ATTACHMENT E – MONITORING AND REPORTING PROGRAM

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ATTACHMENT E – MONITORING AND REPORTING PROGRAM (MRP)

The Code of Federal Regulations[1] (CFR) at 40 CFR 122.48 requires that all NPDES permits specify monitoring and reporting requirements. CWC sections 13267 and 13383 also authorize the Regional Water Quality Control Board (Regional Water Board) to require technical and monitoring reports. This MRP establishes monitoring and reporting requirements, which implement federal and California regulations.

I. GENERAL MONITORING PROVISIONS

A. 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.

B. The Regional Water 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 Southern California Coastal Water Research Project (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 that have guided development of the monitoring program described below.

C. 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

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[1] All further statutory references are to title 40 of the Code of Federal Regulations unless otherwise indicated and will be abbreviated as "40 CFR part number.

receiving water monitoring where discharge effects are well understood. The monitoring plan set forth here has been guided by SMBRP recommendations.

D. 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 Order/Permit. Instead, for each regional component, the degree and nature of participation of the Discharger is specified. For this Order/Permit, these levels of effort are based upon past participation of the Discharger 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 Water Board and USEPA. The procedures and time lines for the Regional Water 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, 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 Water 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 Water Board and USEPA by November 1, for the following year's monitoring effort (July through

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June). The following year, detailed scopes of work for proposals, including reporting schedules, shall be presented by the Discharger at a Spring Regional Water Board meeting, to obtain the Regional Water Board approval and to inform the public. Upon approval by the Regional Water Board and USEPA, the Discharger shall implement its special study or studies.

E. 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, Bight '03, and Bight '08) 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
-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 Water 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 conducted under the terms of this Order/Permit are subject to a public hearing before the Regional Water Board and public notice by USEPA.

F. 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.

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G. Discharger participation in regional monitoring programs is required as a condition of this Order/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, 2003, and 2008. The regional programs which must be conducted under this Order/Permit include:

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

2. Santa Monica Bay Restoration Commission's Seafood Safety Survey – The Local Seafood Safety Survey stipulated in this Order/Permit is a contribution to the Santa Monica Bay Restoration Commission's Seafood Safety Survey. The level of participation shall be similar to that provided for the 2008 Regional Bioaccumulation Survey.

3. Central Kelp Monitoring Program – coordinated by the Regional Water Board; and,

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.

H. Regular regional monitoring for the Southern California Bight has been established, occurring at five-year intervals, and coordinated through SCCWRP with discharger agencies and numerous other entities. The fourth regional monitoring program (Bight '08) occurred primarily during summer 2008. The next (fifth) regional monitoring program (Bight '13) is expected to take place during 2013. While participation in regional programs is required under this Order/Permit, revisions to the Discharger's monitoring program at the direction of the Regional Water 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 Regional Water Board Executive Officer and USEPA Director upon written notification to the Discharger.

I. The Regional Water Board has helped to establish the Central Region Kelp Survey Consortium to conduct regional kelp bed monitoring. This program is designed to require ocean dischargers in the Regional Water 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 Water Board since 1985. Data collected in this regional survey will be used to assess status and trends

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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. The regional kelp monitoring survey was initiated during 2003.

II. MONITORING LOCATIONS

The Discharger shall establish the following monitoring locations to demonstrate compliance with the effluent limitations, discharge specifications, and other requirements in this Order/Permit:

Table 1. Monitoring Station Locations

Influent and Effluent Monitoring Stations		
Discharge Point Name	**Monitoring Location Name**	**Monitoring Location Description**
Influent Monitoring Station		
--	**INF-001**	North Outfall Relief Sewer- 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. (33.93061°N, 118.43317°W)
--	**INF-002**	North Central Outfall Sewer- 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. (33.9306°N, 118.43326°W)
--	**INF-003**	Central Outfall Sewer- 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. (33.93033°N, 118.43353°W)
--	**INF-004**	North Outfall Sewer- 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. (33.92782°N, 118.43331°W)
--	**INF-005**	Coastal Interceptor Sewer- 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. (33.92746°N, 118.44318°W)
Effluent Monitoring Station		
001	**EFF-001**	Sampling station shall be located downstream of any in-plant return flows but before entering the discharge tunnel where representative samples of the effluent discharged through Discharge Point 001 can be obtained. (33.92417°N, 118.4314°W)
002	**EFF-002**	Sampling station shall be located downstream of any in-plant return flows but before entering the discharge tunnel where representative samples of the effluent discharged through Discharge Point 002 can be obtained. (33.92527°N, 118.43195°W)

Receiving Water Monitoring Stations					
Inshore Water Quality Monitoring Stations					
Station	**Latitude***	**Longitude***	**Station**	**Latitude***	**Longitude***

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

Note: IS-01 to IS-11 shall be sampled at a distance of 100 ft from the shoreline or at the 30-ft depth contour, whichever is further from shore (except that station IS-11 is located at King Harbor in Redondo Beach).

* Given in decimal minutes.

Offshore Water Quality Monitoring Stations

Station	Latitude*		Longitude*		Station	Latitude*		Longitude*	
RW-OS-3201	33	51.250	118	24.367	RW-OS-3604**	33	56.416	118	30.586
RW-OS-3202	33	50.917	118	25.067	RW-OS-3605**	33	55.666	118	32.133
RW-OS-3203	33	50.717	118	25.583	RW-OS-3606**	33	55.000	118	33.500
RW-OS-3204**	33	50.217	118	26.433	RW-OS-3701	33	59.166	118	29.166
RW-OS-3205**	33	49.433	118	27.817	RW-OS-3702	33	58.800	118	30.000
RW-OS-3206	33	49.466	118	29.567	RW-OS-3703	33	58.450	118	30.600
RW-OS-3301	33	53.583	118	25.633	RW-OS-3704**	33	58.000	118	31.533
RW-OS-3302	33	53.350	118	26.183	RW-OS-3705**	33	57.216	118	33.216
RW-OS-3303	33	53.133	118	26.800	RW-OS-3706**	33	56.550	118	34.500
RW-OS-3304**	33	52.767	118	27.417	RW-OS-3801	34	2.000	118	35.000
RW-OS-3305**	33	52.100	118	29.600	RW-OS-3802	34	1.550	118	35.250
RW-OS-3306**	33	51.067	118	31.633	RW-OS-3803	34	0.350	118	35.833
RW-OS-3401	33	54.150	118	25.950	RW-OS-3804**	33	59.600	118	36.250
RW-OS-3402	33	54.000	118	26.833	RW-OS-3805**	33	58.333	118	36.850
RW-OS-3403	33	54.066	118	27.600	RW-OS-3806	33	57.366	118	37.416
RW-OS-3404**	33	53.816	118	28.116	RW-OS-3901	34	1.650	118	43.000
RW-OS-3405**	33	53.233	118	30.383	RW-OS-3902	34	1.166	118	43.000
RW-OS-3406**	33	52.750	118	32.133	RW-OS-3903	34	0.666	118	43.000
RW-OS-3501	33	55.883	118	26.883	RW-OS-3904**	33	59.850	118	43.000
RW-OS-3502	33	55.666	118	27.616	RW-OS-3905	33	57.616	118	43.000
RW-OS-3503	33	55.433	118	28.350	RW-OS-3906	33	56.566	118	43.000
RW-OS-3504**	33	55.000	118	29.650	RW-OS-4001	33	59.716	118	48.316
RW-OS-3505**	33	54.550	118	31.516	RW-OS-4002	33	59.300	118	48.316
RW-OS-3506**	33	54.000	118	32.983	RW-OS-4003**	33	58.833	118	48.316
RW-OS-3601	33	57.584	118	27.975	RW-OS-4004	33	57.500	118	48.316
RW-OS-3602	33	57.333	118	28.666	RW-OS-4005	33	55.683	118	48.316
RW-OS-3603	33	56.966	118	29.416	RW-OS-4006	33	54.750	118	48.316

* Given in decimal minutes.

** Discrete stations of the Central Bight Cooperative Water Quality Survey.

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Benthic and Trawl Monitoring Stations

Station	Latitude*		Longitude*	
FIXED GRID STATIONS				
RW-A-1 (T)	33	59.183	118	30.117
RW-A-2	33	55.117	118	26.883
RW-A-3 (T)	33	52.050	118	25.000
RW-B-1	34	00.417	118	42.933
RW-B-3	34	00.350	118	35.833
RW-B-5	33	57.983	118	31.533
RW-B-6	33	56.467	118	30.567
RW-B-7	33	55.283	118	29.500
RW-B-8	33	53.800	118	28.450
RW-B-10	33	50.483	118	24.940
RW-C-1 (T)	33	59.833	118	43.050
RW-C-3 (T)	33	59.383	118	36.033
RW-C-5	33	57.167	118	33.233
RW-C-6 (T)	33	55.683	118	32.083
RW-C-7	33	53.583	118	32.250
RW-C-8	33	52.750	118	31.417
RW-C-9A (T)	33	51.283	118	26.283
RW-D-1 (Benthic)	33	54.700	118	33.000
RW-D-1T (T)**	33	54.805	118	32.215
RW-E-1	33	59.057	118	42.867
RW-E-3	33	58.317	118	36.867
RW-E-6	33	55.700	118	33.417
RW-E-10	33	49.405	118	27.880
RW-Z-1	33	54.883	118	31.500
RW-Z-2 (T)	33	54.450	118	31.467
RW-Z-3 (T)**	33	54.005	118	30.395
RW-Z-4 (T)**	33	57.082	118	30.579
YEAR 1 RANDOM STATIONS				
RW-NA-1	33	53.396	118	31.190
RW-NA-2	33	54.054	118	30.907
RW-NA-3	33	54.199	118	32.025
RW-NA-4	33	55.061	118	30.380
RW-NA-5	33	55.167	118	31.114
RW-NA-6	33	56.041	118	31.636
RW-FA-7	33	52.397	118	29.837
RW-FA-8	33	52.675	118	32.650
RW-FA-9	33	52.981	118	29.263
RW-FA-10	33	53.132	118	30.983
RW-FA-11	33	53.594	118	30.105
RW-FA-12	33	53.870	118	29.438
RW-FA-13	33	54.398	118	34.130
RW-FA-14	33	54.874	118	28.602
RW-FA-15	33	55.073	118	33.387
RW-FA-16	33	55.966	118	30.050
RW-FA-17	33	56.086	118	33.208
RW-FA-18	33	56.612	118	29.351
RW-FA-19	33	56.671	118	32.167
RW-FA-20	33	57.157	118	31.470
RW-Random1A (T)**	33	54.874	118	28.602
RW-Random2A (T)**	33	52.397	118	29.837
RW-Random3A (T)**	33	51.451	118	28.185
YEAR 2 RANDOM STATIONS				
RW-NB-1	33	54.325	118	33.022
RW-NB-2	33	54.490	118	30.105
RW-NB-3	33	54.883	118	32.057
RW-NB-4	33	54.905	118	30.594
RW-NB-5	33	55.261	118	32.981
RW-NB-6	33	55.620	118	29.888
RW-NB-7	33	55.670	118	31.887
RW-NB-8	33	56.212	118	30.826
RW-FB-9	33	52.493	118	31.105
RW-FB-10	33	53.017	118	29.854
RW-FB-11	33	53.087	118	33.191
RW-FB-12	33	53.249	118	30.759
RW-FB-13	33	53.282	118	29.015
RW-FB-14	33	53.616	118	33.900
RW-FB-15	33	54.194	118	28.841
RW-FB-16	33	55.102	118	29.375
RW-FB-17	33	56.220	118	33.825
RW-FB-18	33	56.407	118	29.231
RW-FB-19	33	56.690	118	31.871
RW-FB-20	33	56.858	118	30.287
RW-Random1B (T)**	33	56.220	118	33.825
RW-Random2B (T)**	33	56.407	118	29.231
RW-Random3B (T)**	33	53.017	118	29.854

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

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CORE MONITORING

III. INFLUENT MONITORING REQUIREMENTS

(For footnotes, see pages, E-17 and E-18)

Influent monitoring is required to:

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

A. Monitoring Location INF-001

1. The Discharger shall monitor influent to the Facility at INF-001 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table 2. Influent Monitoring

Influent Monitoring Program				
Parameter	**Units**	**Sample Type[1]**	**Minimum Sampling Frequency[2]**	**Required Analytical Test Method**
Flow	MGD	Recorder/totalizer	Continuous[3]	[4]
$BOD_5 20^0C$	mg/L	24-hr composite	Daily	[4]
Suspended solids	mg/L	24-hr composite	Daily	[4]
pH	pH units	Grab	Weekly	[4]
Oil and grease	mg/L	Grab[5]	Weekly	[4]
TOC (total organic carbon)	mg/L	24-hr composite	Monthly	[4]
Cyanide	µg/L	Grab	Monthly	[4]
Organic nitrogen	mg/L	24-hr composite	Quarterly	[4]
Radioactivity (including gross alpha, gross, beta, combined radium-226 & radium-228, tritium, strontium-90 and uranium)[6]	pCi/L	24-hr composite	Monthly	[4]
Total phosphorus (as P)	mg/L	24-hr composite	Quarterly	[4]
Tributyltin	ng/L	24-hr composite	Quarterly	[4]
Aldrin	µg/L	24-hr composite	Quarterly	[4]
Chlordane and related compounds[7]	µg/L	24-hr composite	Quarterly	[4]
DDT[7]	µg/L	24-hr composite	Quarterly	[4]
Dieldrin	µg/L	24-hr composite	Quarterly	[4]
Endosulfan[7]	µg/L	24-hr composite	Quarterly	[4]
Endrin	µg/L	24-hr composite	Quarterly	[4]
HCH[7]	µg/L	24-hr composite	Quarterly	[4]
Heptachlor	µg/L	24-hr composite	Quarterly	[4]
Heptachlor epoxide	µg/L	24-hr composite	Quarterly	[4]

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Influent Monitoring Program				
Parameter	**Units**	**Sample Type[1]**	**Minimum Sampling Frequency[2]**	**Required Analytical Test Method**
PCBs[7]	µg/L	24-hr composite	Quarterly	[4]
Toxaphene	µg/L	24-hr composite	Quarterly	[4]
2,4-Dinitrophenol	µg/L	24-hr composite	Quarterly	[4]
2,4,6-Trichlorophenol	µg/L	24-hr composite	Quarterly	[4]
4,6-Dinitro-2-methylphenol	µg/L	24-hr composite	Quarterly	[4]
Phenolic compounds (chlorinated)[7]	µg/L	24-hr composite	Quarterly	[4]
Phenolic compounds (non-chlorinated)[7]	µg/L	24-hr composite	Quarterly	[4]
Bis(2-chloro-ethoxy) methane	µg/L	24-hr composite	Quarterly	[4]
Bis(2-chloro-isopropyl) ether	µg/L	24-hr composite	Quarterly	[4]
Di-n-butylphthalate	µg/L	24-hr composite	Quarterly	[4]
Dichlorobenzenes[7]	µg/L	24-hr composite	Quarterly	[4]
Diethylphthalate	µg/L	24-hr composite	Quarterly	[4]
Dimethylphthalate	µg/L	24-hr composite	Quarterly	[4]
Fluoranthene	µg/L	24-hr composite	Quarterly	[4]
Hexachlorocyclopentadiene	µg/L	24-hr composite	Quarterly	[4]
Isophorone	µg/L	24-hr composite	Quarterly	[4]
Nitrobenzene	µg/L	24-hr composite	Quarterly	[4]
Benzidine	µg/L	24-hr composite	Quarterly	[4]
Bis(2-chloroethyl) ether	µg/L	24-hr composite	Quarterly	[4]
Bis(2-ethylhexyl) phthalate	µg/L	24-hr composite	Quarterly	[4]
1,4-Dichlorobenzene	µg/L	24-hr composite	Quarterly	[4]
3,3-Dichlorobenzidine	µg/L	24-hr composite	Quarterly	[4]
2,4-Dinitrotoluene	µg/L	24-hr composite	Quarterly	[4]
1,2-Diphenylhydrazine	µg/L	24-hr composite	Quarterly	[4]
Hexachlorobenzene	µg/L	24-hr composite	Quarterly	[4]
Hexachlorobutadiene	µg/L	24-hr composite	Quarterly	[4]
Hexachloroethane	µg/L	24-hr composite	Quarterly	[4]
N-Nitrosodimethylamine	µg/L	24-hr composite	Quarterly	[4]
N-Nitrosodi-n-propylamine	µg/L	24-hr composite	Quarterly	[4]
N-Nitrosodiphenylamine	µg/L	24-hr composite	Quarterly	[4]
PAHs[7]	µg/L	24-hr composite	Quarterly	[4]
TCDD equivalents[7, 12]	µg/L	24-hr composite	Quarterly	[4]
Acrolein	µg/L	Grab	Quarterly	[4]
Acrylonitrile	µg/L	Grab	Quarterly	[4]
Benzene	µg/L	Grab	Quarterly	[4]
Carbon tetrachloride	µg/L	Grab	Quarterly	[4]
Chlorobenzene	µg/L	Grab	Quarterly	[4]
Chlorodibromomethane	µg/L	Grab	Quarterly	[4]
Chloroform	µg/L	Grab	Quarterly	[4]
Dichlorobromomethane	µg/L	Grab	Quarterly	[4]
Dichloromethane	µg/L	Grab	Quarterly	[4]

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Influent Monitoring Program				
Parameter	**Units**	**Sample Type[1]**	**Minimum Sampling Frequency[2]**	**Required Analytical Test Method**
1,1-Dichloroethylene	µg/L	Grab	Quarterly	[4]
1,2-Dichloroethane	µg/L	Grab	Quarterly	[4]
1,3-Dichloropropene	µg/L	Grab	Quarterly	[4]
Ethylbenzene	µg/L	Grab	Quarterly	[4]
Halomethanes[7]	µg/L	Grab	Quarterly	[4]
Methyl-tert-butyl-ether	µg/L	Grab	Quarterly	[4]
Toluene	µg/L	Grab	Quarterly	[4]
1,1,2,2-Tetrachloroethane	µg/L	Grab	Quarterly	[4]
1,1,1-Trichloroethane	µg/L	Grab	Quarterly	[4]
1,1,2-Trichloroethane	µg/L	Grab	Quarterly	[4]
Tetrachloroethylene	µg/L	Grab	Quarterly	[4]
Trichloroethylene	µg/L	Grab	Quarterly	[4]
Vinyl chloride	µg/L	Grab	Quarterly	[4]
Antimony	µg/L	24-hr composite	Quarterly	[4]
Arsenic	µg/L	24-hr composite	Quarterly	[4]
Beryllium	µg/L	24-hr composite	Quarterly	[4]
Cadmium	µg/L	24-hr composite	Monthly	[4]
Chromium (III)	µg/L	24-hr composite	Monthly	[4]
Copper	µg/L	24-hr composite	Monthly	[4]
Hexavalent chromium[7]	µg/L	24-hr composite	Monthly	[4]
Lead	µg/L	24-hr composite	Monthly	[4]
Mercury [13]	µg/L	24-hr composite	Monthly	[4]
Nickel	µg/L	24-hr composite	Monthly	[4]
Selenium	µg/L	24-hr composite	Monthly	[4]
Silver	µg/L	24-hr composite	Monthly	[4]
Thallium	µg/L	24-hr composite	Quarterly	[4]
Zinc	µg/L	24-hr composite	Monthly	[4]

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IV. EFFLUENT MONITORING REQUIREMENTS

(For footnotes, see pages E-17 and E-18)

Effluent monitoring is required to:

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

A. Monitoring Locations- EFF 001 and EFF 002

1. The Discharger shall monitor effluent at EFF-001 and EFF-002 as follows. If more than one analytical test method is listed for a given parameter, the Discharger must select from the listed methods and corresponding Minimum Level:

Table 3. Effluent Monitoring

Effluent Monitoring Program				
Parameter	**Units**	**Sample Type[1]**	**Minimum Sampling Frequency[2, 10]**	**Required Analytical Test Method**
Flow	MGD	Recorder/totalizer	Continuous[3]	[4]
$BOD_5 20^0C$	mg/L	24-hr composite	Daily	[4]
Suspended solids	mg/L	24-hr composite	Daily	[4]
pH	pH unit	Grab	Weekly	[4]
Oil and grease	mg/L	Grab[5]	Weekly	[4]
Temperature[11]	^0C	Continuous	Continuous	[4]
Total Organic Carbon	mg/L	24-hr composite	Monthly	[4]
Settleable solids	mL/L	Grab[5]	Daily	[4]
Total residual chlorine (Discharge Point 001 only)	mg/L	Grab	Daily	[4]
Dissolved Oxygen	mg/L	Grab	Weekly	[4]
Turbidity	NTU	24-hr composite	Weekly	[4]
Ammonia nitrogen	mg/L	24-hr composite	Weekly	[4]
Toxicity, Acute	TUa	24-hr composite	Monthly	[4]
Toxicity, Chronic	TUc	24-hr composite	Monthly	[4]
Cyanide	µg/L	grab	Monthly	[4]
Nitrate nitrogen	µg/L	24-hr composite	Quarterly	[4]
Organic nitrogen	mg/L	24-hr composite	Quarterly	[4]
Radioactivity[6] (including gross alpha, gross beta, combined radium-226 & radium-228, tritium, strontium-90 and uranium)	pCi/L	24-hr composite	Monthly	[4]
Total phosphorus (as P)	mg/L	24-hr composite	Quarterly	[4]
Tributyltin	ng/L	24-hr composite	Quarterly	[4]
Aldrin	µg/L	24-hr composite	Quarterly	[4]
Chlordane and related compounds[7]	µg/L	24-hr composite	Quarterly	[4]
DDT[7]	µg/L	24-hr composite	Quarterly	[4]
Dieldrin	µg/L	24-hr composite	Quarterly	[4]
Endosulfan[7]	µg/L	24-hr composite	Quarterly	[4]
Endrin	µg/L	24-hr composite	Quarterly	[4]
HCH[7]	µg/L	24-hr composite	Quarterly	[4]
Heptachlor	µg/L	24-hr composite	Quarterly	[4]
Heptachlor epoxide	µg/L	24-hr composite	Quarterly	[4]
PCBs[7]	µg/L	24-hr composite	Quarterly	[4]
PCB congeners[8]	µg/L	24-hr composite	Annually	[4]
Toxaphene	µg/L	24-hr composite	Quarterly	[4]

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Effluent Monitoring Program				
Parameter	**Units**	**Sample Type[1]**	**Minimum Sampling Frequency[2, 10]**	**Required Analytical Test Method**
2,4-Dinitrophenol	µg/L	24-hr composite	Quarterly	[4]
2,4,6-Trichlorophenol	µg/L	24-hr composite	Quarterly	[4]
4,6-Dinitro-2-methylphenol	µg/L	24-hr composite	Quarterly	[4]
Phenolic compounds (chlorinated)[7]	µg/L	24-hr composite	Quarterly	[4]
Phenolic compounds (non-chlorinated)[7]	µg/L	24-hr composite	Quarterly	[4]
Bis(2-chloro-ethoxy) methane	µg/L	24-hr composite	Quarterly	[4]
Bis(2-chloro-isopropyl) ether	µg/L	24-hr composite	Quarterly	[4]
Di-n-butylphthalate	µg/L	24-hr composite	Quarterly	[4]
Dichlorobenzenes[7]	µg/L	24-hr composite	Quarterly	[4]
Diethylphthalate	µg/L	24-hr composite	Quarterly	[4]
Dimethylphthalate	µg/L	24-hr composite	Quarterly	[4]
Fluoranthene	µg/L	24-hr composite	Quarterly	[4]
Hexachlorocyclopentadiene	µg/L	24-hr composite	Quarterly	[4]
Isophorone	µg/L	24-hr composite	Quarterly	[4]
Nitrobenzene	µg/L	24-hr composite	Quarterly	[4]
Benzidine	µg/L	24-hr composite	Quarterly	[4]
Bis(2-chloroethyl) ether	µg/L	24-hr composite	Quarterly	[4]
Bis(2-ethylhexyl) phthalate	µg/L	24-hr composite	Quarterly	[4]
1,4-Dichlorobenzene	µg/L	24-hr composite	Quarterly	[4]
3,3-Dichlorobenzidine	µg/L	24-hr composite	Quarterly	[4]
2,4-Dinitrotoluene	µg/L	24-hr composite	Quarterly	[4]
1,2-Diphenylhydrazine	µg/L	24-hr composite	Quarterly	[4]
Hexachlorobenzene	µg/L	24-hr composite	Quarterly	[4]
Hexachlorobutadiene	µg/L	24-hr composite	Quarterly	[4]
Hexachloroethane	µg/L	24-hr composite	Quarterly	[4]
N-Nitrosodimethylamine	µg/L	24-hr composite	Quarterly	[4]
N-Nitrosodi-n-propylamine	µg/L	24-hr composite	Quarterly	[4]
N-Nitrosodiphenylamine	µg/L	24-hr composite	Quarterly	[4]
PAHs[7]	µg/L	24-hr composite	Quarterly	[4]
TCDD equivalents[7, 13]	µg/L	24-hr composite	Quarterly	[4]
Acrolein	µg/L	Grab	Quarterly	[4]
Acrylonitrile	µg/L	Grab	Quarterly	[4]
Benzene	µg/L	Grab	Quarterly	[4]
Carbon tetrachloride	µg/L	Grab	Quarterly	[4]
Chlorobenzene	µg/L	Grab	Quarterly	[4]
Chlorodibromomethane	µg/L	Grab	Quarterly	[4]
Chloroform	µg/L	Grab	Quarterly	[4]
Dichlorobromomethane	µg/L	Grab	Quarterly	[4]
Dichloromethane	µg/L	Grab	Quarterly	[4]
1,1-Dichloroethylene	µg/L	Grab	Quarterly	[4]
1,2-Dichloroethane	µg/L	Grab	Quarterly	[4]

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Effluent Monitoring Program				
Parameter	**Units**	**Sample Type[1]**	**Minimum Sampling Frequency[2, 10]**	**Required Analytical Test Method**
1,3-Dichloropropene	µg/L	Grab	Quarterly	[4]
Ethylbenzene	µg/L	Grab	Quarterly	[4]
Halomethanes[7]	µg/L	Grab	Quarterly	[4]
Methyl-tert-butyl-ether	µg/L	Grab	Quarterly	[4]
Toluene	µg/L	Grab	Quarterly	[4]
1,1,2,2-Tetrachloroethane	µg/L	Grab	Quarterly	[4]
1,1,1-Trichloroethane	µg/L	Grab	Quarterly	[4]
1,1,2-Trichloroethane	µg/L	Grab	Quarterly	[4]
Tetrachloroethylene	µg/L	Grab	Quarterly	[4]
Trichloroethylene	µg/L	Grab	Quarterly	[4]
Vinyl chloride	µg/L	Grab	Quarterly	[4]
Antimony	µg/L	24-hr composite	Quarterly	[4]
Arsenic	µg/L	24-hr composite	Monthly	[4]
Beryllium	µg/L	24-hr composite	Quarterly	[4]
Cadmium	µg/L	24-hr composite	Monthly	[4]
Chromium (III)	µg/L	24-hr composite	Monthly	[4]
Copper	µg/L	24-hr composite	Monthly	[4]
Hexavalent chromium[9]	µg/L	24-hr composite	Monthly	[4]
Lead	µg/L	24-hr composite	Monthly	[4]
Mercury [13]	µg/L	24-hr composite	Monthly	[4]
Nickel	µg/L	24-hr composite	Monthly	[4]
Selenium	µg/L	24-hr composite	Monthly	[4]
Silver	µg/L	24-hr composite	Monthly	[4]
Thallium	µg/L	24-hr composite	Quarterly	[4]
Zinc	µg/L	24-hr composite	Monthly	[4]

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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 effluent, 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] When continuous monitoring of flow is required, total daily flow and peak daily flow (24-hr basis) shall be reported.

[4] Pollutants shall be analyzed using: the analytical methods described in 40 CFR part 136; where no methods are specified for a given pollutant, by methods approved by this Regional Water Board, the State Water Board and USEPA Region 9. For any pollutant whose effluent limitation is lower than all the minimum levels (MLs) specified in Appendix II of the Ocean Plan, the analytical method with the lowest ML must be selected.

[5] Oil and grease and settleable solids monitoring shall consist of a single grab sample at peak flow over a 24-hour period.

[6] 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 or gross beta results for the same sample exceed 15 pCi/L or 50 pCi/L, respectively. If radium-226 & 228 exceeds the stipulated criteria, then analyze for tritium, strontium-90, and uranium.

[7] See Attachment A for definition of terms.

[8] 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.

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

[10] For Discharge Point 001, the minimum frequency of analysis shall be once per discharge day, but no more than one analysis need be done during the indicated sampling period; however, total chlorine residual shall be monitored daily, and acute toxicity shall not be monitored. During routine maintenance activities, sampling and analyses are not required, except for total chlorine residuals.

[11] For Discharge Point 002, sampling shall be continuous and the maximum daily temperature shall be reported.

[12] USEPA Method 1613 shall be used to analyze TCDD equivalents.

[13] USEPA Method 1631E, with a quantitation level of 0.5 ng/L, shall be used to analyze total mercury.

B. Mass Emission Benchmarks

The following Mass Emission Benchmarks, in metric tons per year (MT/yr), have been established for the discharge through the 5-mile outfall (Discharge Point 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.

Table 4. 12-Month Average Effluent Mass Emission Benchmarks

Ocean Plan 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

Ocean Plan Constituent	12-month Average Mass Emission Benchmarks (MT/yr)
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
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

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Ocean Plan Constituent	12-month Average Mass Emission Benchmarks (MT/yr)
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
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

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Ocean Plan Constituent	12-month Average Mass Emission Benchmarks (MT/yr)
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

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V. WHOLE EFFLUENT TOXICITY TESTING REQUIREMENTS

A. Acute Toxicity Testing for Discharge Point 002

1. Methods and Test Species

   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 the 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.

2. Frequency

   a. Screening - The Discharger shall conduct the first acute toxicity test screening for three consecutive months beginning in 2011. 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.

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

3. 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.

B. Chronic Toxicity Testing for Discharge Points 002 and 001

1. Methods and Test Species.

The Discharger shall conduct critical life stage chronic toxicity tests on flow-weighted, 24-hour composite effluent samples. The presence of chronic toxicity shall be estimated as specified in *Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms* (EPA/600/R-95/136, 1995). 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 Discharge Point 002, the 96-hour acute toxicity statistical endpoint may also be reported as LC50 and TUa, along with other chronic toxicity test results required by this Order/Permit.

2. Frequency

Screening - The Discharger shall conduct the first chronic toxicity test screening for three consecutive months beginning in 2011. 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.

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

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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.

C. Quality Assurance

1. 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).

2. 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.

3. 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.

4. 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 chronic IWCs for Discharge Points 001 and 002 are 7.1% and 1.1% effluent, respectively. 7.1% is the result of 1 divided by 14, which is sum of dilution credit 13 plus 1. 1.1% is the result of 1 divided by 85, which is sum of dilution credit 84 plus 1. The acute IWC for Discharge Point 002 is 35.7% effluent.

5. Following Paragraph 10.2.6.2 of USEPA's chronic freshwater test methods manual (EPA/821/R-02/013, 2002), all chronic toxicity test results from the multi-concentration tests required by this Order/Permit must be reviewed and reported according to USEPA guidance on the evaluation of concentration-response relationships found in Method Guidance and Recommendations for Whole Effluent Toxicity (WET) Testing (40 CFR 136) (EPA/821/B-00-004, 2000).

6. Because this Order/Permit requires sublethal hypothesis testing endpoints from test methods in Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms (EPA/600/R-95/136, 1995), within-test variability must be reviewed for acceptability and a variability criterion (upper %MSD bound) must be applied, as directed under each test method. Based on this review, only accepted effluent toxicity test results shall be reported on the DMR form. If

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excessive within-test variability invalidates a test result, then the Discharger must resample and retest within 14 days.

7. If the discharged effluent is chlorinated, then chlorine shall not be removed from the effluent sample prior to toxicity testing without written approval by the permitting authority.

8. pH drift during the toxicity test may contribute to artifactual toxicity when pH-dependent toxicants (e.g., ammonia, metals) are present in an effluent. To determine whether or not pH drift during the toxicity test is contributing to artifactual toxicity, the Discharger shall conduct three sets of parallel toxicity tests, in which the pH of one treatment is controlled at the pH of the effluent and the pH of the other treatment is not controlled, as described in section 11.3.6.1 of the test methods manual, Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms (EPA/821/R-02/013, 2002). Toxicity is confirmed to be artifactual and due to pH drift when no toxicity above the chronic WET permit limit or trigger is observed in the treatments controlled at the pH of the effluent. If toxicity is confirmed to be artifactual and due to pH drift, then, following written approval by the permitting authority, the Discharger may use the procedures outlined in section 11.3.6.2 of the test methods manual to control sample pH during the toxicity test.

D. Accelerated Monitoring

If the effluent toxicity test result exceeds the toxicity 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 three days of the test results exceeding the toxicity limitation.

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

2. If the result of any of the six additional tests exceeds the toxicity 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.

3. If the results of any two of the six additional tests (any two tests in the 12-week period) exceed the toxicity limitation, then the Discharger shall initiate a Toxicity Identification Evaluation (TIE) and implement the initial investigation Toxicity Reduction Evaluation (TRE) Workplan.

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

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E. 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 Regional Water Board Executive Officer for approval and USEPA within 90 days of the effective date of this Order/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), or most current version, as guidance. At a minimum, the workplan must contain the provisions in Attachment G. This workplan shall describe the steps the Discharger intends to follow if toxicity is detected, and should include, at a minimum:

1. 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.

2. 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,

3. 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 V.F.3 for guidance manuals.

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

1. If results of the implementation of the Initial Investigation TRE Workplan indicate the need to continue the TRE/TIE, then 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:

   a. Further actions to investigate and identify the cause of toxicity;

   b. Actions the Discharger will take to mitigate the impact of the discharge and prevent the recurrence of toxicity; and,

   c. A schedule for these actions.

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

   a. Step 1 includes basic data collection.

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

c. 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.

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

e. Step 5 evaluates in-plant treatment options.

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

3. The Discharger may initiate a Toxicity Identification Evaluation (TIE) as part of a TRE to identify the causes of toxicity using the same species and test method and, as guidance, USEPA test method manuals; Methods for Aquatic Toxicity Identification Evaluations: Phase I Toxicity Characterization Procedures (EPA/600/6-91/003, 1991); Methods for Aquatic Toxicity Identification Evaluations, Phase II Toxicity Identification Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/080, 1993); Methods for Aquatic Toxicity Identification Evaluations, Phase III Toxicity Confirmation Procedures for Samples Exhibiting Acute and Chronic Toxicity (EPA/600/R-92/081, 1993); and Marine Toxicity Identification Evaluation (TIE): Phase I Guidance Document (EPA/600/R-96-054, 1996).

4. If a TRE/TIE is initiated prior to completion of the accelerated testing required in section V.D. 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.

G. Ammonia Removal

1. Except with prior approval from the Regional Water Board Executive Officer 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.

   a. 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.

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b. Chronic ammonia concentrations in the effluent are greater than 4 mg/L total ammonia.

c. 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.

d. 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.

2. 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 Executive Officer and USEPA, and receiving written permission expressing approval from the Executive Officer and USEPA.

H. 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 Order/Permit. Test results shall be reported in Acute Toxic Units (TUa) or Chronic Toxic Units (TUc), as required, with the self-monitoring report (SMR) and 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 V.D, then those results also shall be submitted with the DMR and SMR for the period in which the investigation occurred.

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

2. A full laboratory report for all toxicity testing shall be submitted as an attachment to the SMR and DMR for the month in which the toxicity test was conducted and shall also include: the toxicity test results reported according to the test methods manual chapter on report preparation and test review; the dates of sample collection and initiation of each toxicity test; all results for effluent parameters monitored concurrently with the toxicity test(s); and progress reports on TRE/TIE investigations. Routine reporting shall include, at a minimum, as applicable for each toxicity test:

   a. sample collection date(s)

   b. test initiation date

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c. test species

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

e. LC_{50} value(s) in percent effluent

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

g. NOEC value(s) in percent effluent

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

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

j. IC/EC_{25} value(s) in percent effluent

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

l. Available water quality measurements for each toxicity test (e.g., pH, dissolved oxygen, temperature, conductivity, hardness, salinity, ammonia).

3. The Discharger shall provide a compliance summary that includes a summary table of toxicity data from at least eleven of the most recent effluent samples for toxicity testing.

4. The Discharger shall notify the Regional Water Board and USEPA of any exceedance of a toxicity limitation, in writing, 14 days after the receipt of the test results. 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.

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VI. RECEIVING WATER MONITORING REQUIREMENTS

(For footnotes, see page E-43)

A. Inshore Water Quality Monitoring

This monitoring addresses the question: “Are Ocean Plan and Basin Plan objectives for bacteria being met?” Data collected at inshore stations provide the means to determine whether bacteriological objectives for water contact and shellfish

harvesting are being met in the area of greatest potential for water contact and shellfish harvesting activities most proximal to the points of discharge.

1. The Discharger shall monitor the following 11 inshore stations (Figure 1):

Table 5. Inshore Monitoring Station

Inshore Monitoring Stations					
Station	**Latitude***	**Longitude***	**Station**	**Latitude***	**Longitude***
RW-IS-1	33 59.833	118 48.067	RW-IS-7	33 58.550	118 28.317
RW-IS-2	34 00.950	118 46.967	RW-IS-8	33 57.567	118 27.583
RW-IS-3	34 01.717	118 44.117	RW-IS-9	33 56.900	118 27.133
RW-IS-4	34 01.833	118 40.383	RW-IS-10	33 56.283	118 26.817
RW-IS-5	34 02.050	118 34.833	RW-IS-11	33 50.000	118 23.850
RW-IS-6	34 00.201	118 29.923			
Note: IS-01 to IS-11 shall be sampled at a distance of 100 ft from the shoreline or at the 30-ft depth contour, whichever is further from shore (except that station IS-11 is located at King Harbor in Redondo Beach).					
* Given in decimal minutes.					

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 shown in Table 5.

2. Parameters to be monitored at the 11 stations are as follows:

Table 6. Inshore Microbiological Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total coliform	CFU/100 mL or MPN/100mL	Grab at surface and midwater	Annually (summer)[1]	[15]
Fecal coliform	CFU/100 mL or MPN/100mL	Grab at surface and midwater	Annually (summer)[1]	[15]
Enterococcus	CFU/100 mL or MPN/100mL	Grab at surface and midwater	Annually (summer)[1]	[15]

B. Offshore Water Quality Monitoring

This monitoring addresses the compliance questions: "Are Ocean Plan and Basin Plan objectives for physical and chemical parameters and bacteria being met?" Water quality data collected provide the information necessary to demonstrate compliance with the water quality standards. 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 and covers 200 kilometers of coast in Ventura, Los Angeles, and Orange Counties, from the nearshore to approximately 10 kilometers offshore. This cooperative program contributes to a regional understanding of seasonal patterns in water column structure. The regional view provides context for determining the

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significance and causes of locally observed patterns in the area of wastewater outfalls.

1. The Discharger shall monitor the following 54 offshore stations (Figure 3):

Table 7. Offshore Monitoring Stations

Offshore Monitoring Stations										
Station	Latitude*		Longitude*			Station	Latitude*		Longitude*	
RW-OS-3201	33	51.250	118	24.367		RW-OS-3604**	33	56.416	118	30.586
RW-OS-3202	33	50.917	118	25.067		RW-OS-3605**	33	55.666	118	32.133
RW-OS-3203	33	50.717	118	25.583		RW-OS-3606**	33	55.000	118	33.500
RW-OS-3204**	33	50.217	118	26.433		RW-OS-3701	33	59.166	118	29.166
RW-OS-3205**	33	49.433	118	27.817		RW-OS-3702	33	58.800	118	30.000
RW-OS-3206	33	49.466	118	29.567		RW-OS-3703	33	58.450	118	30.600
RW-OS-3301	33	53.583	118	25.633		RW-OS-3704**	33	58.000	118	31.533
RW-OS-3302	33	53.350	118	26.183		RW-OS-3705**	33	57.216	118	33.216
RW-OS-3303	33	53.133	118	26.800		RW-OS-3706**	33	56.550	118	34.500
RW-OS-3304**	33	52.767	118	27.417		RW-OS-3801	34	2.000	118	35.000
RW-OS-3305**	33	52.100	118	29.600		RW-OS-3802	34	1.550	118	35.250
RW-OS-3306**	33	51.067	118	31.633		RW-OS-3803	34	0.350	118	35.833
RW-OS-3401	33	54.150	118	25.950		RW-OS-3804**	33	59.600	118	36.250
RW-OS-3402	33	54.000	118	26.833		RW-OS-3805**	33	58.333	118	36.850
RW-OS-3403	33	54.066	118	27.600		RW-OS-3806	33	57.366	118	37.416
RW-OS-3404**	33	53.816	118	28.116		RW-OS-3901	34	1.650	118	43.000
RW-OS-3405**	33	53.233	118	30.383		RW-OS-3902	34	1.166	118	43.000
RW-OS-3406**	33	52.750	118	32.133		RW-OS-3903	34	0.666	118	43.000
RW-OS-3501	33	55.883	118	26.883		RW-OS-3904**	33	59.850	118	43.000
RW-OS-3502	33	55.666	118	27.616		RW-OS-3905	33	57.616	118	43.000
RW-OS-3503	33	55.433	118	28.350		RW-OS-3906	33	56.566	118	43.000
RW-OS-3504**	33	55.000	118	29.650		RW-OS-4001	33	59.716	118	48.316
RW-OS-3505**	33	54.550	118	31.516		RW-OS-4002	33	59.300	118	48.316
RW-OS-3506**	33	54.000	118	32.983		RW-OS-4003**	33	58.833	118	48.316
RW-OS-3601	33	57.584	118	27.975		RW-OS-4004	33	57.500	118	48.316
RW-OS-3602	33	57.333	118	28.666		RW-OS-4005	33	55.683	118	48.316
RW-OS-3603	33	56.966	118	29.416		RW-OS-4006	33	54.750	118	48.316

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

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2. Parameters to be monitored at the 54 offshore stations are as follows:

Table 8. Offshore Water Quality Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Dissolved oxygen	mg/L	continuous profile[3]	quarterly	[15]
Water temperature	°C	continuous profile[3]	quarterly	[15]
Salinity	ppt	continuous profile[3]	quarterly	[15]
Transmissivity	% transmission	continuous profile[3] or Beam C	quarterly	[15]
Chlorophyll a	µg/L	continuous profile[3]	quarterly	[15]
pH	pH units	continuous profile[3]	quarterly	[15]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Ammonia	µg/L	discrete sampling at specified depth[2]	quarterly	[15]
Fecal coliform	CFU/100 mL or MPN/100mL	discrete sampling at specified depth[2]	quarterly	[15]
Total coliform	CFU/100 mL or MPN/100mL	discrete sampling at specified depth[2]	quarterly	[15]
Enterococcus	CFU/100 mL or MPN/100mL	discrete sampling at specified depth[2]	quarterly	[15]
Visual observations[4]	---	---	quarterly	[15]

3. Sampling Design- Fifty-four offshore water quality stations shall be sampled quarterly by a CTD profiler (see Figure 1). Water quality methods and protocols shall follow those described in the most current edition of the Field Operations Manual for Marine Water Column, Benthic, and Trawl Monitoring in Southern California. Visual observations shall be recorded at each station.

   Concurrent with the CTD profiling survey, discrete samples shall be collected quarterly at all 21 offshore discrete sampling stations for ammonia and fecal coliform, 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 Table 7.

4. Whenever there is any discharge to the 1-mile outfall (Discharge Point 001), the following additional offshore sampling shall be conducted at Station A-2 (see Benthic and Trawl Stations table in Benthic Sediments Monitoring under Table 1 and Figure 2) and two additional stations within approximately 50 feet of the discharge point:

Table 9. Additional Offshore Water Quality Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total chlorine residual	µg/L	Grab[2,5]	Once per discharge day	[15]
Fecal coliform	CFU/100 mL or MPN/100mL	Surface & bottom grab[6]	Once per discharge day	[15]
Total coliform	CFU/100 mL or MPN/100mL	Surface & bottom grab[6]	Once per discharge day	[15]
Enterococcus	CFU/100 mL or MPN/100mL	Surface & bottom grab[6]	Once per discharge day	[15]

C. Benthic Infauna and Sediment Chemistry Monitoring

1. Local Benthic Trends Survey

   This survey addresses the question: “Are benthic conditions under the influence of the discharge changing over time?” The data collected are used for regular

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assessment of trends in sediment contamination and biological response along a fixed grid of sites within the influence of the discharge.

a. Sampling Design - Benthic infauna and sediment chemistry monitoring stations in Table 10 shall be sampled in summer (July – September) for the parameters in Table 11. Separate samples shall be collected for benthic infauna and sediment chemistry.

Forty-four benthic monitoring stations (24 fixed stations plus one set of 20 random stations) shall be sampled annually for benthic infauna community analysis[7]. Random station sets A and B shall be sampled in alternate years. The entire contents of each sample shall be passed through a 1.0 millimeter screen to retrieve the benthic organisms. Sampling methods and protocols shall follow those described in the most current edition of the Field Operations Manual for Marine Water Column, Benthic, and Trawl Monitoring in Southern California.

Table 10. Benthic infauna, Sediment Chemistry, and Trawl Monitoring Stations

Benthic and Trawl Monitoring Stations

Station	Latitude*		Longitude*	
FIXED GRID STATIONS				
RW-A-1 (T)	33	59.183	118	30.117
RW-A-2	33	55.117	118	26.883
RW-A-3 (T)	33	52.050	118	25.000
RW-B-1	34	00.417	118	42.933
RW-B-3	34	00.350	118	35.833
RW-B-5	33	57.983	118	31.533
RW-B-6	33	56.467	118	30.567
RW-B-7	33	55.283	118	29.500
RW-B-8	33	53.800	118	28.450
RW-B-10	33	50.483	118	24.940
RW-C-1 (T)	33	59.833	118	43.050
RW-C-3 (T)	33	59.383	118	36.033
RW-C-5	33	57.167	118	33.233
RW-C-6 (T)	33	55.683	118	32.083
RW-C-7	33	53.583	118	32.250
RW-C-8	33	52.750	118	31.417
RW-C-9A (T)	33	51.283	118	26.283
RW-D-1 (Benthic)	33	54.700	118	33.000
RW-D-1T (T)**	33	54.805	118	32.215
RW-E-1	33	59.057	118	42.867
RW-E-3	33	58.317	118	36.867
RW-E-6	33	55.700	118	33.417
RW-E-10	33	49.405	118	27.880
RW-Z-1	33	54.883	118	31.500
RW-Z-2 (T)	33	54.450	118	31.467
RW-Z-3 (T)**	33	54.005	118	30.395
RW-Z-4 (T)**	33	57.082	118	30.579
YEAR 1 RANDOM STATIONS				
RW-NA-1	33	53.396	118	31.190
RW-NA-2	33	54.054	118	30.907
RW-NA-3	33	54.199	118	32.025
RW-NA-4	33	55.061	118	30.380
RW-NA-5	33	55.167	118	31.114
RW-NA-6	33	56.041	118	31.636
RW-FA-7	33	52.397	118	29.837
RW-FA-8	33	52.675	118	32.650
RW-FA-9	33	52.981	118	29.263
RW-FA-10	33	53.132	118	30.983
RW-FA-11	33	53.594	118	30.105
RW-FA-12	33	53.870	118	29.438
RW-FA-13	33	54.398	118	34.130
RW-FA-14	33	54.874	118	28.602
RW-FA-15	33	55.073	118	33.387
RW-FA-16	33	55.966	118	30.050
RW-FA-17	33	56.086	118	33.208
RW-FA-18	33	56.612	118	29.351
RW-FA-19	33	56.671	118	32.167
RW-FA-20	33	57.157	118	31.470
RW-Random1A (T)**	33	54.874	118	28.602
RW-Random2A (T)**	33	52.397	118	29.837
RW-Random3A (T)**	33	51.451	118	28.185
YEAR 2 RANDOM STATIONS				
RW-NB-1	33	54.325	118	33.022
RW-NB-2	33	54.490	118	30.105
RW-NB-3	33	54.883	118	32.057
RW-NB-4	33	54.905	118	30.594
RW-NB-5	33	55.261	118	32.981
RW-NB-6	33	55.620	118	29.888
RW-NB-7	33	55.670	118	31.887
RW-NB-8	33	56.212	118	30.826
RW-FB-9	33	52.493	118	31.105
RW-FB-10	33	53.017	118	29.854
RW-FB-11	33	53.087	118	33.191
RW-FB-12	33	53.249	118	30.759
RW-FB-13	33	53.282	118	29.015
RW-FB-14	33	53.616	118	33.900
RW-FB-15	33	54.194	118	28.841
RW-FB-16	33	55.102	118	29.375
RW-FB-17	33	56.220	118	33.825
RW-FB-18	33	56.407	118	29.231
RW-FB-19	33	56.690	118	31.871
RW-FB-20	33	56.858	118	30.287
RW-Random1B (T)**	33	56.220	118	33.825
RW-Random2B (T)**	33	56.407	118	29.231
RW-Random3B (T)**	33	53.017	118	29.854

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

T E N T A T I V E

For benthic infauna community analysis, 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 shall conduct additional statistical analyses to determine temporal and spatial trends in the marine environment.

Forty-four benthic monitoring stations (24 fixed stations plus one set of 20 random stations) shall also be sampled annually for Grain Size (sufficiently detailed to calculate percent weight in relation to phi size) and TOC; random station sets A and B shall be sampled in alternate years. Four benthic monitoring stations (RW- C1, C6, Z2, and E6) shall be sampled annually for Dissolved Sulfides. Nine benthic monitoring stations (RW- Z2, C1, C3, C6, C7, RW-C8, C9a, D1, and E6) shall be sampled annually for selected priority pollutants and compounds on the local 303(d) list; see Table 11. All 64 benthic monitoring stations (24 fixed stations plus both sets of 20 random stations) shall be sampled in year five of the Order/Permit for selected priority pollutants and compounds on the local 303(d) list; see Table 11.

Table 11. Benthic infauna and Sediment Chemistry Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Benthic Infauna	--	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Grain Size	Phi size	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Total organic carbon	mg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Dissolved Sulfides	mg/kg	0.1 square meter Van Veen grab (upper 2 centimeters, porewater)	Annually	[15]
Organic nitrogen	mg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Priority Pollutants for Sediment Chemistry				
Arsenic	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Cadmiuim	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Chromium	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Copper	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Lead	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Mercury	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Nickel	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Silver	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Zinc	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Total DDT[13]	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
DDT derivatives	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total PCB	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
PCB derivatives	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]
Compounds on local 303(d) list	µg/kg	0.1 square meter Van Veen grab (upper 2 centimeters)	Annually	[15]

2. Local Benthic Mapping Survey

   a. Sampling Design - The benthic monitoring station array utilized 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 2009 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 Regional Water Board Executive Officer and USEPA.

3. Regional Benthic Survey

   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 biological communities in the Bight.

   Sampling Design- A regional survey of benthic conditions within the Southern California Bight took place in 2008 (Bight '08). The final survey design was determined cooperatively by participants represented on the Regional Steering Committee. The Discharger provided support to the Bight '08 benthic survey by participating in or performing the following activities:

      Participation on the Steering Committee

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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 2008, 2003, and 1998 Regional Benthic Surveys. The next regional survey is expected to take place in 2013 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 Macroinvertebrates Survey

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.

Sampling Design – Ten trawl monitoring stations (7 fixed stations plus one set of 3 random stations; see Table 12) shall be sampled in winter (January – March) and summer (July – September) for demersal fish and epibenthic invertebrates, using 10-minute otter trawls. Random station sets A and B shall be sampled in alternate years. Sampling methods and protocols shall follow those described in the most current edition of the Field Operations Manual for Marine Water Column, Benthic, and Trawl Monitoring in Southern California.

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Table 12. Demersal Fish and Macroinvertebrates Monitoring Stations

Trawl Monitoring Stations

Station	Latitude*	Longitude*	Station	Latitude*	Longitude*
FIXED GRID STATION			**YEAR 1 RANDOM STATIONS**		
RW-C-1 (T)	33 59.833	118 43.050	RW-Random1A (T)**	33 54.874	118 28.602
RW-C-3 (T)	33 59.383	118 36.033	RW-Random2A (T)**	33 52.397	118 29.837
RW-C-6 (T)	33 55.683	118 32.083	RW-Random3A (T)**	33 51.451	118 28.185
RW-Z-2 (T)	33 54.450	118 31.467			
RW-Z-3 (T)**	33 54.005	118 30.395	**YEAR 2 RANDOM STATIONS**		
RW-Z-4 (T)**	33 57.082	118 30.579	RW-Random1B (T)**	33 56.220	118 33.825
			RW-Random2B (T)**	33 56.407	118 29.231
			RW-Random3B (T)**	33 53.017	118 29.854

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

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 at 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 shall conduct additional statistical analyses to determine temporal and spatial trends in the marine environment.

2. Regional Demersal Fish and Invertebrates Survey

This survey addresses the questions: 1) "What is the extent, distribution, magnitude and trend of ecological change in demersal fish and epibenthic invertebrate communities 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 health of biological resources in the Bight.

Sampling Design – A regional survey of trawl-caught demersal fish and epibenthic invertebrates within the Southern California Bight took place in 2008 (Bight '08). The final survey design was determined cooperatively by the participants as represented in the Regional Steering Committee. The Discharger provided support to the Bight '08 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 2008, 2003, and 1998 Regional Surveys. The next regional survey is expected to take place in 2013 and the Discharger's level of participation shall be consistent with that provided in previous surveys.

3. Bioaccumulation Monitoring

a. Local Bioaccumulation Trends Survey

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.

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Sampling Design – Three survey sites (Table 13) shall be sampled annually for the parameters in Table 14. The composite sample for muscle tissue and the composite sample for liver tissue for a survey site can be taken from any station within that survey site.

Table 13. Bioaccumulation Sampling Zones

Station Type	Monitoring Location Name	Monitoring Location Description
Bottom Station	RW-BA-Z4	**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.
Bottom Station	RW-BA-Z5	**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.
Bottom Station	RW-BA-NF	**Nearfield:** A 2-km radius around the 5-mile outfall (Discharge Point 002).

Table 14. Bioaccumulation Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
% moisture	%	Composite of liver tissue from 10 individuals of hornyhead turbot	annually	[15]
		Composite of muscle tissue from 10 individuals of hornyhead turbot	annually	[15]
% lipid	%	Composite of liver tissue from 10 individuals of hornyhead turbot	annually	[15]
		Composite of muscle tissue from 10 individuals of hornyhead turbot	annually	[15]
Arsenic	µg/kg	Composite of liver tissue from 10 individuals of hornyhead turbot	annually	[15]
		Composite of muscle tissue from 10 individuals of hornyhead turbot	annually	[15]
Selenium	µg/kg	Composite of liver tissue from 10 individuals of hornyhead turbot [1]	annually	[15]

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Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
		Composite of muscle tissue from 10 individuals of hornyhead turbot	annually	[15]
Mercury	µg/kg	Composite of liver tissue from 10 individuals of hornyhead turbot [ ]	annually	[15]
		Composite of muscle tissue from 10 individuals of hornyhead turbot	annually	[15]
Total DDT [13]	µg/kg	Composite of liver tissue from 10 individuals of hornyhead turbot	annually	[15]
		Composite of muscle tissue from 10 individuals of hornyhead turbot[ ]	annually	[15]
DDT derivatives[8]	µg/kg	Composite of liver tissue from 10 individuals of hornyhead turbot	annually	[15]
		Composite of muscle tissue from 10 individuals of hornyhead turbot	annually	[15]
Total PCB [14]	µg/kg	Composite of liver tissue from 10 individuals of hornyhead turbot	annually	[15]
		Composite of muscle tissue from 10 individuals of hornyhead turbot	annually	[15]
PCB derivatives [9]	µg/kg	Composite of liver tissue from 10 individuals of hornyhead turbot	annually	[15]
		Composite of muscle tissue from 10 individuals of hornyhead turbot	annually	[15]

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b. Local Seafood Safety Survey

This survey addresses the 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.

Sampling Design – A regionally coordinated survey covering Santa Monica Bay employing the sampling design proposed by the Santa Monica Bay Restoration Commission (SMBRC). During years one, three, and five of this Order/Permit, two survey sites (Table 15) shall be sampled annually (late

summer/early fall)—focusing on a consistent size class of fish—for the parameters in Table 16. The composite sample for muscle tissue for a survey site can be taken from any station within that survey site.

Table 15. Seafood Safety Survey Zones

Station Type	Monitoring Location Name	Monitoring Location Description
Bottom Station	RW-BA-Z4	**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.
Bottom Station	RW-BA-Z5	**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.

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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*).

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:

Table 16. Seafood Safety Monitoring Requirements

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
% moisture	%	Composite of muscle tissue from 10 individuals of each of 5 species [10]	Annually during years 1, 3 and 5	[15]
% lipid	%	Composite of muscle tissue from 10 individuals of each of 5 species [10]	Annually during years 1, 3 and 5	[15]
Arsenic	µg/kg	Composite of muscle tissue from 10 individuals of each of 5 species [10]	Annually during years 1, 3 and 5	[15]
Mercury	µg/kg	Composite of muscle tissue from 10 individuals of each of 5 species [10]	Annually during years 1, 3 and 5	[15]

Parameter	Units	Sample Type	Minimum Sampling Frequency	Required Analytical Test Method
Total DDT [5]	µg/kg	Composite of muscle tissue from 10 individuals of each of 5 species [10]	Annually during years 1, 3 and 5	[15]
DDT derivatives [6]	µg/kg	Composite of muscle tissue from 10 individuals of each of 5 species [10]	Annually during years 1, 3 and 5	[15]
Total PCB [7]	µg/kg	Composite of muscle tissue from 10 individuals of each of 5 species [10]	Annually during years 1, 3 and 5	[15]
PCB derivatives [8]	µg/kg	Composite of muscle tissue from 10 individuals of each of 5 species [10]	Annually during years 1, 3 and 5	[15]

c. Regional Seafood Safety Survey

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.

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.

d. Regional Predator Risk Survey

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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.

Sampling Design- A regional survey of whole fish body burdens of contaminants within the Southern California Bight took place in 2008 (Bight '08). The final survey design was determined cooperatively by participants represented on the Regional Steering Committee. The Discharger provided support to the Bight '08 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 2008, 2003, and 1998 Regional Predator Risk Survey. The next regional survey is expected to occur in 2013 and the Discharger's level of participation shall be consistent with that provided in previous surveys.

E. 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 Discharger shall participate in the Central Region Kelp Survey Consortium (CRKSC) to conduct regional kelp bed monitoring in Southern California coastal waters. The CRKSC design is based upon quarterly measures of kelp canopy extent using aerial imaging. The Discharger shall provide up to $10,000 per year in financial support to the CRKSC (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 SMBRC'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, total coliform, enterococcus, and total residual chlorine shall be done below the surface within 1 m (3.1 ft) and 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 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.

15 Pollutants shall be analyzed using: the analytical methods described in 40 CFR part 136; where no methods are specified for a given pollutant, by methods approved by this Regional Water Board, State Water Board, and USEPA Region 9.

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VII. OTHER MONITORING REQUIREMENTS

A. Special Study- Constituents of Emerging Concern in Effluent

Background

Advancements in analytical technology over the last decade have dramatically increased the number of chemicals that can be detected and greatly decreased the concentrations at which chemicals can be detected. This new ability to detect trace levels of chemical concentrations has expanded the existing understanding of the kinds of contaminants present in water and wastewater. Many man-made chemicals, particularly pesticides, pharmaceuticals and personal care products, have been found in waters across the United States.

Collectively, these compounds are referred to as Emerging Constituents (ECs) or Contaminants of Emerging Concern (CECs) because their presence is starting to be revealed by rapid advances in analytical technology. Despite recent improvements in analytical science, there is still scarcity of data and lack of robust methodologies for measuring most CECs. CECs are part of the unregulated chemicals, for which no water quality standards or State notification levels have been established.

Recent publications and media reports on CECs have increased public awareness of the issue, providing an impetus for CEC investigations around the country, including local efforts by the City of Los Angeles and Southern California Coastal Water Research Project (SCCWRP). For instance, starting in 2009, the City of Los Angeles has been conducting a special study as part of Order No. 2005-0020, and results suggest that the presence of natural and synthetic estrogen hormones has caused feminization of male fish (hornyhead turbot) in Santa Monica Bay, especially near the Hyperion Treatment Plant outfall. In January 2010, SCCWRP convened a workshop where 50 scientists, water quality managers, and stakeholders discussed and collaborated on developing an effective CEC monitoring and management strategy that is protective of water quality. Anticipated outcomes of this workshop include recommended lists of CECs for monitoring in recycled water (for groundwater concerns) by the end of 2010, and for monitoring in ambient waters, including ocean waters, by the summer of 2011.

In recent years, this Regional Water Board has incorporated monitoring of a select group of CECs into the NPDES permits issued to POTWs.

CEC Special Study Requirements

1. The Discharger shall initiate an investigation of CECs by conducting a special study. Specifically, within 6 months of the effective date of this Order/Permit, the Discharger shall develop a CEC Special Study Work Plan (Work Plan) and submit for approval by the Regional Water Board Executive Officer and USEPA Director. Immediately upon approval of the Work Plan, the Discharger shall fully implement the Special Study.

   This Work Plan shall include, but not be limited to, the following:

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i. Identification of CECs to be monitored in the effluent, sample type (e.g. 24-hour composite), sampling frequency, and sampling methodology. Table 17 identifies the minimum parameters to be monitored.

Table 17. Effluent Monitoring of CECs

Parameter	Units	Sample Type	Minimum Sampling Frequency	Analytical Test Method and (Minimum Level, units)
17β-Estradiol	ng/L	To be proposed	Annually[26]	To be proposed
Estrone	ng/L	To be proposed	Annually[26]	To be proposed
Cortisol	ng/L	To be proposed	Annually[26]	To be proposed
11-Ketotesosterone	ng/L	To be proposed	Annually[26]	To be proposed
Bisphenol A	ng/L	To be proposed	Annually[26]	To be proposed
Nonylphenol and nonylphenol polyethoxylates	ng/L	To be proposed	Annually[26]	To be proposed
Octylphenol and octylphenol polyethoxylates	ng/L	To be proposed	Annually[26]	To be proposed
Polybrominated diphenyl ethers	ng/L	To be proposed	Annually[26]	To be proposed
Acetaminophen	ng/L	To be proposed	Annually[26]	To be proposed
Amoxicillin	ng/L	To be proposed	Annually[26]	To be proposed
Azithromycin	ng/L	To be proposed	Annually[26]	To be proposed
Carbamazepine	ng/L	To be proposed	Annually[26]	To be proposed
Ciprofloxacin	ng/L	To be proposed	Annually[26]	To be proposed
Dilantin	ng/L	To be proposed	Annually[26]	To be proposed
Ethylenediamine tetra-acetic acid (EDTA)	ng/L	To be proposed	annually[26]	To be proposed
Gemfibrozil,	ng/L	To be proposed	annually[26]	To be proposed
Ibuprofen	ng/L	To be proposed	annually[26]	To be proposed
Lipitor	ng/L	To be proposed	annually[26]	To be proposed
Methadone	ng/L	To be proposed	annually[26]	To be proposed
Morphine	ng/L	To be proposed	annually[26]	To be proposed
Primidone	ng/L	To be proposed	annually[26]	To be proposed
Sulfamethoxazole	ng/L	To be proposed	annually[26]	To be proposed
Trimethoprim	ng/L	To be proposed	annually[26]	To be proposed
Salicylic acid	ng/L	To be proposed	annually[26]	To be proposed
Triclosan	ng/L	To be proposed	annually[26]	To be proposed
DEET	ng/L	To be proposed	annually[26]	To be proposed

Once the SCCWRP's recommended list of CEC monitoring in ambient waters, including ocean waters, is finalized, the above list of minimum parameters to be monitored by the Discharger and the sampling frequency may be re-evaluated and modified by the Executive Officer and Director. At such time, upon request by the Executive Officer and Director, the Discharger shall monitor the requested CEC parameters at the specified frequency. In the Work Plan, the Discharger may also propose, for consideration and approval by the Executive Officer and Director, surrogate or indicator CECs that may contribute towards a better understanding of CECs in its effluent.

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Sample Type– The Discharger shall propose in the Work Plan the appropriate sample type for each type of constituent.

Sampling Period– At minimum, the Discharger shall monitor the specified CECs once per year. The Work Plan shall propose the appropriate sampling month or quarter for each year, consistent with the goals of the analyses. The rationale for selecting the particular sampling month or quarter shall be explained in the Work Plan.

Analytical Test Methodology – The Discharger shall review and consider all available analytical test methodologies, including but not limited to those listed in USEPA Methods 1694 and 1698, and methodologies approved or utilized by U.S. Geologic Survey, California Department of Public Health, and other federal or State agencies. Based on its review, the Discharger shall propose the most sensitive analytical methodology available.

ii. Characterization of existing CEC data (data collected previous to Special Study). The Discharger shall propose a characterization of all existing CEC data (associated with its effluent or receiving water) that have been collected for various purposes in the past. At minimum, the characterization shall include:

- an identification of all CECs monitored to date (outside of this Special Study);
- monitoring duration, frequency, and date(s) (for example, from 2000-present, annually);
- analytical methodologies employed;
- RL, MLs, and MDLs achieved for each methodology used; and
- Temporal/seasonal trend analyses (using both statistical and graphical demonstration) of CEC data, over time and by season.

iii. Evaluation of CEC data collected as part of this Special Study. The Discharger shall propose an evaluation of CEC data (associated with its effluent) to be collected as part of this special study. At minimum, the characterization shall include:

- an identification of CECs that have been monitored;
- monitoring duration, frequency, and date(s);
- RL, MLs and MDLs achieved for each methodology used;
- a brief update on any improvements (or change) in the analytical methodologies and associated RL, MLs and MDLs achieved for each methodology used; and
- temporal/seasonal trend analyses (using both statistical and graphical demonstration) of CEC data collected as part of this special study.

2. Reporting – By April 15th of each year (starting April 15, 2012), the Discharger shall submit to the Regional Water Board Executive Officer and USEPA Director,

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an annual report summarizing the monitoring results from the previous calendar year. Each annual report shall include a compilation of effluent monitoring data of CECs listed in the approved Work Plan, MLs, sample type, analytical methodology used, sampling date/time, QA/QC information, and an evaluation of cumulative CEC data collected to date as part of this special study (see above for further details on CEC data evaluation). In addition, the first annual report due April 15, 2012 shall include a characterization of existing CEC data, i.e., all data collected outside of this special study (see above for further details on existing CEC data characterization).

B. Outfall and Diffuser Inspection

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

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.

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C. Biosolids and Sludge Management

The Discharger must comply with all Clean Water Act and regulatory requirements of 40 CFR 257, 258, 501, and 503, including all applicable monitoring, record keeping, and reporting requirements. The Discharger must comply with the requirements in Attachment H of this Order/Permit.

D. Hauling Reports

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

   a. Types of wastes and quantity of each type;
   b. 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
   c. Location of the final point(s) of disposal for each type of wastes.

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

VIII. REPORTING REQUIREMENTS

A. General Monitoring and Reporting Requirements

1. The Discharger shall comply with all Standard Provisions (Attachment D) related to monitoring, reporting, and recordkeeping.

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

3. 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 Order/Permit using approved analytical methods, the results of those analyses shall be included in the monitoring report. These results shall be reflected in the calculation of the average (or median) used in demonstrating compliance with this Order/Permit.

4. The date and time of sampling (as appropriate) shall be reported with the analytical values determined.

5. Influent and effluent analyses shall be performed on different days of the week during each month. 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 cannot be done during these specified months, the Discharger must notify the Regional Water Board and USEPA, state the reason why the monitoring cannot be conducted, and obtain approval from the Regional Water Board Executive Officer and USEPA for an alternate schedule. Results of quarterly, semiannual, and annual analyses shall be reported by the 15th of the second month following the analysis.

6. Pollutants shall be analyzed using the analytical methods described in 40 CFR 136; or where no methods are specified for a particular pollutant, by methods approved by the Regional Water Board Executive Officer, in consultation with the State Water Board's Quality Assurance Program, and USEPA. For any analyses performed for which no procedure is specified in USEPA guidelines or in the MRP, the constituent or parameter analyzed and the method or procedure used must be specified in the monitoring report.

7. The laboratory conducting analyses shall be certified by the California Department of Public Health Environmental Laboratory Accreditation Program (ELAP), in accordance with CWC section 13176, or approved by the Regional Water Board Executive Officer, in consultation with the State Water Board's Quality Assurance Program, and USEPA for that particular parameter, and must include quality assurance/quality control (QA/QC) data in their reports. A copy of the laboratory

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certification shall be provided each time a new/renewal certification is obtained from ELAP and must be submitted with the annual summary report. Each monitoring report must affirm in writing that: "All analyses were conducted at a laboratory certified for such analyses by the California Department of Public Health, or approved by the Regional Water Board Executive Officer (in consultation with the State Water Board's Quality Assurance Program) and USEPA, and in accordance with current USEPA guideline procedures or as specified in this MRP."

8. 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 this documentation when requested by the Regional Water 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.

9. The Discharger shall calibrate and perform maintenance procedures on all monitoring instruments to insure accuracy of measurements.

10. The Discharger shall report with each sample result in the monitoring reports: the analytical method used, the Method Detection Limit (MDL) as determined by the procedure in 40 CFR 136, and the Reporting Level (RL) [the applicable minimum level (ML) or reported Minimum Level (RML)] for each pollutant. The MLs are those published by the State Water Board in Appendix II of the 2005 Ocean Plan. The ML represents the lowest quantifiable concentration in a sample based on the proper application of all method-based analytical procedures and the absence of any matrix interference. When all specific analytical steps are followed and after appropriate application of method specific factors, the ML also represents the lowest standard in the calibration curve for that specific analytical technique. When there is deviation from the analytical method for dilution or concentration of samples, other factors are applied to the ML depending on the sample preparation. The resulting value is the reported Minimum Level.

11. The Discharger shall select the analytical method that provides a ML lower than the effluent limitation or performance goal established for a given parameter, or where no such requirement exists, the lowest applicable water quality objective in the Ocean Plan. If the effluent limitation or performance goal, or the lowest applicable water quality objective, is lower than all the MLs in Appendix II of the 2005 Ocean Plan, the Discharger must select the method with the lowest ML for compliance purposes. The Discharger shall include in the annual summary reports a list of the analytical methods and MLs employed for each test.

12. Non-detect levels reported for the Hyperion effluent are generally higher than effluent limitations or water quality objectives for DDT, chlordane, PCBs and PAHs. Therefore, the Discharger shall strive for lower analytical detection levels than those specified in Appendix II of the 2005 Ocean Plan to facilitate pollutant load quantification for future DDT, chlordane, PCBs and PAHs TMDLs.

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13. 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 14 below, the Discharger's laboratory may employ a calibration standard lower than the ML in Appendix II of the 2005 Ocean Plan.

14. Upon request by the Discharger, the Regional Water Board, in consultation with the State Water Board's Quality Assurance Program and/or USEPA, may establish an ML that is not contained in Appendix II of the 2005 Ocean Plan, to be included in the Discharger's NPDES permit, in any of the following situations:

    a. When the pollutant under consideration is not included in Appendix II;
    b. When the Discharger agrees to use a test method that is more sensitive than those specified in 40 CFR 136 (most recent revision);
    c. When the Discharger agrees to use an ML lower than those listed in Appendix II;
    d. When the Discharger demonstrates that the calibration standard matrix is sufficiently different from that used to establish the ML in Appendix II and proposes an appropriate ML for their matrix; or
    e. 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 Water Board, State Water Board and USEPA, shall agree on a lowest quantifiable limit, and that limit will substitute for the ML for reporting and compliance determination purposes.

15. The Discharger shall report the results of analytical determinations for the presence of chemical constituents in a sample using the following reporting protocols:

    a. Sample results greater than or equal to the reported ML shall be reported as measured by the laboratory (i.e., the measured chemical concentration in the sample).
    b. Sample results less than the reported ML, but greater than or equal to the laboratory's MDL, shall be reported as "Detected, but Not Quantified," or DNQ. The estimated chemical concentration of the sample shall also be reported. For the purposes of data collection, the laboratory shall write the estimated chemical concentration next to DNQ as well as the words "Estimated Concentration" (may be shortened to "Est. Conc.").
    c. Sample results less than the laboratory's MDL shall be reported as "Not Detected," or ND.

16. For bacterial analyses, sample dilutions should be performed so the expected range of values is bracketed (for example, with multiple tube fermentation method or

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membrane filtration method, 2 to 16,000 per 100 ml for total and fecal coliforms, 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. Detection methods used for coliforms (total and fecal) and enterococcus shall be those presented in Table 1A of 40 CFR 136 (most recent revision).

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

    a. A description of climatic and receiving water characteristics at the time of sampling (weather observations, unusual or abnormal amounts of floating debris, discoloration, wind speed and direction, swell or wave action, time of sampling or measurements, tidal stage and height, etc.).
    b. The date, exact place and description of sampling stations, including differences unique to each station (e.g., date, time, station location, depth, and sample type).
    c. 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.
    d. A description of the specific method used for laboratory analysis, the date(s) the analyses were performed and the individuals participating in these analyses.
    e. An in-depth discussion of the results of the survey. All tabulations and computations shall be explained.

18. The Discharger shall arrange all reported data in a tabular format. The data shall be summarized to clearly illustrate whether the facility is operating in compliance with this Order/Permit.

19. The Discharger shall attach a cover letter to the monitoring reports. The information contained in the cover letter shall clearly identify violations of the Order/Permit; discuss corrective actions taken or planned; and the proposed time schedule for corrective actions. Identified violations must include a description of the requirement that was violated and a description of the violation.

20. All reports must be submitted to the Regional Water Board and USEPA, signed and certified as required by the Standard Provisions (Attachment D), to the addresses listed below. (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 W. 4th Street, Suite 200
    Los Angeles, CA 90013
    Attention: Information Technology Unit

    Regional Administrator

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United States Environmental Protection Agency, Region IX
NPDES Data Team (WTR-1)
75 Hawthorne Street
San Francisco, CA 94105

B. Self Monitoring Reports (SMRs) and Discharge Monitoring Reports (DMRs)

1. At any time during the term of this Order/Permit, the State or Regional Water Board may notify the Discharger to electronically submit Self-Monitoring Reports (SMRs) using the State Water Board's California Integrated Water Quality System (CIWQS) Program web site (http://www.waterboards.ca.gov/ciwqs/ index.html). Until such notification is given, the Discharger shall submit hard copy SMRs. The CIWQS web site will provide additional directions for SMR submittal in the event there will be service interruption for electronic submittal.

2. The Discharger shall report in the SMR/with the DMR the results for all monitoring specified in this Order/Permit. The Discharger shall submit monthly SMRs/DMRs including the results of all required monitoring using USEPA-approved test methods or other test methods specified in this Order/Permit. If the Discharger monitors any pollutant more frequently than required by this Order/Permit, the results of this monitoring shall be included in the calculations and reporting of the data submitted in the monitoring reports.

3. Monitoring periods and reporting for required monitoring shall be completed according to the following schedule, except where specific monitoring periods and reporting dates are required elsewhere in this Order/Permit:

Table 18. Monitoring Periods and Reporting Schedule

Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	Monitoring Report Due Date
Continuous	Order/Permit effective date	All	By the 15th day of the second month after the month of sampling
Hourly	Order/Permit effective date	Hourly	By the 15th day of the second month after the month of sampling
Daily	Order/Permit effective date	(Midnight through 11:59 PM) or any 24-hour period that reasonably represents a calendar day for purposes of sampling	By the 15th day of the second month after the month of sampling
Weekly	Sunday following Order/Permit effective date (or on	Sunday through Saturday	By the 15th day of the second month

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Sampling Frequency	Monitoring Period Begins On…	Monitoring Period	Monitoring Report Due Date
	Order/Permit effective date if that date is Sunday)		after the month of sampling
Monthly	First day of calendar month following Order/Permit effective date (or on Order/Permit effective date if that date is first day of month)	1st day of calendar month through last day of calendar month	By the 15th day of the second month after the month of sampling
Quarterly	Closest of January 1, April 1, July 1, or October 1 following (or on) Order/Permit effective date	January 1 through March 31 April 1 through June 30 July 1 through September 30 October 1 through December 31	May 15 August 15 November 15 February 15
Semiannually	Closest of January 1 or July 1 following (or on) Order/Permit effective date	January 1 through June 30 July 1 through December 31	August 15 February 15
Annually	January 1 following (or on) Order/Permit effective date	January 1 through December 31	February 15

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4. The Discharger shall submit hard copy SMRs in accordance with the following requirements:

   a. The Discharger is not required to duplicate the submittal of data that is entered in a tabular format within CIWQS. When electronic submittal of data is required and CIWQS does not provide for entry into a tabular format within the system, the Discharger shall electronically submit the data in a tabular format as an attachment.

   b. SMRs must be submitted to the Regional Water Board, signed and certified as required by the Standard Provisions (Attachment D), to the address listed below. (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

5. The Discharger shall submit hard copy DMRs in accordance with the following requirements:

a. As described in section VIII.B.1 above, at any time during the term of this Order/Permit, the State or Regional Water Board may notify the Discharger to electronically submit SMRs that will satisfy federal requirements for submittal of Discharge Monitoring Reports (DMRs). Until such notification is given, the Discharger shall submit DMRs in accordance with the requirements described below.

b. DMRs must be signed and certified as required by the Standard Provisions (Attachment D). The Discharger shall submit the original DMR and one copy of the DMR to the State Water Board address listed below. The Discharger shall submit one copy of the DMR to the USEPA address listed below:

Standard Mail	**FedEx/UPS/Other Private Carriers**
State Water Resources Control Board Division of Water Quality c/o DMR Processing Center PO Box 100 Sacramento, CA 95812-1000	State Water Resources Control Board Division of Water Quality c/o DMR Processing Center 1001 I Street, 15th Floor Sacramento, CA 95814
U.S. EPA, Region 9 ATTN: NPDES Data Team (WTR-1) 75 Hawthorne Street San Francisco, CA 94105-3901	

c. All discharge monitoring results must be reported on the official USEPA pre-printed DMR forms (EPA Form 3320-1). Forms that are self-generated must be approved by USEPA.

C. Other Reports

1. Annual Summary Report

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 Water 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. 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 Order/Permit requirements.

The first annual report shall be due April 15, 2011, covering the sampling period from January 2010 – December 2010.

2. Receiving Water Monitoring Report

By August 1 of every other year, a detailed receiving water monitoring biennial assessment report of the data collected during the two previous calendar sampling

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years (January – December) shall be prepared and submitted to the Regional Water Board and USEPA. This report shall include an annual data summary and shall also include an in-depth analysis of the biological, chemical, and physical 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 biennial report shall be due August 1, 2012, covering sampling period from January 2009 – December 2010.

3. Outfall Inspection Report

   By August 1 of each year, a summary report of the Outfall Inspection findings for the previous calendar year shall be prepared and submitted to the Regional Water Board and USEPA. 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.

   The first summary report shall be due August 1, 2011, covering the monitoring period from January 2010 – December 2010.

4. Database Management System

   The Regional Water Board and State Water Resources Control 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.

Figure 1. Offshore Water quality Station Locations

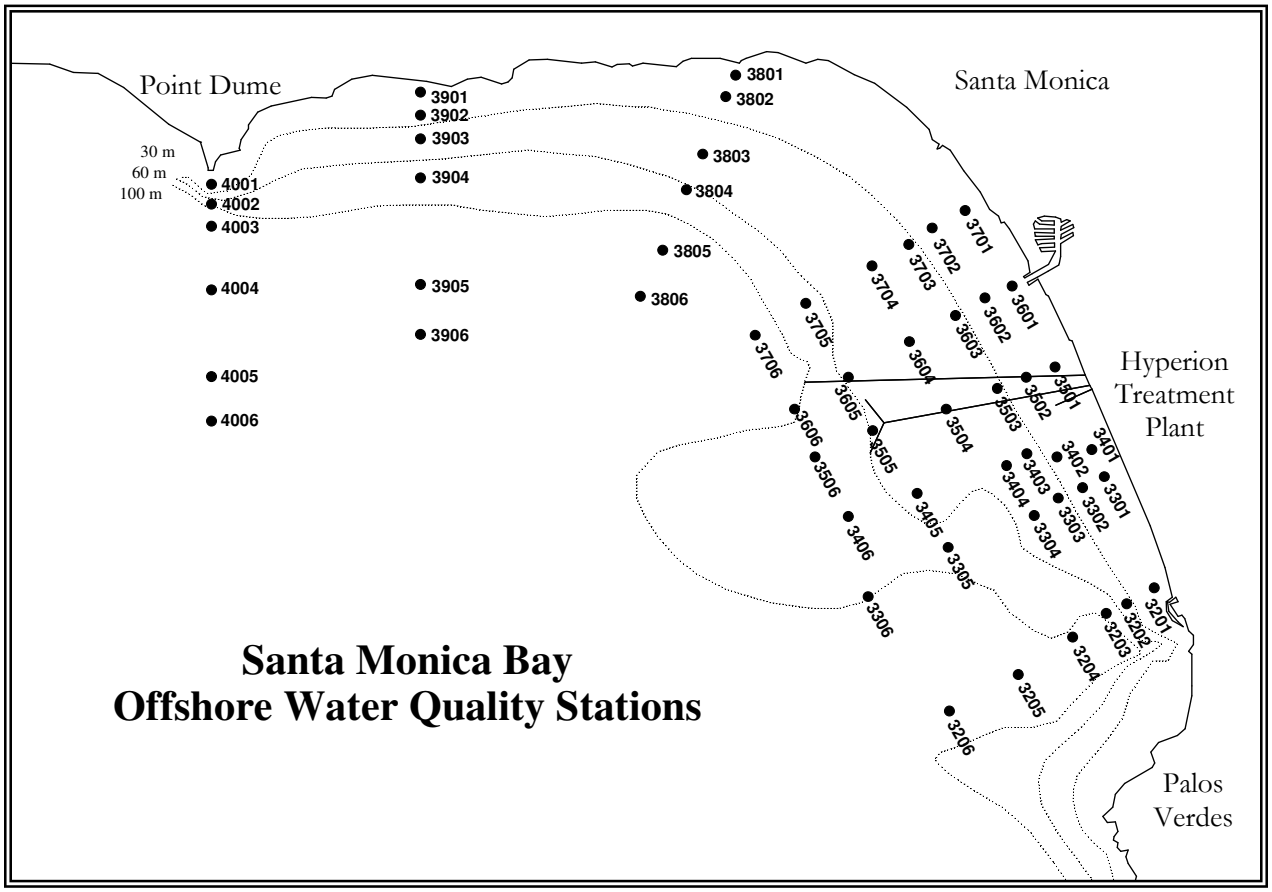

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Figure 2. Offshore Benthic Sediments and Macrofauna Station Locations for Fixed Stations plus Year 1 Random Stations.

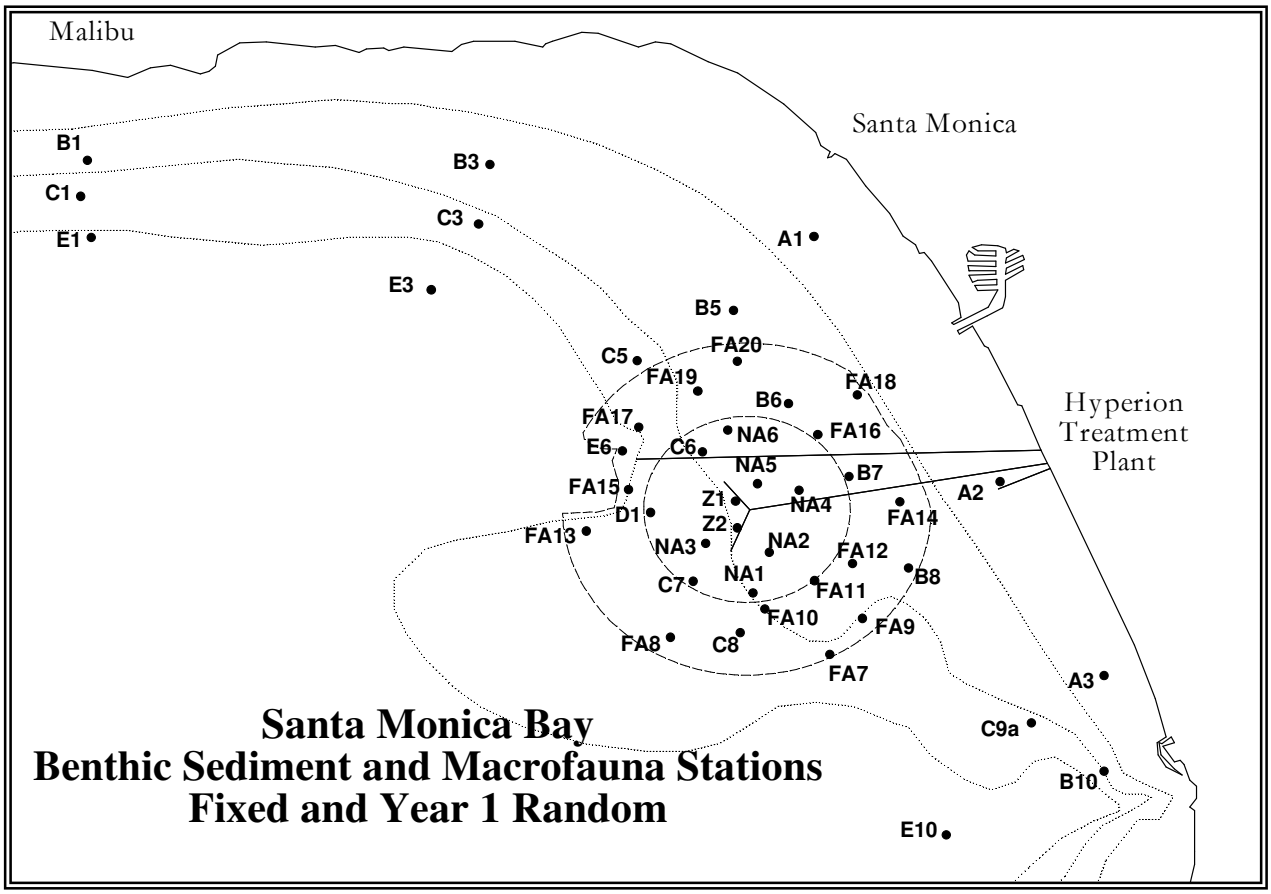

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Figure 3. Offshore Benthic Sediments and Macrofauna Station Locations for Fixed Stations plus Year 2 Random Station.

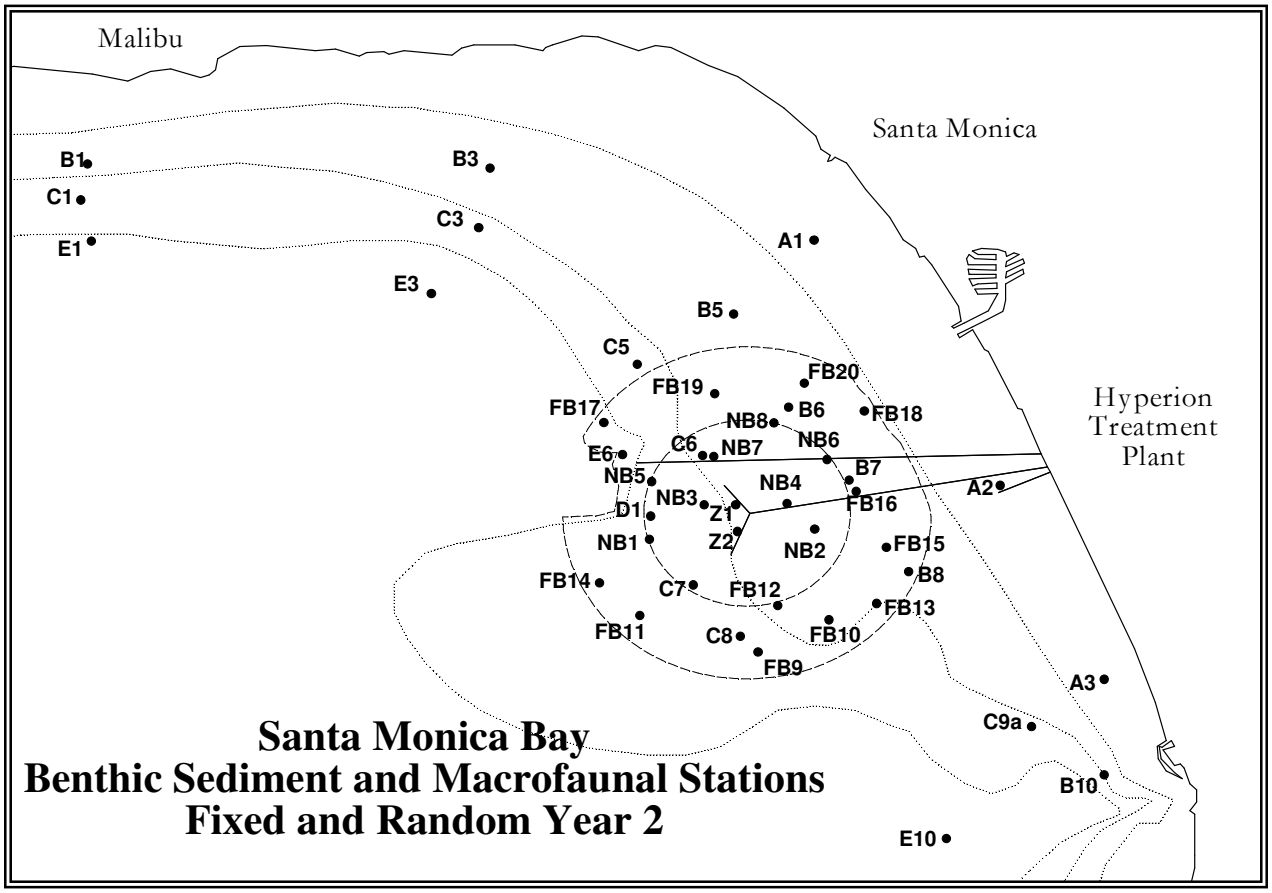

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Figure 4. Trawl Station Locations Including Fixed Stations and Example of a Combined Array of Year 1 and Year 2 Stations.

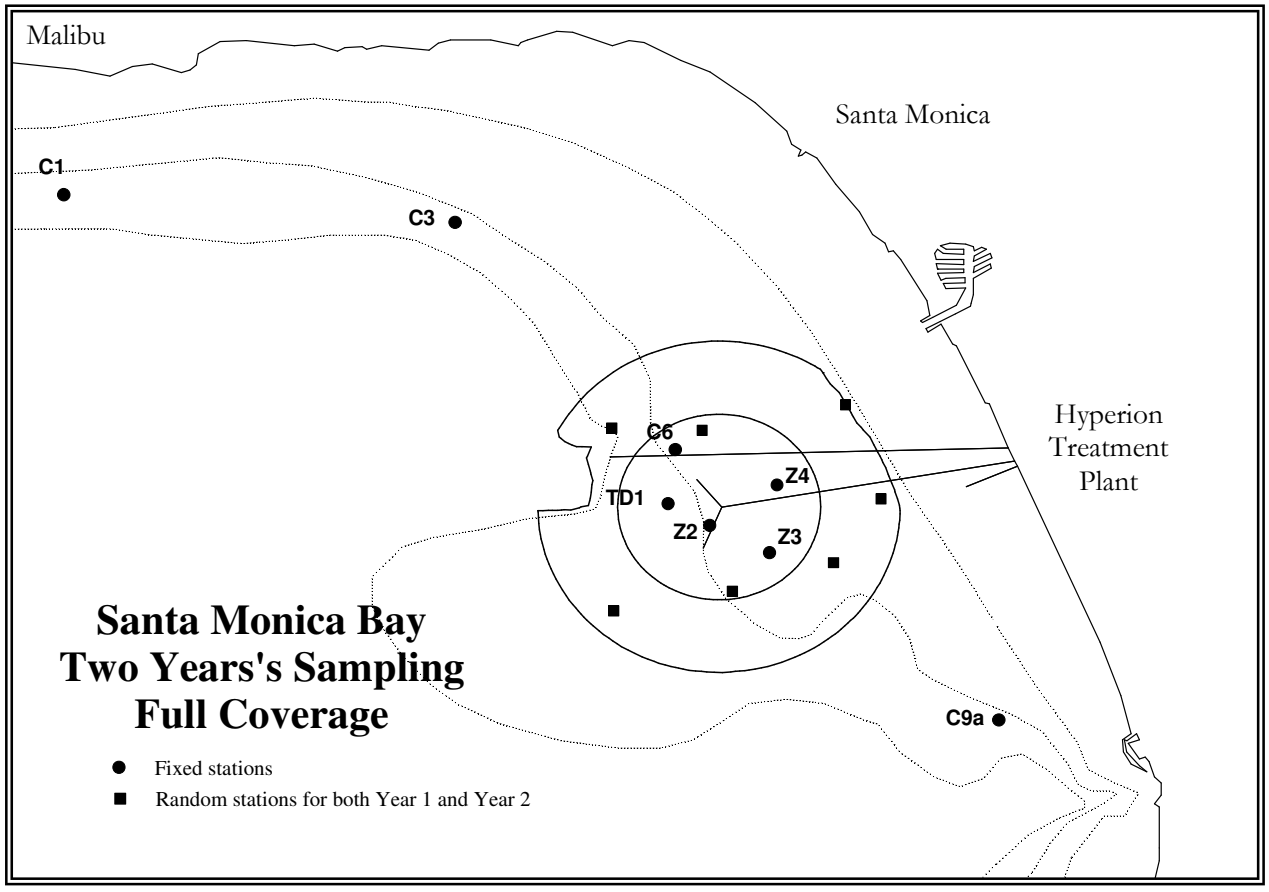

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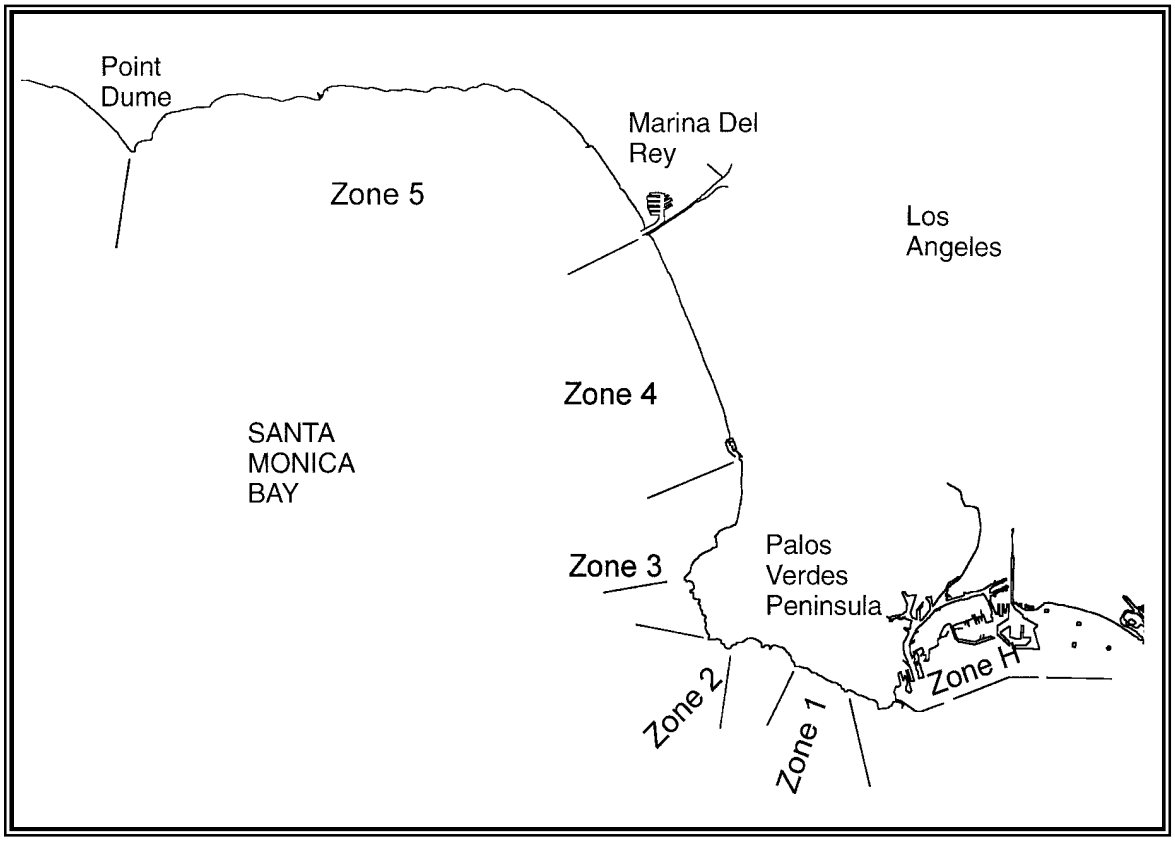
Figure 5. Local Seafood Survey Zones as Defined by SMBRC Seafood Tissue monitoring Design.



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