated that a stoichiometrically appropriate amount of dechlorination chemical has been added to effectively dechlorinate the effluent to 0.1 mg/L or less, then the exceedance over one minute, but not for more than five minutes, will not be considered to be a violation.

[6]. Receiving water (background) concentration is not available. Therefore, the dilution ratios are not applicable. Once the Discharger collects monthly data of receiving water for a year, which are submitted to the Regional Board. The final effluent concentration and mass emission may be modified.

[7]. The concentrations of MBAS in the last permit cycle are between 0.090 mg/L to 0.368 mg/L, which do not exceed the Basin Plan's MBAS WQO (0.5 mg/L). Therefore, interim limit for MBAS is unnecessary, even though the Reasonable Potential Analysis projects MBAS that may exceed the Basin Plan's MBAS WQO.

[8]. This is the salt water total ammonia Water Quality Objective during summer, the lowest monthly average (see Table F8A) of total ammonia projected among water quality monitoring stations (HWs 20, 40-44, 50-54,and 62-64) in the receiving water, based on the Bight monitoring data collected between May and October of 2000 and 2002, according to the methodology listed in the Resolution No. 2004-022, "Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters Not Characteristic of Freshwater (Including Enclosed Bays, Estuaries and Wetlands) with Beneficial Use Designations for Protection of Aquatic Life", adopted by the Regional Board on March 4, 2004. The Water Quality Objective will ultimately serve as the effluent limitation for the discharge. This limit becomes effective after the USEPA approves the Resolution No. 2004-022. If U.S. EPA does not approve the Resolution No. 2004-022, this effluent limitation including mass will not apply.

[9]. This is the salt water total ammonia Water Quality Objective during summer, the lowest daily maximum (see Table F8B) of total ammonia projected among water quality monitoring stations (HWs 20, 40-44, 50-54,and 62-64) in the receiving water, based on the Bight monitoring data collected between May and October of 2000 and 2002, according to the methodology listed in the Resolution No. 2004-022, "Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters Not Characteristic of Freshwater (Including Enclosed Bays, Estuaries and Wetlands) with Beneficial Use Designations for Protection of Aquatic Life", adopted by the Regional Board on March 4, 2004. The Water Quality Objective will ultimately serve as the effluent limitation for the discharge. This limit becomes effective after the USEPA approves the Resolution No. 2004-022. If U.S. EPA does not approve the Resolution No. 2004-022, this effluent limitation including mass will not apply.

[10]. This is the salt water total ammonia Water Quality Objective during winter, resulting from the lowest monthly average (see Table F8A) of total ammonia projected among water quality monitoring stations (HWs 20, 40-44, 50-54,and 62-64) in the receiving water, based on the Bight monitoring data collected

between January and April and between November and December of 2000 and 2002, according to the methodology listed in the Resolution No. 2004-022, "Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters Not Characteristic of Freshwater (Including Enclosed Bays, Estuaries and Wetlands) with Beneficial Use Designations for Protection of Aquatic Life", adopted by the Regional Board on March 4, 2004. The Water Quality Objective will ultimately serve as the effluent limitation for the discharge. This limit becomes effective after the USEPA approves the Resolution No. 2004-022. If U.S. EPA does not approve the Resolution No. 2004-022, this effluent limitation including mass will not apply.

[11]. This is the salt water total ammonia Water Quality Objective during winter, resulting from the lowest daily maximum (see Table F8B) of total ammonia projected among water quality monitoring stations (HWs 20, 40-44, 50-54,and 62-64) in the receiving water, based on the Bight monitoring data collected between January to April and between November and December of 2000 and 2002, according to the methodology listed in the Resolution No. 2004-022, "Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters Not Characteristic of Freshwater (Including Enclosed Bays, Estuaries and Wetlands) with Beneficial Use Designations for Protection of Aquatic Life", adopted by the Regional Board on March 4, 2004. The Water Quality Objective will ultimately serve as the effluent limitation for the discharge. This limit becomes effective after the USEPA approves the Resolution No. 2004-022. If U.S. EPA does not approve the Resolution No. 2004-022, this effluent limitation including mass will not apply.

[12]. Effluent limits for radioactivity are based on Maximum Contaminant Levels (MCLs) specified in Title 22, Chapter 15, Article 5, Section 64443, California Code of Regulations.

B. Basis for conventional and nonconventional pollutants

a. *Biochemical Oxygen Demand (BOD) and Suspended solids*

Biochemical oxygen demand (BOD) is a measure of the quantity of the organic matter in the water and, therefore, the water's potential for becoming depleted in dissolved oxygen. As organic degradation takes place, bacteria and other decomposers use the oxygen in the water for respiration. Unless there is a steady resupply of oxygen to the system, the water will quickly become depleted of oxygen. Adequate dissolved oxygen levels are required to support aquatic life. Depressions of dissolved oxygen can lead to anaerobic conditions resulting in odors, or, in extreme cases, in fish kills.

40 CFR, Part 133 describes the minimum level of effluent quality attainable by secondary treatment, for BOD and suspended solids, as:

i. the monthly average shall not exceed 30 mg/L; and,

ii. the weekly average shall not exceed 45 mg/L.

TITP provides tertiary treatment, as such, the limits in the permit are more stringent than secondary treatment requirements. The Plant achieves solids removal that are better than secondary-treated wastewater by adding a polymer (Alum) to enhance the precipitation of solids, and by filtering the effluent.

The monthly average, the weekly average, and the daily maximum limits cannot be removed because none of the antibacksliding exceptions apply. Those limits were all included in the previous permit (Order 93-014) and the TITP has been able to meet all three limits (monthly average, the weekly average, and the daily maximum), for both BOD and suspended solids.

In addition to having mass-based and concentration-based effluent limitations for BOD and suspended solids, the TITP also has a percent removal requirement for these two constituents. In accordance with 40 CFR, Sections 133.102(a)(3) and 133.102(b)(3), the 30-day average percent removal shall not be less than 85 percent. Percent removal is defined as a percentage expression of the removal efficiency across a treatment plant for a given pollutant parameter, as determined from the monthly average values of the raw wastewater influent pollutant concentrations to the facility and the monthly average values of the effluent pollutant concentrations for a given time period.

b. *Settleable solids*

Excessive deposition of sediments can destroy spawning habitat, blanket benthic (bottom dwelling) organisms, and abrade the gills of larval fish. The limits for settleable solids are based on the Basin Plan (Page 3-16) narrative, "Waters shall not contain suspended or settleable material in concentrations that cause nuisance or adversely affect beneficial uses." The numeric limits are empirically based on results obtained from the settleable solids 1-hour test, using an Imhoff cone.

It is impracticable to use a weekly average limitation, because short term spikes of settleable solid levels that would be permissible under a weekly average scheme would not be adequately protective of all beneficial uses. The monthly average and the daily maximum limits cannot be removed because none of the antibacksliding exceptions apply. The monthly average and daily maximum limits were both included in the previous permit (Order 93-014) and the TITP has been able to meet both limits.

c. *Oil and grease*

Oil and grease are not readily soluble in water and form a film on the water surface. Oily films can coat birds and aquatic organisms, impacting respiration and thermal regulation, and causing death. Oil and grease can also cause nuisance conditions (odors and taste), are aesthetically unpleasant, and can restrict a wide variety of beneficial uses. The limits for

oil and grease are based on the Basin Plan (Page 3-11) narrative, "Waters shall not contain oils, greases, waxes, or other materials in concentrations that result in a visible film or coating on the surface of the water or on objects in the water, that cause nuisance, or that otherwise adversely affect beneficial uses."

The numeric limits are empirically based on concentrations at which an oily sheen becomes visible in water. It is impracticable to use a weekly average limitation, because spikes that occur under a weekly average scheme could cause visible oil sheen. A weekly average scheme would not be sufficiently protective of beneficial uses. The monthly average and the daily maximum limits cannot be removed because none of the antibacksliding exceptions apply. Both limits were included in the previous permit (Order 93-014) and the TITP has been able to meet both limits.

d. *Residual chlorine*

Disinfection of wastewaters with chlorine produces chlorine residual. Chlorine and its reaction products are toxic to aquatic life. The limit for residual chlorine is based on the Basin Plan (Page 3-9) narrative, "Chlorine residual shall not be present in surface water discharges at concentrations that exceed 0.1 mg/L and shall not persist in receiving waters at any concentration that causes impairment of beneficial uses."

It is impracticable to use a weekly average or a monthly average limitation, because it is not as protective as of beneficial uses as a daily maximum limitation is. Chlorine is very toxic to aquatic life and short-term exposures of chlorine may cause fish kills.

e. *Methylene Blue Activated Substances (MBAS)*

The MBAS procedure tests for the presence of anionic surfactants (detergents) in surface and ground waters. Surfactants disturb the water surface tension, which affects insects and can affect gills in aquatic life. The MBAS can also impart an unpleasant soapy taste to water, as well as cause scum and foaming in waters, which impact the aesthetic quality of both surface and ground waters.

Given the nature of the facility (a POTW) which accepts domestic wastewater into the sewer system and treatment plant, and the characteristics of the wastes discharged, the discharge has reasonable potential to exceed both the numeric MBAS water quality objective (WQO) and the narrative WQO for prohibition of floating material such as foams and scums. Therefore an effluent limitation is required.

The 0.5 mg/L concentration (which has been determined to be protective of beneficial uses and the aesthetic quality of waters), is based on the Department of Health Services' secondary drinking water standard, and on the Basin Plan WQO (Page 3-11). The excess MBAS disturb the surface

tension, which affects insects and can affect gills in aquatic life. Since the Reasonable Potential Analysis projects MBAS that may exceed the Basin Plan's MBAS WQO. Therefore, the secondary MCL should be the MBAS limit for this discharge to protect aquatic life, while also protecting surface waters from exhibiting scum or foaming.

Since the Basin Plan objective is based on a secondary drinking water standard, it is practicable to have a monthly average limitation in the permit.

f. *Ammonia as N*

i. Ammonia is a pollutant routinely found in the wastewater effluent of POTWs, in landfill-leachate, as well as in run-off from agricultural fields where commercial fertilizers and animal manure are applied. Ammonia exists in two forms – un-ionized ammonia (NH_3) and the ammonium ion (NH_4^+). They are both toxic, but the neutral, un-ionized ammonia species (NH_3) is much more toxic, because it is able to diffuse across the epithelial membranes of aquatic organisms much more readily than the charged ammonium ion. The form of ammonia is primarily a function of pH, but it is also affected by temperature, salinity, and other factors. Additional impacts can also occur as the oxidation of ammonia lowers the dissolved oxygen content of the water, further stressing aquatic organisms. Ammonia also combines with chlorine (often both are present in POTW treated effluent discharges) to form chloramines – persistent toxic compounds that extend the effects of ammonia and chlorine downstream.

ii. Water quality-based effluent limitations for un-ionized and total ammonia are required in order to be protective of the water quality objective for the following reasons:

- Un-ionized ammonia (NH3) concentrations in effluent and receiving water are not applicable;
- Un-ionized ammonia (NH3) is much more toxic to aquatic organisms; and,
- Total ammonia has reasonable potential to cause or contribute to an excursion of a water quality objective.

iii. The 1994 Basin Plan contained water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on March 4, 2004, by the Regional Board, with the adoption of Resolution No. 2004-022. The amendment revised the Basin Plan by updating the ammonia objectives for inland surface waters not characteristic of freshwater such that they are consistent with the U.S. EPA "Ambient

Water Quality Criteria for Ammonia (Saltwater)-1989." The amendment revised the regulatory provisions of the Basin Plan by adding language to Chapter 3 "Water Quality Objectives."

The Office of Administrative Law approved the amendment on September 15, 2004. USEPA has 60 calendar days to approve this amendment. The amendment will become final when staff files the Notice of Decision document and final Certificate of Fee Exemption with the California Department of Fish and Game. The final effluent limitations for ammonia prescribed in this Order are based on the revised ammonia criteria (see Attachment X) and apply at the end of pipe.

However, there is no any physical and chemical ways to directly measure un-ionized ammonia concentrations in effluent and receiving water. Therefore, only total ammonia concentrations given in this Order result from the formula listed in Attachment K.

g. Receiving Water Coliform/Bacteria Limitations

i. Geometric Mean Limits

- Total coliform density shall not exceed 1,000/100 mL.
- Fecal coliform density shall not exceed 200/100 mL.
- Enterococcus density shall not exceed 35/100 ml.

ii. Single Sample Limits

- Total coliform density shall not exceed 10,000/100 ml.
- Fecal coliform density shall not exceed 400/100 mL.
- Enterococcus density shall not exceed 104/100 ml.
- Total coliform density shall not exceed 10,000/100 ml, if the ration of fecal total coliform exceeds 0.1.

These receiving water limitations are based on Resolution No. 01-018, Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Bacteria Objectives for Water Bodies Designated for Water Contact Recreation, adopted by the Regional Board on October 25, 2001. The Resolution was approved by State Board, OAL, and USEPA, on July 18, 2002, September 19, 2002, and September 25, 2002, respectively.

h. *pH*

The hydrogen ion activity of water (pH) is measured on a logarithmic scale, ranging from 0 to 14. While the pH of "pure" water at 25°C is 7.0, the pH of natural waters is usually slightly basic due to the solubility of carbon dioxide from the atmosphere. Minor changes from natural conditions can harm aquatic life. The effluent limitation for pH which reads, "the wastes discharged shall at all times be within the range of 6.5 to 8.5," is taken from the Basin Plan (Page 3-15) which reads" the pH of inland surface waters shall not be depressed below 6.5 or raised above 8.5 as a result of waste discharge.

i. *Turbidity*

Turbidity is an expression of the optical property that causes light to be scattered in water due to particulate matter such as clay, silt, organic matter, and microscopic organisms. Turbidity can result in a variety of water quality impairments. The effluent limitation for turbidity which reads, "For the protection of the water contact recreation beneficial use, the wastes discharged to water courses shall have received adequate treatment, so that the turbidity of the wastewater does not exceed: (a) a daily average of 2 Nephelometric turbidity units (NTUs); and (b) 5 NTUs more than 5 percent of the time (72 minutes) during any 24 hour period," is based on the Basin Plan (Page 3-17).

j. *Radioactivity*

Radioactive substances are generally present in natural waters in extremely low concentrations. Mining or industrial activities increase the amount of radioactive substances in waters to levels that are harmful to aquatic life, wildlife, or humans. Regional Board staff used Best Professional Judgements to establish radioactivity limits for the effluent using Maximum Contaminant Levels (MCLs) for the drinking water specified in Title 22, Chapter 15, Article 5, Section 64443, of the California Code of Regulations.

C. Temperature

The temperature of wastewater discharged shall not exceed 100^0F, which takes into account the very large dilution credit based upon BPJ.

D. Toxicity

a. Effluent Toxicity:

i. Final effluent water quality data, contained in the Discharger's monitoring reports, shows that chronic toxicity in the effluent has exceeded 1.67 TUc (60% of effluent) several times. Therefore, pursuant to the TSD, reasonable potential exists for chronic toxicity.

As such, the permit should contain a numeric effluent limitation for toxicity.

ii. The following support the inclusion of toxicity numeric effluent limitations for chronic toxicity:

- 40 CFR 122.2 (Definition of Effluent Limitation);
- 40 CFR 122.44(d)(v) – limits on whole effluent toxicity are necessary when chemical-specific limits are not sufficient to attain and maintain applicable numeric or narrative water quality standards;
- 40 CFR 122.44(d)(vi)(A) – where a State has not developed a water quality criterion for a specific pollutant that is present in the effluent and has reasonable potential, the permitting authority can establish effluent limits using numeric water quality criterion;
- Basin Plan objectives and implementation provisions for toxicity;
- Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs Final May 31, 1996;
- Whole Effluent Toxicity (WET) Control Policy July 1994; and,
- Technical Support Document (several chapters and Appendix B).

However, the circumstances warranting a numeric chronic toxicity effluent limitation when there is reasonable potential were under review by the State Water Resources Control Board (State Board) in SWRCB/OCC Files A-1496 & A-1496(a) [Los Coyotes/Long Beach Petitions]. On September 17, 2003, at a public hearing, the State Board decided to defer the issue of numeric chronic toxicity effluent limitations until Phase II of the SIP is adopted. In the mean time, the State Board replaced the numeric chronic toxicity limit with a narrative effluent limitation and a 1 TUc trigger, in the Long Beach and Los Coyotes WRP NPDES permits. This permit contains a similar chronic toxicity effluent limitation. This Order also contains a reopener to allow the Regional Board to modify the permit, if necessary, consistent with any new policy, law, or regulation.

iii. Acute Toxicity Limitation:

The Discharger may test for Acute toxicity by using USEPA's *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms*, October 2002 (EPA-821-R-02-

012). Acute toxicity provisions in the accompanying Order are derived from the Basin Plan's toxicity standards (Basin Plan 3-16 and 3-17). The provisions require the Discharger to accelerate acute toxicity monitoring and take further actions to identify the source of toxicity and to reduce acute toxicity.

iv. Chronic Toxicity Limitation and Requirements:

Chronic toxicity provisions in the accompanying Order are derived from the Basin Plan's toxicity standards (Basin Plan 3-16 and 3-17). The provisions require the Discharger to accelerate chronic toxicity monitoring and take further actions to identify the source of toxicity and to reduce chronic toxicity. The monthly median trigger of 1.0* TU_c (100% effluent) for chronic toxicity is based on *USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity (WET) Programs* Final May 31, 1996 (Chapter 2 – Developing WET Permitting Conditions, Page 2-8). In cases where effluent receives no dilution or where mixing zones are not allowed, the 1.0 TU_c chronic criterion should be expressed as a monthly median. The "median" is defined as the middle value in a distribution, above which and below which lie an equal number of values. For example, if the results of the WET testing for a month were 1.5, 1.0, and 1.0 TU_c, the median would be 1.0 TU_c trigger.

The *USEPA Regions 9 & 10 Guidance for Implementing Whole Effluent Toxicity (WET) Programs* Final May 31, 1996 (Chapter 2 – Developing WET Permitting Conditions, Page 2-8) recommends two alternatives: using 2.0 TUc as the maximum daily limit; or using a statistical approach to develop a maximum daily effluent limitation.

*. If chronic toxicity is based on 60% effluent, then 1.67 TUc is a trigger number.

b. Receiving Water Toxicity:

i. There is no receiving/ambient water toxicity information available. In order to protect aquatic life, human health, and receiving water quality, and to consist with NPDES Permits adopted for the inland dischargers and the Basin Plan, the City is required to conduct the acute and chronic toxicity tests.

ii. The results of the chronic toxic monitoring will be used to assess whether the TITP obtains the dilution credit of 61 for the chronic toxicity in effluent.

iii. Acute Toxicity Limitations – See XI.6.D.a.iii of. this Fact Sheet. If the Discharger can demonstrate that there are no violations of effluent acute toxicity limitations, then the Discharger can waive the TIE in the receiving water.

iv. Chronic Toxicity Limitations – See XI.6.D.a.iv. of this Fact Sheet. If the Discharger can demonstrate that there are no violations of effluent chronic toxicity limitations, then the Discharger can waive the TRE in the receiving water.

E. Limits for priority pollutants on Discharge Serial No. 001:

CTR # [1]	Constituent	Units	Discharge Limitations	
			Monthly Average[2]	Daily Maximum
6	Copper[3, 4, 5]	ì g/L	2.1	5.8
		lbs/day[6]	0.53	1.46
7	Lead[3, 4, 5]	ì g/L	6.6	15
		lbs/day[6]	1.7	3.8
8	Mercury[3, 4, 5]	ì g/L	0.051	0.094
		lbs/day[6]	0.013	0.024
9	Nickel[3, 4, 7]	ì g/L[8]	120	250
		lbs/day[6]	30	63
11	Silver[3, 4, 5]	ì g/L	0.81	2.2
		lbs/day[6]	0.20	0.55
14	Cyanide[4, 9]	ì g/L	0.50	1.0
		lbs/day[6]	0.13	0.25
68	Bis(2-ethylhexyl)phthalate[3, 4, 7]	ì g/L[8]	190	560
		lbs/day[6]	48	140
111	Dieldrin[4, 9]	ì g/L	0.00014	0.00028
		lbs/day[6]	0.000035	0.000070

Footnotes to discharge limitations:

[1]. This number corresponds to the compound number found in Table 1 of CTR. It is simply the order in which the 126 priority pollutants were listed 40 CFR section 131.38 (b)(1).

[2]. The daily maximum effluent concentration limit shall apply to flow weighted 24-hour composite samples and grab samples It may apply to grab samples if the collection of composite samples for those constituents is not appropriate because of instability of the constituents.

[3]. Concentration expressed as total recoverable.

[4] This constituent shows reasonable potential.

[5]. This constituent concentration in receiving water is higher than water quality criteria of this constituent. Therefore, dilution credit is not applicable for this constituent.

[6]. The mass emission rates are calculated as follows: 30 (mgd) x Concentration (µg/L) x 0.008366 (conversion factor) = lbs/day. During wet-weather storm events

in which the flow exceeds the design capacity, the mass discharge rate limitations shall not apply, and concentration limitations will provide the only applicable effluent limitations.

[7]. This constituent concentration in receiving water is lower than water quality criteria of this constituent. Therefore, dilution credit is applicable for this constituent.

[8]. The effluent concentration is based on a dilution ration of 61.

[9]. Minimal detection limit used for analyzing this constituent in receiving water is higher than water quality criteria of this constituent. Dilution credit is not applicable for this constituent, even though the all results showed non-detected. The Discharger shall collect monthly receiving water data for one year. Once the data are available, the permit will be reopened and the dilution ratio for these constituents may be granted, if the City demonstrates that the concentrations of these constituents in the receiving water are less than the relevant WQOs.

F. Basis for priority pollutants:

Allowance of a mixing zone is in the Regional Board's discretion under Section 1.4.2 of the SIP and under the Basin Plan (Basin Plan Chapter 4, Page 30). If the Discharger subsequently conducts appropriate mixing zone and dilution credit studies, the Regional Board can evaluate the propriety of granting a mixing zone or establishing dilution credits.

On September 3, 2004, the State Board partially approved the results of the Study of Dilution Ratios for the TITP outfall conducted by the Larry Walker Associates for the City's Bureau of Sanitation Regulatory Affairs Division. Therefore, mixing zone and dilution credits are used in the accompanying order.

a. Example calculation without dilution credits: Mercury

Is a limit required? What is RPA?

From Attachment A, *Reasonable Potential & Limit Derivation*, we determined that Reasonable potential analysis (RPA) = Yes, therefore a limit is required.

Step 1: Identify applicable water quality criteria.

From California Toxics Rule (CTR), we can obtain the Criterion Maximum Concentration (CMC) and the Criterion Continuous Concentration (CCC). Saltwater Aquatic Life Criteria:

CMC = NA µg/L (CTR Page 31712, column C1) and
CCC = NA µg/L (CTR Page 31712, column C2); and
Human Health Criteria for Water & Organisms = 0.051µg/L (CTR Page 31712, column D2).

Step 2: Calculate effluent concentration allowance (ECA)

ECA = Criteria in CTR, since no dilution is allowed.

Step 3: Determine long-term average (LTA) discharge condition

i. Calculate CV:

CV = Standard Deviation / Mean
= 0.488

ii. Find the ECA Multipliers from SIP Table 1 (Page 7), or by calculating them using equations on SIP Page 6. When CV = 0.488, then:

ECA Multiplier acute = 0.380 and
ECA Multiplier chronic = 0.589.

LTA acute = ECA acute x ECA Multiplier acute
= NA µg/L x 0.380 = NA µg/L

LTA chronic = ECA chronic x ECA Multiplier chronic
= NA µg/L x 0.589 = NA µg/L

Step 4: Select the lowest LTA

In this case, the lowest LTA is not applicable.

Step 5: Calculate the Average Monthly Effluent Limitation (AMEL) & Maximum Daily Effluent Limitation (MDEL) for AQUATIC LIFE

i. Find the multipliers. You need to know CV and n (frequency of sample collection per month). If effluent samples are collected 4 times a month or less, then n = 4. CV was determined to be 0.488 in a previous step.

AMEL Multiplier = 1.416
MDEL Multiplier = 2.632

ii. AMEL aquatic life = lowest LTA (from Step4) x AMEL Multiplier
= NA µg/L x 1.416= NA µg/L

iii. MDEL aquatic life = lowest LTA (from Step4) x AMEL Multiplier
= NA µg/L x 2.632 = NA µg/L

Step 6: Find the Average Monthly Effluent Limitation (AMEL) & Maximum Daily Effluent Limitation (MDEL) for HUMAN HEALTH

i. Find factors. Given CV = 0.488 and n = 4.

For AMEL human health limit, there is no factor.
The MDEL/AMEL human health factor = 1.859

ii. AMEL human health = ECA = 0.051 µg/L

iii. MDEL human health = ECA x MDEL/AMEL factor
= 0.051 µg/L x 1.859 = 0.0948 µg/L

Step 7: Compare the AMELs for Aquatic life and Human health and select the lowest. Compare the MDELs for Aquatic life and Human health and select the lowest

i. Lowest AMEL = 0.051 µg/L (Based on Human Health protection)

ii. Lowest MDEL = 0.0948 µg/L (Based on Human Health protection)

b. Example calculation with dilution credit of 61: Nickel

Is a limit required? What is RPA?

From Attachment A, *Reasonable Potential & Limit Derivation*, we determined that Reasonable potential analysis (RPA) = Yes, therefore a limit is required.

Step 1: Identify applicable water quality criteria.

From California Toxics Rule (CTR), we can obtain the Criterion Maximum Concentration (CMC) and the Criterion Continuous Concentration (CCC).

Saltwater Aquatic Life Criteria:

CMC = 8.3 µg/L (CTR Page 31712, column C1) and
CCC = 75 µg/L (CTR Page 31712, column C2); and
Human Health Criteria for Water & Organisms = 4600 µg/L (CTR Page 31712, column D2).

Step 2: Calculate effluent concentration allowance (ECA)

ECA = Criteria in CTR + dilution credit x (Criteria in CTR – Nickel Concentration in Receiving Water), because of nickel concentration is receiving water less than criteria in CTR.

ECA_{Acute} = 75 µg/L + 61 x (75 µg/L – 6 µg/L) = 4284 µg/L

$ECA_{Chronic}$ = 8.3 µg/L + 61 x (8.3 µg/L – 6 µg/L) = 148.6 µg/L

Step 3: Determine long-term average (LTA) discharge condition

i. Calculate CV:

CV = Standard Deviation / Mean
= 0.700

ii. Find the ECA Multipliers from SIP Table 1 (Page 7), or by calculating them using equations on SIP Page 6. When CV = 0.700, then:

ECA Multiplier acute = 0.281 and
ECA Multiplier chronic = 0.481.

LTA acute = ECA acute x ECA Multiplier acute
= 4284 µg/L x 0.281 = 1204.32 µg/L

LTA chronic = ECA chronic x ECA Multiplier chronic
= 148.6 µg/L x 0.481 = 71.428 µg/L

Step 4: Select the lowest LTA

In this case, the lowest LTA is 71.428 µg/L.

Step 5: Calculate the Average Monthly Effluent Limitation (AMEL) & Maximum Daily Effluent Limitation (MDEL) for AQUATIC LIFE

i. Find the multipliers. You need to know CV and n (frequency of sample collection per month). If effluent samples are collected 4 times a month or less, then n = 4. CV was determined to be 0.700 in a previous step.

AMEL Multiplier = 1.651
MDEL Multiplier = 3.557

ii. AMEL aquatic life = lowest LTA (from Step4) x AMEL Multiplier
= 71.428 µg/L x 1.651= 117.905 µg/L

iii. AMEL aquatic life = lowest LTA (from Step4) x AMEL Multiplier
= 71.428 µg/L x 3.557 = 254.082 µg/L

Step 6: Find the Average Monthly Effluent Limitation (AMEL) & Maximum Daily Effluent Limitation (MDEL) for HUMAN HEALTH

i. Find factors. Given CV = 0.700 and n = 4.

For AMEL human health limit, there is no factor.
The MDEL/AMEL human health factor = 2.155

ii. AMEL human health = ECA = 4600 µg/L

iii. MDEL human health = ECA x MDEL/AMEL factor
= 4600 µg/L x 2.208= 9912.88 µg/L

Step 7: Compare the AMELs for Aquatic life and Human health and select the lowest. Compare the MDELs for Aquatic life and Human health and select the lowest

i. Lowest AMEL = 117.905 µg/L (Based on Aquatic Life protection)

ii. Lowest MDEL = 254.082 µg/L (Based on Aquatic Life protection)

c. A numerical limit has not been prescribed for a toxic constituent if it has been determined that it has no reasonable potential to cause or contribute to excursions of water quality standards. A narrative limit to comply with all water quality objectives is provided in *Standard Provisions* for the priority pollutants, which have no available numeric criteria.

d. The numeric limitations contained in the accompanying Order were derived using best professional judgement and are based on applicable state and federal authorities, and as they are met, will be in conformance with the goals of the aforementioned water quality control plans, and water quality criteria; and will protect and maintain existing and potential beneficial uses of the receiving waters.

X. INTERIM REQUIREMENTS

1. Pollutant Minimization Program

A. The accompanying Order provides for the use of Pollutant Minimization Program, developed in conformance with Section 2.4.5.1 of the SIP, when there is evidence (e.g., sample results reported as DNQ when the effluent limitation is less than the MDL, sample results from analytical methods more sensitive than those methods included in the permit in accordance with sections 2.4.2 or 2.4.3 above, presence of whole effluent toxicity, health advisories for fish consumption, results of benthic or aquatic organisms tissue sampling) that a priority pollutant is present in the discharger's effluent above an effluent limitation.

B. The Discharger shall develop a Pollutant Minimization Program (PMP), in accordance with Section 2.4.5.1.,of the SIP, if all of the following conditions are true, and shall submit the PMP to the Regional Board within 120 days of determining the conditions are true:

a. when there is evidence that the priority pollutant is present in the effluent above an effluent limitation and either:

i. A sample result is reported as detected but not quantified (DNQ) and the effluent limitation is less than the reported ML; or

ii. A sample result is reported as nondetect (ND) and the effluent limitation is less than the MDL.

b. Examples of evidence that the priority pollutant is present in the effluent above an effluent limitation are:

i. sample results reported as DNQ when the effluent limitation is less than the method detection limit (MDL);

ii. sample results from analytical methods more sensitive than those methods included in the permit in accordance with Sections 2.4.2 or 2.4.3;

iii. presence of whole effluent toxicity;

iv. health advisories for fish consumption; or,

v. results of benthic or aquatic organism tissue sampling.

C. The goal of the PMP is to reduce all potential sources of a priority pollutant(s) through pollution minimization (control) strategies, including pollution prevention measures as appropriate, to maintain the effluent concentration at or below the WQBEL.

D. The Discharger shall propose a plan with a logical sequence of actions to achieve full compliance with the limits in this Order. The first phase of the plan is to investigate the sources of the high levels of contaminants in the collection system. If the sources can be identified, source reduction measures (including, when appropriate, Pollution Minimization Plans) will be instituted. At the time this Order is considered, the Discharger is unsure whether or not all sources contributing to the high contaminant levels can be identified. Therefore, a parallel effort will be made to evaluate the appropriateness of Site Specific Objectives (SSO) and, where appropriate, Use Attainability Analyses (UAA), and modifications to and/or construction of treatment facilities. If it is determined that a SSO or UAA is necessary and appropriate, the Discharger will submit a written request for a SSO study, accompanied by a preliminary commitment to fund the study, to the Regional Board. The Discharger will then develop a workplan and submit it to the Regional Board for approval prior to the initiation of the studies.

2. Interim Limits

A. The TITP may not be able to achieve immediate compliance with the limits for ammonia, copper, lead, mercury, silver, cyanide, and dieldrin contained in the accompanying Order Sections I.2.B.a and I.2.B.b. Data submitted in previous self-monitoring reports indicate that these constituents have been detected in the effluent/receiving water, at least once, at a concentration greater than the new limit proposed in the accompanying Order.

B. 40 CFR, Section 131.38(e) provides conditions under which interim effluent limits and compliance schedules may be issued. However, until recently, the Basin Plan did not allow inclusion of interim limits and compliance schedules in NPDES permits for effluent limits. With the Regional Board adoption and USEPA

approval of Resolution No. 2003-001, compliance schedules can be allowed in NPDES permits if:

a. the effluent limit implements new, revised, or newly interpreted water quality standards, or

b. the effluent limit implements TMDLs for new, revised or newly interpreted water quality standards.

C. The SIP allows inclusion of interim limits in NPDES permits for CTR-based priority pollutants. The CTR provides for a five-year maximum compliance schedule, while the SIP allows for longer, TMDL-based compliance schedule. However, the USEPA has yet to approve the longer compliance schedules. Therefore, this Order includes interim limits and compliance schedules based on the CTR for CTR-based priority pollutants limits when the Discharger has been determined to have problems in meeting the new limits. This Order also includes a reopener to allow the Regional Board to grant TMDL-based compliance schedules if the USEPA approves the longer compliance schedule provisions of the SIP.

D. In conformance with the CTR and the relevant provisions of SIP Section 2.1, the Discharger has submitted documentation of the efforts they have made to quantify pollutant levels in the discharge and the sources of the pollutants entering the POTW. In addition, the Discharger already has in place a source control and pollutant minimization approach through its existing pollutant minimization strategies and through the pretreatment program. The duration of interim requirements established in this order was developed in coordination with Regional Board staff and the Discharger, and the proposed schedule is as short as practicable. The five-year compliance schedule is based on the maximum duration compliance schedule. However, the Discharger anticipates it will take longer than five years to achieve the final limits.