CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

MONITORING AND REPORTING PROGRAM NO. 6027
for
THE BOEING COMPANY
SANTA SUSANA FIELD LABORATORY
(CA0001309)

I. Reporting Requirements

A. The Boeing Company (Discharger) shall implement this monitoring program on the effective date of this Order. All monitoring reports shall be submitted quarterly and must be received by the Regional Board by the dates in the following schedule. All monitoring reports should be addressed to the Regional Board, Attention: Information Technology Unit. The first monitoring report under this Program is due by August 15, 2006.

Reporting Period	Report Due
January – March	May 15
April – June	August 15
July – September	November 15
October – December	February 15

B. If there is no discharge during any reporting period, the report shall so state. The Discharger shall submit an annual summary report (for both dry and wet weather discharges), containing a discussion of the previous year's effluent and receiving water monitoring data, as well as graphical and tabular summaries of the data. The data shall be submitted to the Regional Board on hard copy and on a 3 ½ " computer diskette. Submitted data must be IBM compatible, preferably using EXCEL software. This annual report is to be received by the Regional Board by March 1 of each year following the calendar year of data collection.

August 29, 2003
Revised: December 19, 2003
Revised: January 14, 2004
Revised: February 27, 2004
Revised: March 25, 2004
Revised: June 22, 2004
Revised: July 1, 2004
Revised: November 30, 2005
Revised: December 19, 2005
Revised: January 9, 2006
Revised: January 19, 2006

C. Each monitoring report shall contain a separate section titled "Summary of Non-Compliance" which discusses the compliance record and corrective actions taken or planned that may be needed to bring the discharge into full compliance with waste discharge requirements. This section shall clearly list all non-compliance with waste discharge requirements, as well as all excursions of effluent limitations.

D. Each quarterly report shall contain a separate section titled "Reasonable Potential Analysis" which discusses whether or not reasonable potential was triggered for pollutants which do not have a final effluent limitation in the NPDES permit. This section shall contain the following statement, "The analytical results for this sampling period did/did not trigger reasonable potential." If reasonable potential was triggered, then the following information should be provided:

a. A list of the pollutant(s) that triggered reasonable potential;
b. The Basin Plan or CTR criteria that was exceeded for each given pollutant;
c. The concentration of the pollutant(s);
d. The test method used to analyze the sample; and
e. The data and time of sample collection.

E. The Discharger shall inform the Regional Board well in advance of any proposed construction activity that could potentially affect compliance with applicable requirements.

F. Any mitigation/remedial activity including any pre-discharge treatment conducted at the site must be reported in the quarterly monitoring report.

G. Database Management System – The Regional Board is developing a compliance monitoring database management system that may require the Discharger to submit the monitoring and annual reports electronically when it becomes fully operational.

II. Effluent Monitoring Requirements

A. Sampling station(s) shall be established for the point of discharge and shall be located where representative samples of that effluent can be obtained. Provisions shall be made to enable visual inspection of the discharge. All visual observations shall be included in the monitoring report.

B. This Regional Board shall be notified in writing of any change in the sampling stations once established, or in the methods for determining the quantities of pollutants in the individual waste streams.

C. Pollutants shall be analyzed using the methods described in 40 CFR 136.3, 136.4, and 136.5 (revised May 14, 1999); or where no methods are specified for a given pollutant, methods approved by Regional Board or State Board. Laboratories analyzing monitoring samples shall be certified by the California Department of Health Services and must include quality assurance/quality control (QA/QC) data with their report. For the purpose of monitoring pH, dissolved oxygen, residual chlorine, and temperature, tests may be conducted at the field sampling location provided that all requirements of the approved analytical methods for NPDES use in 40 CFR 136 are met.

The monitoring report shall specify the USEPA analytical method used, the Method Detection Limit (MDL) and the Minimum Level (ML) for each pollutant. For the purpose of reporting compliance with numerical limitations, performance goals, and receiving water limitations, analytical data shall be reported by one of the following methods, as appropriate:

1. An actual numerical value for sample results greater than, or equal to, the ML; or,

2. "Detected, but Not Quantified (DNQ)" if results are greater than or equal to the laboratory's MDL but less than the ML; or,

3. "Not-Detected (ND)" for sample results less than the laboratory's MDL with MDL indicated for the analytical method used.

Current MLs (Attachment T-A) are those published by the State Water Resources Control Board (State Board) in the *Policy for the Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California* (SIP), March 2, 2000.

D. Where possible, the MLs employed for effluent analyses shall be lower than the permit limits established for a given parameter. If the ML value is not below the effluent limitation, then the lowest ML value and its associated analytical method shall be selected for compliance purposes. At least once a year (in the annual report), the Discharger shall submit a list of the analytical methods employed for each test and associated laboratory quality assurance/quality control (QA/QC) procedures.

The Regional Board, in consultation with the State Board Quality Assurance Program, shall establish a ML that is not contained in Attachment T-A to be included in the Discharger's permit in any of the following situations:

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

2. When the Discharger and Regional Board agree to include in the permit a test method that is more sensitive than those specified in 40 CFR 136 (revised May 14, 1999);

3. When the Discharger agrees to use an ML that is lower than that listed in Attachment T-A;

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

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

E. Laboratory analyses – all chemical, bacteriological, and toxicity analyses shall be conducted at a laboratory certified for such analyses by the California Department of Health Services Environmental Laboratory Accreditation Program (ELAP). A copy of the laboratory certification shall be submitted with the Annual Report.

F. Water/wastewater samples must be analyzed within allowable holding time limits as specified in 40 CFR section 136.3. All QA/QC samples must be run as specified by the EPA methodology and the results must be reported in the Regional Board format if available, and submitted with the laboratory reports.

G. All analyses shall be accompanied by the chain of custody, including but not limited to data and time of sampling, sample identification, and name of person who performed sampling, date of analysis, name of person who performed analysis, QA/QC data, method detection limits, analytical methods, copy of laboratory certification, and a perjury statement executed by the person responsible for the laboratory.

H. Quarterly effluent analyses are typically performed during the months of February, May, August and November. Annual effluent analyses shall be performed during the month of February. Due to the intermittent nature and unpredictable frequency of discharges from SSFL, periodic sampling should be conducted during the first opportunity presented during the prescribed monitoring period.

I. For parameters that both monthly average and daily maximum limits are specified and the monitoring frequency is less than four times a month, the following shall apply. If an analytical result is greater than the monthly average limit, the sampling frequency shall be increased (within one week of receiving the test results) to a minimum of once weekly at equal intervals, until at least four consecutive weekly samples have been obtained, and compliance with the monthly average limit has been demonstrated.

III. Influent Monitoring Program

A. Influent monitoring for the sewage treatment plants is required during treatment operations:

a. To determine the BOD_5 20°C and suspended solids removal rates;
b. To assess treatment plant performance;
c. As a requirement of the Pollution Minimization Program.

1. 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/or where representative samples of the influent can be obtained. The date and time of sampling shall be reported with the analytical results.

2. Samples for influent $BOD_5$20°C and suspended solids analysis shall be obtained on the same day that the effluent $BOD_5$20°C and suspended solids samples are obtained to demonstrate percent removal. Similarly, sampling for other constituents shall also be coordinated with effluent sampling.

3. The following shall constitute the influent monitoring program:

Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Flow	mgd	recorder	continuous
pH	pH units	grab	semiannually
Suspended solids	mg/L	24-hour composite	semiannually
BOD_5 20°C	mg/L	24-hour composite	semiannually
EPA priority pollutants excluding asbestos[11]	µg/L	24-hour composite/ grab for VOCs and Chromium VI	semiannually

IV. Effluent Monitoring Program

A. The following shall constitute the effluent monitoring program for the final effluent at Discharge Nos. 001, 002, 011 and 018.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Total waste flow	gal/day	----	once per discharge event
Temperature	°F	grab	once per discharge event
pH	pH Units	grab	once per discharge event
Hardness as $CaCO_3$	mg/L	grab	annually
Conductivity at 25°C	µmhos/cm	grab	once per discharge event
Total suspended solids	mg/L	grab	once per discharge event
Settleable solids	ml/L	grab	once per discharge event
BOD_5(20°C)	mg/L	grab	once per discharge event
Oil and grease	mg/L	grab	once per discharge event
Ammonia-N	mg/L	grab	once per discharge event
Turbidity	NTU	grab	once per discharge event
Total residual chlorine	mg/L	grab	annually
Total organic carbon	mg/L	grab	annually
Total dissolved solids	mg/L	grab	once per discharge event
Chloride	mg/L	grab	once per discharge event
Sulfate	mg/L	grab	once per discharge event
Detergents (as MBAS)	mg/L	grab	once per discharge event
Nitrate + Nitrate-N	mg/L	grab	once per discharge event
Ammonia-N	mg/L	grab	once per discharge event©
Nitrate-N	mg/L	grab	once per discharge event
Nitrite-N	mg/L	grab	once per discharge event
Cyanide[2]	µg/L	grab	once per discharge event
Copper[2]	µg/L	grab	once per discharge event

[1] During wet weather flow, a discharge event is greater than 0.1 inch of rainfall in a 24-hour period. No more than one sample per week need be obtained during extended periods of rainfall. Sampling shall be during the first hour of discharge or at the first safe opportunity. The reason for delay shall be included in the report. During dry weather flow, whenever Outfalls 001, 002, 011 or 018 is discharging, minimum sampling frequency during operations generating discharges shall be once per month. If the rain event is not sufficient to produce flow from the area, the observation must be documented with date, time condition and rainfall amount.

© The thirty day average at pH = 7.9 and 20°C, when hourly samples are collected and composited or only one grab sample is collected. The one hour average WLA at 7.9 pH and 20°C, applies if hourly samples are taken throughout the storm and each is analyzed. No single sample may exceed the 10.1 mg/L limit. Analysis for the temperature and pH of the receiving water at the same time as the discharge would provide data for a site-specific determination of the ammonia limit using Attachment H to the WDR. Shall there be no receiving water present, the pH and temperature of the effluent at the end of pipe shall be determined and reported.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Lead[2]	µg/L	grab	once per discharge event
Mercury[2]	µg/L	grab	once per discharge event
1,1-Dichloroethylene	µg/L	grab	once per discharge event
Perchlorate	µg/L	grab	once per discharge event
2,4,6-Trichlorophenol	µg/L	grab	once per discharge event
2,4-Dinitrotoluene	µg/L	grab	once per discharge event
Alpha-BHC	µg/L	grab	once per discharge event
Bis(2-ethylhexyl)phthalate	µg/L	grab	once per discharge event
N-Nitrosodimethylamine	µg/L	grab	once per discharge event
Pentachlorophenol	µg/L	grab	once per discharge event
Trichloroethylene	µg/L	grab	once per discharge event
TCDD♦	µg/L	grab	once per discharge event
Volatile organic compounds	µg/L	grab	once per discharge event
Boron	µg/L	grab	once per discharge event♦♦
Fluoride	mg/L	grab	annually[6]
Barium	mg/L	grab	annually[6]
Iron	mg/L	grab	annually[6]
Manganese[2]	mg/L	grab	annually[6]
Antimony[2]	µg/L	grab	annually[6]
Arsenic[2]	µg/L	grab	annually[6]
Beryllium[2]	µg/L	grab	annually[6]
Cadmium[2]	µg/L	grab	annually[6]
Chromium (VI)[2,3]	µg/L	grab	once per discharge event
Nickel[2]	µg/L	grab	annually[6]
Selenium[2]	µg/L	grab	annually[6]
Silver[2]	µg/L	grab	once per discharge event
Thallium[2]	µg/L	grab	annually[6]
Zinc[2]	µg/L	grab	annually[6]
Cobalt	µg/L	grab	once per discharge event
	µg/L	grab	annually

♦ Analysis must be completed for TCDD and all congeners. After four consecutive samples are reported as nondetect the sampling frequency may be decreased to quarterly. If detected subsequently, the frequency reverts back to once per discharge event.

♦♦ Analyses must include benzene, carbon tetrachloride, chloroform, 1,1-dichloroethane, 1,2-dichloroethane, ethylbenzene, tetrachloroethylene, toluene, xylenes, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichlorofluoromethane, and vinyl chloride. Analyses shall be performed once per discharge event for two years, if all results are nondetect the frequency of monitoring is decreased to quarterly.

[2] Total recoverable results are required.

[3] The Discharger has the option to meet the hexavalent chromium limitations with a total chromium analysis. However, if the total chromium level exceeds the hexavalent chromium limitation, it will be considered a violation unless an analysis has been made for hexavalent chromium in replicate sample and the result is reported within the hexavalent chromium limits.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Vanadium	µg/L	grab	annually
Radioactivity-			
Gross Alpha	pCi/L	grab	annually[6]
Gross Beta[4]	pCi/L	grab	annually[6]
Combined Radium 226 & Radium 228[5]	pCi/L	grab	annually[6]
Tritium[4]	pCi/L	grab	annually[6]
Strontium-90[4]	pCi/L	grab	annually[6]
PCBs	µg/L	grab	annually
TPH[10]	µg/L	grab	annually
Monomethylhydrazine	µg/L	grab	annually
cis-1,2-Dichloroethene	µg/L	grab	annually
1,4-Dioxane	µg/L	grab	annually
1,1,2-Trichloro-1,2,2-Trifluoroethane	µg/L	grab	quarterly
1,2-Dichloro-1,1,2-triflouroethane	µg/L	grab	annually
Cyclohexane	µg/L	grab	annually
Remaining USEPA priority pollutants excluding asbestos[11]	µg/L	grab	annually[6]
Acute toxicity	% survival	grab	annually
Chronic toxicity	TU_c	grab	annually

[4] Analyze these radiochemicals by the following USEPA testing 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, and method 905.0 for strontium-90.

[5] Analysis for combined Radium-226 & 228 shall be conducted only if gross alpha results for the same sample exceed 15 pCi/L or beta greater than 50 pCi/L. It the Radium-226 & 228 exceeds the stipulated criteria analyze for Tritium and Strontium-90. If the analyses of these constituents demonstrates exceedances the monitoring frequency is increased to once per discharge until four consecutive analysis demonstrates compliance with the effluent limitations.

[6] If the detected concentration exceeds the criteria, the frequency of analysis must be increased to once per discharge. After four consecutive samplings demonstrating compliance the frequency reverts back to annually.

B. The following shall constitute the storm water monitoring program for Outfalls 003, through 010.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Rainfall	inches	continuous	continuous
pH	pH Units	grab	once per discharge event
Oil and grease	mg/L	grab	once per discharge event
Total dissolved solids	mg/L	grab	once per discharge event
Chloride	mg/L	grab	once per discharge event
Sulfate	mg/L	grab	once per discharge event
Nitrate + Nitrate-N	mg/L	grab	once per discharge event
Ammonia-N (Outfall 008 only)	mg/L	grab	once per discharge event©
Nitrate-N (Outfall 008 only)	mg/L	grab	once per discharge event
Nitrite-N (Outfall 008 only)	mg/L	grab	once per discharge event
Total suspended solids	mg/L	grab	annually
Boron[2]	mg/L	grab	annually[6]
Fluoride	mg/L	grab	annually
Iron	mg/L	grab	annually
Antimony[2]	µg/L	grab	once per discharge event
Cadmium[2]	µg/L	grab	once per discharge event
Copper[2]	µg/L	grab	once per discharge event
Lead[2]	µg/L	grab	once per discharge event
Mercury[2]	µg/L	grab	once per discharge event
Thallium	µg/L	grab	once per discharge event
Selenium (Outfall 008 only)	µg/L	grab	once per discharge event
Zinc (Outfall 008 only)	µg/L	grab	once per discharge event
Vanadium[2]	µg/L	grab	annually
Aluminum[2]	µg/L	grab	annually
TCDD[9]	µg/L	grab	once per discharge event
Perchlorate	µg/L	grab	once per discharge event[7]
Remaining USEPA priority pollutants excluding asbestos[11]	µg/L	grab	annually[6]
Radioactivity[5]			
Gross Alpha	pCi/L	grab	annually[6]
Gross Beta	pCi/L	grab	annually[6]
Combined Radium 226 & Radium 228[4]	pCi/L	grab	annually[6]

[7] Monitor once per discharge at Happy Valley (Outfall 008). Monitor semiannually at all other storm water only outfalls. If the results are nondetect for two years the Discharger may submit a request for the monitoring frequency to be decreased to annually with Executive Officer approval.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis[1]
Tritium[4]	pCi/L	grab	annually[6]
Strontium-90[4]	pCi/L	grab	annually[6]
Hardness as $CaCO_3$	mg/L	grab	annually
Acute toxicity	% survival	grab	annually

C. The following shall constitute the effluent monitoring program from Outfalls 012 through 014 during engine test operations.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Flow	Mgd	recorder[8]	once per discharge event
Hardness as $CaCO_3$	mg/L	grab	annually
pH	pH units	grab	once per discharge event
Temperature	°F	grab	once per discharge event
Suspended solids	mg/L	grab	once per discharge event
BOD_5 20°C	mg/L	grab	once per discharge event
Settleable solids	mg/L	grab	once per discharge event
Oil and grease	mg/L	grab	once per discharge event
Ammonia-N	mg/L	grab	once per discharge event©
Nitrate-N	mg/L	grab	once per discharge event
Nitrite-N	mg/L	grab	once per discharge event
Turbidity	NTU	grab	once per discharge event
Total dissolved solids	mg/L	grab	once per discharge event
Total petroleum hydrocarbons[10]	µg/L	grab	once per discharge event
Perchlorate	µg/L	grab	once per discharge event
N-Nitrosodimethylamine	µg/L	grab	once per discharge event
1,4-Dioxane	µg/L	grab	once per discharge event
1,2,3-Trichloropropane	µg/L	grab	once per discharge event
Ethylene dibromide	µg/L	grab	once per discharge event
Methyl tertiary butyl ether (MTBE)	µg/L	grab	once per discharge event
Naphthalene	µg/L	grab	once per discharge event

[8] The Discharger will use the flow of the process water used for quenching with the time of the test to calculate the total volume of water used.
[9] All seventeen congeners of TCDD must be analyzed as stipulated in State Implementation Policy. After four consecutive samples are reported as nondetect the sampling frequency may be decreased to quarterly. If detected subsequently, the frequency reverts back to once per discharge event.
[10] Total petroleum hydrocarbons includes all fuels, gasoline, diesel and jet fuel. Analysis should be completed using EPA 418.1 and EPA 8015 (modified) methods.
[11] Analysis shall include xylenes and trichlorofluoromethane.
** This analysis is completed only for discharges from APTF.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Di-isopropyl Ether (DIPE)	µg/L	grab	once per discharge event
Tertiary Butyl Alcohol (TBA)	µg/L	grab	once per discharge event
Monomethyl hydrazine**	µg/L	grab	once per discharge event
Chloride	µg/L	grab	once per discharge event
Boron	µg/L	grab	once per discharge event
Sulfate	µg/L	grab	once per discharge event
Fluoride	µg/L	grab	once per discharge event
Nitrate + Nitrite-N	µg/L	grab	once per discharge event
Copper[2]	µg/L	grab	once per discharge event
Lead[2]	µg/L	grab	once per discharge event
Mercury[2]	µg/L	grab	once per discharge event
Cadmium	µg/L	grab	once per discharge event
Selenium	µg/L	grab	once per discharge event
Zinc	µg/L	grab	once per discharge event
TCDD[9]	µg/L	grab	once per discharge event
Acute toxicity	% survival	grab	annually
Remaining USEPA priority pollutants excluding asbestos[11]	µg/L	grab	annually

D. The following shall constitute the effluent monitoring program from Outfalls 015 through 017. The following program is implemented only when the treatment plants are discharging effluent.

Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Flow	mgd	recorder	continuous
Hardness as $CaCO_3$	mg/L	grab	annually
Turbidity	NTU	recorder	continuous
Total residual chlorine	mg/L	recorder	continuous
pH	pH units	grab	weekly
Temperature	°F	grab	weekly
Suspended solids	mg/L	24-hour composite	weekly
BOD_5 20°C	mg/L	24-hour composite	weekly
Settleable solids	mg/L	grab	weekly
Oil and grease	mg/L	grab	monthly
Dissolved oxygen	mg/L	grab	monthly
Ammonia-N	mg/L	24-hour composite	monthly
Nitrate + Nitrite as N (Nitrogen)	mg/L	24-hour composite	monthly

Constituent	Units	Type of Sample	Minimum Frequency of Analysis
Nitrate as N (Nitrogen)	mg/L	24-hour composite	monthly
Nitrite as N (Nitrogen)	mg/L	24-hour composite	monthly
Total dissolved solids	mg/L	24-hour composite	monthly
Chloride	mg/L	24-hour composite	monthly
Sulfate	mg/L	24-hour composite	monthly
Boron	mg/L	24-hour composite	monthly
Fluoride	mg/L	24-hour composite	monthly
Barium	mg/L	24-hour composite	monthly
Detergents (as MBAS)	mg/L	grab	weekly
Perchlorate	µg/L	grab	monthly
N-Nitrosodimethylamine	µg/L	grab	semiannually[10]
1,4-Dioxane	µg/L	grab	semiannually[10]
1,2,3-Trichloropropane	µg/L	grab	semiannually[10]
Zinc	µg/L	grab	monthly
Cadmium	µg/L	grab	monthly
Chromium III	µg/L	grab	monthly
Copper	µg/L	grab	monthly
Mercury	µg/L	grab	monthly
Nickel	µg/L	grab	monthly
Lead	µg/L	grab	monthly
Selenium	µg/L	grab	monthly
TCDD	µg/L	grab	monthly
Acute toxicity	%survival	grab	monthly
Chronic toxicity	TU_c	24-hour composite	quarterly
Total coliform	MPN/100mL	grab	quarterly
Fecal coliform	MPN/100mL	grab	daily
Remaining USEPA priority pollutants excluding asbestos[11]	µg/L	24-hour composite/ grab for VOCs and Cr-VI	daily semiannually

IV. Toxicity Monitoring Requirements

A. Acute Toxicity Monitoring Program

1. The Discharger shall conduct acute toxicity tests on effluent grab samples by methods specified in 40 CFR Part 136 which cites USEPA's *Methods for Measuring the Acute Toxicity of Effluents to Freshwater and Marine Organisms*, Fifth Edition. October 2002 (EPA/821-R-012) or a more recent edition to ensure compliance in 100 % effluent.

2. The fathead minnow, *Pimephales promelas*, shall be used as the test species for fresh water discharges and the topsmelt, *Atherinops affinis*, shall be used as the test species for brackish effluent. The method for topsmelt is found in USEPA's *Short-term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms*, Fourth Edition, October 2002 (EPA/821-R-02-013).

3. In lieu of conducting the standard acute toxicity testing with the fathead minnow, the Discharger may elect to report the results or endpoint from the first 48 hours of the chronic toxicity test as the results of the acute toxicity test.

B. Chronic Toxicity Effluent Monitoring Program

1. The Discharger shall conduct critical life stage chronic toxicity tests on effluent samples (24-hour composite) or receiving water samples in accordance with EPA's Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002 (EPA/821-R-02-013) or EPA's Short Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Marine and Estuarine Organisms, Third Edition, October 2002, (EPA/821-R-02-014).

2. Effluent samples shall be collected after all treatment processes and before discharge to the receiving water.

3. Test Species and Methods:

a. The Discharger shall conduct tests as follows: with a vertebrate, an invertebrate, and an alga for the first three suites of tests. After the screening period, monitoring shall be conducted using the most sensitive species.

b. Re-screening is required every 15 months. The Discharger shall re-screen with the three species listed above and continue to monitor with the most sensitive species. If the first suite of re-screening tests demonstrates that the same species is the most sensitive than the re-screening does not need to include more that 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.

c. The presence of chronic toxicity shall be estimated as specified using West Coast marine organisms according to EPA' s Short-Term Methods for Estimating Chronic Toxicity of Effluent and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002 (EPA/821-R-02-013).

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 manuals (EPA/600/4-91/002 and EPA/821-R-02-013), then the Discharger must re-sample and re-test within 14 days of notification by the laboratory of an invalid test.

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

D. Accelerated Monitoring

1. If toxicity exceeds the limitations (as defined in Order No. R4-2004-0111, Section I.C.4.a.1. and 1.C.4.b.1), then the Discharger shall immediately implement accelerated testing, as specified at Section I.C.4.a.2 and 1.C.4.b.2. The discharger shall ensure that they receive results of a failing toxicity test within 24 hours of the completion of the test and the additional tests shall begin within 3 business days of receipt of the results or at the first opportunity of discharge. If the accelerated testing shows consistent toxicity, the discharger shall immediately implement the Initial Investigation of the TRE Workplan.

2. If implementation of the initial investigation TRE workplan indicates the source of toxicity (e.g., a temporary plant upset, etc.), then the Discharger may discontinue the TIE.

3. The first step in the initial Investigation TRE Workplan for downstream receiving water toxicity can be a toxicity test protocol designed to determine if the effluent causes or contributes to the measured downstream chronic toxicity If this first step TRE testing shows that the outfall effluent does not cause or contribute to downstream chronic toxicity, using EPA's Short-Term Methods for Estimating the Chronic

Toxicity of Effluents and Receiving Waters to Freshwater Organisms, Fourth Edition, October 2002(EPA/821-R-02-013). Then a report on this testing shall be submitted to the Board and the TRE will be considered to be completed. Routine testing in accordance with MRP No. 6027 shall be continued thereafter.

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

1. Following a TRE trigger, the Discharger shall initiate a TRE in accordance with the facility's initial investigation TRE workplan. At a minimum, the Discharger shall use EPA manuals EPA/600/2-88/070 (industrial) or EPA/833B-99/002 (municipal) as guidance. The Discharger shall expeditiously develop a more detailed TRE workplan for submittal to the Executive Officer within 30 days of the trigger, which will 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;

   c. Standards the Discharger will apply to consider the TRE complete and to return to normal sampling frequency; and,

   d. A schedule for these actions

2. The following is a stepwise approach in conducting the TRE:

   a. Step 1 - Basic data collection. Data collected for the accelerated monitoring requirements may be used to conduct the TRE;

   b. Step 2 - Evaluates optimization of the treatment system operation, facility housekeeping, and the 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 and using currently available TIE methodologies. The objective of the TIE is 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; and,

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

Many recommended TRE elements parallel source control, pollution prevention, and storm water control program best management practices (BMPs). To prevent duplication of efforts, evidence of implementation of these control measures may be sufficient to comply with TRE requirements. By requiring the first steps of a TRE to be accelerated testing and review of the facility's TRE workplan, a TRE may be ended in its early stages. All reasonable steps shall be taken to reduce toxicity to the required level. The TRE may be ended at any stage if monitoring indicates there is no longer toxicity (or six consecutive chronic toxicity results are less than or equal to 1.0 TU_c).

3. The Discharger may initiate a TIE as part of the TRE process to identify the cause(s) of toxicity. The Discharger shall use the EPA acute and chronic manuals, EPA/600/6-91/005F (Phase I)/EPA/600/R-96-054 (for marine), EPA/600/R-92/080 (Phase II), and EPA-600/R-92/081 (Phase III) as guidance.

4. If a TRE/TIE is initiated prior to completion of the accelerated testing schedule required by Part I.C.4.a.2 and Part I.C.4.b.2 of this permit, then the accelerated testing schedule may be terminated, or used as necessary in performing the TRE/TIE, as determined by the Executive Officer.

5. Toxicity tests conducted as part of a TRE/TIE may also be used for compliance, if appropriate.

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

F. Reporting

1. The Discharger shall submit a full report of the toxicity test results, including any accelerated testing conducted during the month as required by this permit. Test results shall be reported in Toxicity Units (percent survival or TU_c) with the discharge monitoring reports (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 IV.C.1., those results shall also be submitted with the DMR for the period in which the Investigation occurred.

2. The full report shall be submitted on or before the end of the month in which the DMR is submitted.

3. The full report shall consist of (1) the results; (2) the dates of sample collection, initiation, and completion of each toxicity tests; (3) the acute toxicity limit or chronic toxicity limit or trigger as described in Order No. R4-2004-0111 sections I.C.4.a.1. and I.C.4.b.1; and (4)printout of the ToxCalc or CETIS program results.

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

5. sample date(s);

6. test initiation date;

7. test species;

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

9. NOEC value(s) in percent effluent;

10. IC_{15}, IC_{25}, IC_{40} and IC_{50} values in percent effluent;

11. TU_c values $\left(TU_c = \frac{100}{NOEC}\right)$;

12. Mean percent mortality (±standard deviation) after 96 hours in 100% effluent (if applicable);

13. NOEC and LOEC values for reference toxicant test(s);

14. IC_{25} value for reference toxicant test(s);

15. Any applicable control charts; and

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

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

The Discharger shall notify, by telephone or electronically, this Regional Board of any toxicity exceedance of the limit or trigger within 24 hours of receipt of the results followed by a written report within 14 calendar days of receipt of the results. The verbal or electronic notification shall include the exceedance and the plan the Discharger will pursue. The written report shall 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.

V. Receiving Water Monitoring Requirements

The receiving water monitoring program shall consist of periodic surveys of receiving water and shall include studies of those physical-chemical characteristics of the receiving water that may be impacted by the discharge.

1. Receiving Water Observations. General observations of the receiving water shall be made at each discharge point on a monthly basis and shall be reported in the quarterly monitoring report. If no discharge occurred during the observation period, this shall be reported.

Observations shall be descriptive where applicable, such that colors, approximate amounts, or types of materials that are apparent. The following observations shall be made where appropriate:

a. Tidal stage, time, and date of monitoring
b. Weather conditions
c. Color of water
d. Appearance of oil films or grease, or floatable materials
e. Extent of visible turbidity or color patches
f. Direction of tidal flow
g. Description of odor, if any, of the receiving water
h. Presence and activity of California Least Tern and California Brown Pelican.

Ordered by: _____ Chief Deputy E.O.
Jonathan S. Bishop
Executive Officer for

Date: March 9, 2006

/CDO

SWRCB Minimum Levels in ppb (µg/L)

The Minimum Levels (MLs) in this appendix are for use in reporting and compliance determination purposes in accordance with section 2.4 of the State Implementation Policy. These MLs were derived from data for priority pollutants provided by State certified analytical laboratories in 1997 and 1998. These MLs shall be used until new values are adopted by the SWRCB and become effective. The following tables (Tables 2a - 2d) present MLs for four major chemical groupings: volatile substances, semi-volatile substances, inorganics, and pesticides and PCBs.

Table 2a - VOLATILE SUBSTANCES*	GC	GCMS
1,1 Dichloroethane	0.5	1
1,1 Dichloroethylene	0.5	2
1,1,1 Trichloroethane	0.5	2
1,1,2 Trichloroethane	0.5	2
1,1,2,2 Tetrachloroethane	0.5	1
1,2 Dichlorobenzene (volatile)	0.5	2
1,2 Dichloroethane	0.5	2
1,2 Dichloropropane	0.5	1
1,3 Dichlorobenzene (volatile)	0.5	2
1,3 Dichloropropene (volatile)	0.5	2
1,4 Dichlorobenzene (volatile)	0.5	2
Acrolein	2.0	5
Acrylonitrile	2.0	2
Benzene	0.5	2
Bromoform	0.5	2
Methyl Bromide	1.0	2
Carbon Tetrachloride	0.5	2
Chlorobenzene	0.5	2
Chlorodibromo-methane	0.5	2
Chloroethane	0.5	2
Chloroform	0.5	2
Chloromethane	0.5	2
Dichlorobromo-methane	0.5	2
Dichloromethane	0.5	2
Ethylbenzene	0.5	2
Tetrachloroethylene	0.5	2
Toluene	0.5	2
Trans-1,2 Dichloroethylene	0.5	1
Trichloroethene	0.5	2
Vinyl Chloride	0.5	2

*The normal method-specific factor for these substances is 1; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

Table 2b - SEMI-VOLATILE SUBSTANCES*	GC	GCMS	LC	COLOR
Benzo (a) Anthracene	10	5		
1,2 Dichlorobenzene (semivolatile)	2	2		
1,2 Diphenylhydrazine		1		
1,2,4 Trichlorobenzene	1	5		
1,3 Dichlorobenzene (semivolatile)	2	1		
1,4 Dichlorobenzene (semivolatile)	2	1		
2 Chlorophenol	2	5		
2,4 Dichlorophenol	1	5		
2,4 Dimethylphenol	1	2		
2,4 Dinitrophenol	5	5		
2,4 Dinitrotoluene	10	5		
2,4,6 Trichlorophenol	10	10		
2,6 Dinitrotoluene		5		
2- Nitrophenol		10		
2-Chloroethyl vinyl ether	1	1		
2-Chloronaphthalene		10		
3,3' Dichlorobenzidine		5		
Benzo (b) Fluoranthene		10	10	
3-Methyl-Chlorophenol	5	1		
4,6 Dinitro-2-methylphenol	10	5		
4- Nitrophenol	5	10		
4-Bromophenyl phenyl ether	10	5		
4-Chlorophenyl phenyl ether		5		
Acenaphthene	1	1		
Acenaphthylene		10	0.5	
Anthracene		10	0.2	
Benzidine		5	2	
Benzo(a) pyrene		10		
Benzo(g,h,i)perylene		5	2	
Benzo(k)fluoranthene		10	0.1	
bis 2-(1-Chloroethoxyl) methane		5	2	
bis(2-chloroethyl) ether	10	1		
bis(2-Chloroisopropyl) ether	10	2		
bis(2-Ethylhexyl) phthalate	10	5		
Butyl benzyl phthalate	10	10		
Chrysene		10	5	
di-n-Butyl phthalate		10		
di-n-Octyl phthalate		10		
Dibenzo(a,h)-anthracene		10	0.1	
Diethyl phthalate	10	2		
Dimethyl phthalate	10	2		
Fluoranthene	10	1	0.05	
Fluorene		10	0.1	

Table 2b - SEMI-VOLATILE SUBSTANCES*	GC	GCMS	LC	COLOR
Hexachloro-cyclopentadiene	5	5		
Hexachlorobenzene	5	1		
Hexachlorobutadiene	5	1		
Hexachloroethane	5	1		
Indeno(1,2,3,cd)-pyrene		10	0.05	
Isophorone	10	1		
N-Nitroso diphenyl amine	10	1		
N-Nitroso-dimethyl amine	10	5		
N-Nitroso -di n-propyl amine	10	5		
Naphthalene	10	1	0.2	
Nitrobenzene	10	1		
Pentachlorophenol	1	5		
Phenanthrene		5	0.05	
Phenol **	1	1		50
Pyrene		10	0.05	

* With the exception of phenol by colorimetric technique, the normal method-specific factor for these substances is 1,000; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 1,000.

** Phenol by colorimetric technique has a factor of 1.

Table 2c – INORGANICS*	FAA	GFAA	ICP	ICPMS	SPGFAA	HYDRIDE	CVAA	COLOR	DCP
Antimony	10	5	50	0.5	5	0.5			1,000
Arsenic		2	10	2	2	1		20	1,000
Beryllium	20	0.5	2	0.5	1				1,000
Cadmium	10	0.5	10	0.25	0.5				1,000
Chromium (total)	50	2	10	0.5	1				1,000
Chromium VI	5							10	
Copper	25	5	10	0.5	2				1,000
Cyanide								5	
Lead	20	5	5	0.5	2				10,000
Mercury				0.5			0.2		
Nickel	50	5	20	1	5				1,000
Selenium		5	10	2	5	1			1,000
Silver	10	1	10	0.25	2				1,000
Thallium	10	2	10	1	5				1,000
Zinc	20		20	1	10				1,000

* The normal method-specific factor for these substances is 1; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance.

Table 2d – PESTICIDES – PCBs*	GC
4,4'-DDD	0.05
4,4'-DDE	0.05
4,4'-DDT	0.01
a-Endosulfan	0.02
alpha-BHC	0.01
Aldrin	0.005
b-Endosulfan	0.01
Beta-BHC	0.005
Chlordane	0.1
Delta-BHC	0.005
Dieldrin	0.01
Endosulfan Sulfate	0.05
Endrin	0.01
Endrin Aldehyde	0.01
Heptachlor	0.01
Heptachlor Epoxide	0.01
Gamma-BHC (Lindane)	0.02
PCB 1016	0.5
PCB 1221	0.5
PCB 1232	0.5
PCB 1242	0.5
PCB 1248	0.5
PCB 1254	0.5
PCB 1260	0.5
Toxaphene	0.5

* The normal method-specific factor for these substances is 100; therefore, the lowest standard concentration in the calibration curve is equal to the above ML value for each substance multiplied by 100.

Techniques:

GC - Gas Chromatography
GCMS - Gas Chromatography/Mass Spectrometry
HRGCMS - High Resolution Gas Chromatography/Mass Spectrometry (i.e., EPA 1613, 1624, or 1625)
LC - High Pressure Liquid Chromatography
FAA - Flame Atomic Absorption
GFAA - Graphite Furnace Atomic Absorption
HYDRIDE - Gaseous Hydride Atomic Absorption
CVAA - Cold Vapor Atomic Absorption
ICP - Inductively Coupled Plasma
ICPMS - Inductively Coupled Plasma/Mass Spectrometry
SPGFAA - Stabilized Platform Graphite Furnace Atomic Absorption (i.e., EPA 200.9)
DCP - Direct Current Plasma
COLOR - Colorimetric