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California Regional Water Quality Control Board
Los Angeles Region
and
U.S. Environmental Protection Agency
Region IX

ORDER NO. R4-2005-0020
NPDES PERMIT NO. CA0109991

Waste Discharge Requirements
and
Authorization to Discharge Under the
National Pollutant Discharge Elimination System

for the

City of Los Angeles
(Hyperion Treatment Plant)

September 21, 2004
Revised: April 7, 2005

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State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
AND
U.S. ENVIRONMENTAL PROTECTION AGENCY
REGION IX

ORDER NO. R4-2005-0020
NPDES PERMIT NO. CA0109991

WASTE DISCHARGE REQUIREMENTS AND AUTHORIZATION TO DISCHARGE UNDER THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM FOR THE CITY OF LOS ANGELES (Hyperion Treatment Plant)

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board) and the Regional Administrator, U.S. Environmental Protection Agency, Region IX (USEPA), find:

PURPOSE OF ORDER

1. The City of Los Angeles (City or Discharger) owns and operates the Hyperion Treatment Plant which discharges disinfected (outfall 001) /undisinfected (outfall 002) secondary treated municipal wastewater to the Pacific Ocean within Santa Monica Bay, a water of the United States. The discharge is regulated under waste discharge requirements (WDRs) contained in Order No. 94-021, adopted by the Regional Board on February 28, 1994. Order No. 94-021 also serves as the National Pollutant Discharge Elimination System (NPDES) permit (CA0109991) issued jointly by the Regional Board and USEPA on April 1, 1994. Order No. 94-021 has an expiration date of March 10, 1999.

2. Section 122.6, Title 40, Code of Federal Regulations (40 CFR) and section 2235.4, Title 23, California Code of Regulations (CCR), state that an expired permit continues in force until the effective date of a new permit, provided the permittee has timely submitted a complete application for a new permit. On March 8, 1999, the City filed a report of waste discharge (ROWD) and applied for renewal of its WDRs and NPDES permit. Therefore, the Discharger's permit has been administratively extended until the Regional Board and USEPA act on the new WDRs and permit.

3. This Order is the reissuance of WDRs and NPDES permit for the Hyperion Treatment Plant.

4. USEPA and the Regional Board have classified Hyperion Treatment Plant as a major discharger. It has a Threat to Water Quality and Complexity rating of 1-A pursuant to CCR, Title 23, section 2200.

CONSENT DECREE AND OTHER LEGAL ISSUES

5. The operations and discharges from the Hyperion Treatment Plant and Hyperion collection system are also regulated under the following enforcement actions:

   a. Amended Consent Decree entered on February 19, 1987, in United States and State of California v. City of Los Angeles, No. CV 77-3047-HP (C.D. Cal.);

   b. Settlement Agreement, Los Angeles Superior Court Case No. C 665238, dated January 29, 1990, in State of California v. City of Los Angeles; and

   c. Regional Board Cease and Desist Order 98-073 adopted on September 14, 1998, amended by Order No. 00-128 adopted on August 31, 2000.

6. In 1987, the City entered into an Amended Consent Decree (No. CV 77-3047-HP) with USEPA and the Regional Board. The Amended Consent Decree required the City under time schedules to undertake the following:

   a. Eliminate the discharge of sewage sludge into the Pacific Ocean from Hyperion Treatment Plant by December 31, 1987 (status: completed);

   b. Comply with interim effluent limits (status: interim limits are not applicable as of January 1, 1999);

   c. Complete construction and begin operation of the Hyperion Energy Recovery System by June 30, 1989 (status: completed, but determined to be a technological failure and abandoned);

   d. Achieve and thereafter maintain compliance with full secondary treatment at Hyperion Treatment Plant by December 31, 1998 (status: completed and achieved compliance before the deadline);

   e. Prepare a storm water pollution reduction study and implement the recommended measures thereof (status: completed).

7. On June 7, 1991, the United States and the State of California filed a supplemental complaint under the existing Consent Decree CV 77-3047-HP (C.D. Cal.) for alleged pretreatment violations against the City. Settlement of the complaint had been concluded and modification to the Consent Decree was entered into court records on August 7, 2000. The settlement requires the City to implement the Westside Water Recycling Extension Project and the Santa Monica Bay Storm Drain Low-Flow Diversion Project.

8. In October 1987, the California Attorney General, on behalf of the Regional Board, filed a complaint with the Los Angeles Superior Court (Case No. C 665238) for civil penalties regarding unpermitted discharges to Discharge Serial No. 001 and raw sewage overflows to surface waters from the Hyperion collection system. A settlement agreement was entered into on January 29, 1990. In lieu of civil penalties, the City was required to implement 23 projects to improve and enhance its collection system and benefit the waters in the Greater Los Angeles Area. Twenty two of the 23 Settlement Agreement projects were completed.

The remaining project deals with the Los Angeles Zoo Wastewater Treatment Facility. Two of the original three elements of the Zoo project (construction of the retention basin and pump station for collection of the Zoo's wastewater and diversion to the North Outfall Sewer force main) were completed in 1995. The City proposes to substitute Best Management Practices (BMPs) for the storm water peripheral drainage system, the third element of the original design concept. After reviewing the study, the Regional Board rejected the City's proposal because the proposed BMPs can not achieve the objectives of the original Settlement Agreement. Currently, the City is in the process of developing other options for the Regional Board's consideration.

9. Sanitary sewer overflows (SSO) have been a recurring problem in certain areas of the City; in particular, in the South Central area, where sewers do not have adequate capacity to absorb inflow and infiltration that occurs during wet weather. For the entire City, between the wet weather period of February 3, 1998, through May 14, 1998, there were 99 separate sanitary overflows resulting in 44 million gallons of raw sewage released. On September 14, 1998, the Regional Board issued Cease and Desist Order (CDO) No. 98-073 to the City, amended by CDO No. 00-128 adopted on August 31, 2000. The CDO requires the City to provide adequate capacity to its wastewater collection system by constructing additional sewer alignments and/or upgrading the existing sewer system over a seven-year period (1998 to 2005). Additionally, on August 5, 2004, the United States, the State of California, Santa Monica Baykeeper, a coalition of community groups and the City of Los Angeles lodged a settlement that would resolve the parties' Clean Water Act and Porter-Cologne Act litigation regarding the City of Los Angeles' SSOs and sewage odors. This settlement underwent public review and comment. The Settlement Agreement and Final Order was filed on October 28, 2004 and entered by the District Court on October 29, 2004, and is now being implemented. The Settlement Agreement and Final Order establishes a ten-year program designed to reduce SSOs and sewage odors to the maximum extent feasible.

HYPERION TREATMENT SYSTEM, SERVICE AREA, AND WASTEWATER COLLECTION SYSTEM

10. The Hyperion Treatment Plant is located at 12000 Vista del Mar Boulevard, Playa Del Rey, California (see Figure 1, Location Map). It is part of a joint outfall system commonly known as the Hyperion Treatment System which consists of the wastewater collection system, the Hyperion Treatment Plant, and three upstream wastewater treatment plants: Donald C. Tillman Water Reclamation Plant (Tillman WRP), Los Angeles-Glendale Water Reclamation Plant (LAGWRP), and Burbank Water Reclamation Plant (Burbank WRP)(owned and operated by a contract city). The Hyperion Treatment System collects, treats, and disposes of sewage from the entire City (except the Wilmington - San Pedro Area, the strip north of San Pedro, and Watts) and from a number of cities and agencies (Contract Cities and Agencies, see below) under contractual agreements. Approximately 85% of the sewage and commercial/industrial wastewater comes from the City of Los Angeles. The remaining 15% comes from the Contract Cities and Agencies. There are approximately four million people in the Hyperion Treatment System Service Area (see Figure 2, Hyperion Service Area Map).

CONTRACT CITIES AND AGENCIES

a. Aneta Street Tax Zone
b. Army Reserve Center
c. Army Reserve Training
d. Barrington Post Office
e. City of Beverly Hills
f. City of Burbank
g. California National Guard (Federal Avenue Armory)
h. L.A. County Sanitation District #4 (W. Hollywood)
i. L.A. County Sanitation District #5 (Inglewood)
j. L.A. County Sanitation District #9 (Terminal Island)
k. L.A. County Sanitation District #16 (Alhambra, Pasadena, S. Pasadena)
l. L.A. County Sanitation District #27 (Sunset Mesa)
m. City of Culver City
n. City of El Segundo
o. Federal Office Building
p. City of Glendale
q. Karl Holton Camp
r. Las Virgenes Municipal Water District
s. Marina Del Rey
t. City of Long Beach
u. City of San Fernando
v. City of Santa Monica
w. Triunfo County Sanitation District
x. Universal City
y. Veterans Memorial Park
z. Veterans Administration – Sawtelle
aa. West Los Angeles Community College

11. Currently, the Hyperion Treatment Plant also accepts dry weather urban runoff that is diverted from storm drains into the City's collection system from April 1 to October 31. The City plans to extend this diversion operation from the dry summer months to year-round in order to conform to the six-year compliance schedule for bacteria concentration during winter dry weather, contained in the Santa Monica Bay Beach Dry-weather Bacteria TMDL regulation (Resolution No. 02-004 and Resolution No. 2002-022) adopted by the Regional Board.

12. The Hyperion Treatment System is an interconnected system and includes approximately 6,500 miles of sewer lines located within the City (including trunk sewers in contract cities and agencies) and additional sewer lines under the control of the contract cities and agencies. Sludge from the City's two upstream plants is returned to the wastewater collection system and flows to the Hyperion Treatment Plant for treatment. Discharges from Tillman WRP and LAGWRP are regulated by Order No. 98-046 (NPDES Permit No. CA0056227) and Order No. 98-047 (NPDES Permit No. CA0053953), respectively. In addition, sludge generated from the Burbank WRP is also returned to the City of Burbank sewer system for treatment at the Hyperion Treatment Plant. The influent to the Burbank WRP can be diverted/bypassed to the Hyperion Treatment Plant during periods of emergency. Discharges from the Burbank WRP are regulated under Order No. 98-052 (NPDES CA0055531).

13. The Contract Cities and Agencies operate their respective collection systems that are tributary to the City's main trunk lines. Some contract cities and agencies also operate their own nondomestic source control programs.

DESCRIPTION OF THE HYPERION TREATMENT PLANT

14. The Hyperion Treatment Plant has a dry weather average design treatment capacity of 450 million gallons per day (mgd) and a wet weather peak hydraulic capacity of approximately 850 mgd. In 2003, the Hyperion Treatment Plant received an average of 339 mgd of influent and discharged an average of 315 mgd of secondary effluent to the ocean. Approximately 24 mgd of secondary effluent was sent to West Basin Water Recycling Facility for advanced treatments.

15. The Hyperion Treatment Plant has provided full secondary treatment since December 1998. Preliminary and primary wastewater treatments consist of screening, grit removal, and primary sedimentation with coagulation and flocculation. In secondary treatment, the primary effluent is biologically treated in a high purity oxygen activated sludge process comprised of a cryogenic oxygen plant, 9 secondary reactor modules and 36 secondary clarifiers. Each secondary reactor module is designed to handle 50 mgd of flow which results in a total treatment capacity of 450 mgd of primary effluent. After clarification, undisinfected secondary effluent is discharged into Santa Monica Bay through a five mile submerged outfall pipe (see below for description). Discharge up to 325 mgd flows by gravity to the outfall, or is pumped at the Effluent Pumping Plant when flows exceed 325 mgd.

    Solid fractions recovered from wastewater treatment processes include grit, primary screenings, primary sludge and skimmings, thickened waste activated sludge, digested sludge screenings and digester cleaning solids. The fine solids (grit, primary screenings, digested sludge screenings, digester cleaning solids) that consist of primarily inorganic materials are hauled away to landfills. The remaining solid fractions (primary sludge and skimmings, thickened waste activated sludge) are anaerobically digested onsite. The digested solids are screened and dewatered using centrifuges. Starting on January 1, 2003, the Hyperion Treatment Plant implemented full thermophilic digestion to generate Class A "EQ" biosolids. The biosolids (treated sewage sludge) are beneficially reused offsite for land application and composting projects. The digester gas is cleaned and a major part of the gas is currently exported to the Los Angeles Department of Water and Power's Scattergood Steam Generating Plant, located immediately adjacent to the Hyperion Treatment Plant. The exported digester gas is used as fuel in the generation of electricity. In return, the generating plant provides steam for digester heating for the Hyperion Treatment Plant. During interruptions in the export of steam from the DWP Scattergood Steam Generation Plant, digester gas can be used as fuel for in-plant boilers that provide steam to heat the anaerobic digesters. Any remaining non-exported digester gas may be flared, if necessary, and is regulated under a flare operation permit from the South Coast Air Quality Management District (AQMD).

    A schematic of the Hyperion Treatment Plant's wastewater flow is presented in Figure 3.

16. ***Water Reclamation*** - The West Basin Municipal Water District (West Basin) operates the West Basin Water Recycling Facility (West Basin Facility) in El Segundo. West Basin is contractually entitled to receive up to 70 mgd of secondary effluent from Hyperion Treatment

Plant for advanced treatment. West Basin Facility provides tertiary treatment and/or advanced treatments such as microfiltration and reverse osmosis (RO) to the Hyperion secondary effluent to produce Title 22 and high purity recycled water. Title 22 recycled water is used for beneficial irrigation, industrial applications including cooling water and boiler feed water, and other purposes. The RO treated recycled water is primarily injected into the West Coast Basin Barrier Project to control seawater intrusion. In 2003, West Basin Facility received approximately an average of 24 mgd of secondary effluent from the Hyperion Treatment Plant.

The waste brine from West Basin Facility is discharged to the ocean through Hyperion's five-mile outfall (Discharge Serial No. 002) via a waste brine line from West Basin Facility. Although the waste brine is discharged through Hyperion's outfall, it is regulated under separate waste discharge requirements and NPDES permit.

17. The Hyperion Treatment Plant ceased the irrigation use of in-plant chlorinated secondary treated wastewater in July 1999. Instead, the plant started using tertiary recycled water from West Basin in August 1999.

DESCRIPTION OF OUTFALLS

18. The Hyperion Treatment Plant has three ocean outfalls. However, only two outfall discharge points (i.e., 001 and 002) are utilized to discharge treated wastes to the Pacific Ocean. The three ocean outfalls are described as follows:

Discharge Serial No. 001 - this is commonly referred to as the "one-mile outfall". It is a 12-foot diameter outfall terminating approximately 5,364 feet (1.6 kilometers [km]) west-southwest of the treatment plant at a depth of approximately 50 feet (15 meters [m]) below the ocean surface (Latitude: 33° 55.095; Longitude 118° 26.844). This outfall is permitted for emergency discharge of chlorinated secondary treated effluent during extremely high flows, power failures, and preventive maintenance, such as routine opening and closing the outfall gate valve(s) for exercising and lubrication. However, during intense storms or storms associated with plant power outages, direct discharge of undisinfected storm water overflow is also permitted at this outfall. This Order and permit require the City to notify the Regional Board and USEPA in advance of any planned preventive maintenance that results in discharges through Discharge Serial No. 001.

Discharge Serial No. 002 - this is commonly referred to as the "five-mile outfall". It is a 12-foot diameter outfall terminating approximately 26,525 feet (8.1 km) west-southwest of the treatment plant at a depth of approximately 187 feet (57 m) below the ocean surface. This outfall is located north of Discharge Serial No. 001 and ends in a "Y" shaped diffuser consisting of two 3,840-foot legs (Latitude: 33° 54.718; Longitude: 118° 31.287) (North terminus of wye structure – Latitude 33° 55.160 and Longitude 118° 31.709; South terminus of wye structure – Latitude 33° 54.039 and Longitude 118° 31.636). This is the only outfall permitted for the routine discharge of undisinfected secondary treated effluent.

Discharge Serial No. 003 – this is a 20-inch diameter outfall terminating approximately 35,572 feet (10.8 km) west of the treatment plant, at the head of a submarine canyon at a depth of approximately 300 feet (91 m) below the ocean surface (Latitude: 33° 55.622, Longitude: 118° 33.183). This outfall had been used to discharge sludge. Under the 1987

amended Consent Decree No. CV77-3047-HP, this outfall was deactivated in November 1987 when sludge discharge to the ocean was terminated. Near the head of this outfall, a spool piece was removed and the discharge pipe was blind-flanged to prevent any possible discharge of sewage or sludge into the Pacific Ocean. The outfall has not been maintained since it was taken out of service. Any discharge from this outfall is prohibited.

DISCHARGE QUALITY DESCRIPTION

19. The effluent characteristics, shown in the following Table 1, are based on data in the Discharger's 2003 annual summary report submitted to the Regional Board and USEPA. Only pollutants that were detected are shown below. Nondetected pollutants and the detection limits are given in the Fact Sheet.

Table 1. Effluent Characteristics for Year 2003

Constituent	Unit	Average or Median *	Maximum	Minimum
Flow	mgd	315	466	268
pH	pH units	6.8	7.3	6.4
Temperature	°F	79	85	--
BOD_5 20°C	mg/L	18	24**	--
Suspended solids	mg/L	19	27**	--
Total organic carbon	mg/L	46	20	--
Total phosphorus	mg/L	2.5	3.2	--
Turbidity	NTU	8	12	--
Oil and grease	mg/L	< 3	4	--
Dissolved oxygen	mg/L	5.6	7.3	--
Organic-N	mg/L	3.7	5.6	--
Nitrate-N	mg/L	0.020	0.076	--
Marine Aquatic Life Toxicants				
Arsenic	ug/L	2.6	5.0	1.1
Cadmium	ug/L	< 0.08	0.16	< 0.08
Chromium (VI)	ug/L	< 2	4	< 2
Copper	ug/L	14	19	10
Lead	ug/L	< 3	4.5	< 2
Mercury	ug/L	< 0.002	0.18	< 0.002
Nickel	ug/L	9.4	12	6.1
Selenium	ug/L	1.1	2	0.24
Silver	ug/L	0.8	1.8	0.6
Zinc	ug/L	18	24	12
Cyanide	ug/L	< 4	6	< 2
Ammonia-N	mg/L	35	37	32
Acute toxicity	TUa	0.6	1.1	0
Chronic toxicity	TUc	25	48	10
Phenolic compounds (non-chlorinated)	ug/L	< 4	1.9	< 4
Phenolic compounds (chlorinated)	ug/L	< 0.4	0.46	< 0.4

Constituent	Unit	Average or Median *	Maximum	Minimum
Endrin	ug/L	< 0.007	0.009	< 0.007
HCH (sum of the following)	ug/L	< DL	0.006	< DL
alpha-BHC	ug/L	< 0.0023	< 0.0023	< 0.0023
beta-BHC	ug/L	< 0.0019	< 0.0019	< 0.0019
gamma-BHC (Lindane)	ug/L	< 0.0020	0.006	< 0.0020
delta-BHC	ug/L	< 0.0007	< 0.0007	< 0.007
Human Health Toxicants – Noncarcinogens				
Antimony	ug/L	< 1.3	2	< 1.3
Di-n-butyl phthalate	ug/L	< 0.07	0.77	< 0.07
Dichlorobenzenes	ug/L	< 0.06	0.17	< 0.06
Fluoranthene	ug/L	< 0.06	0.18	< 0.06
Thallium	ug/L	< 0.3	0.68	< 0.3
Toluene	ug/L	0.23	0.78	< 0.08
Tributyltin	ug/L	< 3.2	10	< 2
Human Health Toxicants – Carcinogens				
Beryllium	ug/L	< 0.01	0.17	< 0.006
Bis(2-ethylhexyl)phthalate	ug/L	2.9	6.4	0.88
Chlorodibromomethane	ug/L	1.4	2.4	0.81
Chloroform	ug/L	5.8	7.1	3.7
1,4-Dichlorobenzene	ug/L	2.2	5.3	< 0.07
Dichlorobromomethane	ug/L	1.2	1.6	0.93
Methylene chloride	ug/L	3.3	5.4	1.7
Halomethanes (sum of the following)	ug/L	< DL	1.1	< DL
Methyl chloride (Chloromethane)	ug/L	< 0.14	< 0.18	< 0.14
Methyl bromide (Bromomethane)	ug/L	< 0.28	< 0.28	< 0.16
Bromoform	ug/L	< 0.19	1.1	< 0.08
Isophorone	ug/L	0.15	0.21	< 0.07
PAHs (sum of the following)	ug/L	< DL	1.6	< DL
Acenaphthylene	ug/L	< 0.06	< 0.06	< 0.06
Anthracene	ug/L	< 0.06	0.16	< 0.06
Benzo(a) anthracene	ug/L	< 0.09	0.28	< 0.09
Benzo(b) fluoranthene	ug/L	< 0.07	0.13	< 0.07
Benzo(k) fluoranthene	ug/L	< 0.19	0.21	< 0.19
1,12-Benzoperylene	ug/L	< 0.05	< 0.05	< 0.05
Benzo(a) pyrene	ug/L	< 0.06	< 0.06	< 0.06
Chrysene	ug/L	< 0.05	0.19	< 0.05
Dibenzo(a,h)anthracene	ug/L	< 0.05	< 0.05	< 0.05
Fluorene	ug/L	< 0.05	0.18	< 0.05
Indeno(1,2,3-cd) pyrene	ug/L	< 0.07	< 0.07	< 0.07
Phenanthrene	ug/L	< 0.08	0.23	< 0.08
Pyrene	ug/L	< 0.07	0.2	< 0.07
Tetrachloroethylene	ug/L	1.7	2.4	0.96

Footnotes

The "<" symbol indicates that the pollutant was not detected at that concentration level.
DL represents detection limit for a group of compounds.

* When a data set contains nondetected data, the median value of the data set is reported.

** Data are weekly average.

20. **Discharge Plume** – The City has collected and assessed extensive chemical and physical data from Santa Monica Bay, including (since 1987) over 6 years of weekly water quality assessments, approximately 4 years of monthly assessments, and approximately 4 years of quarterly assessments. Data collection has taken place at 36 sites (12 nearshore stations and 24 offshore stations) throughout Santa Monica Bay during all weather conditions, including El Niño, La Niña and winter storm conditions. The parameters collected in these assessments are used to locate and define the geometry of the wastewater plume and include transmissivity, dissolved oxygen, temperature and salinity.

    The movement of the plume is dictated by the depth of the thermocline or stratification and the direction and strength of highly variable Santa Monica Bay currents. Under typical conditions, the plume is detected within 2 km (6562 feet) of the outfall terminus, although it has been detected as far as 8 km (26247 feet) away from the outfall. Also, the plume has almost always been detected below the thermocline at a depth ranging from 10 m (33 feet) to 55 m (180 feet). Infrequently, during winter storm conditions, the plume has been detected at the surface in the vicinity of the outfall. On rare occasions, it has been impossible to detect the plume.

    As the waters of Santa Monica Bay approach the shore, the thermocline intersects the rising sea bottom. This point is typically 1000 m (3281 feet) or more offshore and is the theoretical limit of the approach of the plume to the shoreline. The plume has never been detected less than 2.5 km (8202 feet) from shore, at the 45 m (148 feet) depth contour.

21. The City has conducted shoreline and nearshore/inshore water quality monitoring in Santa Monica Bay since the late 1940s. The monitoring results indicated that effluent from Hyperion's five-mile outfall does not reach the shoreline and that elevated bacterial counts are associated with runoff from storm drains and discharges from piers. The direct impacts of the discharge from Hyperion's one-mile outfall on shoreline water quality have not been studied due to the lack of routine discharge. However, it is expected to be very minimal in that effluent discharged from the one-mile outfall is disinfected, and the volume of the discharge is usually much less than five million gallons occurring at most quarterly. This discharge is intended for conducting a functional test of equipment.

    Shoreline monitoring requirements have been transferred to the monitoring program of the municipal storm water for the City (Order No. 01-182, NPDES No. CAS004001) adopted by this Regional Board on December 13, 2001.

DESCRIPTION OF RECEIVING WATER

22. The receiving water into which the Hyperion Treatment Plant discharges is part of the Santa Monica Bay watershed. The watershed is home to unique wetland, sand dune, and open ocean ecosystems that support a rich diversity of wildlife and serve as migration stopovers for marine mammals and birds. The Bay and its beaches are invaluable recreational resources

and important sources of revenue for the region. The Bay is heavily used for fishing, swimming, surfing, diving, and other activities classified as water contact and noncontact recreation.

Over the years, the beneficial uses of the Bay have been impaired to various degrees due to pollution, resource over-exploitation, and habitat destruction. The primary problems of concern include acute health risk associated with swimming in runoff-contaminated surfzone waters, chronic (cancer) risk associated with consumption of certain sport fish species in areas impacted by DDT and PCB contamination, pollutant loading from point sources, urban runoff, and other nonpoint sources in light of projected population increases and their impacts on marine ecosystem, health of fishery resources, and degradation of natural habitats, and population decline of key species.

23. Section 403 of the Clean Water Act (CWA) requires dischargers to comply with specific Ocean Discharge Criteria established to address impacts on marine resources, including fisheries and endangered species. The City of Los Angeles submitted a report on May 29, 2003, to demonstrate compliance with the Section 403 Ocean Discharge Criteria. Based upon an evaluation of previous receiving water monitoring data and reports from other agencies, the City concluded that no unreasonable degradation of the marine environment is occuring with the current discharge receiving full secondary treatment.

24. **Atmospheric Deposition on Santa Monica Bay** – The Santa Monica Bay air deposition study was conducted with the overall support of the Santa Monica Bay Restoration Project (SMBRP) and the Los Angeles County Department of Public Works. Due to limited resources, the primary emphasis was deposition of trace metals.

Data collection and analysis were undertaken collaboratively by scientists from University of California at Los Angeles (UCLA) and the Southern California Coastal Water Research Project (SCCWRP). This study ran concurrently with a study of air toxics conducted by AQMD. During the study, scientists used air concentration data gathered from a site located on the UCLA campus, as well as data collected by AQMD from 24 locations throughout the airshed. This information was then entered into a computer model which calculated and plotted the distribution of deposition rates at different locations under varying weather conditions. Researchers also collected sea surface microlayer (the very thin upper surface layer) information from eight locations in the Bay and analyzed these samples for contaminant concentrations to study the spatial pattern of deposition. The observed distribution pattern for the sea surface samples indicates that farther away from the shore there is less zinc fallout and agrees well the modeling results.

The major conclusions of the final report (September 2001) are:

1) Aerial deposition is a significant contributor to the overall pollutant loading to Santa Monica Bay for trace metals, such as lead, chromium, and zinc.
2) On an annual basis, daily dry atmospheric deposition of metals on Santa Monica Bay and its watershed far exceeds the amount deposited during rain events. Chronic daily dry atmospheric deposition is also far greater than deposition during Santa Ana conditions when large volumes of polluted air are blown from inland areas to the ocean.
3) Most of the mass of metals deposited by dry atmospheric deposition on Santa Monica Bay and its watershed originates as relatively large (larger than 10 microns) aerosols

from area sources (e.g., off-road vehicles and small business) in the Santa Monica Bay watershed.

APPLICABLE LAWS, PLANS, POLICIES AND REGULATIONS

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

26. ***Basin Plan*** - The Board adopted and USEPA has approved under CWA section 303(c) a revised and amended *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) subsequently amended by Resolution Nos. 97-02, 01-018, 2002-011, 2002-022, 2003-001, and 2003-10, also approved by USEPA under section 303(c). This updated and consolidated plan represents the Board's master water quality control planning document and regulations. The Basin Plan: (i) designates beneficial uses for surface and groundwaters, (ii) sets narrative and numeric objectives that must be attained or maintained to protect the designated (existing and potential) beneficial uses and conform to State and federal antidegradation policies, and (iii) includes implementation provisions, programs, and policies to protect all waters in the Region. In addition, the Basin Plan incorporates (by reference) applicable State and Regional Board plans and policies and other State-pertinent water quality policies and regulations. This Order and permit implement the plans, policies and provisions of the Basin Plan.

27. ***Ocean Plan*** - On November 16, 2000, the State Water Resources Control Board (State Board) adopted a revised *Water Quality Control Plan for the Ocean Waters of California* (Ocean Plan). The revised plan was approved by USEPA, on December 3, 2001, for the CWA purposes. This Order and permit include effluent and receiving water limitations, prohibitions, and provisions that implement the Ocean Plan.

28. ***Beneficial Uses*** - The receiving water, Dockweiler Beaches (Hydrologic Unit No. 405.12), is part of El Segundo/LAX Sub-Watershed of the Santa Monica Bay Watershed. The Basin Plan contains water quality objectives for and lists the following beneficial uses of waterbodies in the El Segundo/LAX Sub-Watershed area:

Dockweiler Beaches (Hydrologic Unit 405.12)

Existing: industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, and wildlife habitat.

Potential: spawning, reproduction, and/or early development.

Nearshore Zone (defined as the zone bounded by the shoreline and a line 1000 feet from the shoreline or the 30-foot depth contours, whichever is further from the shoreline)

Existing: industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, wildlife habitat, preservation of biological habitats, rare, threatened, or endangered species, migration of aquatic organisms, and spawning, reproduction, and/or early development.

Offshore Zone

Existing: industrial service supply, navigation, water contact recreation, non-contact water recreation, commercial and sport fishing, marine habitat, wildlife habitat, migration of aquatic organisms, and spawning, reproduction, and/or early development.

Chapter 1, section A, of the Ocean Plan contains the beneficial uses of the ocean waters of the State that shall be protected. These beneficial uses include: industrial water supply; water contact and non-contact recreation, including aesthetic enjoyment; navigation; commercial and sport fishing; mariculture; preservation and enhancement of designated Area of Special Biological Significance (ASBS); rare and endangered species; marine habitat; fish migration; fish spawning and shellfish harvesting.

29. ***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. Similarly, CWA (section 304(d)(4)(B)) and USEPA regulations (40 CFR 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 by a permitted discharge, except under the conditions established in the State Antidegradation Policy and the federal regulation. The provisions of this Order and permit are consistent with these antidegradation policies.

30. ***Watershed Management*** – This Regional Board has been implementing a Watershed Management Approach (WMA) to address water quality protection in Los Angeles and Ventura Counties. The approach is in accordance with 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 and kelp bed monitoring programs in the Southern California Bight.

31. ***CWA 303(d) Listed Pollutants*** – On July 25, 2003, USEPA approved the State's 2002 list of impaired waterbodies prepared pursuant to CWA 303(d). The list (hereinafter referred to as the 303(d) list) identifies waterbodies where water quality standards are not expected to be met after implementation of technology-based effluent limitations by point sources (water quality-limited waterbodies).

Santa Monica Bay (Offshore and Nearshore) is on the 303(d) list for the following pollutants/stressors, from point and non-point sources: chlordane (sediment), DDT (tissue & sediment), polycyclic aromatic hydrocarbons (sediment), PCBs (tissue & sediment), debris, sediment toxicity, and fish consumption advisory. This Order and permit prescribe Water Quality Based Effluent Limits (WQBELs) for chlordane, DDT, PAHs, and PCBs, as described in Finding 54.

32. ***Santa Monica Bay Beaches Bacteria Total Maximum Daily Loads (TMDLs)*** – The Board has adopted two TMDLs to reduce bacteria at Santa Monica Bay beaches during dry and wet weather. The Board adopted the Dry Weather and Wet Weather TMDLs on January 24, 2002 and December 12, 2002, respectively (Resolution Nos. 2002-004 and 2002-022). These TMDLs were approved by the State Board, State OAL and USEPA Region IX and became effective on July 15, 2003. In these TMDLs, waste load allocations (WLAs) are expressed as the number of sample days at a shoreline monitoring site that may exceed the single sample targets for total coliform, fecal coliform and enterococcus identified under "Numeric Target" in the TMDLs. Waste load allocations are expressed as allowable exceedance days because the bacterial density and frequency of single sample exceedances are the most relevant to public health protection at beaches. The final shoreline compliance point for the WLAs in the TMDLs is the wave wash where there is a freshwater outlet (i.e., publicly owned storm drain or natural creek) to the beach, or at ankle depth at beaches without a freshwater outlet. The City of Los Angeles, as the owner of Hyperion Treatment Plant, is identified as a responsible jurisdiction in these TMDLs. In these TMDLs, Hyperion Treatment Plant is assigned a WLA of zero days of exceedance of the single sample bacterial objectives during all three identified periods – summer dry weather, winter dry weather and wet weather. Hyperion' s WLA of zero exceedance days requires that no discharge from Hyperion' soutfall may cause or contribute to any exceedances of the single sample bacteria objectives at the shoreline compliance points identified in the TMDL and, subsequently, in the approved Coordinated Shoreline Monitoring Plan (dated April 7, 2004) submitted by responsible agencies and jurisdictions under the TMDLs. Because it has been demonstrated that the plume from the outfall does not come into contact with the shoreline and has never been detected less than 2.5 km from shore (see Finding 20), this Order and permit do not require shoreline monitoring. However, the shoreline monitoring data collected in LA County Stormwater Monitoring (MS4) Permit will be used to demonstrate compliance with the WLAs in these TMDLs.

BASIS FOR EFFLUENT AND RECEIVING WATER LIMITS AND OTHER DISCHARGE REQUIREMENTS

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

- The plans, policies and water quality standards (beneficial uses + objectives + antidegradation policy) contained in the *Water Quality Control Plan, Los Angeles Region: Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties*, as amended and approved by USEPA through the public notice date of this Order and permit (Basin Plan);
- *Water Quality Control Plan, Ocean Waters of California, California Ocean Plan,* State Water Resources Control Board, 2001 (Ocean Plan);

- *Region 9 & 10 Guidance for Implementing Whole Effluent Toxicity Programs, Final* , USEPA Regions IX & X, May 31, 1996;
- *Whole Effluent Toxicity (WET) Control Policy*, USEPA, July 1994;
- Applicable federal laws and regulations
  - Federal Clean Water Act, and
  - 40 CFR 122, 125, and 131, among others; and,
- Best professional judgment (pursuant to 40 CFR 122.44).

34. USEPA regulations, policy, and guidance documents upon which Best Professional Judgment (BPJ) was developed include, in part:

    - *Technical Support Document for Water Quality Based Toxics Control,* March 1991 (EPA-505/2-90-001);
    - *U.S. EPA NPDES Permit Writers' Manual,* December 1996 (EPA-833-B-96-003);
    - *Inspectors Guide for Evaluation of Municipal Wastewater Treatment Plants*, April 1979 (EPA/430/9-79-010); and,
    - *Fate of Priority Pollutants in Publicly Owned Treatment Works Pilot Study,* October 1979 (EPA-440/1-79-300).

35. Where numeric water quality objectives have not been established in the Basin Plan or Ocean Plan, 40 CFR 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.

36. ***Mass and Concentration Limits*** – 40 CFR 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 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. Therefore, during storm events when flows exceed design capacity, only concentration-based limits are applicable.

37. ***Maximum Daily Effluent Limitations*** – Pursuant to 40 CFR 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 include only average weekly and average monthly effluent limitations in the permit, because a single daily discharge of certain pollutants, 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 for certain constituents.

38. ***Pretreatment*** – In compliance with 40 CFR 403, the City developed a Pretreatment Program for POTWs owned and operated by the City. The City's Pretreatment Program was approved by USEPA on June 30, 1983. In 1989, USEPA delegated the authority to administer pretreatment programs in California to the State and Regional Boards. Thus, this Regional Board became the approval authority for pretreatment programs in Los Angeles and Ventura Counties.

    This Order and permit include the City' s approved Pretreatment Program and require the City to continue implementation and control of the Program throughout the Hyperion Treatment Plant' s service area, including contributing jurisdictions.The POTW, as Control Authority, may exercise its authority over the entire service area directly, as provided by state law, or may elect to enter into contracts or other multi-jurisdictional agreements with the contributing jurisdictions. In case the POTW elects to enter into inter-jurisdictional agreements, the POTW must ensure that discharges received from entities outside of its political boundaries are regulated to the same extent, as are the discharges from within its political boundaries.

    The City applies one set of local limits to all discharges from the Hyperion Treatment Plant, Tillman WRP, and LAGWRP to the Hyperion Treatment System. Burbank WRP is also part of the Hyperion Treatment System. To meet the effluent limitations of this Order and permit and General Pretreatment Regulations, this Order and permit require the City to reevaluate local limits for discharges to the Hyperion Treatment System.

39. ***Sludge Disposal*** – To implement CWA Section 405(d), on February 19, 1993, USEPA promulgated 40 CFR 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. The City is also responsible for compliance with WDRs and NPDES permits for the generation, transport and application of biosolids issued by the State Board, other regional boards, or USEPA, to whose jurisdiction the Hyperion biosolids will be transported and applied.

40. ***Storm Water 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 122.26 that established requirements for storm water discharges under an NPDES permit. 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 as State Board Order No. 97-03-DWQ. The Hyperion Treatment Plant is covered under this general permit.

41. ***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 regulated by this Order and permit.

42. ***Antibacksliding Policies*** – Antibacksliding provisions are contained in Sections 303(d)(4) and 402(o) of the CWA and in 40 CFR 122.44(l). These 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.

    The relaxation of effluent limitations for certain discharges covered by this Order and permit are excepted from antibacksliding pursuant to CWA sections 402(o)(2)(B)(l) and 303(d)(4) because new information is available about the likelihood of constituents to be present in concentrations with the reasonable potential to cause or contribute to excursions above water quality standards. This new information would have justified the application of less stringent effluent limitations at the time the NPDES permit was previously issued. Pursuant to the reasonable potential analysis, certain constituents that previously had water quality-based effluent limitations have been shown not to have reasonable potential and, as a result, no longer require effluent limitations to protect water quality standards. Consistent with antibacksliding statutes and regulations and antidegradation policies, the effluent limitations contained in this Order and permit are at least as stringent as existing effluent limitation and are fully protective of existing, intermittent, and potential designated beneficial uses. Reasonable Potential Analysis results are described in Finding 53.

43. ***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 401.12 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.

44. ***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 dischargers 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.

45. ***Water Quality Based Effluent Limits (WQBELs)*** – WQBELs are designed to protect the quality of the receiving water by ensuring that 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 standard, 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 ocean waters of Santa Monica Bay are contained in the Ocean Plan and Basin Plan. Any pollutant for which reasonable potential exists, pursuant to 40 CFR 122.44(d)(1), to exceed an Ocean Plan or Basin Plan water quality standard has WQBELs. Under 40 CFR 122.44(d)(1)(vii)(B), WQBELs shall ensure that effluent limits are consistent with the assumptions and requirements of any available waste load allocation for the discharge prepared by the State and approved by USEPA pursuant to 40 CFR 130.7. The Santa Monica Bay Beaches TMDLs for bacteria include waste load allocations for the Hyperion Treatment Plant, as described in Finding 32.

46. ***Ocean Plan Limits and Objectives*** – Numerical effluent limitations for conventional, nonconventional, and toxic pollutants were calculated based on effluent limitations in *Table A*, and water quality objectives in *Table B* of the Ocean Plan. The minimum dilution ratio used to calculate effluent limitations for nonconventional and toxic pollutants based on water quality objectives in *Table B* of the Ocean Plan is 84:1 (i.e., 84 parts seawater to one part effluent) and 13:1 for Discharge Serial No. 002 and Discharge Serial No. 001, respectively. The ratios were calculated by the State Board.

47. ***401 Certification*** - The Regional Board has determined that its joint issuance of this NPDES permit with USEPA serves as its certification under CWA section 401 that any discharge pursuant to this permit will comply with the CWA provisions at 33 U.S.C. 1311, 1312, 1313, 1316, and 1317.

48. ***Magnuson-Stevens Fishery Conservation and Management Act (MSA) and Endangered Species Act (ESA)*** - USEPA' s reissuance of NPDES permit No. CA0109991 to the City of Los Angeles for Hyperion Treatment Plant is subject to requirements of MSA and section 7 of ESA. On February 9, 2004, USEPA requested updated information related to: (1) essential fish habitat and managed and associated species, and (2) threatened and endangered species and their designated critical habitats, in the vicinity of the Hyperion outfalls from the National Marine Fisheries Service and the U.S. Fish and Wildlife Service (collectively, the Services). Based on this and other relevant information, USEPA is currently evaluating whether there are effects on essential fish habitat and managed and associated species protected under the MSA, or on threatened and endangered species and their designated critical habitats protected under the ESA. Based on the outcome of this analysis, USEPA may engage in consultation with the Services during, and subsequent to, this permit reissuance. USEPA may decide that changes to this permit are warranted based on the results of the completed consultation, and a reopener provision to this effect has been included in the permit.

49. ***Santa Monica Bay Restoration Plan*** - The Hyperion Treatment Plant discharges to Santa Monica Bay, which is one of the most heavily used recreational areas in California. Recognizing the importance of the Bay as a national resource, the State of California and USEPA nominated, and Congress included, Santa Monica Bay in the National Estuary Program. This led to the formation of the Santa Monica Bay Restoration Project that developed the Bay Restoration Plan (BRP) which serves as a blueprint for restoring and enhancing the Bay. The Regional Board plays a lead role in the implementation of the plan. Three of the proposed priorities of the plan are reduction of pollutants of concern at the source (including municipal wastewater treatment plants), attainment of full secondary treatment at the City of Los Angeles' Hyperion Treatment Plant and the County Sanitation Districts of Los Angeles County's Joint Water Pollution Control Plant, and implementation of the mass emission approach for discharges of pollutants to the Bay.

    The Hyperion Treatment Plant has operated with full secondary treatment since December 1998. The Mass Emission Approach's objective is to reduce mass emissions of pollutants that have detectable inputs to the Bay and can accumulate in the marine environment. It complements the existing concentration-based regulatory system while sediment quality objectives are being formulated. The BRP identified copper, lead, silver, and zinc to have interim mass emission performance caps. Similar to the concentration-based performance goals, the mass emission performance caps are not enforceable limitations. The interim mass emission caps for the four metals contained in this Order and permit are based on the average mass emission in 1995 when the mass emission approach was initiated.

REASONABLE POTENTIAL ANALYSIS (RPA)

50. 40 CFR 122.44(d)(1)(i and iii) provide that effluent limitations shall be prescribed in permits for all pollutants or pollutant parameters determined to (or that may) be discharged at a level that will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard. 40 CFR 122.44(d)(1)(ii) provides the factors, including variability of the pollutants in the effluent, to be considered in determining reasonable potential. The procedure for statistical determination of the reasonable potential for a discharged pollutant to exceed an objective is outlined in USEPA guidance, *Technical Support Document for Water Quality-based Toxics Control* (TSD; EPA/505/2-90-001, March 1991). This approach combines knowledge of effluent variability (in terms of a calculated coefficient of variation, CV) with uncertainty (as a function of the number of effluent data) to statistically estimate a maximum effluent value at a high level of confidence. The estimated maximum effluent value is calculated as the value associated with the upper 99 percent confidence level of the 99th percentile, based on a lognormal distribution of daily effluent values. The projected receiving water value (based on the statistically estimated maximum effluent value and dilution ratio) is then compared to the appropriate objective to determine the potential for exceedance of that objective and the need for an effluent limitation.

51. ***Reasonable Potential Determination*** – Regional Board and USEPA staff conducted RPAs for all toxic pollutants listed in *Table B* of the Ocean Plan. Effluent data provided in the Discharger's monitoring reports from January 1999 to June 2004 were used in the analyses. Dilution ratios of 84:1 and 13:1 for Discharge Serial Nos. 002 and 001, respectively, were considered in this evaluation.

52. For any pollutant that has at least one detected value, the maximum detected effluent concentration (MDEC) is identified and compared with the reported maximum MDL (method detection limit) during the reporting period. The larger of these two values (i.e., the MDEC or the reported maximum MDL) is selected as the maximum reported effluent concentration for that pollutant. If the pollutant is not detected in any of the effluent samples, the reported maximum MDL is selected as the maximum reported effluent concentration for that pollutant.

    Effluent data (one half of MDL used for nondetected data) are used to calculate a pollutant-specific CV that is then used to generate a pollutant-specific reasonable potential multiplier. When more than 80 percent of the effluent data are reported as not detected, a default CV of 0.6 is used. The statistically estimated maximum effluent concentration is determined by multiplying the maximum reported effluent concentration with its multiplier. The projected receiving water concentration for each pollutant is then calculated by factoring in the dilution ratio. Finally, the projected receiving water concentration is compared with the appropriate objective listed in the Ocean Plan. Tables R1-1, R1-2, R2-1, and R2-2 in the accompanying Fact Sheet contain effluent data and detailed steps in the determination of reasonable potential.

53. Using this statistical procedure, Regional Board and USEPA staff have determined that the following pollutants, when discharged through each outfall, have reasonable potential to exceed Ocean Plan objectives, and, therefore, require effluent limitations.

    Discharge Serial No. 001

    Copper, cyanide, chlorine residual, ammonia, chronic toxicity, chlorinated phenolic compounds, hexachlorocyclohexane (HCH), 2,4-dinitrophenol, tributyltin, acrylonitrile, aldrin, benzidine, beryllium, bis (2-chloroethyl) ether, bis (2-ethylhexyl) phthalate, chlordane, DDT, 3,3'-dichlorobenzidine, dieldrin, heptachlor, heptachlor epoxide, hexachlorobenzene, n-nitrosodi-n-propylamine, PAHs, PCBs, TCDD equivalents, tetrachloroethene, toxaphene, and 2,4,6-trichlorophenol.

    Discharge Serial No. 002

    Chlorine residual, chronic toxicity, tributyltin, aldrin, benzidine, chlordane, DDT, 3,3'-dichlorobenzidine, dieldrin, heptachlor, heptachlor epoxide, hexachlorobenzene, PAHs, PCBs, TCDD equivalents, and toxaphene.

    During the comment period, the City provided additional information on sediment and fish tissue for nine constituents that were 100% non-detected in the 1999-2004 effluent data set. USEPA and Regional Board staff have evaluated the additional information and determined that eight constituents (aldrin, benzidine, 3,3'-dichlorobenzidine, dieldrin, heptachlor, heptachlor epoxide, hexachlorobenzene, and toxaphene) have no reasonable potential to exceed Ocean Plan objectives. Therefore, effluent limits for these eight constituents are not required. The Fact Sheet contains a detailed analysis for this.

    In addition, based on further analyses of the information and monitoring data, USEPA and Regional Board staff have determined, using BPJ, that there is no RP for chlorine residual when the effluent is discharged through Outfall 002. However, the effluent limit for chlorine residual is retained for Outfall 001 since the effluent is required to be chlorinated

when it is discharged through Outfall 001. The Fact Sheet also contains a detailed analysis for this.

WQBELs for these pollutants discharged through each outfall were calculated using the procedure outlined in the Ocean Plan.

54. At various locations in Santa Monica Bay, DDT and chlordane, PCBs and PAHs are found in sediments at levels that can be harmful to marine organisms. In addition, DDT and PCBs are found in certain Bay-captured seafood species at levels posing potential health risks to humans. A brief description of these pollutants and their occurrence in Santa Monica Bay is given below.

In the U.S., DDT and chlordane, both organochlorine insecticides, were widely used in agricultural and urban settings until they were banned in 1973 and 1988, respectively. PCBs, a large group of industrial and commercial chemicals, were widely used as coolants and lubricants in transformers, capacitors and other electronic equipment until the late 1970s when their manufacture was banned. Because of their stable properties, DDT, chlordane and PCBs persist in the environment, the result of historical uses which no longer occur. They have low water solubility and are generally found in sediments and fish tissue. PAHs are trace organic contaminants that occur naturally in crude oil, coal and other hydrocarbons. Anthropogenic sources include the combustion of hydrocarbons and their presence in fossil fuel products, such as coal-tar pitch and asphalt. PAHs are slightly soluble in water. Binding to particulate matter, they tend to accumulate in sediments and concentrate in biota. When present in sufficient quantity, PAHs are toxic to aquatic life and carcinogenic to humans.

Bight '98 surveys included efforts to assess the spatial extent of anthropogenic contaminant accumulation in benthic sediments and their effects on marine biota in the Southern California Bight. These surveys showed that while elevated levels of DDT, chlordane and PCBs continue to be measured in sediments near Hyperion Treatment Plant's 5-mile outfall, much of this is reflective of historical deposition and not the levels of contaminants associated with recent discharges. These surveys also concluded that DDT and PCBs in sediments are a dominant source of contaminant exposure levels in bottom living fish. DDT continues to be found in fish tissue at levels of concern throughout the Bight, although these levels are declining over time. Elevated levels of PAHs continue to be measured in offshore sediments near Hyperion's 7-mile outfall (Discharge Serial No. 003), decommissioned in November 1987, and are primarily reflective of historical deposition associated with the discharge of sewage sludge. PAHs are also found in shallow water offshore sediments associated with urban storm water runoff from Ballona Creek. (Bay et al., 2003.) Monitoring data show that effluent levels of DDT, chlordane, PCBs and PAHs discharged from the 5-mile outfall (Discharge Serial No. 002) remain at non-detect concentrations.

As described in Finding 31, nearshore and offshore waters of Santa Monica Bay are on the California's 2002 CWA 303(d) list of water quality limited segments for DDT (sediment and tissue, centered on Palos Verdes Shelf); chlordane (sediment); PCBs (sediment and tissue); and PAHs (sediment). TMDLs for DDT, PCBs and PAHs have not been scheduled. A TMDL for chlordane is scheduled for 2006. As TMDLs for these four constituents have not been completed, the draft permit proposes to continue forward mass emission and concentration WQBELs contained in the 1994 permit. These limits are

based on Ocean Plan water quality objectives and permit limit calculation procedures, and, for Discharge Serial No. 002, the average design flow rate (420 mgd) of the Hyperion Treatment Plant in 1994. Current performance for DDT, chlordane, PCBs and PAHs in the Hyperion Treatment Plant effluent are generally at non-detect concentrations.

The Regional Board and USEPA note that non-detect levels reported for the Hyperion effluent are generally higher than permit limits and water quality objectives for DDT, chlordane, PCBs and PAHs. Therefore, in addition to Ocean Plan requirements specified in Monitoring and Reporting Program Sections III and IV of this permit, the Discharger shall strive for lower analytical detection levels to facilitate pollutant load quantification for future DDT, chlordane, PCBs and PAHs TMDLs.

55. In general, for constituents that have been determined to have no reasonable potential to cause, or contribute to, excursions of water quality objectives, no numerical limits are prescribed; instead a narrative statement to comply with all Ocean Plan requirements is provided and the Discharger is required to monitor for these constituents to gather data for use in RPAs for future permit renewals and/or updates.

56. The 1994 order and permit include technology based effluent limits for acute toxicity and freshwater acute toxicity testing requirements specified in the 1990 Ocean Plan. In 2001, the Ocean Plan was revised to include a new daily maximum acute toxicity water quality objective of 0.3 TUa, implementation procedures for developing water quality based effluent limits for acute toxicity, and acute toxicity testing protocols using marine species, rather than freshwater species. While the 2001 Ocean Plan specifies that discharges with dilution ratios below 100:1 must conduct chronic toxicity testing, it does not preclude permitting authorities implementing 40 CFR 122.44(d)(1) from establishing acute toxicity testing requirements, including effluent limits, to ensure protection of the new acute toxicity objective. Because ammonia and marine acute toxicity effluent quality data for POTW ocean discharges having dilution ratios greater than 84:1 periodically show acute toxicity related to effluent ammonia concentrations and the current operation of the Hyperion Treatment Plant does not effectively remove ammonia, the Regional Board and USEPA have determined that the Hyperion discharge has reasonable potential to exceed the current Ocean Plan objective for acute toxicity. Consequently, the Order and permit propose daily maximum acute toxicity effluent limits of 2.8 TUa and "Pass" (for Discharge Serial Nos. 002 and 001, respectively) and testing protocols consistent with the 2001 Ocean Plan.

57. This Order and permit are consistent with State and federal antidegradation policies in that it does not authorize a change in pollutant mass emission rates, nor does it authorize a relaxation in the manner of treatment of the discharge. Pollutant limit mass emission rates continue to be based on the design flow rate of the treatment plant under the 1994 permit of 420 mgd. Although the design flow rate of the treatment plant has increased to 450 mgd, this increase has been accompanied by a significant improvement in the level of effluent treatment necessary to achieve full secondary treatment. As a result, both the quantity of discharged pollutants and quality of the discharge are expected to remain relatively constant or improve during this permit term, consistent with antidegradation policies. In conformance with reasonable potential analysis procedures identified in State Board and USEPA documents, effluent limitations for some constituents are not carried forth in this Order and permit because there is not presently reasonable potential for the constituents to cause or contribute to an exceedance of water quality standards. Without

reasonable potential, there is no longer a need to maintain prior WQBELs under WQBEL regulations, antibacksliding provisions, or antidegradation policies. The accompanying monitoring and reporting program requires continued data collection and if monitoring data show 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 designated beneficial uses and conforms with antidegradation policies and antibacksliding provisions.

58. The effluent limitations and other requirements in this Order and permit are based upon the Basin Plan, Ocean Plan, other federal and State plans, policies, and guidelines, plant performance, and best engineering judgment; and, as they are met, will be in conformance with the goals of the aforementioned water control requirements. The specific methodology and example calculations for effluent limitations are documented in the Fact Sheet that accompanies this Order and permit.

PERFORMANCE GOALS

59. Chapter III, section F.2, of the Ocean Plan allows the Regional Board and USEPA to establish more restrictive water quality objectives and effluent limitations than those set forth in the Ocean Plan as necessary for the protection of the beneficial uses of ocean waters.

    Pursuant to this provision and to implement the recommendation of the Water Quality Advisory Task Force (*Working Together for an Affordable Clean Water Environment, A final report presented to the California Water Quality Control Board, Los Angeles Region by Water Quality Advisory Task force, September 30, 1993)* that was adopted by the Regional Board on November 1, 1993, performance goals that are more stringent than those based on Ocean Plan objectives are prescribed in this Order and permit. This approach is consistent with the antidegradation policy in that it requires the City to maintain its treatment level and effluent quality, recognizing normal variations in treatment efficiency and sampling and analytical techniques. However, this approach does not address substantial changes in treatment plant operations that could significantly affect the quality of the treated effluent.

60. While performance goals were previously placed in many POTW permits in the Region, they have not been continued for discharges that are to inland surface waters. For inland surface waters, the California Toxics Rule (40 CFR 131.38) has resulted in effluent limits as stringent as many performance goals. However, the Ocean Plan allows for significant dilution, and the continued use of performance goals serves to maintain existing treatment levels and effluent quality and supports State and federal antidegradation policies.

61. The performance goals are based upon the actual performance of the Hyperion Treatment Plant and are specified only as an indication of the treatment efficiency of the facility. Performance goals are intended to minimize pollutant loading (primarily for toxics) and, while maintaining the incentive for future voluntary improvement of water quality whenever feasible, without the imposition of more stringent limits based on improved performance. They are not considered as limitations or standards for the regulation of the discharge from the treatment facility. The Executive Officer and USEPA may modify any of the performance goals if the City requests and has demonstrated that the change is warranted. The

methodology for calculating the performance goals is described below. The results are documented in Tables R1-1, R1-2, R2-1, and R2-2 in the accompanying Fact Sheet.

- For constituents that have been routinely detected in the effluent (less than 80 percent nondetectable data), performance goals are statistically set at the 95th percentile of January 1999 through June 2004 performance data using the protocol described in Appendix E of *Technical Support Document for Water Quality-based Toxics Control*, EPA/505/2-90-001, March 1991. Effluent pollutant data are assumed lognormally distributed. One half of the detection limit is assigned to respective nondetect samples for conducting statistical analyses. However, if the maximum detected effluent concentration (from January 1999 to June 2004) is less than the calculated 95th percentile value, the maximum detected effluent concentration is used as the performance goal.

- For constituents where monitoring data has consistently shown nondetectable levels (at least 80 percent nondetectable data), performance goals are set at five times (for carcinogens and marine aquatic life toxicants) or ten times (for noncarcinogens) the maximum method detection limit (MDL) reported from January 2003 to June 2004. (In order to meet Minimum Level reporting requirement outlined in State Implementation Plan the City has completed new studies on method detection limits during this period.) However, if the maximum detected effluent concentration is less than the calculated value based on MDL, the maximum detected effluent concentration is used as the performance goal.

- For constituents with no RP, if the performance goal derived from the above steps exceeds the respective calculated Ocean Plan effluent limit, the calculated WQBEL is then prescribed as the performance goal for that constituent.

62. ***Mass Emission Benchmarks*** - To address the uncertainty due to potential increases in toxic pollutant loadings from the Hyperion Treatment Plant discharge to the marine environment during the five-year permit term, and to establish a framework for evaluating the need for an antidegradation analysis to determine compliance with State and federal antidegradation requirements at the time of permit reissuance, 12-month average mass emission benchmarks have been established for effluent discharged through the 5-mile outfall (Discharge Serial No. 002) (see MRP VI.D.). These mass emission benchmarks are not enforceable water quality based effluent limitations. They may be re-evaluated and revised during the five-year permit term. The mass emission benchmarks (in metric tons per year; MT/yr) for the Hyperion Treatment Plant discharge were determined using January 1999 through June 2004 effluent concentrations and the Discharger's projected end-of-permit flow of 400 MGD. If only one effluent data point was detected or if all effluent data points were nondetect, the pollutant concentration associated with the maximum method detection limit from January 2003 to June 2004 was used to calculate the mass emission benchmark. If two or more effluent data points were detected, the pollutant concentration associated with the 95th percentile (calculated in accordance with Regional Board procedures) was used to calculate the mass emission benchmark. Exceptions to this are mass emission benchmarks for copper, lead, silver and zinc which are based directly on Mass Emission Caps for these pollutants of concern in Santa Monica Bay, established by the Regional Board (see Section I.B.).

PETITION AND CEQA REQUIREMENTS

63. The Regional Board and USEPA have notified the Discharger and interested agencies and persons of their intent to renew waste discharge requirements and the NPDES permit for this discharge and have provided them with an opportunity to submit written views and recommendations.

64. The Regional Board and USEPA held a public comment period, including a public hearing to receive oral comments and have considered all written and oral comments pertaining to the discharge and to the tentative requirements.

65. This Order and permit shall first be adopted by the Regional Board and then issued by USEPA. USEPA' s issuance consists of the service of notice of the Regional Administrator' s decision. This permit will become effective 33 days following the date it is mailed to the Discharger by EPA, unless a request for review is filed.

66. Pursuant to the California Water Code (CWC) Section 13320, any aggrieved party may seek review of this Order by filing a petition with the State Board. A petition must be sent to the State Water Resources Control Board, P.O. Box 100, Sacramento CA 95812, within 30 days of adoption of this Order.

67. Pursuant to 40 CFR 124, a petition may be filed with the Environmental Appeals Board to review any condition of the permit decision. If a request for review of the permit is filed, only those permit conditions which are uncontested will go into effect pending disposition of the request for review. Requests for review must be filed within 33 days following the date the final permit is mailed and must meet the requirements of 40 CFR 124.19. All requests for review should be addressed to the Environmental Appeals Board (EAB) as follows. Requests sent through the U.S. Postal Service (except by Express Mail) must be addressed to the EAB's mailing address, which is: U.S. Environmental Protection Agency; Clerk of the Board; Environmental Appeals Board (MC 1103B); Ariel Rios Building; 1200 Pennsylvania Avenue, N.W.; Washington, D.C. 20460-0001. All filings delivered by hand or courier, including Federal Express, UPS, and U.S. Postal Express Mail, should be directed to the following address: Environmental Appeals Board; U.S. Environmental Protection Agency; Colorado Building; 1341 G Street, N.W., Suite 600; Washington, D.C. 20460. Those persons filing a request for review must have filed comments on the draft permit, or participated in the public hearing. Otherwise, any such request for review may be filed only to the extent of changes from the draft to the final permit decision.

68. The issuance of waste discharge requirements that serve as an NPDES permit for this discharge is exempt from the provisions of Chapter 3 (commencing with Section 21100) of Division 13 (California Environmental Quality Act) of the Public Resources Code in accordance with California Water Code Section 13389.

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

I. DISCHARGE REQUIREMENTS

A. Effluent Limitations and Performance Goals
(For footnotes, please see pages 33 to 35)

1. Discharge Outfalls

a. Discharge Serial No. 001 (one-mile outfall)

Wastes discharged from Discharge Serial No. 001 shall be limited to chlorinated secondary treated effluent (domestic and industrial wastewater, diverted dry weather urban runoff, and storm water from Hyperion Treatment Plant). However, during intense storms or storms accompanied with plant power outages, undisinfected storm water overflow is also permitted at this outfall. Discharge from Discharge Serial No. 001 is only permitted for emergency cases such as extremely high flows and power failures, and for quarterly preventative maintenance to conduct outfall gate valve(s) exercising and lubrication.

b. Discharge Serial No. 002 (five-mile outfall)

Wastes discharged from Discharge Serial No. 002 shall be limited to secondary treated effluent (domestic and industrial wastewater, diverted dry weather urban runoff, and storm water from Hyperion Treatment Plant).

c. Discharge Serial No. 003

Any waste discharged from Discharge Serial No. 003 is prohibited.

2. The effluent limitations and performance goals for Discharge Serial No. 002, and the effluent limitations for Discharge Serial No. 001 are given below. The listed effluent performance goals are not enforceable effluent limitations or standards. The discharge of an effluent with constituents in excess of effluent limitations is prohibited.

The Discharger shall maintain, if not improve, its treatment efficiency. Any exceedance of the performance goals shall trigger an investigation into the cause of the exceedance. If the exceedance persists in **three** successive monitoring periods, the City shall submit a written report to the Regional Board and USEPA on the nature of the exceedance, the results of the investigation as to the cause of the exceedance, and the corrective actions taken or proposed corrective measures with timetable for implementation, if necessary.

a. **Discharge Serial Nos. 001 and 002**

(1) Major Wastewater Constituents

Discharge Serial Nos. 001 and 002

Constituent	Units	DISCHARGE LIMITATIONS [1]		
		Monthly Average	Weekly Average	Daily Maximum [2]
$BOD_5 20^0C$ [3]	mg/L	30	45	[4]
	lbs/day	113,000	169,000	---
Suspended solids [3]	mg/L	30	45	[4]
	lbs/day	113,000	169,000	---
Oil and grease [5]	mg/L	25	40	75
	lbs/day	93,800	150,000	---
Settleable solids [5]	ml/L	1.0	1.5	3.0
Turbidity [5]	NTU	75	100	225

b. **Discharge Serial No. 002**

(1) Toxic Materials - Marine Aquatic Life Toxicants

Discharge Serial No. 002

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]			PERFORMANCE GOALS [8]
		Monthly Average	Daily Maximum [2]	Instantaneous Maximum [7]	Monthly Average
Arsenic [29]	µg/L	[9]	[9]	[9]	3.5 [10]
Cadmium [29]	µg/L	[9]	[9]	[9]	0.63 [11]
Chromium (hexavalent) [13] [29]	µg/L	[9]	[9]	[9]	10 [12]
Copper [14] [29]	µg/L	[9]	[9]	[9]	23 [10]
Lead [14] [29]	µg/L	[9]	[9]	[9]	3.8 [10]
Mercury [29]	µg/L	[9]	[9]	[9]	0.3 [11]
Nickel [29]	µg/L	[9]	[9]	[9]	15 [10]

Discharge Serial No. 002

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]			PERFORMANCE GOALS [8]
		Monthly Average	Daily Maximum [2]	Instantaneous Maximum [7]	Monthly Average
Selenium [29]	µg/L	[9]	[9]	[9]	1.7 [10]
Silver [14] [29]	µg/L	[9]	[9]	[9]	2.2 [10]
Zinc [14] [29]	µg/L	[9]	[9]	[9]	39 [10]
Cyanide	µg/L	[9]	[9]	[9]	8.3 [10]
Ammonia as N	mg/L	[9]	[9]	[9]	36.3 [10]
Phenolic compounds (non-chlorinated) [31]	µg/L	[9]	[9]	[9]	1.9 [11]
Phenolic compounds (chlorinated) [32]	µg/L	[9]	[9]	[9]	0.46 [11]
Endosulfan [17]	µg/L	[9]	[9]	[9]	0.02 [12]
HCH [18]	µg/L	[9]	[9]	[9]	0.026 [10]
Endrin	µg/L	[9]	[9]	[9]	0.009 [11]
Acute toxicity [19]	TUa	N/A	2.8	N/A	N/A
Chronic toxicity [20]	TUc	N/A	84 [21]	N/A	N/A
Radioactivity					
Gross alpha	pCi/L	N/A	15 [30]	N/A	N/A
Gross beta	pCi/L	N/A	50 [30]	N/A	N/A
Combined radium-226 & radium-228	pCi/L	N/A	5.0 [30]	N/A	N/A
Tritium	pCi/L	N/A	20,000 [30]	N/A	N/A
Strontium-90	pCi/L	N/A	8.0 [30]	N/A	N/A
Uranium	pCi/L	N/A	20 [30]	N/A	N/A

(2) Human Health Toxicants – Non Carcinogens

Discharge Serial No. 002

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]	PERFORMANCE GOALS [8]
		Monthly Average	Monthly Average
Acrolein	µg/L	[9]	20 [12]
Antimony [29]	µg/L	[9]	5 [10]
Bis(2-chloroethoxy) methane	µg/L	[9]	0.5 [12]
Bis(2-chloroisopropyl) ether	µg/L	[9]	0.5 [12]
Chlorobenzene	µg/L	[9]	1.2 [12]
Chromium (III) [29]	µg/L	[9]	6.6 [10]
Di-n-butyl-phthalate	µg/L	[9]	0.77 [11]
Dichlorobenzenes [22]	µg/L	[9]	0.17 [11]
Diethyl phthalate	µg/L	[9]	0.1 [11]
Dimethyl phthalate	µg/L	[9]	2.7 [12]
2-Methyl-4,6-dinitrophenol	µg/L	[9]	4 [12]
2,4-Dinitrophenol	µg/L	[9]	2.1 [12]
Ethyl benzene	µg/L	[9]	0.17 [11]
Fluoranthene	µg/L	[9]	0.18 [11]
Hexachlorocyclopentadiene	µg/L	[9]	29 [12]
Nitrobenzene	µg/L	[9]	0.5 [12]
Thallium [29]	µg/L	[9]	5 [11]
Toluene	µg/L	[9]	0.46 [10]
Tributyltin	ng/L	120	7.2 [10]
	lbs/day	0.42	---

Discharge Serial No. 002

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]	PERFORMANCE GOALS [8]
		Monthly Average	Monthly Average
1,1,1-Trichloroethane	µg/L	[9]	1.8 [12]

(3) Human Health Toxicants – Carcinogens

Discharge Serial No. 002

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]	PERFORMANCE GOALS [8]
		Monthly Average	Monthly Average
Acrylonitrile	µg/L	[9]	1.6 [12]
Aldrin	µg/L	[9]	0.0019 [33]
Benzene	µg/L	[9]	0.36 [11]
Benzidine	µg/L	[9]	0.0059 [33]
Beryllium [29]	µg/L	[9]	0.05 [12]
Bis(2-chloroethyl) ether	µg/L	[9]	0.45 [12]
Bis(2-ethylhexyl) phthalate	µg/L	[9]	6.9 [10]
Carbon tetrachloride	µg/L	[9]	0.75 [12]
Chlordane [23]	µg/L	0.0019	[15]
	lbs/day	0.0067	---
Chlorodibromomethane	µg/L	[9]	3.9 [10]
Chloroform	µg/L	[9]	6.6 [10]
DDT [24]	µg/L	0.014	[15]
	lbs/day	0.049	---
1,4-Dichlorobenzene	µg/L	[9]	5.3 [11]
3,3-Dichlorobenzidine	µg/L	[9]	0.55 [12]
1,2-Dichloroethane	µg/L	[9]	0.25 [12]

Discharge Serial No. 002

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]	PERFORMANCE GOALS [8]
		Monthly Average	Monthly Average
1,1-Dichloroethylene	µg/L	[9]	0.65 [12]
Dichlorobromomethane	µg/L	[9]	1.5 [10]
Dichloromethane	µg/L	[9]	22 [10]
1,3-Dichloropropene	µg/L	[9]	0.9 [12]
Dieldrin	µg/L	[9]	0.0034 [33]
2,4-Dinitrotoluene	µg/L	[9]	0.4 [12]
1,2-Diphenylhydrazine	µg/L	[9]	0.18 [11]
Halomethanes [25]	µg/L	[9]	1.3 [10]
Heptachlor	µg/L	[9]	0.0043 [33]
Heptachlor epoxide	µg/L	[9]	0.0017 [33]
Hexachlorobenzene	µg/L	[9]	0.018 [33]
Hexachlorobutadiene	µg/L	[9]	0.35 [12]
Hexachloroethane	µg/L	[9]	0.35 [12]
Isophorone	µg/L	[9]	0.33 [11]
N-Nitrosodimethylamine	µg/L	[9]	0.85 [12]
N-Nitrosodi-N-propylamine	µg/L	[9]	0.65 [12]
N-Nitrosodiphenylamine	µg/L	[9]	0.45 [12]
PAHs [26]	µg/L	0.748	[15]
	lbs/day	2.62	---
PCBs [27]	µg/L	0.002	[15]
	lbs/day	0.007	---

Discharge Serial No. 002

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]	PERFORMANCE GOALS [8]
		Monthly Average	Monthly Average
TCDD equivalents [28]	pg/L	0.33	[15]
	lbs/day	1.2×10^{-6}	---
1,1,2,2-Tetrachloroethane	µg/L	[9]	1 [12]
Tetrachloroethylene	µg/L	[9]	5.8 [10]
Toxaphene	µg/L	[9]	0.018 [33]
Trichloroethylene	µg/L	[9]	0.53 [11]
1,1,2-Trichloroethane	µg/L	[9]	0.85 [12]
2,4,6-Trichlorophenol	µg/L	[9]	0.45 [12]
Vinyl chloride	µg/L	[9]	0.85 [12]

c. **Discharge Serial No. 001**

(1) Toxic Materials - Marine Aquatic Life Toxicants

Discharge Serial No. 001

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]		
		Monthly Average	Daily Maximum [2]	Instantaneous Maximum [7]
Copper [14] [29]	µg/L	16	140	160
Cyanide	µg/L	14	56	140
Total chlorine residual [16]	mg/L	0.028	0.092	0.84
Ammonia as N	mg/L	8.4	34	84
Phenolic compounds (chlorinated) [32]	µg/L	14	56	140
HCH [18]	µg/L	0.056	0.11	0.17

Discharge Serial No. 001

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]		
		Monthly Average	Daily Maximum [2]	Instantaneous Maximum [7]
Chronic toxicity [20]	TUc	N/A	13 [21]	N/A
Radioactivity				
Gross alpha	pCi/L	N/A	15 [30]	N/A
Gross beta	pCi/L	N/A	50 [30]	N/A
Combined radium-226 & radium-228	pCi/L	N/A	5.0 [30]	N/A
Tritium	pCi/L	N/A	20,000 [30]	N/A
Strontium-90	pCi/L	N/A	8.0 [30]	N/A
Uranium	pCi/L	N/A	20 [30]	N/A

(2) Human Health Toxicants – Non Carcinogens

Discharge Serial No. 001

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]
		Monthly Average
2,4-Dinitrophenol	µg/L	56
Tributyltin	ng/L	20

(3) Human Health Toxicants – Carcinogens

Discharge Serial No. 001

Constituent	Units	DISCHARGE LIMITATIONS [1, 6]
		Monthly Average
Acrylonitrile	µg/L	1.4
Beryllium [29]	µg/L	0.46
Bis(2-chloroethyl) ether	µg/L	0.63
Bis(2-ethylhexyl) phthalate	µg/L	49
Chlordane [23]	ng/L	0.3

Discharge Serial No. 001

Constituent	Units	DISCHARGE LIMITATIONS [1, 6] Monthly Average
DDT [24]	ng/L	2.4
N-Nitrosodi-N-propylamine	µg/L	5.3
PAHs [26]	ng/L	123
PCBs [27]	ng/L	0.3
TCDD equivalents [28]	pg/L	0.055
Tetrachloroethylene	µg/L	28
2,4,6-Trichlorophenol	µg/L	4.1

Footnotes for Effluent Limitations

[1] The mass emission rates for Discharge Serial No. 002 are based on the average design flow rate (420 mgd) of the Hyperion Treatment Plant in the 1994 permit.

During storm events when flow exceeds the design capacity, the mass emission rate limits shall not apply. Only the concentration limits shall apply.

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

[3] Limits are based on secondary treatment standards, 40 CFR 133.102.

[4] Daily maximum limits are not specified for secondary treatment standards in 40 CFR 133.102.

[5] Limits are based on Ocean Plan effluent limitations, Table A.

[6] Effluent limitations for these constituents are based on Ocean Plan objectives using initial dilution ratios of 84 and 13 parts of seawater to 1 part effluent for Discharge Serial Nos. 002 and 001, respectively.

[7] The instantaneous maximum shall apply to grab sample results.

[8] The performance goals are based upon the actual performance data of Hyperion Treatment Plant and are specified only as an indication of the treatment efficiency of the plant. They are not considered as limitations or standards for the treatment plant. Hyperion Treatment Plant shall make best efforts to maintain, if not improve, the effluent quality at the level of these performance goals. The Executive Officer and USEPA may modify any of the performance goals if the City requests and has demonstrated that the change is warranted.

[9] These constituents did not show reasonable potential to exceed the Ocean Plan objectives, therefore, no numerical water quality based effluent limits are prescribed.

[10] Numerical effluent quality performance goals are derived statistically using data in the Discharger Monitoring Reports from January 1999 to June 2004 when Hyperion Treatment Plant was operating in full secondary treatment mode. Please refer to Finding 61 for calculation procedures.

On January 1, 2003, the Hyperion Treatment Plant started full thermophilic digestion for the generation of class A biosolids, which increased the ammonia concentration in the returned centrate (about 3 mgd) from approximately 800 mg/L to 1250 mg/L. Therefore, the performance goal for ammonia nitrogen is derived based on monthly monitoring data reported from January 2003 to June 2004, only.

[11] The maximum detected effluent concentration (MDEC) for the pollutant from January 1999 to June 2004 is prescribed as the performance goal because the value derived from Footnotes [10] or [12] is higher than the respective MDEC. Please refer to Finding 61 for procedures.

[12] These constituents were not detected. Performance goals are set at five times (for carcinogens and marine aquatic life toxicants) or ten times (for noncarcinogens) of the maximum reported method detection limit (between January 2003 and June 2004).

[13] The City has the option to meet the hexavalent chromium performance goal with a total chromium analysis. However, if the total chromium level exceeds the hexavalent chromium performance goal, it will be considered an exceedance unless an analysis has been made for hexavalent chromium in a replicate/split sample and the result has been shown to be in compliance with the hexavalent chromium performance goal.

[14] This constituent is a pollutant of concern. Mass emission goals in the form of Caps are established for maintaining the 1995 emission levels for pollutants of concern (see Section I.B.).

[15] These constituents were determined to have reasonable potential to exceed the respective water quality objective. Therefore, effluent limits are prescribed for these constituents. Since the calculated performance goal is higher than the respective effluent limit, no performance goal is prescribed.

[16] These total chlorine residual limits shall only apply to continuous discharge exceeding two hours.

For intermittent discharges not exceeding two hours, water quality objectives for total chlorine residual shall be determined through the use of the following equation:

$$\log y = -0.43(\log x) + 1.8$$

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

For intermittent discharges not exceeding two hours, the applicable total chlorine residual limit (daily maximum) shall then be calculated using the above calculated water quality objective according to procedures outlined in Section III.C.3.a of the 2001 Ocean Plan. The minimum dilution ratios shall be 13:1 for Discharge Serial No. 001, and 84:1 for Discharge Serial No. 002.

[17] Endosulfan shall mean the sum of endosulfan-alpha and -beta and endosulfan sulfate.

[18] HCH means the sum of alpha, beta, gamma (lindane), and delta isomers of hexachlorocyclohexane.

[19] Expressed as Acute Toxicity Units (TUa)

<u>For Discharge Serial Nos. 001 and 002</u>:

$$TUa = 100/LC50$$

where: Lethal Concentration, 50 Percent (LC50) is expressed as the estimate of the percent effluent concentration that causes death in 50% of the test population, in the time period prescribed by the toxicity test, as required by this permit.

[20] Expressed as Chronic Toxicity Units (TUc)

$$TUc = 100/NOEC$$

where: NOEC (No Observed Effect Concentration) is expressed as the maximum percent effluent that causes no observable effect on test organisms as determined by the result of a critical life stage toxicity test, as required by this permit.

[21] Effluent limit is the same as that in Order No. 94-021 and is more stringent than the calculated limit based on 2001 Ocean Plan Objectives (Antibacksliding Policy)

[22] Dichlorobenzenes shall mean the sum of 1,2- and 1,3-dichlorobenzene.

[23] Chlordane means the sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-alpha, nonachlor-gamma and oxychlordane.

[24] DDT means the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

[25] Halomethanes shall mean the sum of bromoform, bromomethane (methyl bromide) and chloromethane (methyl chloride).

[26] PAHs (polynuclear aromatic hydrocarbons) mean the sum of acenaphthylene, anthracene, 1, 2-benzanthracene, 3, 4-benzofluoranthene, benzo[k]-fluoranthene, 1, 12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[ah]anthracene, fluorene, indeno[1, 2, 3-cd]pyrene, phenanthrene and pyrene.

[27] PCBs (polychlorinated biphenyls) mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-l232, Aroclor-1242, Aroclor-l248, Aroclor-1254 and Aroclor-1260.

[28] TCDD equivalents mean the sum of the concentration of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below:

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8-tetra CDF	0.1
l,2,3,7,8-penta CDF	0.05
2,3,4,7,8-penta CDF	0.5
2,3,7,8-hexa CDFs	0.1
2,3,7,8-hepta CDFs	0.01
octa CDF	0.001

[29] Concentration expressed as total recoverable.

[30] 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.

[31] Nonchlorinated phenolic compounds mean the sum of Phenol, 2,4-Dimethylphenol, 2-Nitrophenol, and 4-Nitrophenol, 2,4-Dinitrophenol and 4,6-Dinitro-2-Methylphenol.

[32] Chlorinated phenolic compounds mean the sum of 2-Chlorophenol, 2,4-Dichlorophenol, 4-Chloro-3-methylphenol, 2,4,6-Trichlorophenol, and Pentachlorophenol.

[33] These constituents were determined to have no reasonable potential to exceed the respective water quality objective. However, the calculated performance goal is greater than the respective calculated Ocean Plan effluent limit. Therefore, effluent limit is prescribed as the performance goal.

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3. The pH of wastes discharged shall at all times be within the range of 6.0 and 9.0. [3]

4. The temperature of wastes discharged shall not exceed 100°F.

5. The arithmetic mean values, by weight, for effluent samples collected in a period of 30 consecutive calendar days shall not exceed 15 percent of the arithmetic mean of values, of $BOD_5 20^0C$ and the suspended solids by weight, for influent samples collected at approximately the same time during the same period. [3]

6. Waste discharged to the ocean must be essentially free of:

   a. Material that is floatable or will become floatable upon discharge.

   b. Settleable material or substances that may form sediments which will degrade benthic communities or other aquatic life.

   c. Substances that will accumulate to toxic levels in marine waters, sediments or biota.

   d. Substances that significantly decrease the natural light to benthic communities and other marine life.

   e. Materials that result in aesthetically undesirable discoloration of the ocean surface.

7. The City shall ensure that bacterial concentrations in the effluent discharge do not result in an exceedance of the Hyperion Treatment Plant waste load allocation of zero (0) days exceedance of single sample numeric limits [based on Basin Plan bacteria objectives for marine waters designated REC-1, see I.C.(Receiving Water Limitations).1.a.(2) below] at shoreline compliance points, as specified in Regional Board Resolution Nos. 2002-004 and 2002-022.

B. Mass Emission Caps

Mass emission caps are applied to four pollutants of concern identified by the SMBRP (copper, lead, silver, and zinc) that are causing or could cause deterioration of designated beneficial uses in Santa Monica Bay. Caps are set at 1995 allowable emission rates. The City should make best efforts to discharge these pollutants of concern below cap values. The Executive Officer and USEPA may modify any of the mass emission cap values, if the City requests and demonstrates that the change is warranted.

The mass emission caps are based on an average flow rate of 347 mgd and the average concentration of the pollutant of concern in 1995. If performance data showed nondetectable levels, one half of the detection limit was used to calculate an average concentration. Mass emission caps calculations are shown in the accompanying Fact Sheet.

Parameter	Mass Emission Cap (Lbs/year)
Copper	41,100
Lead	2,700
Silver	5,500

Zinc	59,100

C. Receiving Water Limitations

1. Bacterial Characteristics

a. Water Contact Standards

In marine water designated for water contact recreation (REC-1), the waste discharged shall not cause the following bacterial standards to be exceeded in the receiving water outside the initial dilution zone.

(1) Geometric Mean Limits
   (a) Total coliform density shall not exceed 1,000/100 ml.
   (b) Fecal coliform density shall not exceed 200/100 ml.
   (c) Enterococcus density shall not exceed 35/100 ml.

(2) Single Sample Limits
   (a) Total coliform density shall not exceed 10,000/100 ml.
   (b) Fecal coliform density shall not exceed 400/100 ml.
   (c) Enterococcus density shall not exceed 104/100 ml.
   (d) Total coliform density shall not exceed 1,000/100 ml, if the ratio of fecal-total coliform exceeds 0.1.

In addition, total coliform density shall not exceed 1,000/100 ml for more than 20 percent of the samples at any sampling station in any 30-day period.

The geometric mean values should be calculated based on a statistically sufficient number of samples (generally not less than 5 samples equally spaced over a 30-day period).

If any of the single sample limits are exceeded, the Regional Board may require repeat sampling on a daily basis until the sample falls below the single sample limit in order to determine the persistence of the exceedance.

When repeat sampling is required because of an exceedance of any one single sample limit, values from all samples collected during that 30-day period will be used to calculate the geometric mean.

b. Shellfish Harvesting Standards

At all areas where shellfish may be harvested for human consumption, as determined by the Regional Board, the waste discharged shall not cause the following bacterial standards to be exceeded:

The median total coliform density for any 6-month period shall not exceed 70 per 100 ml, and not more than 10 percent of the samples during any 6-month period shall exceed 230 per 100 ml.

c. If a shore station consistently exceeds a total or fecal coliform objective or exceeds a geometric mean enterococcus density of 24 organisms per 100 ml for a 30-day period, or 12 organisms per 100 ml for a six-month period, the Discharger may be required to conduct a sanitary survey to determine if the discharge is the source of the contamination. The geometric mean shall be a moving average based on no less than five samples per month, spaced evenly over the time interval. When a sanitary survey identifies a controllable source of indicator organisms associated with the discharge of sewage, the Discharger shall take action to control the source.

2. Physical Characteristics

The waste discharged shall not:

a. Cause floating particulates and oil and grease to be visible;

b. Cause aesthetically undesirable discoloration of the ocean surface;

c. Significantly reduce the transmittance of natural light at any point outside the initial dilution zone; and,

d. Change the rate of deposition of inert solids and the characteristics of inert solids in ocean sediments such that benthic communities are degraded.

3. Chemical Characteristics

The waste discharged shall not:

a. Cause the dissolved oxygen concentration at any time to be depressed more than 10 percent from that which occurs naturally;

b. Change the pH of the receiving waters at any time more than 0.2 units from that which occurs naturally;

c. Cause the dissolved sulfide concentration of waters in and near sediments to be significantly increased above that present under natural conditions;

d. Contain individual pesticides or combinations of pesticides in concentrations that adversely affect beneficial uses;

e. Cause the concentration of substances set forth in Chapter II, Table B of the Ocean Plan, in marine sediments to increase to levels that would degrade indigenous biota;

f. Cause the concentration of organic materials in marine sediments to be increased to levels that would degrade marine life; and,

g. Contain nutrients at levels that will cause objectionable aquatic growths or degrade indigenous biota.

4. Biological Characteristics

The waste discharged shall not:

a. Degrade marine communities, including vertebrate, invertebrate, and plant species;

b. Alter the natural taste, odor, and color of fish, shellfish, or other marine resources used for human consumption; and,

c. Cause the concentration of organic materials in fish, shellfish or other marine resources used for human consumption to bioaccumulate to levels that are harmful to human health.

5. Radioactivity

a. Discharge of radioactive waste shall not degrade marine life.

6. The waste discharged shall not cause a violation of any applicable water quality standard for receiving waters. If more stringent applicable water quality standards are promulgated or approved pursuant to Section 303 of the CWA, or amendments, thereto, USEPA and the Regional Board will revise and modify this Order and permit in accordance with such standards.

II. BIOSOLIDS REQUIREMENTS

A. The Discharger shall comply with the requirements of 40 CFR 503, in general, and in particular the requirements in Attachment B of this Order and permit, [*Biosolids/sludge Management*]. These requirements are enforceable by USEPA.

B. The Discharger shall ensure compliance with the requirements in SWRCB Order No. 2004-10-DWQ, "General Waste Discharge Requirements for the Discharge of Biosolids to Land for Use as a Soil Amendment in Agricultural, Silvicultural, Horticultural and Land Reclamation Activities" for those sites receiving the Discharger' sbiosolids which a Regional Water Quality Control Board has placed under this general order, and with the requirements in individual Waste Discharge Requirements issued by a Regional Board for sites receiving the Discharger' s biosolids.

C. The Discharger shall comply, if applicable, with WDRs issued by other Regional Boards to which jurisdiction the biosolids are transported and applied.

D. The Discharger shall furnish this Regional Board with a copy of any report submitted to USEPA, State Board or other Regional Board, with respect to municipal sludge or biosolids.

III. PRETREATMENT REQUIREMENTS

A. This Order and permit include the Discharger's approved Pretreatment Program as an enforceable condition. The Discharger is required to implement and enforce the pretreatment program in its entire service area, including the contributing jurisdictions.

B. The Discharger shall evaluate whether its pretreatment local limits are adequate to meet the requirements of this Order and permit. Hyperion Treatment Plant is part of the Hyperion Treatment System, including Tillman WRP, LAGWRP, and Burbank WRP. In the reevaluation of local limits, the Discharger shall consider the effluent limitations contained in this Order and permit, and other relevant factors due to the interconnectedness of the system and protection of the upstream plants. The Discharger shall submit by December 1, 2005 to the Regional Board and USEPA the results of the evaluation indicating whether changes to the Discharger's local limits are needed. Any revised local limits shall be submitted to the Regional Board and USEPA for approval under 40 CFR 403.18 by December 1, 2006. In addition, the Discharger shall consider collection system overflow protection from such constituents as oil and grease, etc. Lack of adequate local limits shall not be a defense against liability for violations of effluent limitations and overflow prevention requirements contained in this Order and permit.

C. Any substantial modifications to the approved Pretreatment Program, as defined in 40 CFR 403.18(b), shall be submitted in writing to the Regional Board and USEPA and shall not become effective until Regional Board and USEPA approval is obtained.

D. The Discharger shall enforce the requirements promulgated under Sections 307(b), 307(c), 307(d), and 402(b) of the CWA with timely, appropriate, and effective enforcement actions. The Discharger shall require all nondomestic users subject to the federal categorical standards to comply with those standards and shall take enforcement actions against those users who do not comply with the standards. Such enforcement actions shall be consistent with an enforcement response plan, developed pursuant to 40 CFR 403.8(f)(5). The Discharger shall ensure that all nondomestic users subject to the federal categorical standards achieve compliance no later than the date specified in those requirements or, in the case of a new nondomestic user, upon commencement of the discharge.

E. The Discharger shall perform the pretreatment functions as required in Federal Regulations 40 CFR 403 including, but not limited to:

1. Implement the necessary legal authorities as provided in 40 CFR 403.8(f)(1);
2. Enforce the pretreatment requirements under 40 CFR 403.5 and 403.6;
3. Implement the programmatic functions as provided in 40 CFR 403.8(f)(2); and
4. Provide the requisite funding and personnel to implement the Pretreatment Program as provided in 40 CFR 403.8(f)(3).

F. The Discharger shall submit semiannual and annual reports to the Regional Board, and USEPA describing the Discharger' s pretreatment activities over the period. The annual and semiannual reports shall contain, but not be limited to, the information required in the attached *Pretreatment Reporting Requirements* (Attachment P), or an approved revised version thereof. The Semi-Annual Report covers the periods from January 1 to June 30 and is due by September 1 of each year. A copy of the newspaper notice required under 40 CFR §403.8(f)(2)(vii) should be included in the Semi-Annual Report. A full scan of the priority pollutants for the influent and effluent should be conducted at least annually in July. If the Discharger is not in compliance with any conditions or requirements of this Order and permit, the Discharger shall include the reasons for noncompliance and shall state how and when the Discharger will comply with such conditions and requirements.

G. The Discharger shall be responsible and liable for the performance of all control authority pretreatment requirements contained in 40 CFR 403, including subsequent regulatory revisions thereof. Where Part 403 or subsequent revision places mandatory actions upon the Discharger as Control Authority but does not specify a timetable for completion of the actions, the Discharger shall complete the required actions within six months from the effective date of this Order and permit or the effective date of Part 403 revisions, whichever comes later. For violations of pretreatment requirements, the Discharger shall be subject to enforcement actions, penalties, fines, and other remedies by the Regional Board, USEPA, or other appropriate parties, as provided in the CWA. The Regional Board or USEPA may initiate enforcement action against a nondomestic user for noncompliance with applicable standards and requirements, as provided in the CWA and/or the California Water Code.

IV. PROHIBITIONS

A. Any discharge of wastes at any point other than specifically described in this Order and permit is prohibited, and constitutes a violation thereof.

B. The bypassing of untreated or partially treated wastes to the ocean is prohibited.

C. The discharge of municipal and industrial waste sludge directly to the ocean, or into a waste stream that discharges to the ocean, is prohibited.

D. The discharge of sludge digester supernatant and centrate directly to the ocean, or into a waste stream that discharges to the ocean without further treatment is prohibited.

E. The discharge of any waste resulting from the combustion of toxic or hazardous wastes to any waste stream that ultimately discharges to waters of the United States is prohibited, unless specifically authorized elsewhere in this Order and permit.

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

V. PROVISIONS

A. This Order shall serve as an NPDES permit pursuant to section 402 of the CWA, or amendments thereto. This Order and permit shall become effective 33 days from the date of signature by the USEPA Director.

B. This Order and permit include the attached "Standard Provisions, General Monitoring and Reporting Requirements". ("Standard Provisions", Attachment S) and "Pretreatment Reporting Requirements" (Attachment P). If there is any conflict between provisions stated hereinbefore and said "Standard Provisions" or Attachment P, those provisions stated hereinbefore prevail.

C. This Order and permit includes the attached Monitoring and Reporting Program (CI-1492) (M&RP, Attachment T). If there is any conflict between provisions stated in the Standard Provisions or Attachment P and the Monitoring and Reporting Program, those provisions in the latter prevail.

D. The wastes discharged shall comply with all applicable Ocean Plan and applicable Basin Plan requirements.

E. The City shall comply with all applicable effluent limitations, national standards of performance, toxic effluent standards, and all federal regulations established pursuant to Sections 301, 302, 303(d), 304, 306, 307, 316, 403, and 405 of the CWA and amendments thereto.

F. For biosolids/sludge management, the City must comply with all applicable requirements of 40 CFR sections 257, 258, 501, and 503, including all monitoring, record keeping, and reporting requirements.

G. The Discharger must comply with all conditions of this permit. Any permit noncompliance constitutes a violation of the CWA and the CWC and is grounds for enforcement action; for permit termination, revocation and reissuance, or modification, or denial of a permit renewal application. Subparagraphs (1), (2), and (3) of 40 CFR 122.41(a) are incorporated into this permit by reference.

H. To address the uncertainty due to potential increases in toxic pollutant loadings from the Hyperion Treatment Plant discharge to the marine environment during the five-year permit term, and to establish a framework for evaluating the need for an antidegradation analysis to determine compliance with State and federal antidegradation requirements at the time of permit reissuance, 12-month average mass emission benchmarks have been established for effluent discharged through the 5-mile outfall (Discharge Serial No. 002) (see MRP VI.D.). These mass emission benchmarks were calculated based on the Regional Board and USEPA's evaluation of current effluent quality, using January 1999 through June 2004 effluent data, and the Discharger's projected end-of-permit flow of 400 mgd. Exceptions to this are mass emission benchmarks for copper, lead, silver and zinc which are based directly on Mass Emission Caps for these pollutants of concern in Santa Monica Bay, established by the Regional Board. Mass emission benchmarks are not enforceable water quality based effluent limitations. They may be re-evaluated and revised during the five-year permit term.

I. Compliance Determination

1. Compliance with single constituent effluent limitations - If the concentration of the pollutant in the monitoring sample is greater than the effluent limitation and greater than or equal to the reported Minimum Level (see Reporting Requirements IV. A. of M&RP), then the Discharger is out of compliance.

2. Compliance with monthly average limitations - In determining compliance with monthly average limitations, the following provisions shall apply to all constituents:

   a. If the analytical result of a single sample, monitored monthly, quarterly, semiannually, or annually, does not exceed the monthly average limit for that constituent, the Discharger will have demonstrated compliance with the monthly average limit for that month.

   b. If the analytical result of any single sample, monitored monthly, quarterly, semiannually, or annually, exceeds the monthly average limit for any constituent, the Discharger shall collect up to four additional weekly samples. All five analytical results shall be reported in the monitoring report for that month, or the subsequent month. The concentration of pollutant (a numerical average or a median) estimated from the following Section V.I.3. will be used for compliance determination.

   c. In the event of noncompliance with a monthly average effluent limitation, the sampling frequency for that constituent shall be increased to weekly and shall continue at this level until compliance with the monthly average effluent limitation has been demonstrated.

   d. If only one sample was obtained for the month or more than a monthly period and the result exceeds the monthly average, then the Discharger is in violation of the monthly average limit.

3. When all sample results are greater than or equal to the reported Minimum Level (see Reporting Requirements IV. A. of *MRP*), the numerical average of the analytical results of these samples will be used for compliance determination

   When one or more sample results are reported as "Not-Detected (ND)" or "Detected, but Not Quantified (DNQ)" (see Reporting Requirements IV. D. of *MRP*), the median value of these samples will be used for compliance determination. If, in a even number of samples, one or both of the middle values is ND or DNQ, the median will be the lower of the two middle values.

4. Compliance with effluent limitations expressed as a sum of several constituents – If the sum of the individual pollutant concentrations is greater than the effluent limitation and greater than or equal to the Reported Minimum Level, then the Discharger is out of compliance. In calculating the sum of the

concentrations of a group of individual pollutants, consider constituents reported as ND or DNQ to have concentrations equal to zero.

5. Compliance with effluent limitations expressed as a median – In determining compliance with a median limitation, the analytical results in a set of data will be arranged in order of magnitude (either increasing or decreasing order); and

   a. If the number of measurements (n) is odd, then the median will be calculated as = $X_{(n+1)/2}$, or

   b. If the number of measurements (n) is even, then the median will be calculated as = $[X_{n/2} + X_{(n/2)+1}]/2$, i.e. the midpoint between the n/2 and n/2+1 data points.

J. In calculating mass emission rates from the monthly average concentrations, for compliance purpose, consider constituents reported as ND or DNQ to have concentrations equal to zero for the calculation of the monthly average concentrations.

K. Pollutant Minimization Program (PMP)

1. The goal of the PMP is to reduce all potential sources of a pollutant through pollutant minimization (control) strategies, including pollution prevention measures, in order to maintain the effluent concentration at or below the effluent limitation.

   Pollution prevention measures may be particularly appropriate for persistent bioaccumulative priority pollutants where there is evidence that beneficial uses are being impacted. The completion and implementation of a Pollution Prevention Plan, required in accordance with California Water Code Section 13263.3 (d) will fulfill the PMP requirements in this section.

2. The Discharger shall develop and conduct a PMP if all of the following conditions are true, and shall submit the PMP to the Regional Board and USEPA within 90 days of determining the conditions are true:

   a. The calculated effluent limitation is less than the reported minimum level;

   b. The concentration of the pollutant is reported as "Detected, but Not Quantified", DNQ;

   c. There is evidence showing that the pollutant is present in the effluent above the calculated effluent limitation.

3. The Discharger shall also develop and conduct a PMP if all of the following conditions are true, and shall submit the PMP to the Regional Board and USEPA within 90 days of determining the conditions are true:

   a. The calculated effluent limitation is less than the method detection limit;

b. The concentration of the pollutant is reported as "Not-Detected", ND;

c. There is evidence showing that the pollutant is present in the effluent above the calculated effluent limitation.

4. The Discharger shall consider the following in determining whether the pollutant is present in the effluent at levels above the calculated effluent limitation:

   a. health advisories for fish consumption;

   b. presence of whole effluent toxicity;

   c. results of benthic or aquatic organism tissue sampling;

   d. sample results from analytical methods more sensitive than methods included in the permit;

   e. the concentration of the pollutant is reported as DNQ and the effluent limitation is less than the method detection limit.

5. Elements of a PMP. The PMP shall include actions and submittals acceptable to the Regional Board and USEPA including, but not limited to, the following:

   a. An annual review and semi-annual monitoring of potential sources of the reportable pollutant, which may include fish tissue monitoring and other bio-uptake sampling;

   b. Quarterly monitoring for the reportable pollutant in the influent to the wastewater treatment system;

   c. Submittal of a control strategy designed to proceed toward the goal of maintaining concentrations of the reportable pollutant in the effluent at or below the calculated effluent limitation;

   d. Implementation of appropriate cost-effective control measures for the pollutant, consistent with the control strategy; and,

   e. An annual status report that shall be sent to the Regional Board and USEPA including:

      - All PMP monitoring results for the previous year;
      - A list of potential sources of the reportable pollutant;
      - A summary of all action taken in accordance with control strategy; and,
      - A description of actions to be taken in the following year.

L. Waste management systems that discharge to the ocean must be designed and operated in a manner that will maintain the indigenous marine life and a healthy and diverse marine community.

M. Waste effluents shall be discharged in a manner that provides sufficient initial dilution to minimize the concentrations of substances not removed in the treatment.

N. Location of waste discharge must assure the following:

1. Pathogenic organisms and viruses are not present in areas where shellfish are harvested for human consumption or in areas used for swimming or other body-contact sports.

2. Natural water quality conditions are not altered in areas designed as being of special biological significance or areas that existing marine laboratories use as a source of seawater.

3. Maximum protection is provided to the marine environment.

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

P. The Discharger shall notify the Regional Board and USEPA immediately by telephone or electronically, but not later than 24 hours, of the presence of adverse conditions in the receiving waters or on beaches and shores as a result of the waste discharge; written confirmation shall follow as soon as possible but not later than five working days after notification.

Q. The Discharger shall provide standby or emergency power facilities and/or storage capacity or other means so that in the event of plant upset or outage due to power failure or other causes, the discharge of raw or inadequately treated sewage does not occur.

R. The City shall update and thereafter implement its updated contingency plan (including timely scheduling of construction and/or maintenance) for the Hyperion Treatment System involving, but not limited to, Tillman WRP, LAGWRP, North Outfall Replacement Sewer, North Outfall Sewer, North Outfall Treatment Facility, and the Hyperion Treatment Plant.

S. The Discharger shall notify the Executive Officer and USEPA in writing no later than six months prior to planned discharge of any chemical, other than chlorine or other product previously reported to the Executive Officer and USEPA, which may be toxic to aquatic life. Such notification shall include:

1. Name and general composition of the chemical,

2. Frequency of use,
3. Quantities to be used,
4. Proposed discharge concentrations, and
5. USEPA registration number, if applicable.

No discharge of such chemical shall be made prior to obtaining approval from the Executive Officer and USEPA.

VI. REOPENERS AND MODIFICATION

A. This Order and permit may be reopened and modified, to incorporate new limits based on future reasonable potential analyses to be conducted based on on-going monitoring data collected by the Discharger and evaluated by the Regional Board and USEPA.

B. This Order and permit may be reopened and modified, to incorporate new mass emission rates based on the current Hyperion Treatment Plant's design capacity of 450 mgd provided that the Discharger requests and conducts an antidegradation analysis to demonstrate that the change is warranted.

C. This Order and permit may be reopened and modified, in accordance with the provisions set forth in 40 CFR 122 and 124, to incorporate requirements for the implementation of the watershed protection management approach.

D. This Order and permit may be modified, in accordance with the provisions set forth in 40 CFR 122 and 124, to include new MLs.

E. This Order and permit may be reopened and modified, to revise effluent limitations as a result of future Basin Plan Amendments or the adoption of a TMDL for Santa Monica Bay Watershed Management Areas.

F. The Board or USEPA may modify, or revoke and reissue this Order and permit if present or future investigations demonstrate that the discharge(s) governed by this Order and permit will cause, have the potential to cause, or will contribute to adverse impacts on water quality and/or beneficial uses of the receiving waters.

G. This Order and permit may be modified, revoked, and reissued or terminated in accordance with the provisions of 40 CFR 122.44, 122.62 to 122.64, 125.62, and 125.64. Causes for taking such actions include, but are not limited to, failure to comply with any condition of this Order and permit, endangerment to human health or the environment resulting from the permitted activity, or acquisition of newly obtained information which would have justified the application of different conditions if known at the time of Order and permit adoption and issuance. The filing of a request by the Discharger for an Order and permit modification, revocation, and issuance or termination, or a notification of planned changes or anticipated noncompliances does not stay any condition of this Order and permit.

H. This Order and permit may be modified, or revoked and reissued, based on the results of Magnuson-Stevens Fishery Conservation and Management Act and/or

Endangered Species Act section 7 consultation(s) with the National Marine Fisheries Service and/or the U.S. Fish and Wildlife Service.

VII. EXPIRATION DATE

A. This Order and permit expires on **May 14, 2010.**

B. The Discharger must file a Report of Waste Discharge and NPDES application in accordance with Title 23, CCR and 40 CFR 122.21(d), respectively, not later than 180 days in advance of the expiration date as application for issuance of new waste discharge requirements.

VIII. RESCISSION

Order No. 94-021 adopted by this Board on February 28, 1994, and NPDES permit No. CA0109991 issued by USEPA on April 1, 1994 are hereby rescinded upon the effective date of this Order and permit, except for purposes of enforcement.

The signatures below certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Los Angeles Region, on April 7, 2005, and of a National Pollutant Discharge Elimination System permit issued by the United States Environmental Protection Agency, Region IX.

Jonathan Bishop,
Executive Officer
California Water Quality Control Board
Los Angeles Region

Date:_____

Alexis Strauss,
Director
Water Division
USEPA Region IX

Date: _____

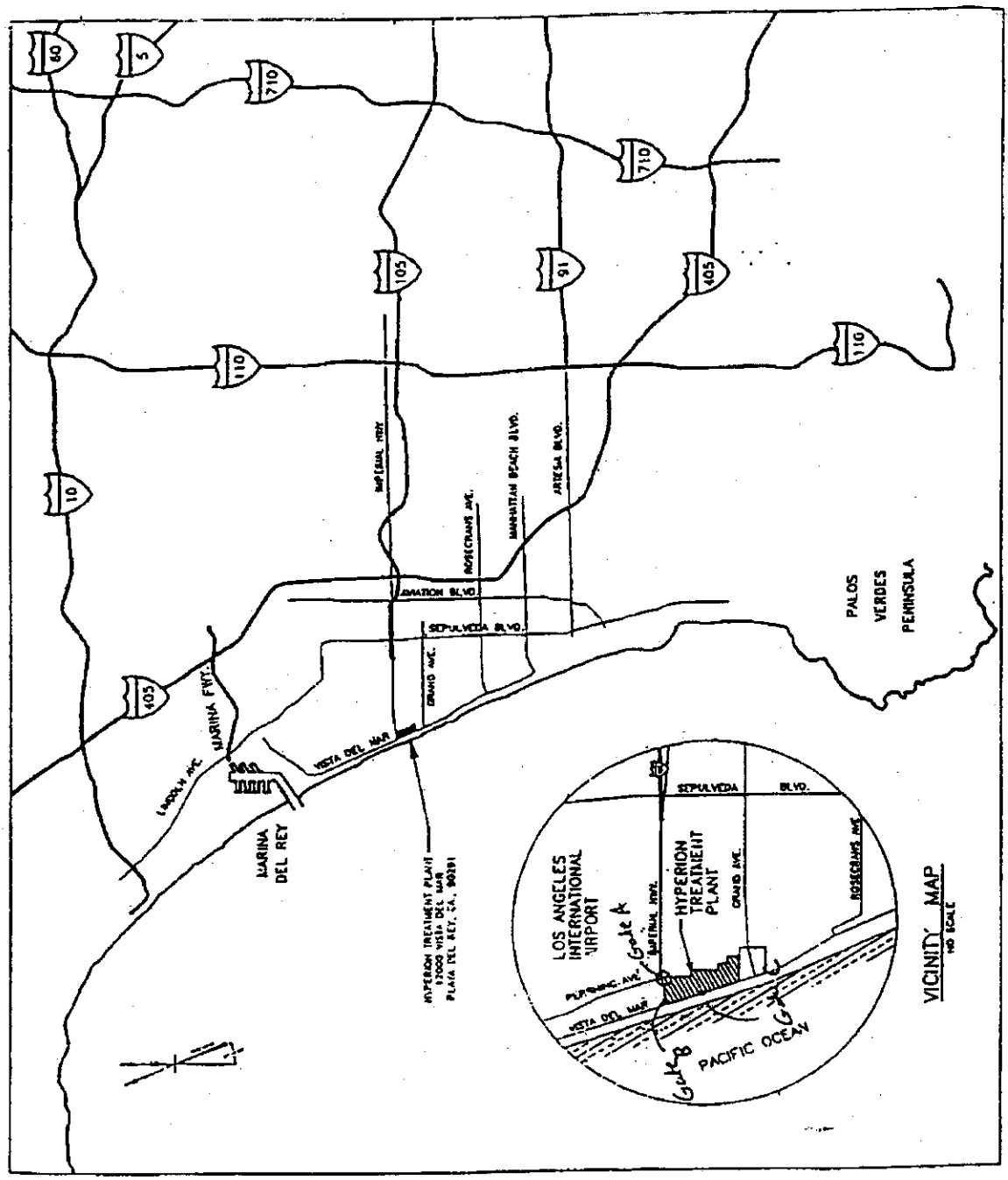

Figure 1
HYPERION TREATMENT PLANT LOCATION MAP

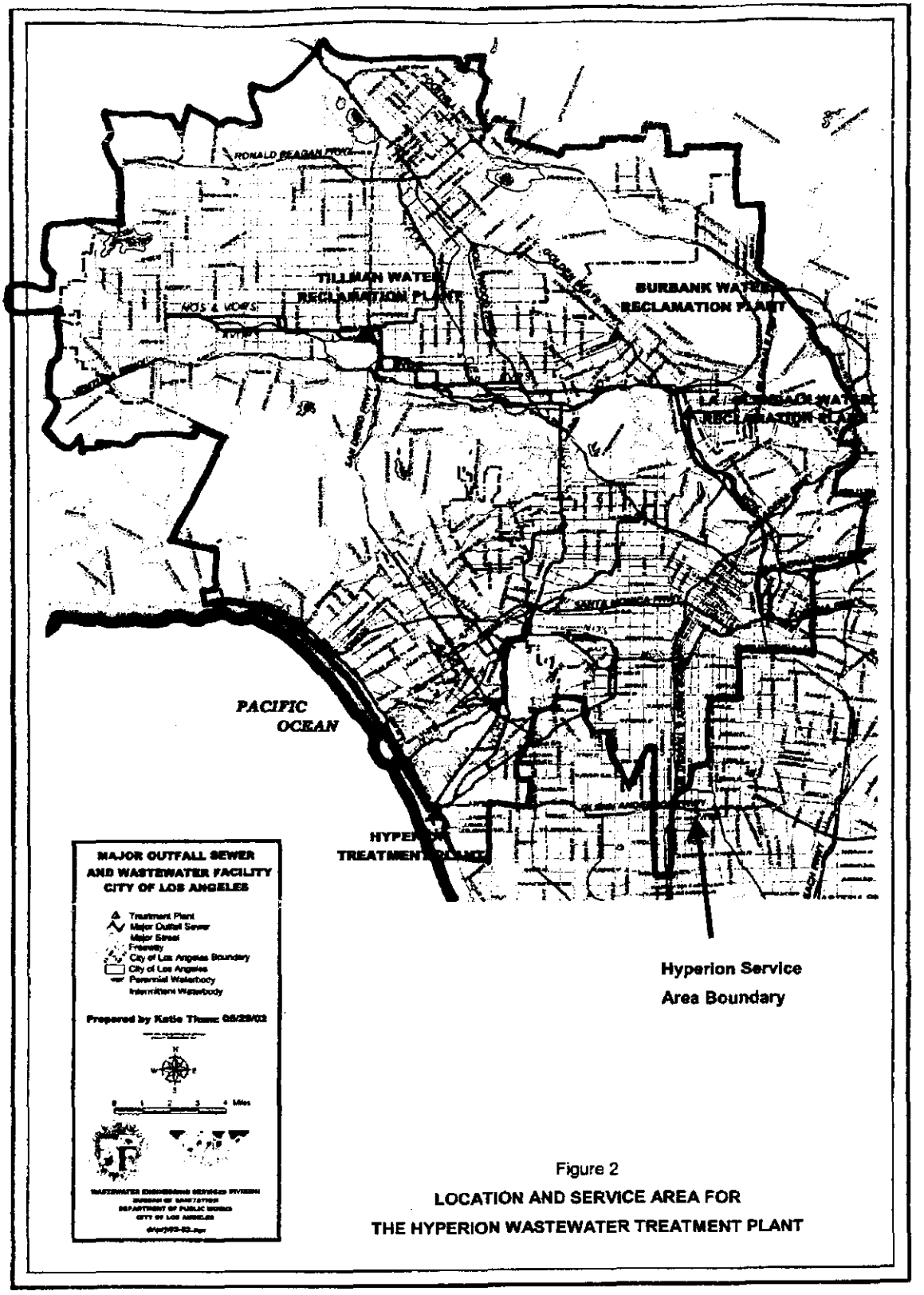

Figure 2
LOCATION AND SERVICE AREA FOR
THE HYPERION WASTEWATER TREATMENT PLANT

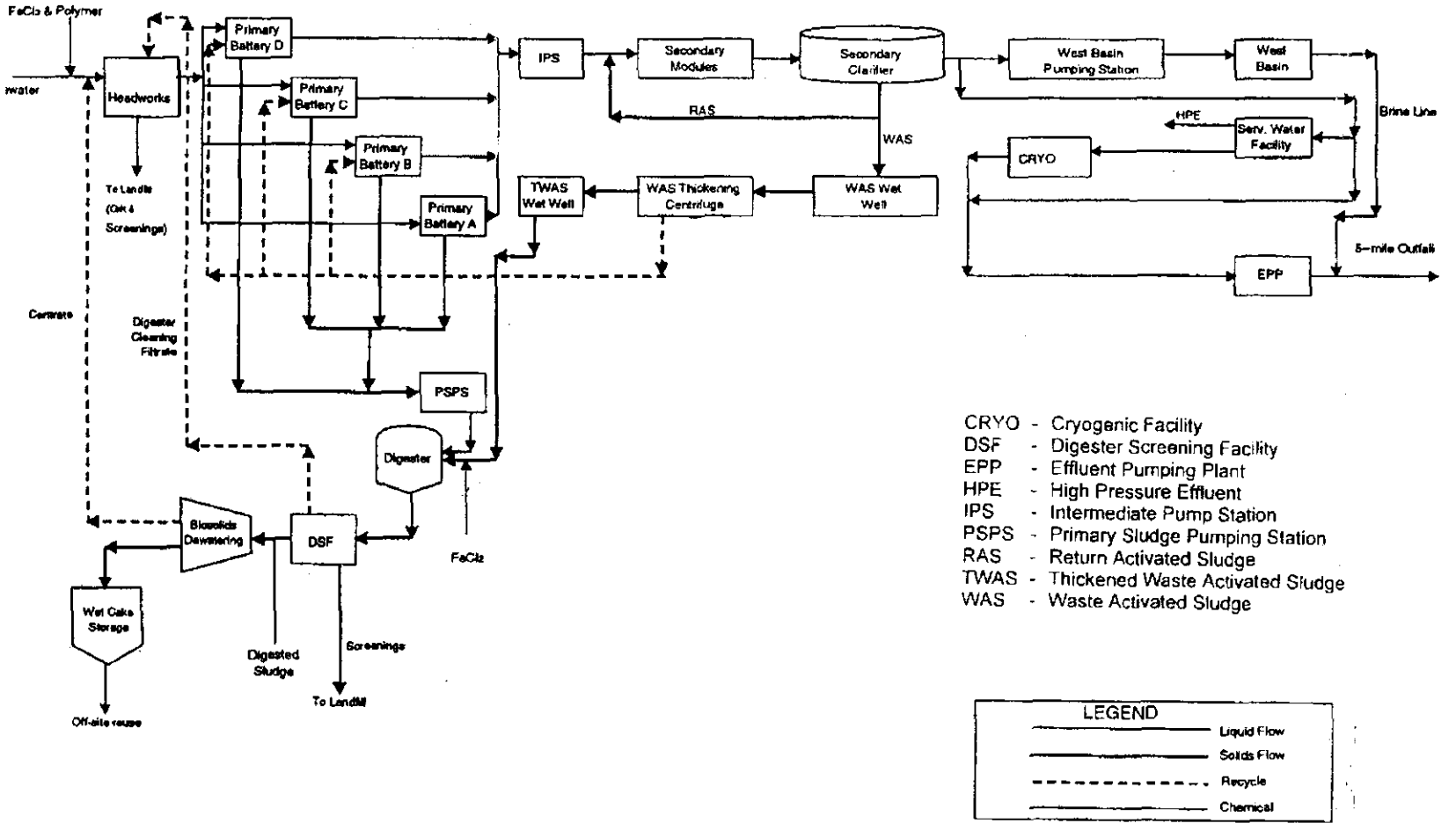

Figure 3

A SCHEMATIC PRESENTATION OF WASTEWATER FLOW AT HYPERION TREATMENT PLANT

ATTACHMENT T

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION
AND
U. S. ENVIRONMENTAL PROTECTION AGENCY
REGION IX

MONITORING AND REPORTING PROGRAM NO. 1492
FOR THE
CITY OF LOS ANGELES
(Hyperion Treatment Plant)

Order No. R4-2005-0020
NPDES No. CA0109991

The Discharger shall implement this monitoring and reporting program on the effective date of this Order and permit:

I. FRAMEWORK FOR MONITORING

A. Pursuant to Title 40 of the Code of Federal Regulations (40 CFR) 122.41(j) and 122.48(b), the monitoring program for a discharger receiving a National Pollutant Discharge Elimination System (NPDES) permit must determine compliance with NPDES permit terms and conditions including TMDL requirements incorporated into the permits, and demonstrate that State water quality standards are met.

B. In January 1999, Hyperion Treatment Plant's (Hyperion) benthic sampling program was modified from an equidistant depth contour-based grid to a combination fixed station/random station array. This change allowed the assessment of more subtle changes in the benthic community as a result of the change from partial secondary to full secondary effluent (December 1998). Impacts associated with the 5-mile outfall discharge have decreased in spatial extent since the 1980s commensurate with improved effluent quality. Sampling with the combination fixed station/random station array has also shown an improvement in benthic communities around the outfall and some reduction in levels of metals in sediments (Marine Monitoring in Santa Monica Bay, Biennial Assessment Report for the Period January 2001 through December 2002, City of Los Angeles, July, 2003).

C. The City of Los Angeles (City or Discharger) has been monitoring Santa Monica Bay shoreline stations from Malibu to Palos Verdes on a daily basis at a minimum of 16 stations for bacterial contamination since the late 1940's. This monitoring program originated to ensure that public health was protected from contamination by Hyperion effluent discharged into Santa Monica Bay. Since construction of the 5-mile outfall (Discharge Serial No. 002) in the 1950's, data from over 40 years of daily monitoring for total and fecal coliform and over 10 years of monitoring data for enterococcus at these stations have shown that Hyperion's 5-mile outfall has not been observed to affect water quality at these shoreline stations during a variety of

oceanographic and meteorological conditions. Instead, test results showed that contamination originates from land via storm drain flows into Santa Monica Bay particularly during events such as rainfall, illicit discharges, and sewage spills. Recognizing this key finding, several organizations including the California Regional Water Quality Control Board, Los Angeles Region (Regional Board), City of Los Angeles, Los Angeles (LA) County Department of Public Works, LA County Department of Health Services, Heal the Bay, and the United States Environmental Protection Agency (USEPA), in a 1995 joint effort, relocated Hyperion's 18 daily shoreline stations to form the backbone of the Santa Monica Bay shoreline monitoring for stormwater and urban runoff contamination. This daily monitoring program is supplemented by weekly monitoring at additional stations by LA County Department of Health Services.

The results of daily and weekly monitoring have been used by LA County Department of Health Services to post warning signs at the beaches or restrict beach access whenever bacterial indicator thresholds have been exceeded. These results have also been successfully used by Heal the Bay to grade the Santa Monica Bay beaches in its "Report Card", which is posted on its website.

Santa Monica Bay shoreline monitoring requirements in the LA County Stormwater Monitoring (MS4) Permit, issued on December 13, 2001, call for monitoring of 18 water quality stations six days per week to determine compliance with the State of California's bathing water standards for public beaches and ocean water-contact sport areas, and the related impacts of discharges from storm drains and piers. Since the focus of the shoreline monitoring program has changed from monitoring the impact of Hyperion's 5-mile outfall to that of urban runoff and storm water, shoreline monitoring is no longer included in this NPDES permit.

In 2002, the Regional Board adopted two Total Maximum Daily Loads (TMDLs) to address bacterial contamination at the beaches along Santa Monica Bay (see Finding 32). The City of Los Angeles, as the owner of Hyperion Treatment Plant, is identified as a responsible jurisdiction in these TMDLs. In these TMDLs, Hyperion Treatment Plant is assigned a waste load allocation (WLA) of zero days of exceedance of the single sample bacterial objectives during all three identified periods – summer dry weather, winter dry weather and wet weather. Hyperion' s WLA of zero exceedance days requires that no discharge from Hyperion' s outfall may cause or contribute to any exceedances of the single sample bacteria objectives at the shoreline compliance points identified in the TMDL and, subsequently, in the approved Coordinated Shoreline Monitoring Plan (dated April 7, 2004) submitted by responsible agencies and jurisdictions under the TMDLs. Because it has been demonstrated that the plume from the outfall does not come into contact with the shoreline and has never been detected less than 2.5 km from shore (see F. below), this Order and permit does not require shoreline monitoring, as the monitoring data from the shoreline monitoring sites is required by the MS4 permit and will be used to demonstrate compliance with the WLAs in these TMDLs.

D. Nearshore monitoring (at stations located along the 30-foot depth contour) for bacterial contamination has been part of Hyperion's monitoring program for over 25 years and was included as an additional means to detect the approach of the plume to shore. In 1994, nearshore monitoring was replaced with similar "inshore" monitoring (at stations located approximately 1,000 feet offshore) to detect approach of the plume to the shore, but sites were located in kelp beds or near water contact recreation areas. Data collected at nearshore and inshore monitoring stations has shown few exceedances of past or current Ocean Plan bacterial standards. Inshore monitoring sites have been retained to demonstrate compliance with Ocean Plan and Basin Plan bacterial standards during summer time.

E. Offshore monitoring (at stations located offshore of the inshore/nearshore zone to a distance of three nautical miles from land) for bacterial contamination has been conducted as part of Hyperion's monitoring program. Offshore monitoring sites have been retained to demonstrate compliance with Ocean Plan and Basin Plan bacterial standards in the offshore.

F. Wastewater from Hyperion does not come into contact with the shoreline. In addition to bacterial contamination monitoring, the City of Los Angeles has collected and assessed considerable amounts of chemical and physical water quality data from Santa Monica Bay. The parameters collected in these assessments are used to locate and define the wastewater plume and include transmissivity, dissolved oxygen, temperature, salinity and ammonia. Since 1987, over six years of weekly water quality assessments and approximately four years of monthly and quarterly assessments have taken place under many oceanographic conditions, including El Nino, La Nina and winter storm conditions.

The movement of the plume is dictated by the depth of the thermocline or stratification and the direction and strength of highly variable Santa Monica Bay currents. Under typical conditions, the plume is detected within 2 km (6562 feet) of the outfall terminus, although it has been detected as far 8 km (26247 feet) away from the outfall. Also, the plume has almost always been detected below the thermocline at a depth ranging from 10 m (33 feet) to 55 m (180 feet). Infrequently, during winter storm conditions, the plume has been detected at the surface in the vicinity of the outfall. On rare occasions, it has been impossible to detect the plume.

As the waters of Santa Monica Bay approach the shore, the thermocline intersects the rising sea bottom. This point is typically 1000 m (3281 feet) or more offshore and is the theoretical limit of the approach of the plume to the shoreline. The plume has never been detected less than 2.5 km (8202 feet) from shore, at the 45 m (148 feet) depth contour. A thorough discussion of the fate and transport of Hyperion's wastewater plume is available in A. Dalkey and J. F. Shisko (1996) *Observations of Oceanic Processes and Water Quality following Seven Years of CTD Surveys in Santa Monica Bay, California*, Bulletin of the Southern California Academy of Sciences 95(1), pp. 17-32.

G. The following monitoring program requires analysis of receiving waters for three bacterial indicators: total coliform, enterococcus and fecal coliform. USEPA-

approved methods for these indicators include membrane filtration, multiple tube fermentation and chromogenic/fluorogenic methods (for example, Colilert™18Medium [IDEXX] for total coliform and Enterolert™ [IDEXX] for enterococcus).

There is no comparable chromogenic/fluorogenic method for fecal coliform analysis. However, both the State of California Environmental Laboratory Accredation Program (ELAP) and the Microbiological Disease Laboratory accept the substitution of a method for quantifying *E. coli* as an indicator of fecal coliform (Colilert™18Medium (IDEXX), a chromogenic/fluorogenic method, can also be used to measure *E. coli*). *E. coli* is a subset of the fecal coliform group and is, therefore, a direct indicator of fecal contamination in water. Comparative testing, in parallel, must be performed by a laboratory substituting the *E. coli* method to determine if any adjustment to *E. coli* results is necessary to estimate fecal coliform. For example, Orange County Sanitation District multiplies *E. coli* results by a factor of 1.1 to estimate fecal coliform. Additionally, reports published by Southern California Coastal Water Research Project (SCCWRP) (including R. T. Noble, J.H. Dorsey, M.K. Leecaster, M. Mazur, C.D. McGee, D. Moore, V. Orozco-Borbon, D. Reid, K. Schiff, P.M. Vainik, S.B. Weisberg. 2000. *Southern California Bight 1998 Regional Monitoring Program: III. Storm event shoreline microbiology*, SCCWRP, Westminster, CA) generally show good correlation of traditional methods to these newer methods, but also indicate underestimation of fecal coliform when using *E. coli* as a direct substitute. Hyperion will need to calculate an appropriate multiplier using their own laboratory results and will require approval from the Executive Officer and USEPA before using the chromogenic/fluorogenic method (for example, Colilert™18Medium (IDEXX) method) for fecal coliform analyses.

H. NPDES compliance monitoring focuses on the effects of a specific point source discharge. Generally, it is not designed to assess impacts from other sources of pollution (e.g., nonpoint source runoff, aerial fallout) or to evaluate the current status of important ecological resources in the waterbody. The scale of existing compliance monitoring programs does not match the spatial and, to some extent, temporal boundaries of the important physical and biological processes in the ocean. In addition, the spatial coverage provided by compliance monitoring programs is less than ten percent of the nearshore ocean environment. Better technical information is needed about status and trends in ocean waters to guide management and regulatory decisions, to verify the effectiveness of existing programs, and to shape policy on marine environmental protection.

I. The Regional Board and USEPA, working with other groups, have developed a comprehensive basis for effluent and receiving water monitoring appropriate to large publicly owned treatment works (POTWs) discharging to waters of the Southern California Bight. This effort has culminated in the publication by the SCCWRP of the Model Monitoring Program guidance document (Schiff, K.C., J.S. Brown and S.B. Weisberg. 2001. *Model Monitoring Program for Large Ocean Dischargers in Southern California.* SCCWRP Tech. Rep #357. Southern California Coastal Water Research Project, Westminster, CA. 101 pp.). This guidance provides the principles, framework and recommended design for effluent

and receiving water monitoring elements which have guided development of the monitoring program described below.

J. In July 2000, the Santa Monica Bay Restoration Project (SMBRP) published "An Assessment of the Compliance Monitoring System in Santa Monica Bay" to set forth recommendations and priorities for compliance monitoring in Santa Monica Bay. This report reasoned that a reduced level of receiving water monitoring is justified for large POTWs discharging to Santa Monica Bay due to improvements in effluent quality and associated decreases in receiving water impacts. Like the Model Monitoring Plan developed by SCCWRP, SMBRP recommendations are focused on providing answers to management questions and allowing a reduction in POTW receiving water monitoring where discharge effects are well understood. The monitoring plan set forth here has been guided by SMBRP recommendations.

K. The conceptual framework for the Model Monitoring Program has three components that comprise a range of spatial and temporal scales: (1) core monitoring; (2) regional monitoring; and (3) special studies.

1. Core monitoring is local in nature and focused on monitoring trends in quality and effects of the point source discharge. This includes effluent monitoring as well as some aspects of receiving water monitoring. In the monitoring program described below these core components are typically referred to as local monitoring.

2. Regional monitoring is focused on questions that are best answered by a region-wide approach that incorporates coordinated survey design and sampling techniques. The major objective of regional monitoring is to collect information required to assess how safe it is to swim in the ocean, how safe it is to eat seafood from the ocean, and whether the marine ecosystem is being protected. Key components of regional monitoring include elements to address pollutant mass emission estimations, public health concerns, monitoring of trends in natural resources, assessment of regional impacts from all contaminant sources, and protection of beneficial uses. The final design of regional monitoring programs is developed by means of steering committees and technical committees comprised of participating agencies and organizations, and is not specified in this permit. Instead, for each regional component, the degree and nature of participation of the Discharger is specified. For this permit, these levels of effort are based upon past participation of the City of Los Angeles in regional monitoring programs.

   The Discharger shall participate in regional monitoring activities coordinated by the SCCWRP or any other appropriate agency approved by the Regional Board and USEPA. The procedures and time lines for the Regional Board and USEPA approval shall be the same as detailed for special studies, below.

3. Special studies are focused on refined questions regarding specific effects or development of monitoring techniques and are anticipated to be of short duration and/or small scale scale, although multiyear studies also may be needed. Questions regarding effluent or receiving water quality, discharge impacts, ocean processes in the area of the discharge, or development of techniques for monitoring the same, arising out of the results of core or regional monitoring, may be pursued through special studies. These studies are by nature ad hoc and cannot be typically anticipated in advance of the five-year permit cycle.

   The Discharger, the Regional Board and USEPA shall consult annually to determine the need for special studies. Each year, the Discharger shall submit proposals for *any proposed* special studies to the Regional Board and USEPA by December 30, for the following year's monitoring effort (July through June). The following year, detailed scopes of work for proposals, including reporting schedules, shall be presented by the Discharger at a Spring Regional Board meeting, to obtain the Regional Board and USEPA approval and to inform the public. Upon approval by the Regional Board and USEPA, the Discharger shall implement its special study or studies.

L. The conceptual framework for the SMBRP Comprehensive Monitoring Program was designed to be implemented in part through modifications to existing receiving water monitoring programs for major NPDES dischargers into coastal ocean waters. Some elements of this monitoring program already have been implemented, for example through establishment of periodic bight-wide regional monitoring surveys (Southern California Bight Pilot Project'94, Bight'98 and Bight'03) and annual kelp bed monitoring. However, other elements of the program have yet to be developed, including:

   -rocky intertidal monitoring
   -resident fish monitoring
   -pelagic ecosystem monitoring
   -wetlands monitoring
   -hard bottom benthos monitoring
   -bird and mammal monitoring
   -commercial shellfish monitoring
   -stormwater mass emission loading and plume tracking monitoring.

The Santa Monica Bay Restoration Commission's Technical Advisory Committee has agreed to develop a detailed workplan outlining the monitoring surveys required to complete implementation of the Comprehensive Monitoring Program framework developed in 1993. This workplan should include formulation of management goals and objectives, identification of suitable monitoring indicators, detailed sampling designs, and cost estimates for each monitoring component. Upon completion of this workplan, USEPA, the Regional Board, affected NPDES permit holders, and other interested agencies and stakeholders will develop implementation plans to collaboratively fund these programs and determine each party's level of participation. It is anticipated that funding for these programs from the City of Los Angeles will be supplied through a combination of

modifications to the Hyperion Treatment Plant's Monitoring and Reporting Program, including redirection of existing effort and new monitoring efforts relevant to the Hyperion Treatment Plant's discharge. Redirection of existing monitoring requirements and/or the imposition of additional monitoring efforts are subject to a hearing before USEPA and the Regional Board.

M. In attempt to bridge the foregoing gap in information, this monitoring program for Hyperion Treatment Plant is comprised of requirements to demonstrate compliance with the conditions of the NPDES permit, ensure compliance with State water quality standards, and mandate participation in regional monitoring and/or area-wide studies.

N. While there are additions in some program areas in the following receiving water monitoring program, implementation of the Model Monitoring Program will result overall in a decreased level of monitoring effort. This lower level of monitoring effort is justified at this time because of accumulation of knowledge from many years of monitoring by Southern California Bight dischargers, improved understanding of local oceanographic processes in general, and documented improvements in the areas of Santa Monica Bay that have been impacted by the Hyperion discharge. Additionally, changes in sampling designs address management questions more directly than in the past.

O. Major changes to the receiving water monitoring requirements have resulted from implementation of the 2001 California Ocean Plan's Water Quality Objectives and application of the monitoring principles and designs in the Model Monitoring Program for Large Ocean Discharges in Southern California, SCCWRP, March 2002, (Model Monitoring Program). These changes include:

1. Effluent toxicity – revised requirement for acute toxicity testing to evaluate discharge effect on marine species.

2. Bacteriological – shoreline stations transferred to the Municipal Stormwater Permit for Los Angeles County.

3. Sediment chemistry – reduction in types of chemical analysis.

4. Bioaccumulation - reduction in frequency change from semiannual to annual; no replicates required, elimination of triannual collection of macroinvertebrate.

5. Fish communities – additional sampling stations, but no replicates required; sampling frequency reduced from quarterly to semiannual.

6. Benthic infauna – frequency reduced from semiannual to annual, replicates eliminated.

P. Discharger participation in regional monitoring programs is required as a condition of this permit. The Discharger shall complete collection and analysis of samples in accordance with the schedule established by the Steering Committee directing the

Bight-wide regional monitoring surveys. The level of participation shall be similar to that provided by the Discharger in previous regional surveys conducted in 1994, 1998, 2000 and 2003. The regional programs which must be conducted under this permit include:

1. Future Southern California Bight regional surveys, including benthic infauna, sediment chemistry, fish communities, fish predator risk.

2. Santa Monica Bay Restoration Project's Seafood Safety Survey – the level of participation shall be similar to that provided for the 1998 Regional Bioaccumulation Survey.

3. Central Region Kelp Monitoring Program – coordinated by the Regional Board.

4. Central Bight Water Quality Cooperative Program – coordinated monitoring conducted by Orange County Sanitation District, County Sanitation Districts of Los Angeles County, City of Los Angeles and City of Oxnard through appropriate agencies for water quality monitoring.

Q. Regular regional monitoring for the Southern California Bight has been established, occurring at four- to five-year intervals, and coordinated through SCCWRP with discharger agencies and numerous other entities. The third regional monitoring program (Bight'03) occurred during summer 2003 and winter 2003-4. While participation in regional programs is required under this permit, revisions to the Hyperion monitoring program at the direction of the Regional Board and USEPA may be necessary to accomplish the goals of regional monitoring or to allow the performance of special studies to investigate regional or site-specific water issues of concern. These revisions may include a reduction or increase in the number of parameters to be monitored, the frequency of monitoring, or the number and size of samples to be collected. Such changes may be authorized by the Executive Officer and USEPA upon written notification to the Discharger.

R. The Regional Board has established the Central Region Kelp Survey Consortium to conduct regional kelp bed monitoring. This program is designed to require ocean dischargers in the Regional Board's jurisdiction to undertake a collaborative program (which may include participation by Orange County ocean dischargers) to monitor kelp beds in the Southern California Bight, patterned after the successful program implemented by the San Diego Regional Board since 1985. Data collected in this regional survey will be used to assess status and trends in kelp bed health and spatial extent. The regional nature of the survey will allow the status of beds local to specific dischargers to be compared to regional trends. Additionally, this survey provides data to the Santa Monica Bay Restoration Project's Kelp Beds program.

The regional survey will consist primarily of quarterly aerial overflights to assess the size and health of existing kelp beds. The Discharger shall participate in the management and technical committees responsible for the final survey design and shall provide appropriate financial support to help fund the survey (share based on

the number of participants in the study, but not to exceed a maximum of $10,000 per year). The regional kelp monitoring survey was initiated during 2003.

II. SUBMITTAL OF MONITORING REPORTS

A. Influent/effluent monitoring reports (Discharger Monitoring Reports) and receiving water bacterial monitoring reports shall be submitted monthly so that they are received by the Regional Board and USEPA by the 15th day of the second month following the end of each monthly reporting period. For example, the monitoring report covering the month of January 2005 shall be received by the Regional Board and USEPA by March 15, 2005. The reporting schedule is indicated in the following table.

Monitoring Frequency	Report Due
Continuous, Daily, Weekly, Monthly	By the 15th day of the second month
Quarterly	March 15 (1st Q), June 15 (2nd Q), September 15 (3rd Q), and December 15 (4th Q)
Semiannually	March 15 (1st) and September 15 (2nd)
Annually	September 15

B. By April 15 of each year, the Discharger shall submit an annual summary report containing a discussion of the previous year' s influent/effluent analytical results, as well as graphical and tabular summaries of the monitoring analytical data. The data shall be submitted to the Regional Board and USEPA on hard copy and a CD-Rom disk or other appropriate electronic medium. The submitted data must be IBM compatible, preferably using Microsoft Excel software. In addition, the Discharger shall discuss the compliance record and any corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge and permit requirements.

C. An annual summary of the receiving water monitoring data collected during each sampling year (January-December) shall be prepared and submitted so that it is received by the Regional Board and USEPA by August 1 of the following year.

A detailed receiving water monitoring biennial assessment report of the data collected during the two previous calendar sampling years (January-December) shall be prepared and submitted so that it is received by the Regional Board and USEPA by August 1 of every other year. This report shall include an annual data summary and shall also include an in-depth analysis of the biological and chemical data following recommendations in the Model Monitoring Program guidance document (Schiff, K.C., J.S. Brown and S.B. Weisberg. 2001. *Model Monitoring Program for Large Ocean Dischargers in Southern California.* SCCWRP Tech. Rep #357. SCCWRP, Westminster, CA. 101 pp.). Data shall be tabulated, summarized, and graphed where appropriate, analyzed, interpreted, and generally presented in such a way as to facilitate ready understanding of its significance. Spatial and temporal trends shall be examined and compared. The

relation of physical and chemical parameters to biological parameters shall be evaluated. See, also, Section IV.H. of this Monitoring and Reporting Program. All receiving water monitoring data shall be submitted in accordance with the data submittal formats developed for the Southern California Bight Regional Monitoring Surveys.

The first assessment report shall be due August 1, 2007, and cover the sampling periods of January-December 2005 and January-December 2006. Subsequent reports shall be due August 1, 2009, and August 1, 2011, to cover sampling periods of January 2007-December 2008 and January 2009-December 2010, respectively.

D. A summary report of the Outfall Inspection findings shall be provided annually. This written report, augmented with videographic and/or photographic images, shall provide a description of the observed external condition of the discharge pipes from shallow water to their respective termini. This report shall be submitted so that it is received by August 1 of the following year.

E. All monthly monitoring reports, annual summary reports, and biennial assessment reports shall be delivered to the Regional Board and USEPA as follows. Reference the reports to Compliance File No. CI-1492 to facilitate routing to the appropriate staff and file.

California Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013
Attention: Information Technology Unit

Regional Administrator
United States Environmental Protection Agency, Region IX
DMR/NPDES, MAILCODE: WTR-7
75 Hawthorne Street
San Francisco, CA 94105

F. Database Management System: The Regional Board and State Water Resources Control Board (State Board) are developing a database compliance monitoring management system. The Discharger may be required to submit all monitoring and annual summary reports electronically in a specified format when this system becomes fully operational.

III. MONITORING REQUIREMENTS

A. Quarterly influent and effluent analyses shall be performed during the months of January, April, July, and October. Semiannual influent and effluent analyses shall be performed during the months of January and July. Annual influent and effluent analyses shall be performed during the month of July. Should there be instances when monitoring could not be done during these specified months, the Discharger

must notify the Regional Board and USEPA, state the reason why the monitoring could not be conducted, and obtain approval from the Executive Officer and USEPA for an alternate schedule. Results of quarterly, semiannual, and annual analyses shall be reported in the monthly monitoring report following the analysis.

B. Pollutants shall be analyzed using the analytical methods described in 40 CFR 136; or where no methods are specified for a given pollutant, by methods approved by the Regional Board, State Board and/or USEPA. The laboratory conducting analyses shall be certified by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP) or approved by the Regional Board for that particular parameter. A copy of the laboratory certification shall be submitted with the annual summary report.

C. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR 136.3. All QA/QC analyses must be run on the same dates that samples are actually analyzed. The Discharger shall retain the QA/QC documentation in its files and make available for inspection and/or submit them when requested by the Regional Board and/or USEPA. Proper chain of custody procedures must be followed and a copy of this documentation shall be submitted with the monthly report.

D. For bacterial analyses, sample dilutions should be performed so the expected range of values is bracketed (for example, with multiple tube fermentation method or membrane filtration method, 2 to 16,000 per 100 ml for total and fecal coliform, at a minimum, and 1 to 1000 per 100 ml for enterococcus). The detection methods used for each analysis shall be reported with the results of the analyses.

1. Detection methods used for coliforms (total and fecal) shall be those presented in Table 1A of 40 CFR 136 (revised May 14, 1999), unless alternate methods have been approved by USEPA pursuant to 40 CFR 136, or improved methods have been determined by the Executive Officer and/or USEPA.

2. Detection methods used for enterococcus shall be those presented in the USEPA publication EPA 600/4-85/076, *Test Methods for Escherichia coli and Enterococci in Water By Membrane Filter Procedure* or any improved method determined by the Executive Officer and/or USEPA to be appropriate.

IV. REPORTING REQUIREMENTS

A. The monitoring report shall specify the USEPA analytical method used, the Method Detection Limit (MDL), and reported Minimum Level (RML) for each pollutant. The reported Minimum Level is the Minimum Level (ML) chosen by the Discharger for reporting and compliance determination from the Minimum Levels listed in Appendix II (Attachment T-1) of the 2001 Ocean Plan. MLs represent the lowest quantifiable concentration in a sample based on the proper application of method-specific analytical procedures and the absence of matrix interferences. MLs also

represent the lowest standard concentration in the calibration curve for a specific analytical technique after the application of appropriate method-specific factors.

B. The Discharger shall select the analytical method that provides a ML lower than the permit limit established for a given parameter, or where there is no permit limit, the lowest effluent concentration value calculated in accordance with the procedures in the Ocean Plan. If the permit limit or the calculated lowest effluent concentration is lower than all the MLs in Attachment T-1, the Discharge must select the method with the lowest ML for compliance purposes. The Discharger shall include in the Annual Summary Report a list of the analytical methods employed for each test.

C. Non-detect levels reported for the Hyperion effluent are generally higher than permit limits and water quality objectives for DDT, chlordane, PCBs and PAHs. Therefore, in addition to Ocean Plan requirements specified in Monitoring and Reporting Program Sections III and IV of this permit, the Discharger shall strive for lower analytical detection levels to facilitate pollutant load quantification for future DDT, chlordane, PCBs and PAHs TMDLs.

D. The Discharger shall instruct its laboratories to establish calibration standards so that the ML (or its equivalent if there is differential treatment of samples relative to calibration standards) is the lowest calibration standard. At no time is the Discharger to use analytical data derived from extrapolation beyond the lowest point of the calibration curve. In accordance with section E, below, the Discharger's laboratory may employ a calibration standard lower than the ML in Attachment T-1.

E. For the purpose of reporting compliance with numerical influent, effluent and receiving water requirements, analytical data shall be reported using the following reporting protocols:

1. Sample results greater than or equal to the RML must be reported "as measured" by the laboratory (i.e., the measured chemical concentration in the sample); or

2. Sample results less than the RML, but greater than or equal to the laboratory's MDL, must be reported as "Detected, but Not Quantified", or DNQ. The laboratory must write the estimated chemical concentration of the sample next to DNQ as well as the words "Estimated Concentration" (may be shortened to Est. Conc.); or

3. Sample results less than the laboratory's MDL must be reported as "Not-Detected", or ND.

F. Upon request by the Discharger, the Regional Board, in consultation with the State Board Quality Assurance Program and/or USEPA, may establish an ML that is not contained in Attachment T-1, to be included in the Discharger's permit, in any of the following situations:

1. When the pollutant under consideration is not included in Attachment T-1;

2. When the Discharger agrees to use a test method that is more sensitive than those specified in 40 CFR 136 (revised May 14, 1999, or subsequent revision);

3. When the Discharger agrees to use an ML lower than those listed in Attachment T-1;

4. When the Discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Attachment T-1 and proposes an appropriate ML for their matrix; or

5. When the Discharger uses a method whose quantification practices are not consistent with the definition of an ML. Examples of such methods are the USEPA-approved method 1613 for dioxins and furans, method 1624 for volatile organic substances, and method 1625 for semi-volatile organic substances. In such cases, the Discharger, and the Regional Board, State Board and USEPA, shall agree on a lowest quantifiable limit, and that limit will substitute for the ML for reporting and compliance determination purposes.

G. If the Discharger samples and performs analyses (other than for process/operational control, startup, research, or equipment testing) on any influent, effluent, or receiving water constituent more frequently than required by this monitoring program using approved analytical methods, the results of those analyses shall be reported. These results shall be reflected in the calculation of the average used in demonstrating compliance with average effluent, receiving water, etc., limitations.

H. Records and reports of marine monitoring surveys conducted to meet receiving water monitoring requirements shall include, at a minimum, the following information:

1. A description of climatic and receiving water characteristics at the time of sampling (weather observations, unusual or abnormal amounts of floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling or measurements, tidal stage and height, etc.).

2. The date, exact place and description of sampling stations, including differences unique to each station (e.g., date, time, station location, depth, and sample type).

3. A list of the individuals participating in field collection of samples or data and description of the sample collection and preservation procedures used in the various surveys.

4. A description of the specific method used for laboratory analysis, the date(s) the analyses were performed and the individuals participating in these analyses.

5. An in-depth discussion of the results of the survey. All tabulations and computations shall be explained.

I. The Discharger shall inform the Regional Board and USEPA well in advance of any proposed construction or maintenance or modification to the treatment plant that could potentially affect compliance with applicable requirements.

J. The Discharger shall develop and maintain a record of all spills, overflows or bypasses of raw or partially treated sewage from its collection system or treatment plant. This record shall be made available to the Regional Board and USEPA upon request. On the fifteenth day of January, April, July, and October (15 days after the end of the fiscal quarter) of each year, the Discharger shall submit to the Regional Board and USEPA a report listing all spills, overflows or bypasses occurring during the previous quarter. The reports shall provide:

1. the date and time of each spill, overflow or bypass;
2. the location of each spill, overflow or bypass;
3. the estimated volume of each spill, overflow or bypass including gross volume, amount recovered and amount not recovered;
4. the cause of each spill, overflow or bypass;
5. whether each spill, overflow or bypass entered a receiving water and, if so, the name of the water body and whether it entered via storm drains or other man-made conveyances;
6. mitigation measures implemented; and
7. corrective measures implemented or proposed to be implemented to prevent/minimize future occurrences.

K. For certain spills, overflows and bypasses, the Discharger shall make reports and conduct monitoring as required below:

1. For spills, overflows or bypasses of 500 gallons or more that flowed to receiving waters or entered a shallow ground water aquifer or has public exposure, and all spills, overflows and bypasses of 1,000 gallons or more, the Discharger shall report such spills to the Regional Board, the State Office of Emergency Services and the local health agency by telephone or electronically as soon as possible but not later than 24 hours of knowledge of the incident. The following information shall be included in the report: location; date and time of spill; volume and nature of the spill; cause(s) of the spill; mitigation measures implemented; and corrective measures implemented or proposed to be implemented to prevent/minimize future occurrences.

2. For spills, overflows or bypasses of 500 gallons or more that reach receiving waters, the Discharger shall obtain and analyze grab samples for total and fecal coliforms or E. coli, and enterococcus, upstream and downstream of the point of entry of the spill if feasible, accessible and safe. This monitoring

shall be on a daily basis from time the spill is known until the results of two consecutive sets of bacteriological monitoring indicate the return to the background level or cessation of monitoring is authorized by the County Department of Health Services.

3. For spills, overflows or bypasses of 500 gallons or more that flowed to receiving waters or entered a shallow ground water aquifer, and all spills, overflows and bypasses of 1,000 gallons or more, the Discharger shall make a good faith effort to analyze a grab sample of the spill or overflow for total and fecal coliforms or E. coli, and enterococcus, and relevant pollutants of concern depending on the area and nature of spills or overflows.

4. The Regional Board notification shall be followed by a written preliminary report five working days after verbal notification of the incident. Within 10 days after submitting preliminary report, the Discharger shall submit the final written report to this Regional Board. The written report shall document the information required in subparagraphs 1 and 3 above, monitoring results and any other information required in Provision E.3 of the Standard Provisions.

V. INFLUENT MONITORING

A. Influent monitoring is required to:

1. Determine compliance with NPDES permit conditions.
2. Assess treatment plant performance.
3. Assess effectiveness of the Pretreatment Program.

B. Sampling stations shall be established at each point of inflow to the sewage treatment plant and shall be located upstream of any in-plant return flows and where representative samples of the influent can be obtained. The date and time of sampling (as appropriate) shall be reported with the analytical values determined.

C. The following shall constitute the influent monitoring program.
(For footnotes, please see Pages T-24 to T-25)

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Flow	mgd	recorder/totalizer	continuous
BOD_5 20°C	mg/L	24-hr composite	daily
Suspended solids	mg/L	24-hr composite	daily
pH	pH units	grab	weekly
Oil and grease	mg/L	grab [3]	weekly
TOC	mg/L	24-hr composite	monthly

MISCELLANEOUS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Cyanide	µg/L	grab	monthly
Organic nitrogen	mg/L	24-hr composite	quarterly
Radioactivity [4] (Including gross alpha, gross beta, combined radium-226 & radium-228, tritium, strontium-90 and uranium)	pCi/L	24-hr composite	monthly
Total phosphorus (as P)	mg/L	24-hr composite	quarterly
Tributyltin	ng/L	24-hr composite	quarterly

PESTICIDES

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Aldrin	µg/L	24-hr composite	quarterly
Chlordane and related compounds [5]	µg/L	24-hr composite	quarterly
DDT [6]	µg/L	24-hr composite	quarterly
Dieldrin	µg/L	24-hr composite	quarterly
Endosulfan [7]	µg/L	24-hr composite	quarterly
Endrin	µg/L	24-hr composite	quarterly
HCH [8]	µg/L	24-hr composite	quarterly
Heptachlor	µg/L	24-hr composite	quarterly
Heptachlor epoxide	µg/L	24-hr composite	quarterly
PCBs [9]	µg/L	24-hr composite	quarterly
Toxaphene	µg/L	24-hr composite	quarterly

ACID EXTRACTABLES

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
2,4-Dinitrophenol	µg/L	24-hr composite	quarterly
2,4,6-Trichlorophenol	µg/L	24-hr composite	quarterly
4,6-Dinitro-2-methylphenol	µg/L	24-hr composite	quarterly
Phenolic compounds (chlorinated) [18]	µg/L	24-hr composite	quarterly

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Phenolic compounds (non-chlorinated) [19]	µg/L	24-hr composite	quarterly

BASE NEUTRALS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Bis(2-chloro-ethoxy) methane	µg/L	24-hr composite	quarterly
Bis(2-chloro-isopropyl) ether	µg/L	24-hr composite	quarterly
Di-n-butylphthalate	µg/L	24-hr composite	quarterly
Dichlorobenzenes [11]	µg/L	24-hr composite	quarterly
Diethylphthalate	µg/L	24-hr composite	quarterly
Dimethylphthalate	µg/L	24-hr composite	quarterly
Fluoranthene	µg/L	24-hr composite	quarterly
Hexachlorocyclopentadiene	µg/L	24-hr composite	quarterly
Isophorone	µg/L	24-hr composite	quarterly
Nitrobenzene	µg/L	24-hr composite	quarterly
Benzidine	ng/L	24-hr composite	quarterly
Bis(2-chloroethyl) ether	µg/L	24-hr composite	quarterly
Bis(2-ethylhexyl) phthalate	µg/L	24-hr composite	quarterly
1,4-Dichlorobenzene	µg/L	24-hr composite	quarterly
3,3-Dichlorobenzidine	µg/L	24-hr composite	quarterly
2,4-Dinitrotoluene	µg/L	24-hr composite	quarterly
1,2-Diphenylhydrazine	µg/L	24-hr composite	quarterly
Hexachlorobenzene	µg/L	24-hr composite	quarterly
Hexachlorobutadiene	µg/L	24-hr composite	quarterly
Hexachloroethane	µg/L	24-hr composite	quarterly
N-Nitrosodimethylamine	µg/L	24-hr composite	quarterly
N-Nitrosodi-n-propylamine	µg/L	24-hr composite	quarterly
N-Nitrosodiphenylamine	µg/L	24-hr composite	quarterly
PAHs [12]	µg/L	24-hr composite	quarterly
TCDD equivalents [13]	pg/L	24-hr composite	quarterly

VOCs

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Acrolein	µg/l	grab	quarterly
Acrylonitrile	µg/l	grab	quarterly
Benzene	µg/l	grab	quarterly
Carbon tetrachloride	µg/l	grab	quarterly
Chlorobenzene	µg/l	grab	quarterly
Chlorodibromomethane	µg/l	grab	quarterly
Chloroform	µg/L	grab	quarterly
Dichlorobromomethane	µg/l	grab	quarterly
Dichloromethane	µg/L	grab	quarterly
1,1-Dichloroethylene	µg/l	grab	quarterly
1,2-Dichloroethane	µg/L	grab	quarterly
1,3-Dichloropropene	µg/l	grab	quarterly
Ethylbenzene	µg/l	grab	quarterly
Halomethanes [14]	µg/L	grab	quarterly
Methyl-tert-butyl-ether	µg/l	grab	quarterly
Toluene	µg/l	grab	quarterly
1,1,2,2-Tetrachloroethane	µg/l	grab	quarterly
1,1,1-Trichloroethane	µg/l	grab	quarterly
1,1,2-Trichloroethane	µg/l	grab	quarterly
Tetrachloroethylene	µg/l	grab	quarterly
Trichloroethylene	µg/L	grab	quarterly
Vinyl chloride	µg/l	grab	quarterly

METALS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Antimony	µg/L	24-hr composite	quarterly
Arsenic	µg/l	24-hr composite	monthly
Beryllium	µg/L	24-hr composite	quarterly
Cadmium	µg/l	24-hr composite	monthly

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2]
Chromium (III)	µg/l	24-hr composite	monthly
Copper	µg/l	24-hr composite	monthly
Hexavalent chromium [15]	µg/l	24-hr composite	monthly
Lead	µg/l	24-hr composite	monthly
Mercury	µg/l	24-hr composite	monthly
Nickel	µg/l	24-hr composite	monthly
Selenium	µg/l	24-hr composite	monthly
Silver	µg/l	24-hr composite	monthly
Thallium	µg/l	24-hr composite	quarterly
Zinc	µg/l	24-hr composite	monthly

VI. EFFLUENT MONITORING

A. Effluent monitoring is required to:

1. Determine compliance with NPDES permit conditions and water quality standards.
2. Assess plant performance, identify operational problems and improve plant performance.
3. Provide information on wastewater characteristics and flows for use in interpreting water quality and biological data.

B. An effluent sampling station shall be located for each point of discharge and shall be located downstream of any in-plant return flows where representative samples of the effluent can be obtained. These stations shall be designated as Discharge Serial Nos. 001 and 002. The date and time of sampling (as appropriate) shall be reported with the analytical values determined (See Section IV, Reporting Requirements).

C. The following shall constitute the effluent monitoring program for Discharge Serial Nos. 001 and 002 (For footnotes, please see Pages T-24 to T-25).

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Flow	mgd	recorder/totalizer	continuous
BOD_5 20°C	mg/L	24-hr composite	daily
Suspended solids	mg/L	24-hr composite	daily
pH	pH units	grab	weekly

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Oil and grease	mg/L	grab [3]	weekly
Temperature [17]	°C	continuous	continuous
TOC	mg/L	24-hr composite	monthly

MISCELLANEOUS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Settleable solids	ml/L	grab [3]	daily
Total chlorine residual	mg/L	grab	daily
Dissolved oxygen	mg/L	grab	weekly
Turbidity	NTU	24-hr composite	weekly
Ammonia nitrogen	mg/L	24-hr composite	monthly
Toxicity, acute	TUa	24-hr composite	monthly
Toxicity, chronic	TUc	24-hr composite	monthly
Cyanide	µg/L	grab	monthly
Nitrate nitrogen	µg/L	24-hr composite	quarterly
Organic nitrogen	mg/L	24-hr composite	quarterly
Radioactivity [4] (Including gross alpha, gross beta, combined radium-226 & radium-228, tritium, strontium-90 and uranium)	pCi/L	24-hr composite	monthly
Total phosphorus (as P)	mg/L	24-hr composite	quarterly
Tributyltin	ng/L	24-hr composite	quarterly

PESTICIDES

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Aldrin	µg/L	24-hr composite	quarterly
Chlordane and related compounds [5]	µg/L	24-hr composite	quarterly
DDT [6]	µg/L	24-hr composite	quarterly
Dieldrin	µg/L	24-hr composite	quarterly
Endosulfan [7]	µg/L	24-hr composite	quarterly
Endrin	µg/L	24-hr composite	quarterly

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
HCH [8]	µg/L	24-hr composite	quarterly
Heptachlor	µg/L	24-hr composite	quarterly
Heptachlor epoxide	µg/L	24-hr composite	quarterly
PCBs [9]	µg/L	24-hr composite	quarterly
PCB congeners [10]	µg/L	24-hr composite	annually
Toxaphene	µg/L	24-hr composite	quarterly

ACID EXTRACTABLES

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
2,4-Dinitrophenol	µg/L	24-hr composite	quarterly
2,4,6-Trichlorophenol	µg/L	24-hr composite	quarterly
4,6-Dinitro-2-methyl-phenol	µg/L	24-hr composite	quarterly
Phenolic compounds (chlorinated) [18]	µg/L	24-hr composite	quarterly
Phenolic compounds (non-chlorinated) [19]	µg/L	24-hr composite	quarterly

BASE NEUTRALS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Bis(2-chloro-ethoxy) methane	µg/L	24-hr composite	quarterly
Bis(2-chloro-isopropyl) ether	µg/L	24-hr composite	quarterly
Di-n-butylphthalate	µg/L	24-hr composite	quarterly
Dichlorobenzenes [11]	µg/L	24-hr composite	quarterly
Diethylphthalate	µg/L	24-hr composite	quarterly
Dimethylphthalate	µg/L	24-hr composite	quarterly
Fluoranthene	µg/L	24-hr composite	quarterly
Hexachlorocyclopentadiene	µg/L	24-hr composite	quarterly
Isophorone	µg/L	24-hr composite	quarterly
Nitrobenzene	µg/L	24-hr composite	quarterly
Benzidine	µg/L	24-hr composite	quarterly
Bis(2-chloroethyl) ether	µg/L	24-hr composite	quarterly

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Bis(2-ethylhexyl) phthalate	µg/L	24-hr composite	quarterly
1,4-Dichlorobenzene	µg/L	24-hr composite	quarterly
3,3-Dichlorobenzidine	µg/L	24-hr composite	quarterly
2,4-Dinitrotoluene	µg/L	24-hr composite	quarterly
1,2-Diphenylhydrazine	µg/L	24-hr composite	quarterly
Hexachlorobenzene	µg/L	24-hr composite	quarterly
Hexachlorobutadiene	µg/L	24-hr composite	quarterly
Hexachloroethane	µg/L	24-hr composite	quarterly
N-Nitrosodimethylamine	µg/L	24-hr composite	quarterly
N-Nitrosodi-n-propylamine	µg/L	24-hr composite	quarterly
N-Nitrosodiphenylamine	µg/L	24-hr composite	quarterly
PAHs [12]	µg/L	24-hr composite	quarterly
TCDD equivalents [13]	pg/L	24-hr composite	quarterly

VOCs

Constituent	Units	Type of Sample [1, 18]	Minimum Frequency of Analysis [2, 16]
Acrolein	µg/L	grab	quarterly
Acrylonitrile	µg/L	grab	quarterly
Benzene	µg/L	grab	quarterly
Carbon tetrachloride	µg/L	grab	quarterly
Chlorobenzene	µg/L	grab	quarterly
Chlorodibromomethane	µg/l	grab	quarterly
Chloroform	µg/L	grab	quarterly
Dichlorobromomethane	µg/l	grab	quarterly
Dichloromethane	µg/L	grab	quarterly
1,1-Dichloroethylene	µg/L	grab	quarterly
1,2-Dichloroethane	µg/L	grab	quarterly
1,3-Dichloropropene	µg/L	grab	quarterly
Ethylbenzene	µg/L	grab	quarterly
Halomethanes [14]	µg/L	grab	quarterly

Constituent	Units	Type of Sample [1, 18]	Minimum Frequency of Analysis [2, 16]
Methyl-tert-butyl-ether	µg/l	grab	quarterly
Toluene	µg/L	grab	quarterly
1,1,2,2-Tetrachloroethane	µg/L	grab	quarterly
1,1,1-Trichloroethane	µg/L	grab	quarterly
1,1,2-Trichloroethane	µg/L	grab	quarterly
Tetrachloroethylene	µg/L	grab	quarterly
Trichloroethylene	µg/L	grab	quarterly
Vinyl chloride	µg/L	grab	quarterly

METALS

Constituent	Units	Type of Sample [1]	Minimum Frequency of Analysis [2, 16]
Antimony	µg/L	24-hr composite	quarterly
Arsenic	µg/l	24-hr composite	monthly
Beryllium	µg/L	24-hr composite	quarterly
Cadmium	µg/L	24-hr composite	monthly
Chromium (III)	µg/L	24-hr composite	monthly
Copper	µg/L	24-hr composite	monthly
Hexavalent chromium [15]	µg/L	24-hr composite	monthly
Lead	µg/L	24-hr composite	monthly
Mercury	µg/L	24-hr composite	monthly
Nickel	µg/L	24-hr composite	monthly
Selenium	µg/L	24-hr composite	monthly
Silver	µg/L	24-hr composite	monthly
Thallium	µg/L	24-hr composite	quarterly
Zinc	µg/L	24-hr composite	monthly

Whenever there is a discharge from Discharge Serial No. 001 (not during routine maintenance activities), the discharger shall monitor total chlorine residual at a frequency of daily or once per discharge, which one is greater, in addition to the constituents listed above.

Footnotes for Influent and Effluent Monitoring Program

[1] For 24-hour composite samples, if the duration of the discharge is less than 24 hours but greater than 8 hours, at least eight flow-weighted samples shall be obtained during the discharge period and composited. For discharge durations of less than eight hours, individual "grab samples" may be substituted. A grab sample is an individual sample collected in less than 15 minutes.

[2] For the influent and Discharge Serial No. 002, weekly, and monthly sampling shall be arranged so that each day of the week is represented over a seven week or month period. The schedule should be repeated every seven weeks or months.

[3] Single grab sample at peak flow.

[4] Analyze these radiochemicals by the following USEPA methods: method 900.0 for gross alpha and gross beta, method 903.0 or 903.1 for radium-226, method 904.0 for radium-228, method 906.0 for tritium, method 905.0 for strontium-90, and method 908.0 for uranium.

Analysis for combined Radium-226 & 228 shall be conducted only if gross alpha results for the same sample exceed 15 pCi/L or beta greater than 50 pCi/L. If Radium-226 & 228 exceeds the stipulated criteria, analyze for Tritium, Strontium-90 and uranium.

[5] Sum of chlordane-alpha, chlordane-gamma, chlordene-alpha, chlordene-gamma, nonachlor-cis, nonachlor-trans and oxychlordane.

[6] Sum of 4,4' -DDT, 2,4' -DDT, 4,4' -DDE, 2,4' -DDE, 4,4' -DDD and 2,4' -DDD.

[7] Sum of endosulfan-alpha and –beta and endosulfan sulfate.

[8] Sum of alpha, beta, gamma (lindane) and delta isomers of hexachlorocyclohexane.

[9] Sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254 and Aroclor-1260.

[10] To facilitate interpretation of sediment/fish tissue data and TMDL development, PCB congeners whose analytical characteristics resemble those of PCB-18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206 shall be individually quantified.

[11] Sum of 1,2- and 1,3-dichlorobenzene.

[12] Sum of acenaphthylene, anthracene, 1,2-benzanthracene, 3,4-benzofluoranthene, benzo[k]fluoranthene, 1,12-benzoperylene, benzo[a]pyrene, chrysene, dibenzo[a,h]anthracene, fluorene, indeno[1,2,3-cd]pyrene, phenanthrene and pyrene.

[13] Sum of the concentration of chlorinated dibenzodioxins (2,3,7,8-CDDs) and chlorinated dibenzofurans (2,3,7,8-CDFs) multiplied by their respective toxicity factors, as shown in the table below:

Isomer Group	Toxicity Equivalence Factor
2,3,7,8-tetra CDD	1.0
2,3,7,8-penta CDD	0.5
2,3,7,8-hexa CDDs	0.1
2,3,7,8-hepta CDD	0.01
octa CDD	0.001
2,3,7,8-tetra CDF	0.1
1,2,3,7,8-penta CDF	0.05
2,3,4,7,8-penta CDF	0.5
2,3,7,8-hexa CDFs	0.1
2,3,7,8-hepta CDFs	0.01
octa CDF	0.001

[14] Sum of bromoform, bromomethane (methyl bromide), and chloromethane (methyl chloride).

[15] Discharger may, at its option, meet the hexavalent chromium limitation by analyzing for total chromium rather than hexavalent chromium.

[16] For Discharge Serial Nos. 001, the minimum frequency of analysis shall be once per discharge day, but no more than one analysis need be done during the period indicated. The permit does not require acute toxicity testing of this effluent discharge. During routine maintenance activities, sampling and analyses are not required.

[17] For Discharge Serial No. 002, sampling shall be continuous and the maximum daily temperature shall be reported.

[18] Sum of 2-Chlorophenol, 2,4-Dichlorophenol, 4-Chloro-3-methylphenol, 2,4,6-Trichlorophenol, and Pentachlorophenol.

[19] Sum of Phenol, 2,4-Dimethylphenol, 2-Nitrophenol, and 4-Nitrophenol, 2,4-Dinitrophenol and 4,6-Dinitro-2-Methylphenol.

D. The following Mass Emission Benchmarks, in metric tons per year (MT/yr), have been established for the discharge through the 5-mile outfall (Discharge Serial No. 002). The Discharger shall monitor and report the mass emission rate for all constituents that have mass emission benchmarks. For each constituent, the 12-month average mass emission rate and the concentration and flow used to calculate that mass emission rate shall be reported in the annual pretreatment report and the annual receiving water monitoring report.

Constituent	12-month Average Mass Emission Benchmarks (MT/yr)
Marine Aquatic Life	
Arsenic	1.9
Cadmium	0.88
Chromium VI	4.6
Chromium (total)	n/a
Copper	13
Lead	2.1
Mercury	0.19
Nickel	8.3
Selenium	0.94
Silver	1.2
Zinc	22
Cyanide	4.6
Total chlorine residual	n/a
Ammonia as N	20,100
Acute toxicity	N/a
Chronic toxicity	N/a
Phenolic compounds (non-chlorinated)	3

Constituent	12-month Average Mass Emission Benchmarks (MT/yr)
Phenolic compounds (chlorinated)	0.5
Endosulfan	0.004
Endrin	0.004
HCH	0.02
Radioactivity	n/a
Human Health (noncarcinogens)	
Acrolein	1
Antimony	3
Bis(2-cl-ethoxy) methane	0.03
Bis(2-cl-isopropyl) ether	0.03
Chlorobenzene	0.066
Chromium (III)	3.6
Di-n-butyl phthalate	2.2
Dichlorobenzenes (BNA)	1
Diethyl phthalate	0.03
Dimethyl phthalate	0.15
2-methyl-4,6-dinitrophenol	0.2
2,4-dinitrophenol	0.12
Ethyl benzene	0.066
Fluoranthene	0.03
Hexachlorocyclopentadiene	1.6
Nitrobenzene	0.03
Thallium	4.3
Toluene	0.25
Tributyltin	n/a
1,1,1-trichloroethane	0.099
Human Health Protection (carcinogens)	
Acrylonitrile	0.17
Aldrin	n/a
Benzene	0.12
Benzidine	n/a
Beryllium	0.006
Bis(2-chloroethyl) ether	0.05
Bis(2-ethylhexyl) phthalate	3.8
Carbon tetrachloride	0.083

Constituent	12-month Average Mass Emission Benchmarks (MT/yr)
Chlordane	n/a
Chlorodibromomethane	2.2
Chloroform	3.6
DDT, total	n/a
1,4-dichlorobenzene (BNA)	7.7
3,3' -dichlorobenzidine	n/a
1,2-dichloroethane	0.03
1,1-dichloroethylene	0.072
Dichlorobromomethane	0.83
Methylene chloride	12
1,3-dichloropropene	0.17
Dieldrin	n/a
2,4-dinitrotoluene	0.04
1,2-diphenylhydrazine	0.03
Halomethanes	1.2
Heptachlor	n/a
Heptachlor epoxide	n/a
Hexachlorobenzene	n/a
Hexachlorobutadiene	0.04
Hexachloroethane	0.04
Isophorone	3.2
N-nitrosodimethylamine	0.094
N-nitrosodi-n-propylamine	0.072
N-nitrosodiphenylamine	0.05
PAHs	n/a
PCBs	n/a
TCDD equivalents	n/a
1,1,2,2-tetrachloroethane	0.1
Tetrachloroethylene	3.2
Toxaphene	n/a
Trichloroethylene	0.094
1,1,2-trichloroethane	0.094
2,4,6-trichlorophenol	0.05
Vinyl chloride	0.094

E. Toxicity Monitoring Requirements

1. Acute Toxicity Testing

a. **Methods and test species.** Test Species and Methods for Discharge Serial No. 002. The discharger shall conduct 96-hour static renewal acute toxicity tests on flow-weighted 24-hour composite effluent samples. When conducting toxicity tests in accordance with a specified chronic test methods manual, if daily observations of mortality make it possible to also calculate acute toxicity for the desired exposure period and the dilution series for the toxicity test includes the acute IWC, such method may be used to estimate the 96-hour LC50.

The presence of acute toxicity shall be estimated as specified in *Methods for Measuring the Acute Toxicity of Effluents and Receiving Waters to Freshwater and Marine Organisms* (EPA 821-R-02-012, 2002), with preference for west coast vertebrate and invertebrate species.

b. **Frequency**

(1) Screening - The Discharger shall conduct the first acute toxicity test screening for three consecutive months in 2005. Re-screening is required every 24 months. The Discharger shall re-screen with a marine vertebrate species and a marine invertebrate species and continue to monitor with the most sensitive species. If the first suite of re-screening tests demonstrate that the same species is the most sensitive, then the re-screening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is ambiguity, then the Discharger shall proceed with suites of screening tests for a minimum of three, but not to exceed five, suites.

(2) Regular toxicity tests - After the screening period, monitoring shall be conducted monthly using the most sensitive marine species.

c. **Toxicity Units.** The acute toxicity of the effluent shall be expressed and reported in Acute Toxic Units, TUa, where,

$$TU_a = \frac{100}{LC50}$$

The Lethal Concentration, 50 Percent (LC50) is expressed as the estimate of the percent effluent concentration that causes death in

50% of the test population, in the time period prescribed by the toxicity test.

2. Chronic Toxicity Testing

a. **Methods and test species.** The Discharger shall conduct critical life stage chronic toxicity tests on 24-hour composite effluent samples in accordance with USEPA's *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms*, 1995, (EPA/600/R-95/136). When a chronic toxicity test method that incorporates a 96-hour acute toxicity endpoint is used to monitor toxicity at the chronic IWC in effluent discharged from Outfall 001, the 96-hour acute toxicity statistical endpoint shall also be reported as LC50 and Tua, along with other chronic toxicity test results required by this permit.

b. **Frequency**

(1) Screening - The Discharger shall conduct the first chronic toxicity test screening for three consecutive months in 2005. Re-screening is required every 24 months. The Discharger shall re-screen with a marine vertebrate species, a marine invertebrate species, and a marine alga species and continue to monitor with the most sensitive species. If the first suite of re-screening tests demonstrate that the same species is the most sensitive, then the re-screening does not need to include more than one suite of tests. If a different species is the most sensitive or if there is ambiguity, then the Discharger shall proceed with suites of screening tests for a minimum of three, but not to exceed five, suites.

(2) Regular toxicity tests - After the screening period, monitoring shall be conducted monthly using the most sensitive species.

c. **Toxicity Units.** The chronic toxicity of the effluent shall be expressed and reported in Chronic Toxic Units, TUc, where,

$$TU_c = \frac{100}{NOEC}$$

The No Observable Effect Concentration (NOEC) is expressed as the maximum percent effluent concentration that causes no observable effect on test organisms, as determined by the results of a critical life stage toxicity test.

3. Quality Assurance

a. Concurrent testing with a reference toxicant shall be conducted. Reference toxicant tests shall be conducted using the same test conditions as the effluent toxicity tests (e.g., same test duration, etc).

b. If either the reference toxicant test or effluent test does not meet all test acceptability criteria (TAC) as specified in the test methods manual (EPA-821-R-02-012 and/or EPA/600/R-95/136), then the Discharger must re-sample and re-test within 14 days.

c. Control and dilution water should be receiving water or laboratory water, as appropriate, as described in the manual. If the dilution water used is different from the culture water, a second control using culture water shall be used.

d. A series of at least five dilutions and a control shall be tested. The dilution series shall include the instream waste concentration (IWC), and two dilutions above and two below the IWC. The acute IWC for Discharge Serial No. 002 is 35% effluent. The chronic IWC for Discharge Serial No. 002 is 1.2% effluent; the chronic IWC for Discharge Serial No. 001 is 7.0% effluent.

e. When using 2002 WET test methods, the effluent and reference toxicant tests must meet the upper and lower bounds on test sensitivity, as determined by calculating the Percent Minimum Significant Difference (PMSD) for each test result. Test sensitivity bounds are specified for these tests in Table 3-6 of *Understanding and Accounting for Method Variability in Whole Effluent Toxicity Applications Under the National Pollutant Discharge Elimination System Program* (EPA/833-R-00-003, June 2000). There are five possible outcomes based on the PMSD result:

(1) Unqualified Pass: The test's PMSD is within the bounds in Table 3-6 and there is no significant difference between the means for the control and the IWC treatment. The regulatory authority would conclude that there is no toxicity at the IWC concentration.

(2) Unqualified Fail: The test's PMSD is larger than the lower bound (but not greater than the upper bound) in Table 3-6 and there is a significant difference between the means for the control and the IWC treatment. The regulatory authority would conclude that there is toxicity at the IWC concentration.

(3) Lack Test Sensitivity: The test's PMSD exceeds the upper bound in Table 3-6 and there is no significant difference between the means for the control and the IWC treatment.

The test is considered invalid. An effluent sample must be collected and another toxicity test must be conducted. The Discharger must re-sample and re-test within 14 days.

(4) Lack Test Sensitivity: The test's PMSD exceeds the upper bound in Table 3-6 and there is a significant difference between the means for the control and the IWC treatment. The test is considered valid. The regulatory authority would conclude that there is toxicity at the IWC concentration.

(5) Very Small by Significant Difference: The relative difference (see Section 6.4.2 of EPA/833-R-00-003) between the means for the control and the IWC treatment is smaller than the lower bound in Table 3-6 and this difference is statistically significant. The test is acceptable. The NOEC is determined as described in Sections 6.4.2 and 6.4.3 of EPA/833-R-00-003.

4. Accelerated Monitoring

If the effluent toxicity test result exceeds the limitation, then the Discharger shall immediately implement accelerated toxicity testing that consists of six additional tests, approximately every two weeks, over a 12-week period. Effluent sampling for the first test of the six additional tests shall commence within 3 days of receipt of the test results exceeding the toxicity limitation.

a. If all the results of the six additional tests are in compliance with the toxicity limitation, the Discharger may resume regular monthly testing.

b. If the result of any of the six additional tests exceeds the limitation, then the Discharger shall continue to monitor once every two weeks until six consecutive biweekly tests are in compliance. At that time, the Discharger may resume regular monthly testing.

c. If the results of any two of the six tests (any two tests in a 12-week period) exceed the limitation, the Discharger shall initiate a Toxicity Reduction Evaluation (TRE).

d. If implementation of the initial investigation TRE workplan (see item 5) indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger shall return to the regular testing frequency.

5. Preparation of an Initial Investigation TRE Workplan

The Discharger shall prepare and submit a copy of the Discharger's initial investigation Toxicity Reduction Evaluation (TRE) workplan to the

Executive Officer of the Regional Board for approval and USEPA within 90 days of the effective date of this permit. If the Executive Officer does not disapprove the workplan within 60 days, the workplan shall become effective. The Discharger shall use USEPA manual EPA/833B-99/002 (municipal) as guidance, or most current version. At a minimum, the TRE Workplan must contain the provisions in Attachment C. This workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include, at a minimum:

a. A description of the investigation and evaluation techniques that will be used to identify potential causes and sources of toxicity, effluent variability, and treatment system efficiency.

b. A description of the facility's methods of maximizing in-house treatment efficiency and good housekeeping practices, and a list of all chemicals used in the operation of the facility; and,

c. If a toxicity identification evaluation (TIE) is necessary, an indication of the person who would conduct the TIEs (i.e., an in-house expert or an outside contractor). See MRP Section VI.E.6.c. for guidance manuals.

6. Steps in Toxicity Reduction Evaluation (TRE) and Toxicity Identification Evaluation (TIE)

a. If results of the implementation of the facility's initial investigation TRE workplan indicate the need to continue the TRE/TIE, the Discharger shall expeditiously develop a more detailed TRE workplan for submittal to the Executive Officer and USEPA within 15 days of completion of the initial investigation TRE. The detailed workplan shall include, but not be limited to:

(1) Further actions to investigate and identify the cause of toxicity;

(2) Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and

(3) A schedule for these actions.

b. The following section summarizes the stepwise approach used in conducting the TRE:

(1) Step 1 includes basic data collection.

(2) Step 2 evaluates optimization of the treatment system operation, facility housekeeping, and selection and use of in-plant process chemicals.

(3) If Steps 1 and 2 are unsuccessful, Step 3 implements a Toxicity Identification Evaluation (TIE) and employment of all reasonable efforts using currently available TIE methodologies. The objective of the TIE shall be to identify the substance or combination of substances causing the observed toxicity.

(4) Assuming successful identification or characterization of the toxicant(s), Step 4 evaluates final effluent treatment options.

(5) Step 5 evaluates in-plant treatment options.

(6) Step 6 consists of confirmation once a toxicity control method has been implemented.

Many recommended TRE elements parallel source control, pollution prevention, and storm water control program best management practices (BMPs). To prevent duplication of efforts, evidence of compliance with those requirements may be sufficient to comply with TRE requirements. By requiring the first steps of a TRE to be accelerated testing and review of the facility's TRE workplan, a TRE may be ended in its early stages. All reasonable steps shall be taken to reduce toxicity to the required level. The TRE may be ended at any stage if monitoring indicates there are no longer toxicity violations.

c. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the USEPA acute manual, chronic manual, EPA/600/R-96-054 (Phase I), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III), as guidance.

d. If a TRE/TIE is initiated prior to completion of the accelerated testing required in Section VI.E.4. of this program, then the accelerated testing schedule may be terminated, or used as necessary in performing the TRE/TIE, as determined by the Executive Officer and USEPA.

e. The Regional Board recognizes that toxicity may be episodic and identification of causes of and reduction of sources of toxicity may not be successful in all cases. Consideration of enforcement action by the Board will be based, in part, on the Discharger's actions and efforts to identify and control or reduce sources of consistent toxicity.

7. Ammonia Removal

a. Except with prior approval from the Executive Officer of the Regional Board and USEPA ammonia shall not be removed from bioassay samples. The Discharger must demonstrate the effluent toxicity is

caused by ammonia *because of increasing test pH* when conducting the toxicity test. It is important to distinguish the potential toxic effects of ammonia from other pH sensitive chemicals, such as certain heavy metals, sulfide, and cyanide. The following may be steps to demonstrate that the toxicity is caused by ammonia and not other toxicants before the Executive Officer and USEPA would allow for control of pH in the test.

(1) There is consistent toxicity in the effluent and the maximum pH in the toxicity test is in the range to cause toxicity due to increased pH.

(2) Chronic ammonia concentrations in the effluent are greater than 4 mg/L total ammonia.

(3) Conduct graduated pH tests as specified in the toxicity identification evaluation methods. For example, mortality should be higher at pH 8 and lower at pH 6.

(4) Treat the effluent with a zeolite column to remove ammonia. Mortality in the zeolite treated effluent should be lower than the non-zeolite treated effluent. Then add ammonia back to the zeolite-treated samples to confirm toxicity due to ammonia.

b. When it has been demonstrated that toxicity is due to ammonia because of increasing test pH, pH may be controlled using appropriate procedures which do not significantly alter the nature of the effluent, after submitting a written request to the Regional Board and USEPA, and receiving written permission expressing approval from the Executive Officer of the Regional Board and USEPA.

8. Reporting

The Discharger shall submit a full report of the toxicity test results, including any accelerated testing conducted during the month, as required by this permit. Test results shall be reported in Acute Toxicity Units (TUa) or Chronic Toxicity Units (TUc), as required, with the discharge monitoring report (DMR) for the month in which the test is conducted.

If an initial investigation indicates the source of toxicity and accelerated testing is unnecessary, pursuant to Section VI.E.4.d, then those results also shall be submitted with the DMR for the period in which the Investigation occurred.

a. The full report shall be received by the Regional Board and USEPA by the 15th day of the second month following sampling.

b. The full report shall consist of (1) the results; (2) the dates of sample collection and initiation of each toxicity test; (3) the toxicity limit.

c. Test results for toxicity tests also shall be reported according to the appropriate manual chapter on Report Preparation and shall be attached to the DMR. Routine reporting shall include, at a minimum, as applicable, for each test, as appropriate:

(1) sample date(s)

(2) test initiation date

(3) test species

(4) end point values for each dilution (e.g. number of young, growth rate, percent survival)

(5) LC_{50} value(s) in percent effluent

(6) TUa value(s) $\left(TU_a = \frac{100}{LC50} \right)$

(7) NOEC value(s) in percent effluent

(8) TUc values $\left(TU_c = \frac{100}{NOEC} \right)$

(9) Mean percent mortality (+standard deviation) after 96 hours in 100% effluent (if applicable)

(10) IC/EC_{25} values(s) in percent effluent

Inhibition Concentration (IC_P) is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a non-quantal biological endpoint (e.g., reproduction, growth) calculated from a continuous model (e.g., EPA Interpolation Model).

Effective Concentration (EC_P) is a point estimate of the toxicant concentration that causes a given percent reduction (p) in a quantal biological measurement (e.g., development, survival) calculated from a continuous model (e.g., Probit).

(11) NOEC and LOEC (Lowest Observable Effect Concentration) values for reference toxicant test(s)

(12) Available water quality measurements for each test (e.g., pH, D.O., temperature, conductivity, hardness, salinity, ammonia).

d. The Discharger shall provide a compliance summary which includes a summary table of toxicity data from at least eleven of the most recent samples.

e. The Discharger shall notify this Regional Board and USEPA immediately of any toxicity exceedance and in writing 14 days after the receipt of the results of an effluent limit. The notification will describe actions the Discharger has taken or will take to investigate and correct the cause(s) of toxicity. It may also include a status report on any actions required by the permit, with a schedule for actions not yet completed. If no actions have been taken, the reasons shall be given.

VII. RECEIVING WATER MONITORING PROGRAM

(For footnotes, please see Pages T-48 to T-49)

A. Inshore Water Quality Monitoring

1. This survey addresses the compliance questions: "Are Ocean Plan and Basin Plan limits for bacteria being met?" Data collected provide the information necessary to demonstrate compliance with the water quality standards. Parameters to be monitored include:

Parameter	Units	Type of Sample	Sample Frequency
Fecal coliform (or *E. coli*)	CFU/100 ml (or MPN/100 ml)	discrete sampling at the surface and at midwater	Annually[1] (summer)
Total coliform	CFU/100 ml (or MPN/100 ml)	discrete sampling at the surface and at midwater	Annually[1] (summer)
Enterococcus	CFU/100 ml (or MPN/100 ml)	discrete sampling at the surface and at midwater	Annually[1] (summer)[j]

Hyperion shall calculate an appropriate multiplier for substituting *E. coli* for fecal coliform using bacterial data from their own laboratory which will require approval from the Executive Officer and USEPA before using the Colilert™18Medium (IDEXX) method for *E. coli*.

2. Inshore Water Quality Monitoring Stations

Eleven inshore water quality sampling stations shall be sampled at a distance of 1000 feet from the shoreline or at the 30-foot depth contour, whichever is further from shore (except that station IS-11 is located at

King Harbor in Redondo Beach). The stations shall be designated and located as follows:

Station	Latitude*		Longitude*	
IS-01	33	59.833	118	48.067
IS-02	34	00.950	118	46.967
IS-03	34	01.717	118	44.117
IS-04	34	01.833	118	40.383
IS-05	34	02.050	118	34.833
IS-06	34	00.201	118	29.923
IS-07	33	58.550	118	28.317
IS-08	33	57.567	118	27.583
IS-09	33	56.900	118	27.133
IS-10	33	56.283	118	26.817
IS-11	33	50.000	118	23.850

* Given in decimal minutes

B. Offshore Water Quality Monitoring

1. This survey addresses the compliance questions: "Are Ocean Plan and Basin Plan objectivess for dissolved oxygen, pH and bacteria being met?" Data collected provide the information necessary to demonstrate compliance with the standards for local monitoring. In addition, data collected by the City of Los Angeles contribute to the Central Bight Cooperative Water Quality Survey. This regionally coordinated survey provides integrated water quality surveys on a quarterly basis. These surveys cover 200 kilometers of coast in Ventura, Los Angeles, and Orange County, from the nearshore to approximately 10 kilometers offshore. This cooperative program contributes to a regional understanding of seasonal patterns in nearshore water column structure. The regional view provides context for determining the significance and causes of locally observed patterns in the area of wastewater outfalls.

2. Sampling Design – Fifty-four offshore water quality stations shall be sampled quarterly by a CTD profiler (see Figure 1). Sampling techniques will follow protocols described in the most recent Bight Regional Marine Monitoring Survey Field Operations Manual.

   Concurrent with the CTD profiling survey, discrete samples[2] shall be collected quarterly at all 21 offshore discrete sampling stations for ammonia and fecal coliform (or E. coli), total coliform and enterococcus at fixed depths of 1, 15, 30, and 45 meters (or as deep as practical for those stations located in depths less than 45 m) as noted in the next section - Water Quality Survey Sites. Parameters to be monitored include:

Parameter	Units	Type of Sample	Sample Frequency
Dissolved oxygen	mg/L	continuous profile[3]	quarterly
Temperature	°C	continuous profile[3]	quarterly
Salinity	psu	continuous profile[3]	quarterly
Transmissivity	% transmission	continuous profile[3] or Beam C	quarterly
Chlorophyll	µg/L	continuous profile[3]	quarterly
pH	pH units	continuous profile[3]	quarterly
Ammonia	µg/L	discrete sampling at specified depths [2]	quarterly
Fecal coliform (or *E. coli)*	CFU/100ml (or MPN/100 ml)	discrete sampling at specified depths [2]	quarterly
Total Coliform	CFU/100ml (or MPN/100 ml)	discrete sampling at specified depths [2]	quarterly
Enterococcus	CFU/100 ml (or MPN/100 ml)	discrete sampling at specified depths [2]	quarterly
Visual observations[4]	---	---	quarterly

The following additional offshore sampling shall be conducted at Station A-2 (see Survey Sites - Benthic and Trawl Stations table in Benthic Sediments Monitoring section below and Figure 2) and two additional stations within approximately 50 feet of the discharge point whenever there is any discharge to the 1-mile outfall (Discharge Serial No. 001):

Parameter	Units	Type of Sample	Sample Frequency
Total chlorine residual	µg/L	grab [5]	once per discharge day
Fecal coliform (or *E. coli*)	CFU/100 ml (or MPN/100 ml)	surface & bottom grab [6]	once per discharge day
Total coliform	CFU/100 ml (or MPN/100 ml)	surface & bottom grab [6]	once per discharge day
Enterococcus	CFU/100 ml	surface & bottom grab [6]	once per discharge day

3. Offshore Water Quality Survey Sites

Station	Latitude*		Longitude*		Station	Latitude*		Longitude*	
3201	33	51.250	118	24.367	3604**	33	56.416	118	30.586
3202	33	50.917	118	25.067	3605**	33	55.666	118	32.133
3203	33	50.717	118	25.583	3606**	33	55.000	118	33.500
3204**	33	50.217	118	26.433	3701	33	59.166	118	29.166
3205**	33	49.433	118	27.817	3702	33	58.800	118	30.000
3206	33	48.666	118	29.567	3703	33	58.450	118	30.600
3301	33	53.583	118	25.633	3704**	33	58.000	118	31.533
3302	33	53.350	118	26.183	3705**	33	57.216	118	33.216
3303	33	53.133	118	26.800	3706**	33	56.550	118	34.500
3304**	33	52.767	118	27.417	3801	34	2.000	118	35.000
3305**	33	52.100	118	29.600	3802	34	1.550	118	35.250
3306**	33	51.067	118	31.633	3803	34	0.350	118	35.833
3401	33	54.150	118	25.950	3804**	33	59.600	118	36.250
3402	33	54.000	118	26.833	3805**	33	58.333	118	36.850
3403	33	54.066	118	27.600	3806	33	57.366	118	37.416
3404**	33	53.816	118	28.116	3901	34	1.650	118	43.000
3405**	33	53.233	118	30.383	3902	34	1.166	118	43.000
3406**	33	52.750	118	32.133	3903	34	0.666	118	43.000
3501	33	55.883	118	26.883	3904**	33	59.850	118	43.000
3502	33	55.666	118	27.616	3905	33	57.616	118	43.000
3503	33	55.433	118	28.350	3906	33	56.566	118	43.000
3504**	33	55.000	118	29.650	4001	33	59.716	118	48.316
3505**	33	54.550	118	31.516	4002	33	59.300	118	48.316
3506**	33	54.000	118	32.983	4003**	33	58.833	118	48.316
3601	33	57.584	118	27.975	4004	33	57.500	118	48.316
3602	33	57.333	118	28.666	4005	33	55.683	118	48.316
3603	33	56.966	118	29.416	4006	33	54.750	118	48.316

* Given in decimal minutes
** Discrete stations of the Central Bight Cooperative Water Quality Survey

C. Benthic Sediments Monitoring

1. Local Benthic Trends Survey

a. This survey addresses the question: "Are benthic conditions under the influence of the discharge changing over time?" The data collected are used for regular assessment of trends in sediment contamination and biological response along a fixed grid of sites within the influence of the discharge.

b. Sampling Design - Forty-four offshore sampling stations (24 fixed stations plus one set of 20 random stations) within Santa Monica Bay shall be sampled annually for benthic monitoring. Random station sets A and B will be sampled in alternate years. The benthic stations shall be sampled in summer (July - September)

for sediments following protocols described in the most recent Bight Regional Marine Monitoring Survey Field Operations Manual. One sample shall be taken at each station for benthic infauna for community analyses[7] by means of a 0.1 m^2 (1.1 ft^2) modified Van Veen sediment grab sampler.

The following determinations shall be made at each station, where appropriate: identification of all organisms to lowest possible taxon; community structure analysis [7]; mean, range, standard deviation, and 95% confidence limits, if appropriate, for value determined in the community analysis. The discharger may be required to conduct additional "statistical analyses" to determine temporal and spatial trends in the marine environment.

In addition, one sample shall be taken at each station for chemistry analysis and analyzed for TOC and Grain Size (sufficiently detailed to calculate percent weight in relation to phi size) at each station annually. During years one, two, three, and four of the permit dissolved sulfides (water soluble) (mg/kg) at four stations (C1, C6, Z2, and E6) and selected priority pollutants (see below) at nine stations (Z2, C1, C3, C6, C7, C8, C9a, D1 and E6) shall be analyzed. During the fifth year of the permit, 64 sediment stations (24 fixed stations plus both sets of 20 random stations) shall be sampled for priority pollutant analyses as indicated below.

Priority pollutants include:

Arsenic
Cadmium
Chromium
Copper
Lead
Mercury
Nickel
Silver
Zinc
Total DDT [13]
DDT derivatives [8]
Total PCB [14]
PCB derivatives [9]
And Compounds on Local 303(d) list

c. Survey Sites - Sixty-four offshore benthic stations are identified in the sampling design (see Figure 2 and 3). This revised station array was accepted by the Regional Board and USEPA in December 1998 and implemented in January 1999 to better assess the impact on the benthic community as a result of full secondary treatment at Hyperion Treatment Plant. Stations were shifted from the previous equidistant, depth contour-based grid to

a combination fixed station/random station array with 24 stations from the old array and two sets of 20 randomly positioned stations to be sampled in alternate years. The stations shall be designated and located as shown below [Survey Sites - Benthic and Trawl Stations].

Survey Sites - Benthic and Trawl Stations

Station	Latitude*		Longitude*	
Fixed grid station				
A1 (T)	33	59.183	118	30.117
A2	33	55.117	118	26.883
A3 (T)	33	52.050	118	25.000
B1	34	00.417	118	42.933
B3	34	00.350	118	35.833
B5	33	57.983	118	31.533
B6	33	56.467	118	30.567
B7	33	55.283	118	29.500
B8	33	53.800	118	28.450
B10	33	50.483	118	24.940
C1 (T)	33	59.833	118	43.050
C3 (T)	33	59.383	118	36.033
C5	33	57.167	118	33.233
C6 (T)	33	55.683	118	32.083
C7	33	53.583	118	32.250
C8	33	52.750	118	31.417
C9A (T)	33	51.283	118	26.283
D1 (Benthic)				
	33	54.700	118	33.000
D1T (T)**	33	54.805	118	32.215
E1	33	59.057	118	42.867
E3	33	58.317	118	36.867
E6	33	55.700	118	33.417
E10	33	49.405	118	27.880
Z1	33	54.883	118	31.500
Z2 (T)	33	54.450	118	31.467
Z3 (T)**	33	54.005	118	30.395
Z4 (T)** to be dertemined				
Year 1 random stations				
NA1	33	53.396	118	31.190
NA2	33	54.054	118	30.907
NA3	33	54.199	118	32.025
NA4	33	55.061	118	30.380
NA5	33	55.167	118	31.114
NA6	33	56.041	118	31.636
FA7	33	52.397	118	29.837
FA8	33	52.675	118	32.650
FA9	33	52.981	118	29.263
FA10	33	53.132	118	30.983
FA11	33	53.594	118	30.105
FA12	33	53.870	118	29.438
FA13	33	54.398	118	34.130
FA14	33	54.874	118	28.602
FA15	33	55.073	118	33.387
FA16	33	55.966	118	30.050
FA17	33	56.086	118	33.208
FA18	33	56.612	118	29.351
FA19	33	56.671	118	32.167
FA20	33	57.157	118	31.470
Random1A (T)** to be determined				
Random2A (T)** to be determined				
Random3A (T)** to be determined				
Year 2 random stations				
NB1	33	54.325	118	33.022
NB2	33	54.490	118	30.105
NB3	33	54.883	118	32.057
NB4	33	54.905	118	30.594
NB5	33	55.261	118	32.981
NB6	33	55.620	118	29.888
NB7	33	55.670	118	31.887
NB8	33	56.212	118	30.826
FB9	33	52.493	118	31.105
FB10	33	53.017	118	29.854
FB11	33	53.087	118	33.191
FB12	33	53.249	118	30.759
FB13	33	53.282	118	29.015
FB14	33	53.616	118	33.900
FB15	33	54.194	118	28.841
FB16	33	55.102	118	29.375
FB17	33	56.220	118	33.825
FB18	33	56.407	118	29.231
FB19	33	56.690	118	31.871
FB20	33	56.858	118	30.287
Random1B (T)** to be determined				
Random2B (T)** to be determined				
Random3B (T)** to be determined				

* Given in decimal minutes
** Trawl site only
(T) Trawl stations

2. Local Benthic Mapping Survey

   a. Sampling Design - The benthic monitoring station array utilized for the past few years was designed as a fixed station/random station combination, incorporating 26 stations from the old sampling array and two sets of 20 newly designated randomly positioned stations. These stations shall be sampled in alternate years for the purposes of monitoring benthic infaunal community and sediment chemistry changes resulting from the implementation of full secondary treatment at Hyperion Treatment Plant. The goal is to develop a better depiction of any impact footprint resulting from the discharge using a probabilistic monitoring approach.

   b. The discharger shall evaluate monitoring data collected between January 1999 and December 2003 using a fixed station/random station combination, and any other relevant data, to assess the mapping ability of this benthic station array. The goal is to determine if the spatial coverage is appropriate to adequately delineate any changes and describe the extent of the footprint of any impacts. Following the analysis, the station array will be assessed and any recommendations for change will be submitted to the Executive Officer of the Regional Board and USEPA Region IX.

3. Regional Benthic Survey

   a. This regional survey addresses the questions: 1) "What is the extent, distribution, magnitude and trend of ecological change in soft-bottom benthic habitats within the Southern California Bight?"; and 2) "What is the relationship between biological response and contaminant exposure?" The data collected will be used to assess the condition of the sea-floor environment and the health of the biological communities in the Bight.

   b. Sampling Design - A regional survey of benthic conditions within the Southern California Bight took place in 2003 (Bight'03). The final survey design was determined cooperatively by participants represented on the Regional Steering Committee. The Discharger provided support to the Bight'03 benthic survey by participating in or performing the following activities:

      Participation on the Steering Committee
      Participation on relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, Benthos, and Chemistry)
      Field sampling at sea
      Infaunal sample analysis
      Sediment chemistry analysis
      Data management

This level of participation was consistent with that provided by the Discharger during the 1998 Regional Benthic Survey. The next regional survey is expected to take place in 2008 and the Discharger's level of participation shall be consistent with that provided in previous surveys.

D. Fish and Invertebrate (Trawl) Monitoring

1. Local Demersal Fish and Invertebrate Survey

a. This survey addresses the question: "Is the health of demersal fish and epibenthic invertebrate communities in the vicinity of the discharge changing over time?" The data collected are used for regular assessment of temporal trends in community structure along an array of sites within the influence of the discharge. Data will also be collected on trash and debris to contribute to the SMBRP's Sources and Loadings program.

b. Sampling Design - Trawling stations shall be sampled semi-annually in winter (January – March) and summer (July – September) following benthic sampling for demersal fish and epibenthic invertebrates following protocols described in the most recent Bight Regional Marine Monitoring Survey Field Operations Manual.

All organisms captured shall be identified to the lowest possible taxon and counted. Fish shall be size-classed. Wet-weight biomass shall be estimated for all species. Each individual captured shall be examined for the presence of externally evident signs of disease or anomaly. Estimates of type, quantity and weight of trash and debris in each trawl shall be made. Community analysis[10] shall be conducted for fish and macroinvertebrates for each station. Mean, range, standard deviation, and 95% confidence limits, if appropriate, shall be reported for the values determined in the community analysis. The Discharger may be required to conduct additional statistical analyses to determine temporal and spatial trends in the marine environment.

c. Survey Sites - Thirteen offshore trawling stations in a combined fixed station/random station array including seven stations from the fixed array (C1, C3, C6, D1T, Z2, Z3, and Z4,) and two sets of three randomly positioned stations shall be sampled in alternate years. Station Z4 and random station positions will be determined following final adoption of the permit (see Survey Sites - Benthic and Trawl Stations table in Benthic Sediments Monitoring section above and Figure 4).

2. Regional Demersal Fish and Invertebrate Survey

a. This regional survey addresses the questions: "What is the extent, distribution, magnitude and trend of ecological change in demersal fish and epibenthic invertebrate communities within the Southern California Bight?" and "What is the relationship between biological response and contaminant exposure?" The data collected will be used to assess the condition of the sea-floor environment and health of biological resources in the Bight.

b. Sampling Design - A regional survey of trawl-caught demersal fish and epibenthic invertebrates within the Southern California Bight took place in 2003 (Bight'03). The final survey design was determined cooperatively by the participants as represented in the Regional Steering Committee. The Discharger provided support to the Bight'03 survey by participating in or performing the following activities:

Participation on the Steering Committee
Participation on relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, Fish & Invertebrates)
Field sampling at sea
Tissue chemical analysis
Data management

This level of participation was consistent with that provided by the Discharger during the 1998 Regional Survey. The next regional survey is expected to occur in 2008 and the Discharger's level of participation shall be consistent with that provided in previous surveys.

E. Bioaccumulation Monitoring

1. Local Bioaccumulation Trends Survey

a. This survey addresses the question: "Are fish tissue contamination levels in the vicinity of the outfall changing over time?" The data collected are used for regular assessment of temporal trends in horneyhead turbot tissue.

b. Sampling Design - Three offshore zones plus the nearfield shall be sampled by trawl annually within Santa Monica Bay. Horneyhead turbot fish muscle and liver tissue shall be analyzed for the purpose of bioaccumulation trends.

For fish tissue analysis, one composite sample of ten horneyhead turbot individuals will be collected annually within four zones[11,12]. Samples may be taken from any station within each zone.

Tissue, as applied to the analysis of priority pollutants as listed below, signifies separate analyses for muscle and liver for horneyhead turbots. All tissue samples shall be analyzed for:

% moisture
% lipid
Arsenic
Selenium
Mercury
Total DDT [13]
DDT derivatives [8]
Total PCB [14]
PCB derivatives [9]

c. Survey Sites (see Figure 5). Sampling zones are defined as follows:

Zone 4 (south Santa Monica Bay): Inshore of the 150-meter depth contour and between a line bearing 235° magnetic off the south end of the Redondo Beach Pier and a line bearing 240° magnetic off the south entrance of Marina Del Rey. This zone includes the Redondo Piers, the north rim of the Redondo Canyon, Short Bank, and the 1-, 5- and 7-mile Hyperion outfalls.

Zone 5 (north Santa Monica Bay): Inshore of the 150-meter depth contour and between a line bearing 240° magnetic off the south entrance of Marina del Rey and a line bearing 180° magnetic off Point Dume. This zone includes the Santa Monica beaches, Venice and Santa Monica Piers, Paradise Cove and most of Point Dume Canyon.

Nearfield: A 2-km radius around the 5-mile outfall (Discharge Serial No. 002)

2. Local Seafood Safety Survey

a. Surveys shall include sampling within two zones in Santa Monica Bay to answer two questions: 1) "Where seafood consumption advisories exist locally, do tissue concentrations of contaminants continue to exceed the Advisory Tissue Concentration (ATC)?"; and 2) "What are tissue contaminant trends relative to the ATC in other species and for other contaminants not currently subject to local consumption advisories?" The data collected will be used to provide information necessary for the management of local seafood consumption advisories.

b. Sampling Design – A regionally coordinated survey covering Santa Monica Bay employing the sampling design proposed by

the SMBRP (Development of Comprehensive Monitoring Program, Santa Monica Bay Restoration Project, October 2000).

One species from each of five groups of fish (rockfish, kelpbass, sandbass, surfperches and croakers) shall be sampled from each of the two zones in years one, three and five. For rockfishes, scorpionfish (*Scorpaena guttata*) is the preferred species, followed by bocaccio (*Sebastes paucispinis*) and then by any other abundant and preferably benthic rockfish species. For surfperches, black surfperch (*Embiotoca jacksoni*) is the preferred species, followed by white surfperch (*Phanerodon furcatus*), and then by walleye surfperch (*Hyperprosopon argenteum*).

For fish tissue analysis, one composite sample of ten individuals of each target will be collected within each of the two zones[11, 12]. Sampling should take place within the same season of the year (preferably late summer/early fall) and should focus upon a consistent size class of fish. All tissue samples shall be analyzed for:

% moisture
% lipid
Arsenic
Selenium
Mercury
Total DDT [13]
DDT derivatives [8]
Total PCB [14]
PCB derivatives [9]

c. Survey Sites (see Figure 5). Sampling zones are defined as follows:

Zone 4 (south Santa Monica Bay): Inshore of the 150-meter depth contour and between a line bearing 235° magnetic off the south end of the Redondo Beach Pier and a line bearing 240° magnetic off the south entrance of Marina Del Rey. This zone includes the Redondo Piers, the north rim of the Redondo Canyon, Short Bank, and the 1-, 5- and 7-mile Hyperion outfalls.

Zone 5 (north Santa Monica Bay): Inshore of the 150-meter depth contour and between a line bearing 240° magnetic off the south entrance of Marina del Rey and a line bearing 180° magnetic off Point Dume. This zone includes the Santa Monica beaches, Venice and Santa Monica Piers, Paradise Cove and most of Point Dume Canyon.

3. Regional Seafood Safety Survey

   a. This regional survey addresses the question: "Are seafood tissue levels within the Southern California Bight below levels that ensure public safety?" The data collected will be used to assess levels of contaminants in the edible tissue of commercial or recreationally important fish within the Bight relative to Advisory Tissue Concentrations.

   b. Sampling Design - A regional survey of edible tissue contaminant levels in fish within the Southern California Bight shall be conducted at least once every ten years, encompassing a broader set of sampling sites and target species than those addressed in the local seafood survey. The objective is to determine whether any unexpected increases or decreases in contaminant levels have occurred in non-target species and/or at unsampled sites. The final survey design may be determined cooperatively by participants represented on a Regional Steering Committee or by the State of California's Office of Environmental Health and Hazard Assessment. The Discharger shall provide support to a Regional Seafood Safety Survey by participating in or performing the following activities:

      Participation on a Steering Committee
      Participation on relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, and Chemistry)
      Field sampling at sea
      Tissue chemical analysis
      Data management

      The Discharger's participation shall be consistent with that provided by the Discharger to similar regional bioaccumulation surveys.

4. Regional Predator Risk Survey

   a. This regional survey addresses the question: "Are fish body burdens within the Southern California Bight a health risk to higher trophic levels in the marine food web?" The data collected will be used to estimate health risk to marine birds, mammals and wildlife from the consumption of fish tissue.

   b. Sampling Design - A regional survey of whole fish body burdens of contaminants within the Southern California Bight took place in 2003 (Bight'03). The final survey design was determined cooperatively by participants represented on the Regional Steering Committee. The Discharger provided support to the

Bight'03 Predator Risk Survey by participating in or performing the following activities:

Participation on the Steering Committee
Participation on relevant Technical Committees (e.g., Information Management, Field Methods & Logistics, and Chemistry)
Field sampling at sea
Tissue chemical analysis

This level of participation was consistent with that provided by the Discharger to the 1998 Regional Predator Risk Survey. The next regional survey is expected to occur in 2008 and the discharger's level of participation shall be consistent with that provided in previous surveys.

5. Kelp Bed Monitoring

This regional survey is to address the question: "Is the extent of kelp beds in the Southern California Bight changing over time and are some beds changing at rates different than others?" The data collected in this regional survey will be used to assess status and trends in kelp bed health and spatial extent. The regional nature of the survey will allow the status of beds local to the discharge to be compared to regional trends.

The regional survey primarily will consist of quarterly aerial overflights of the kelp beds. The Discharger shall provide up to $10,000 per year in financial support to the regional kelp monitoring program (annual level of support will depend on the number of participants in the program). The Discharger shall participate in the regional management and technical committees responsible for the development of the survey design and the assessment of kelp bed resources in the Bight.

Participation in this survey provides data to the SMBRP's Kelp Beds program.

Footnotes for Receiving Water Monitoring Program

[1] The annual sample shall be taken in the summer quarter.

[2] Discrete sampling for ammonia nitrogen, fecal coliform (or *E. coli*), total coliform and enterococcus shall be done within 1 m (3.1 ft) and below the surface at 15.0 m (49.2 ft), 30.0 m (98.4 ft), and 45.0 m (147.6 ft) (or as deep as practical for those stations located in depths less than 45 m).

[3] Depth profile measurements will be obtained by using multiple sensors to measure parameters through the entire water column (from the surface to as close to the bottom as practicable).

[4] Receiving Water Observations of water color, turbidity, odor, and unusual or abnormal amounts of floating or suspended matter in the water or on the beach, rocks and jetties, or beach structures shall be made and recorded at stations. The character and extent of such matter shall be described. The dates, times and depths of sampling and these observations shall also be reported.

[5] The "Daily Maximum" value shall be reported during periods of discharge.

[6] Bottom sampling shall be done 2.0 m (6.6 ft) above the seabed.

[7] Community analysis of benthic infauna shall include number of species, number of individuals per species, total numerical abundance per station, benthic response index (BRI) and biological indices, plus utilize appropriate regression analyses, parametric and nonparametric statistics, and multivariate techniques or other appropriate analytical techniques.

[8] At a minimum, 4,4' -DDT, 2,4' -DDT, 4,4' -DDE, 2,4' -DDE, 4,4' -DDD, and 2,4' -DDD.

[9] At a minimum, chlorinated biphenyl congeners whose analytical characteristics resemble those of PCB-18, 28, 37, 44, 49, 52, 66, 70, 74, 77, 81, 87, 99, 101, 105, 110, 114, 118, 119, 123, 126, 128, 138, 149, 151, 153, 156, 157, 158, 167, 168, 169, 170, 177, 180, 183, 187, 189, 194, 201, and 206 shall be individually quantified.

[10] Community analysis of fish and macroinvertebrates shall include wet weight of fish and macroinvertebrate species (when combined weight of individuals of one species exceed 0.1 kg), standard length of each individual fish, number of species, number of individuals per species, total numerical abundance per station, number of individuals in each 1-cm size class for each species of fish, species abundance per trawl and per station, and biological indices, plus utilize appropriate regression analyses, parametric and nonparametric techniques, and multivariate techniques or other appropriate analytical techniques.

[11] Where appropriate, individuals collected for both local bioaccumulation trends or local seafood safety comprising the smallest 10 percent by weight shall not be used as part of the composite sample. Individuals for tissue analysis shall be randomly selected from the remaining organisms. It may not be possible to collect the required number of fish every year at each zone. If fish of the target size are absent in a given zone, additional sampling effort need not be attempted. If target size fish are present in a given zone, one additional sampling event shall be conducted to attempt to collect the necessary number of individuals.

[12] Tissue samples removed from individuals shall be of uniform weight.

[13] Total DDT means the sum of 4,4'-DDT, 2,4'-DDT, 4,4'-DDE, 2,4'-DDE, 4,4'-DDD and 2,4'-DDD.

[14] Total PCBs (polychlorinated biphenyls) mean the sum of chlorinated biphenyls whose analytical characteristics resemble those of Aroclor-1016, Aroclor-1221, Aroclor-l232, Aroclor-1242, Aroclor-l248, Aroclor-1254 and Aroclor-1260.

VIII. OUTFALL AND DIFFUSER INSPECTION

A. This survey answers the question: "Are the outfall structures in serviceable condition ensuring their continued safe operation?"

B. Survey Design: Each ocean outfall (001 and 002) shall be externally inspected a minimum of once a year. Inspections shall include general observations and photographic/videographic records of the outfall pipes and adjacent ocean bottom. The pipes shall be visually inspected by a diver, manned submarine, or remotely operated vehicle. A summary report of the inspection findings shall be provided. This written report, augmented with videographic and/or photographic images, will provide a description of the observed condition of the discharge pipes from shallow water to their respective termini.

IX. SLUDGE MONITORING AND REPORTING

A. The Discharger must comply with all requirements of 40 CFR 257, 258, 501, and 503, including all applicable monitoring, record keeping, and reporting requirements.

B. The Discharger must comply with the monitoring and reporting requirements outlined in Attachment B in this Order and permit, [*Biosolids/Sludge Management*].

X. HAULING REPORTS

A. In the event wastes are transported to a different disposal site during the reporting period, the following shall be reported:

1. Types of wastes and quantity of each type;
2. Name and either the address or the State registration number for each hauler of wastes (or the method of transport if other than by hauling); and
3. Location of the final point(s) of disposal for each type of wastes.

B. If no wastes are transported off site during the reporting period, a statement to that effect shall be submitted.

XI. REPORTING SCHEDULE

The above monitoring program, or subsequent modification thereto, shall become effective upon the effective date of Order No. R4-2005-0020 and NPDES Permit No. CA0109991. Influent/effluent monitoring reports, receiving water monitoring reports, and other required reports shall be submitted as indicated under section II. of the above monitoring program.

All reports shall be signed by a responsible officer or duly authorized representative (as specified in 40 CFR 122.2) of the City of Los Angeles Hyperion Treatment Plant and submitted under penalty of perjury.

Ordered by:

Jonathan Bishop,
Executive Officer
California Water Quality Control Board
Los Angeles Region

Date:_____

Alexis Strauss,
Director
Water Division
USEPA Region IX

Date: _____

Figure 1. Offshore water quality station locations.

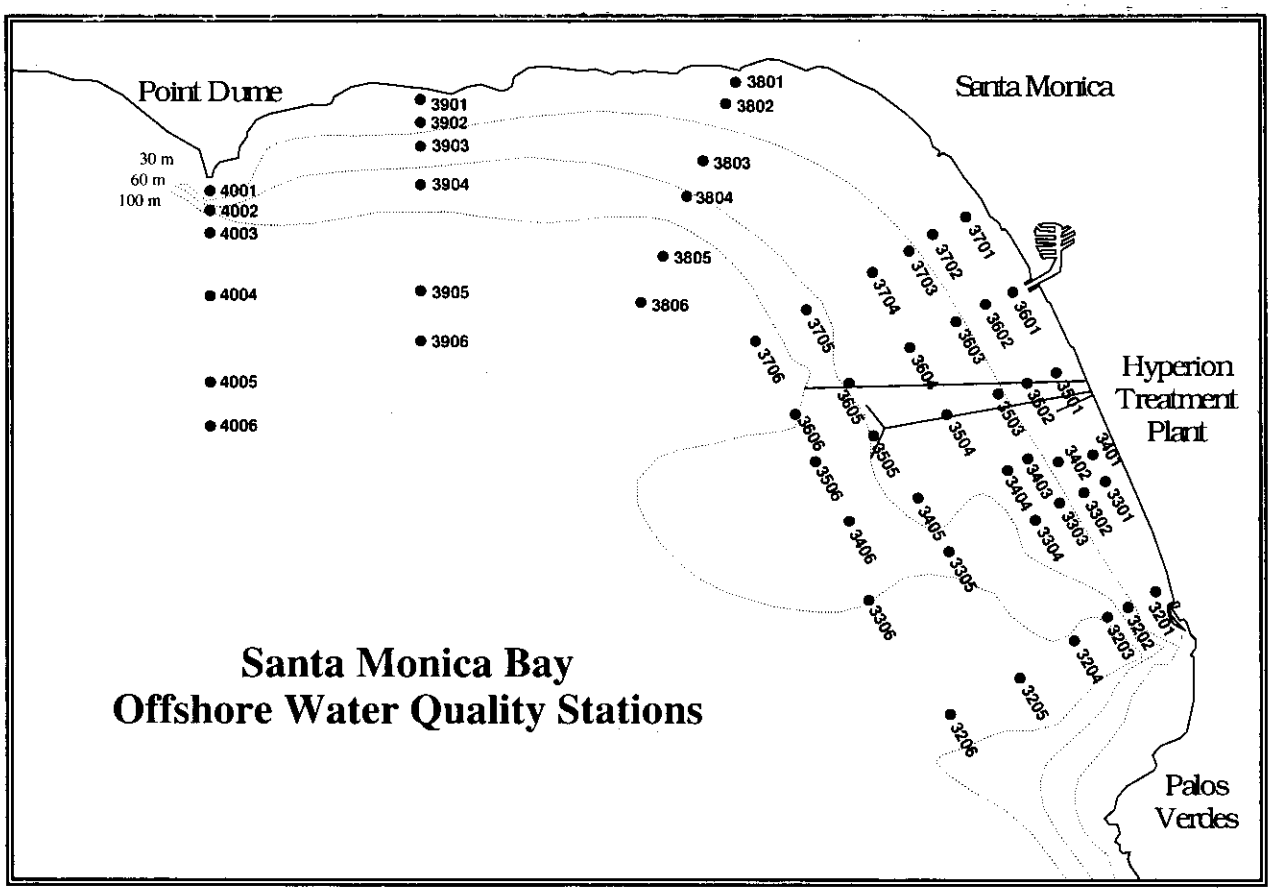

Figure 2. Offshore benthic sediment and macrofauna station locations for fixed stations plus Year 1 random stations.

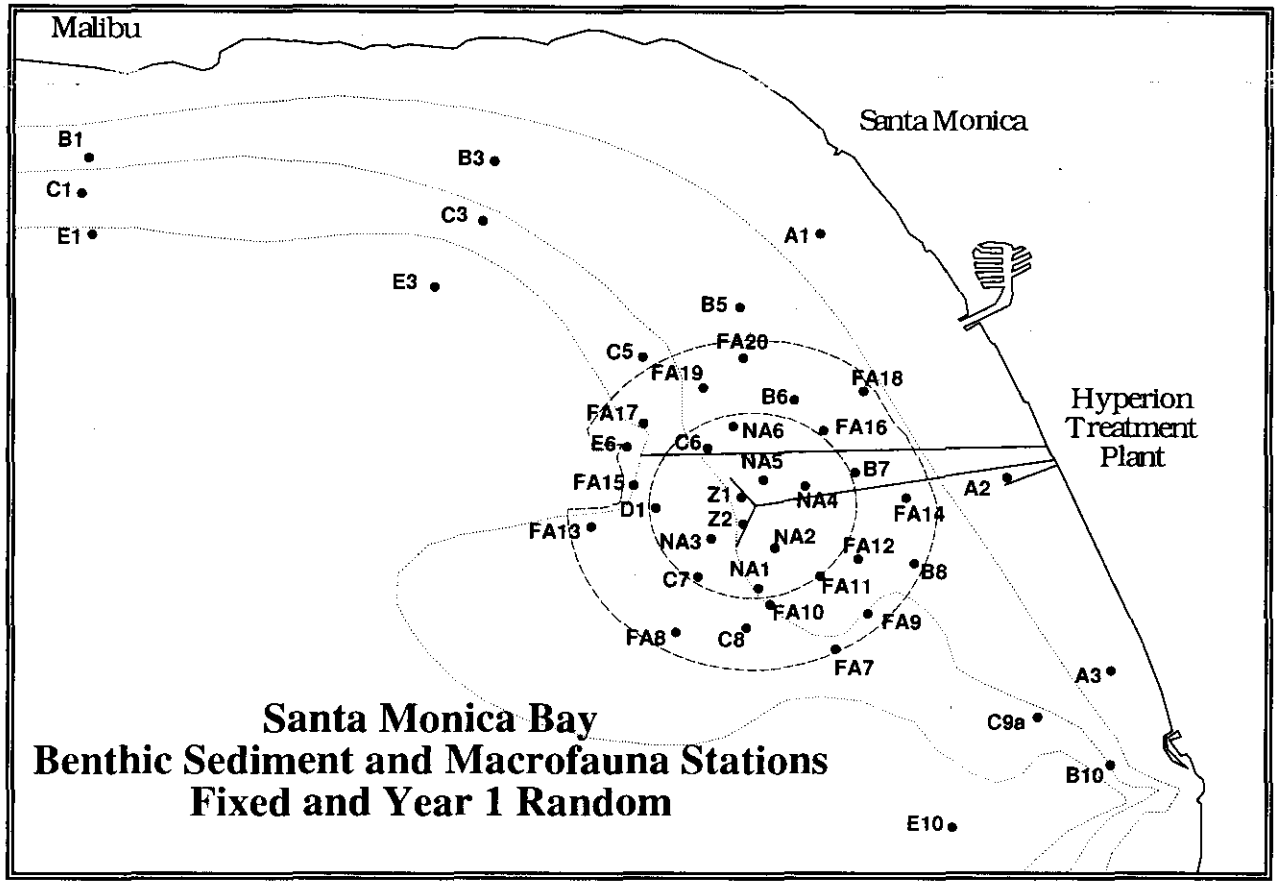

Figure 3. Offshore benthic sediment and macrofauna station locations for fixed stations plus Year 2 random stations.

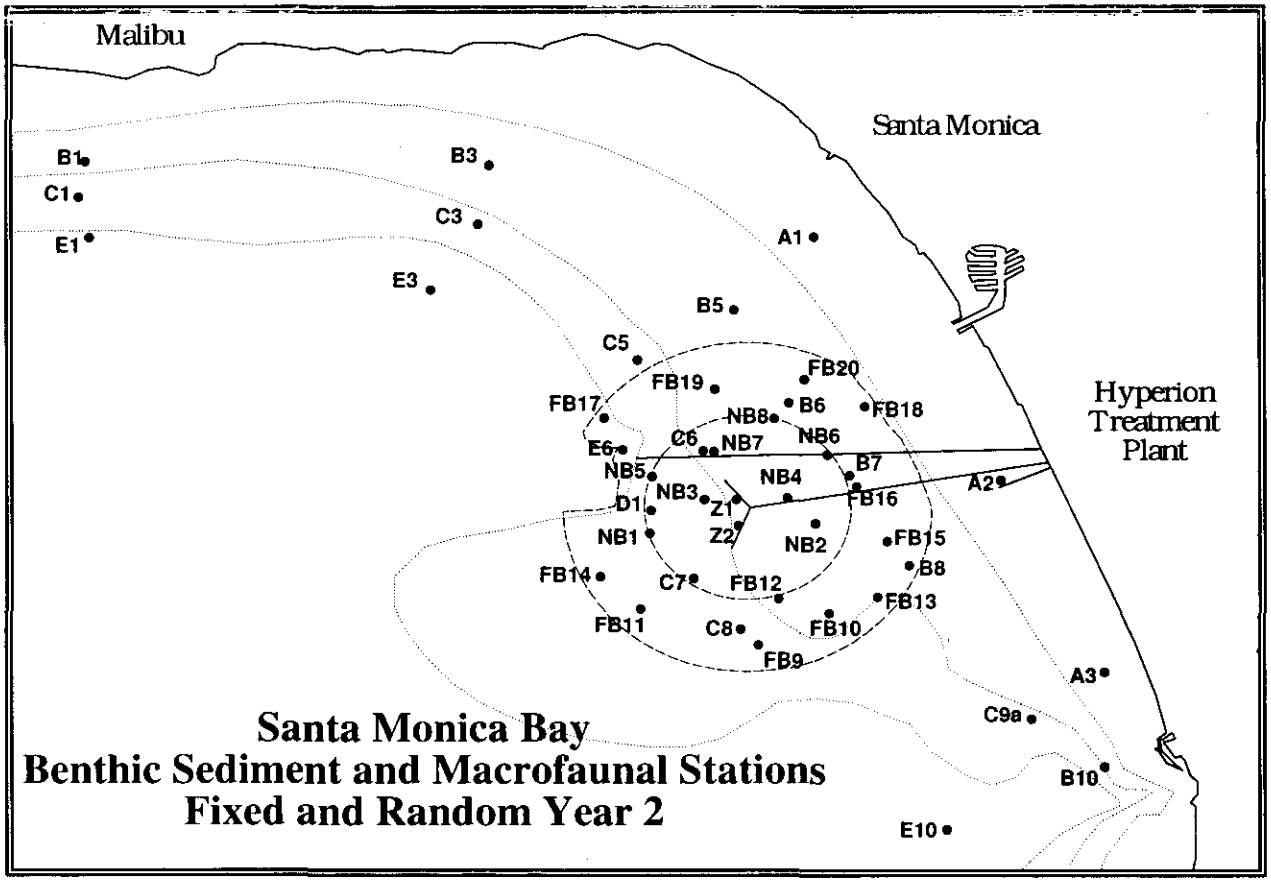

Figure 4. Trawl station locations including fixed stations and example of a combined array of Year 1 and Year 2 random stations.

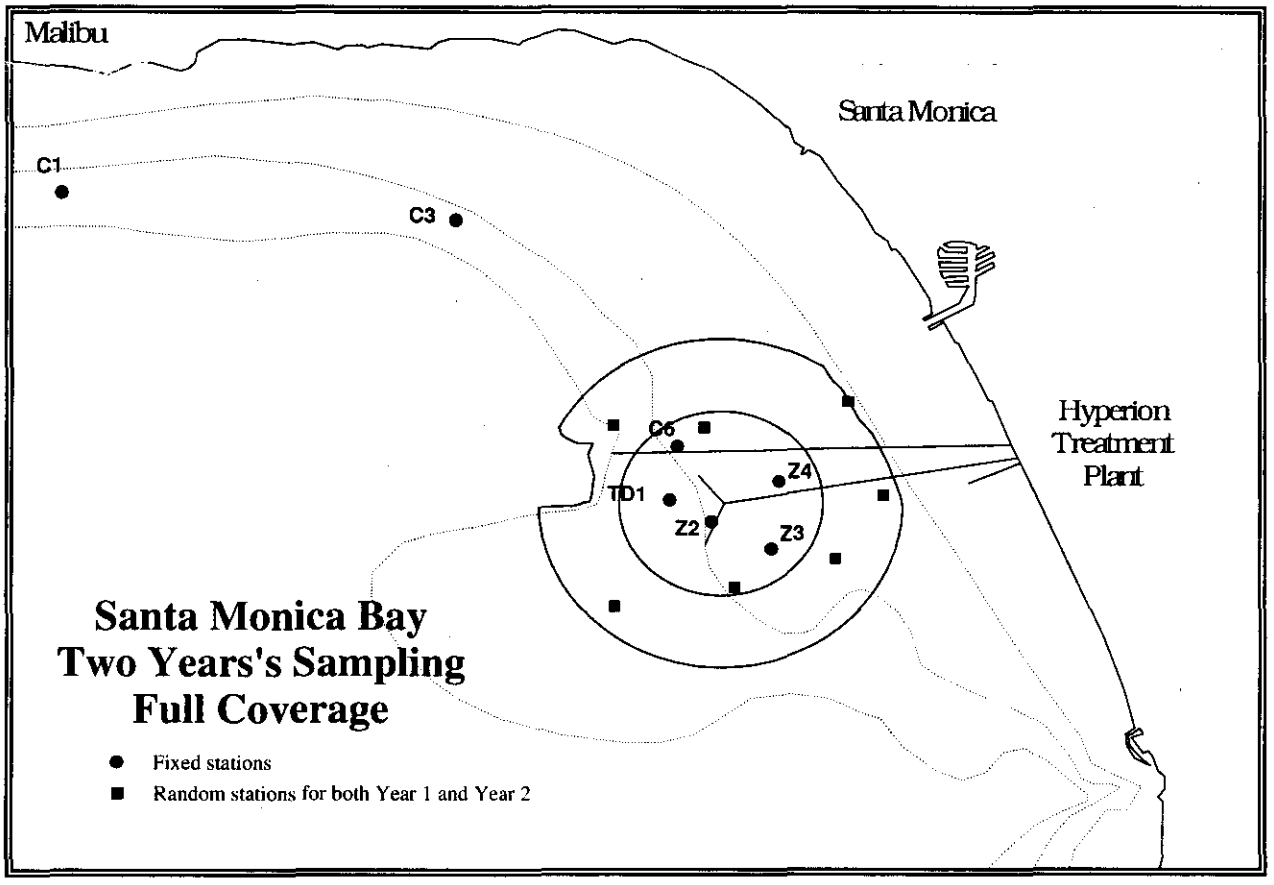

Figure 5. Local seafood survey zones as defined by SMBRP seafood tissue monitoring design.