

APPENDIX F

THIRD QUARTER 2007 REASONABLE POTENTIAL ANALYSIS  
(RPA) SUMMARY TABLES

**THIRD QUARTER 2007 REASONABLE POTENTIAL ANALYSIS SUMMARY  
THE BOEING COMPANY  
SANTA SUSANA FIELD LABORATORY  
NPDES PERMIT CA0001309**

1. The following Reasonable Potential Analysis (RPA) provides the analytical results as performed by the procedures outlined in "Reasonable Potential Analysis Methodology Technical Memo, (MWH and Flow Science, 2006).
2. The monitoring data set utilized to conduct the RPA consists of all applicable and relevant data from August 2004 through the present reporting quarter.
3. As directed by the CTR and the Regional Water Control Board 2,3,7,8-TCDD (Dioxin) values are to be expressed in NPDES permitting and this RPA as TCDD Total Equivalence units (TEQs). A TCDD TEQ is determined by multiplying each of the seventeen dioxin and furan congeners by their respective total equivalence factor (TEF), and summing the results of those products. For the purposes of this RPA, the resulting TCDD TEQ does not include those congener concentrations that are reported as DNQ, as specified on Page 46 of the NPDES permit.
4. In calculating the average, standard deviation, coefficient of variation, and projected maximum effluent concentration (99/99), one-half of the MDL was used for concentration results reported as ND. Data reported with qualifiers were not included in this RPA as Boeing believes qualified data are not "appropriate, valid, relevant, (nor) representative"<sup>1</sup> of storm water constituents and are therefore not utilized in its RPA.
5. All of the following abbreviations and/or notes may not occur on every table.

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Definition of Acronyms, Abbreviations, and Terminology Used

>=	Greater than or equal to
*	Freshwater aquatic life criteria for metals are expressed as a function of total hardness (mg/L) in the water body. The equations are provided in the CTR, (US EPA, 2000). Values displayed correspond to a total hardness of 100 mg/l.
µg/L	Concentration units, micrograms per liter
All Data Qualified	All available monitoring data are qualified and no statistical analysis is performed.
Annually	The 2006 NPDES Permit requires annual monitoring.
Available Data < DL	All available monitoring data that are not qualified are below detection limits.
B	Background
C	Concentration
CCC	Criterion Continuous Concentration
CMC	Criterion Maximum Concentration
CTR	California Toxics Rule
CV	Coefficient of Variation
DL	Detection Limit
EPA TSD	EPA's Technical Support Document for Water Quality Based Toxics Control, (see references).

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<sup>1</sup> SIP, p. 5.

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Definition of Acronyms, Abbreviations, and Terminology Used (Continued)

Fibers/L	Units for asbestos concentration, fibers per liter
HH O	Human Health criteria for consumption of Organisms only
HH W&O	Human Health criteria for consumption of Water and Organisms
MEC	Maximum Observed Effluent Concentration
Min	Minimum
NA	Not Applicable
Narrative	Water quality criteria are expressed as a narrative objective rather than a numeric objective, and therefore are not part of the statistical RPA calculations.
None	No available CTR or Basin Plan criteria.
Once Per Discharge	The 2006 NPDES Permit requires monitoring once per discharge event.
Qualified Data	Data qualifier definitions are: (a) J- The reported result is an estimate. The value is less than the minimum calibration level but greater than the estimated detection limit (EDL), (b) U/UJ- The

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	and/or Calleguas Creek watersheds.
C = Lowest Criteria	The comparison concentration (C) is equal to the lowest criterion for a constituent based on the CMC, CCC, HH O, and Basin Plan Criteria listed.

**Priority Pollutant RPA Column Explanation (Continued)**

<i>Step 2 defines the applicable data set.</i>	
Is Effluent Data Available	If there is available monitoring data that is not qualified and above DL, then YES. If not, then NO.
<i>Step 3 determines the maximum observed effluent concentration.</i>	
Was Constituent Detected in Effluent Data	If the constituent was detected, then YES. If all monitoring data are non-detect or qualified then NO.
Are all DL >C	If constituent was detected in effluent data then not applicable (NA). If constituent was not detected and all analysis detection limits are less than the comparison concentration, then YES, if not then NO.
If DL > C MEC = Min (DL)	If the previous cell answer was yes, then the MEC is equal to the minimum detection limit. If not, then NA.
<i>Step 4 compares the MEC to the lowest applicable water quality criteria.</i>	
MEC >= C	If the MEC is greater than or equal to the comparison concentration then YES, if not then NO.
Tier 1 – Need limit?	If the preceding cell was YES, then YES.

Note: Steps 5 and 6 of the Priority Pollutant RPA do not apply to Boeing SSFL because the Regional Board gives no consideration for receiving water background constituent concentrations. Furthermore, Boeing SSFL defers the application of

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Receiving Water Concentration	water concentration as equal to the projected maximum effluent concentration.
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Nonpriority Pollutant RPA Column Explanation (Continued)

Step 1, Determine Water Quality Objectives	The water quality objective is based on appropriate Basin Plan criteria.
BU – Beneficial Use Protection, NC – Human noncarcinogen, AP- Aquatic Life Protection, TMDL – Total Maximum Daily Load	This is the Regional Board’s Basis for determining if reasonable potential should be evaluated for a non-priority pollutant.

Note: Boeing SSFL has completed appropriate statistical calculations, but defers the application of best professional judgment and the final determination of reasonable potential to the Regional Board Staff.

References

Los Angeles Regional Water Quality Control Board, “Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, (Basin Plan).” June 13, 1994.

MWH and Flow Science, “Reasonable Potential Analysis Methodology Technical Memo- Version 1, Final, Santa Susana Field Laboratory, Ventura County, California.” April 28, 2006.

State Water Resources Control Board, “Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California, (SIP)” Resolution No. 2005-0019, February 24, 2005.

US EPA, *40CFR part 131, Water Quality Standards; Establishment of numeric Criteria for Priority*

**Table F1**  
**REASONABLE POTENTIAL ANALYSIS FOR PRIORITY POLLUTANTS, (OUTFALLS 001, 002, 011, 018)**

Table F1  
REASONABLE POTENTIAL ANALYSIS FOR PRIORITY POLLUTANTS, (OUTFALLS 001, 002, 011, 018)

THIRD QUARTER 2007  
THE BOEING COMPANY  
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NPDES PERMIT CA0001309

Step 2

Step 4

Outfall CT





**Table F2  
REASONABLE POTENTIAL ANALYSIS FOR NONPRIORITY POLLUTANTS, (OUTFALLS 001, 002, 011, 018)**

**THIRD QUARTER 2007  
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<b>Outfall</b>	<b>Constituent</b>	<b>Monitoring</b>	<b>Units</b>	<b>Number of Samples</b>	<b>MEC</b>	<b>CV</b>	<b>Multiplier</b>	<b>Projected Maximum Effluent Concentration (99/99)</b>	<b>Dilution Ratio</b>	<b>Background Concentration</b>	<b>Projected Maximum Receiving Water Concentration</b>	<b>Step 1, Determine Water Quality Objectives</b>	<b>BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection</b>
1_2_11_18	Barium	Annual	mg/L	15	2.3	3.06	13.40	30.83	0	0	30.83	1000	BU
1_2_11_18	Biochemical Oxygen Demand (BOD 5 day)	Discharge	mg/L	52	33	1.45	2.75	90.87	0	0	90.87	20	BU
1_2_11_18	Chloride	Discharge	mg/L	86	56	0.64	1.51	84.32	0	0	84.32	150	BU
1_2_11_18	Fluoride	Annual	mg/L	0	All Data Qualified	0.60	All Data Qualified	All Qualified Data	0	0	NA	1.6	BU
1_2_11_18	Nitrate + Nitrite as Nitrogen (N)	Discharge	mg/L	76	10	1.48	2.27	22.68	0	0	22.68	8	BU/TMDL
1_2_11_18	Oil & Grease	Discharge	mg/L	44	17	2.24	4.04	68.65	0	0	68.65	10	BU
1_2_11_18	Sulfate	Discharge	mg/L	85	400	1.05	1.84	734.93	0	0	734.93	300	BU
1_2_11_18	Surfactants (MBAS)	Discharge	mg/L	18	1	2.62	9.58	9.58	0	0	9.58	0.5	BU
1_2_11_18	Total Dissolved Solids	Discharge	mg/L	86	1000	0.66	1.52	1524.01	0	0	1524.01	150	BU
1_2_11_18	Total Settleable Solids	Discharge	ml/L	56	10	4.69	5.05	50.48	0	0	50.48	0.3	BU
1_2_11_18	Total Suspended Solids	Discharge	mg/L	70	33000	7.31	4.97	163918.71	0	0	163918.71	45	BU



Table F3  
REASONABLE POTENTIAL ANALYSIS FOR PRIORITY POLLUTANTS, (OUTFALLS 003-007, 009, 010)

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Step 2

Step 4

Outfall CTR Constituent Units MEC CV CMC = Acute CCC = Chronic HH W&O (Not App) HH O = HH



**Table F3**  
**REASONABLE POTENTIAL ANALYSIS FOR PRIORITY POLLUTANTS, (OUTFALLS 003-007, 009, 010)**

**THIRD QUARTER 2007**

**Table F3  
REASONABLE POTENTIAL ANALYSIS FOR PRIORITY POLLUTANTS, (OUTFALLS 003-007, 009, 010)**

**THIRD QUARTER 2007  
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SANTA SUSANA FIELD LABORATORY  
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						Step 1: Water Quality Criteria, Determine C					Step 2	Step 3			Step 4	
						CTR CRITERIA				Basin Plan Title 22 GWR	C = Lowest Criteria	Is Effluent Data Available	Was Constituent Detected in Effluent Data	Are all Detection Limits > C	If DL > C, MEC = Min (DL)	MEC >= C
Outfall	CTR	Constituent	Units	MEC	CV	Freshwater CMC = Acute	Human Health CCC = Chronic	HH W&O (Not App)	HH O = HH							
3-7, 9,10	093	Isophorone	ug/L	Available Data <DL	0.60	NONE	NONE	8.4	600	NONE	600	Yes	No	No	NA	No
3-7, 9,10	094	Naphthalene	ug/L	Available Data <DL	0.60	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
3-7, 9,10	095	Nitrobenzene	ug/L	Available Data <DL	0.60	NONE	NONE	17	1900	NONE	1900	Yes	No	No	NA	No
3-7, 9,10	096	N-Nitrosodimethylamine	ug/L	Available Data <DL	0.60	NONE	NONE	0.00069	8.1	NONE	8.1	Yes	No	No	NA	No
3-7, 9,10	097	n-Nitroso-di-n-propylamine	ug/L	Available Data <DL	0.60	NONE	NONE	0.005	1.4	NONE	1.4	Yes	No	Yes	1.4	No
3-7, 9,10	098	N-Nitrosodiphenylamine	ug/L	Available Data <DL	0.60	NONE	NONE	5	16	NONE	16	Yes	No	No	NA	No
3-7, 9,10	099	Phenanthrene	ug/L	Available Data <DL	0.60	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
3-7, 9,10	100	Pyrene	ug/L	Available Data <DL	0.60	NONE	NONE	960	11000	NONE	11000	Yes	No	No	NA	No
3-7, 9,10	101	1,2,4-Trichlorobenzene	ug/L	Available Data <DL	0.60	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
3-7, 9,10	102	Aldrin	ug/L	Available Data <DL	0.60	3	NONE	0.00013	0.00014	NONE	0.00014	Yes	No	Yes	0.00014	No
3-7, 9,10	103	alpha-BHC	ug/L	Available Data <DL	0.60	NONE	NONE	0.0039	0.013	NONE	0.013	Yes	No	Yes	0.013	No
3-7, 9,10	104	beta-BHC	ug/L	Available Data <DL	0.60	NONE	NONE	0.014	0.046	NONE	0.046	Yes	No	No	NA	No
3-7, 9,10	105	Lindane (gamma-BHC)	ug/L	Available Data <DL	0.60	0.95	NONE	0.019	0.063	0.2	0.063	Yes	No	No	NA	No
3-7, 9,10	106	delta-BHC	ug/L	Available Data <DL	0.60	NONE	NONE	NONE	NONE	NONE	NONE	Yes	No	No	NA	No
3-7, 9,10	107	Chlordane	ug/L	Available Data <DL	0.60	2.4	0.0043	0.00057	0.00059	NONE	0.00059	Yes	No	Yes	0.00059	No
3-7, 9,10	108	4,4'-DDT	ug/L	Available Data <DL	0.60	1.1	0.001	0.00059	0.00059	NONE	0.00059	Yes	No	Yes	0.00059	No
3-7, 9,10	109	4,4'-DDE	ug/L	Available Data <DL	0.60	NONE	NONE	0.00059	0.00059	NONE	0.00059	Yes	No	Yes	0.00059	No
3-7, 9,10	110	4,4'-DDD	ug/L	Available Data <DL	0.60	NONE	NONE	0.00083	0.00084	NONE	0.00084	Yes	No	Yes	0.00084	No
3-7, 9,10	111	Dieldrin	ug/L	Available Data <DL	0.60	0.24	0.056	0.00014	0.00014	NONE	0.00014	Yes	No	Yes	0.00014	No
3-7, 9,10	112	Endosulfan I	ug/L	Available Data <DL	0.60	0.22	0.056	110	240	NONE	0.056	Yes	No	No	NA	No
3-7, 9,10	113	Endosulfan II	ug/L	Available Data <DL	0.60	0.22	0.056	110	240	NONE	0.056	Yes	No	No	NA	No
3-7, 9,10	114	Endosulfan Sulfate	ug/L	Available Data <DL	0.60	NONE	NONE	110	240	NONE	240	Yes	No	No	NA	No

**Table F3  
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NPDES PERMIT CA0001309**

						Step 1: Water Quality Criteria, Determine C					Step 2	Step 3			Step 4	
						CTR CRITERIA				Basin Plan Title 22 GWR	C = Lowest Criteria	Is Effluent Data Available	Was Constituent Detected in Effluent Data	Are all Detection Limits > C	If DL > C, MEC = Min (DL)	MEC >= C
Outfall	CTR	Constituent	Units	MEC	CV	Freshwater		Human Health								
						CMC = Acute	CCC = Chronic	HH W&O (Not App)	HH O = HH							
3-7, 9,10	115	Endrin	ug/L	Available Data <DL	0.60	0.086	0.036	0.76	0.81	NONE	0.036	Yes	No	No	NA	No
3-7, 9,10	116	Endrin Aldehyde	ug/L	Available Data <DL	0.60	NONE	NONE	0.76	0.81	NONE	0.81	Yes	No	No	NA	No
3-7, 9,10	117	Heptachlor	ug/L	Available Data <DL	0.60	0.52	0.0038	0.00021	0.00021	NONE	0.00021	Yes	No	Yes	0.00021	No
3-7, 9,10	118	Heptachlor Epoxide	ug/L	Available Data <DL	0.60	0.52	0.0038	0.0001	0.00011	NONE	0.00011	Yes	No	Yes	0.00011	No
3-7, 9,10	119	Aroclor-1016	ug/L	Available Data <DL	0.60	NONE	0.014	0.00017	0.00017	NONE	0.00017	Yes	No	Yes	0.00017	No
3-7, 9,10	120	Aroclor-1221	ug/L	Available Data <DL	0.60	NONE	0.014	0.00017	0.00017	NONE	0.00017	Yes	No	Yes	0.00017	No
3-7, 9,10	121	Aroclor-1232	ug/L	Available Data <DL	0.60	NONE	0.014	0.00017	0.00017	NONE	0.00017	Yes	No	Yes	0.00017	No
3-7, 9,10	122	Aroclor-1242	ug/L	Available Data <DL	0.60	NONE	0.014	0.00017	0.00017	NONE	0.00017	Yes	No	Yes	0.00017	No
3-7, 9,10	123	Aroclor-1248	ug/L	Available Data <DL	0.60	NONE	0.014	0.00017	0.00017	NONE	0.00017	Yes	No	Yes	0.00017	No
3-7, 9,10	124	Aroclor-1254	ug/L	Available Data <DL	0.60	NONE	0.014	0.00017	0.00017	NONE	0.00017	Yes	No	Yes	0.00017	No
3-7, 9,10	125	Aroclor-1260	ug/L	Available Data <DL	0.60	NONE	0.014	0.00017	0.00017	NONE	0.00017	Yes	No	Yes	0.00017	No
3-7, 9,10	126	Toxaphene	ug/L	Available Data <DL	0.60	0.73	0.0002	0.0073	0.00075	NONE	0.0002	Yes	No	Yes	0.0002	No

**Table F4  
REASONABLE POTENTIAL ANALYSIS FOR NONPRIORITY POLLUTANTS, (OUTFALLS 003-010)**

**THIRD QUARTER 2007  
THE BOEING COMPANY  
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NPDES PERMIT CA0001309**

<b>Outfall</b>	<b>Constituent</b>	<b>Monitoring</b>	<b>Units</b>	<b>Number of Samples</b>	<b>MEC</b>	<b>CV</b>	<b>Multiplier</b>	<b>Projected Maximum Effluent Concentration (99/99)</b>	<b>Dilution Ratio</b>	<b>Background Concentration</b>	<b>Projected Maximum Receiving Water Concentration</b>	<b>Step 1, Determine Water Quality Objectives</b>	<b>BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection</b>
3-7, 9,10	Boron	Annual	mg/L	7	0.21	0.6	3.54	0.74	0	0	0.74	1	BU
3-7, 9,10	Chloride	Discharge	mg/L	155	210	1.6	1.62	339.54	0	0	339.54	150	BU
3-7, 9,10	Fluoride	Annual	mg/L	0	All Data Qualified	0.6	All Data Qualified	All Qualified Data	0	0	NA	1.6	BU
3-7, 9,10	Nitrate + Nitrite as Nitrogen (N)	Discharge	mg/L	149	51	2.6	1.90	96.86	0	0	96.86	8	BU/TMDL
3-7, 9,10	Oil & Grease	Discharge	mg/L	92	16	2.4	2.52	40.33	0	0	40.33	10	BU
3-7, 9,10	Sulfate	Discharge	mg/L	155	240	1.6	1.61	385.64	0	0	385.64	300	BU
3-7, 9,10	Total Dissolved Solids	Discharge	mg/L	157	980	0.9	1.38	1354.91	0	0	1354.91	150	BU
3-7, 9,10	Total Suspended Solids	Annual	mg/L	101	4000	3.7	2.79	11152.76	0	0	11152.76	45	BU