TSS, BOD, perchlorate, total coliform oil and grease, total residual chlorine, and nitrate as nitrogen. The BPJ analysis resulted in reasonable potential for total dissolved solids, chloride, sulfate, fluoride, nitrate + nitrite as nitrogen, and barium. Effluent limitations for these constituents were included in Order R4-2006-0008.

R4-2006-0036

Discharges from Outfalls 001, 002, 011 and 018 flow to Bell Creek a tributary of the LA River. The TMDL for metals in the Los Angeles River assigned WLAs to all point source discharges to LA River and all upstream reaches and tributaries to (including Bell Creek and tributaries to Bell Creek). Effluent limitations for cadmium, copper, lead, zinc, and selenium at the aforementioned outfalls were based on WLAs established by the TMDL or existing effluent limitations, whichever were more protective. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N, which are included for these outfalls.

Outfalls 003 through 010 are storm water only outfalls. Outfall 008 is the only storm water only compliance point that discharges to Dayton Canyon Creek which flows to Bell Creek, a tributary of the Los Angeles River. The storm water only discharges do not have statistical reasonable potential for zinc. However, discharges from Outfall 008 flow to the LA River, which has a TMDL that provides a WLA for zinc. That WLA will also be incorporated as an effluent limitation at Outfall 008 only. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N, which are also included for this outfall.

Discharges from Outfalls 012 through 014 (rocket engine test stands) exit the site via tributaries to Bell Creek. The metals that have TMDL WLAs that do not have reasonable potential at these outfalls are cadmium, selenium and zinc. Effluent limitations for these constituents are included based on the TMDL. The Los Angeles River Nutrient TMDL developed WLAs for ammonia-N, nitrate-N, and nitrite-N. Daily maximum effluent limitations for these constituent were also applicable and included for discharges from these locations. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N.

Discharges from Outfalls 015 through 017 exited the site via tributaries to Bell Creek. The Metals TMDL resulted in new WLAs for lead and selenium and a wet weather discharge WLA for cadmium. The LA River Nutrient TMDL requires WLAs for ammonia-N, nitrate-N, and nitrite-N. TMDL based effluent limitations were included in the order for the noted metals and nutrients.

R4-2007-0055

On February 21, 2007, the discharger submitted a new ROWD that requested that outfalls 012, 013, and 014 be removed from the permit. Since discharges from the rocket engine test stands have terminated, wastewater will no longer be discharged. However, years of using the rocket engine test stands have resulted in contamination in the immediate vicinity of the test stands. RCRA investigations have resulted in the delineation of areas surrounding the test stands as RCRA Facility Investigation (RFI) sites. Chemicals of concern identified at these sites include TPH-gasoline, TPH-diesel, TPH-kerosene, oil and grease, trichloroethene and 1,2-dichloroethene. Since

these contaminants are documented as present in these locations the discharger will be required to monitor during storm events for chemicals of concern. The effluent limitations included in Orders R4-2006-0008 and R4-2006-0036 for the rocket engine test stands will be included as "benchmarks".

A "benchmark" is a water quality based effluent limit or a performance based limit that is used to evaluate the performance of BMPs with regard to the removal of contaminants present in the discharge. In this permit, the benchmarks are established based on water quality based effluent limitations. Exceedance of a benchmark triggers an evaluation of the BMPs implemented at the site. The evaluation may determine that the BMPs require augmentation, upgrading, or replacement. If so, the Discharger must develop a plan to implement the required upgrades and report to the Regional Board staff within 60 days of the reported exceedance. The Discharger will continue monitoring as directed in the Monitoring and Reporting Program and the Basin Management Practices Compliance Plan.

Topanga Fire: The Topanga Fire occurred on September 28, 2005. The fire resulted in significant alterations to the site. Over 70 percent of the SSFL burned with significant areas denuded of vegetation, making much of the steep terrain highly erodible. The exposure of the surface soils with no vegetative cover to runoff has increased the potential for the transport of those surface soils and associated contaminants offsite as a result of the fire. All of the BMPs in place onsite were destroyed.

After the fire Boeing immediately began efforts to replace the BMPs that were destroyed. Many of the drainage areas were vacuumed to remove accumulated ash. The Discharger hydromulched in excess of 800 acres onsite and installed erosion control devices throughout much of the SSFL site prior to the January 19, 2006 Board Meeting. BMPs implemented prior to the fire were typical of those routinely used at construction sites to retard the transport of sediment (silt fences, plastic sheeting, etc). In most cases, the BMPs implemented after the fire were designed to slow flows (i.e. using underdrain systems) and to treat specific contaminant groups (i.e. metals) using bags filled with carbon or vermiculite.

On May 24, 2007, Boeing submitted to the Regional Board the *Phase 2 Post-Fire Vegetation Recovery Assessment Report* prepared for Geosyntech Consultants by Western Botanical Services, Inc. The report assessed the status of and time to recovery of chaparral and scrub at the project site subsequent to the Topanga Fire which began on September 28, 2005. The executive summary of the report asserts that chaparral and scrub represent the dominant vegetation types at SSFL and that these plant communities represent an important natural vegetation-based means of erosion control at the site. It further states that the "perennial plant cover differed by significantly more than 30 percent between burned and unburned transects, total vegetative cover differed by significantly greater than 20 percent cover and ground cover differed by significantly more than 30 percent cover." The executive summary also states that the burned chaparral and scrub vegetation will likely recover to previous conditions within five to ten years.

The report also includes a section titled *Chaparral Recovery after Fire.* The section includes summaries of other studies completed on chaparral. Several studies (Guo

2001, Grace & Keeley 2006, Keeley & Keeley 1981, Horton & Kraebel 1955, Robi chaud et al 2000) concluded that the total vegetative cover is generally high in the first two years following a fire: reported values are from 11 to 85 percent. The report estimates that between March 26 and April 12, 2007, the mean total vegetative cover within the burned areas on the SSFL site is 46.6 percent.

Soil infiltration capacity is sometimes reduced after a fire. This reduction in soil infiltration capacity is due to an increase in soil water repellency (hydrophobicity) which is caused by waxy residues that are deposited on the soils during the burning of vegetation. On July 17, 2007, Boeing submitted the "Post Fire Soil Hydrophobicity and Recovery of Infiltration Capacity Report". The report documented an investigation of the pre-fire and post fire hydrophobicity conditions in four onsite target soil groups. The analysis was completed in April 2007. The conclusion suggests no statistical difference in the hydrophobicity of the soils between the burned and unburned tested areas onsite other than a portion of watershed 002 (west of Outfall 018). (Based on a confidence level of α=0.05.) The report included the statement that case studies indicate that the recovery time ranged from one to three years. The study at SSFL was completed nineteen months after the fire which began on September 28, 2005.

Regional Board's Wet Weather Task Force: During the Regional Board hearing on the 2005-07 Triennial Review of the Basin Plan, many stakeholders raised the issue of compliance with water quality standards and TMDLs during wet weather as a significant challenge and suggested that the formation of a Wet Weather Task Force to discuss and identify potential solutions to the challenges involved in complying with water quality standards during wet weather would be helpful. The Regional Board requested that staff convene a task force to identify project ideas that would address these wet weather concerns. The task force identified as a top priority a project to evaluate alternative design storm criteria. A design storm is a specific size storm event used to plan for and design storm water controls. Specifically, a design storm would assist in determining the scale and treatment capacity of controls such as BMPs. The Regional design storm issue arose again as a high priority for stakeholders as well as the Board at the hearing on the Los Angeles River Metals TMDL. During the TMDL hearing, the Executive Officer, Jonathan Bishop, committed Regional Board resources to fund an initial 2-year contract with Southern California Coastal Water Research Project (SCCWRP) to begin an evaluation of potential design storms that could be used by responsible agencies when implementing TMDLs.

Over the last two years, Regional Board staff has been working with SCCWRP, GeoSyntec, and a cross-section of stakeholders in the region known as the Design Storm Project Steering Committee on this project to evaluate potential design storms in terms of capturing storm water runoff, achieving water quality standards and implementability. A draft report is scheduled for circulation in early September 2007, which will summarize the results of the first two years of the project; discuss the complexities of establishing a regional design storm; and set forth recommendations for additional technical studies, sensitivity analysis and modeling.

Regional Board staff recognizes that while there are an infinite number of site specific considerations and permutations that could be considered in evaluating

potential design storms (e.g. different land uses, different pollutants, different inter-event times, different levels of effluent quality, etc.), it was necessary to make many assumptions and generalizations during this initial evaluation of regional design storms.

Therefore, Regional Board staff anticipates that further work will be needed before proposing a regional design storm policy or any site-specific design storm in order to further explore these assumptions and generalizations; evaluate the efficacy of the design storm for different pollutants and land uses; refine the data used in modeling the water quality outcomes of potential design storms and consider policy with regard to incorporating design storms into permits. It is therefore premature to establish a regional design storm or site-specific design storm at this time prior to this additional technical work and prior to a full consideration of the policy considerations of adopting a regional design storm policy.

Boeing's BMP Capacity Evaluations: On February 23, 2007, Boeing submitted to the Regional Board a memo entitled Outfall BMP Capacity Evaluation – 1 year storm 1 hour time of concentration. The memo evaluated the capacity of onsite structural best management practices. The memo also documented discussions with Regional Board staff which introduced the possibility of the use of the design storm size used for the trash TMDL in the Los Angeles River. The site specific storm proposed by Boeing utilized the same approach as was utilized in the Los Angeles River Trash TMDL, with some modifications. Boeing's concluded that a storm that generated a flow of 2.3 inches depth could be considered the "site specific design storm" and it was used to design the structural BMPs.

On April 3, 2007, Boeing submitted to the Regional Board a letter entitled Boeing SSFL Best Management Practice Rainfall Capacity Submittal. The letter included a summary of the site specific storm analysis and an evaluation of the BMPs in place. The analysis of the BMPs in place concluded that BMPs at Outfalls 003 and 004 required upgrades to capture and treat the 2.3 inches of rainfall. All other storm water only outfalls had best management practices capable of treating the storm depth of 2.3 inches, except Outfalls 008 and 009. The Discharger proposed the implementation of natural BMPs to treat the 2.3 inches of rainfall at Outfalls 008 and 009. The Discharger indicated that the location, terrain, and size of these outfalls make the implementation of structural BMPs to treat that volume of water (2.3 inches) much more difficult at these locations. The modeling and the structural BMP upgrades required to treat the site specific storm have been implemented at Outfalls 003 through 007.

The assumptions and generalizations utilized to develop the site specific storm have not been enumerated by the Discharger. The Regional Board has not developed a regional design storm policy or a policy for the consideration and evaluation of site specific storms developed for individual discharges. Therefore, this permit does not implement the 2.3 inches as the upper bound of the runoff that the discharger must treat for compliance with the final effluent limitations. When the Regional Board Design Storm Project, and associated policy considerations, are further developed along with an evaluation of acceptable assumptions and generalizations, the storm size developed by the Discharger may be considered by the Regional Board.

Reasonable Potential Analysis: A reasonable potential analysis was completed for data collected through May 22, 2006. The analysis did not result in the inclusion of any new constituents with effluent limitations in this Order.

Outfalls 015 through 017 will be deleted. The discharger currently trucks the wastewater offsite for disposal at one of the County Sanitation Districts of Los Angeles facilities and there are no plans to initiate discharges from the treatment plants in the future. Therefore, the updated ROWD included a request that Outfalls 015 through 017 be removed from the permit.

To prevent further degradation of the water quality of the Los Angeles River and Calleguas Creek and to protect their beneficial uses, mixing zones and dilution credits are not allowed in this Order. This determination is based on:

- Many of the beneficial uses stipulated are intermittent for Dayton Canyon Creek, Bell Creek and the Arroyo Simi. The discharges from SSFL in many cases provide a significant portion of the headwaters for these waterbodies. Since there is little assimilative capacity of the receiving water, a dilution factor is not appropriate and the final WQBEL should be a numeric objective applied end-of-pipe.

- The discharge may contain the 303(d) listed pollutants that are bioaccumulative such as metals. These pollutants, when exceeding water quality criteria within the mixing zone, can potentially result in tissue contamination of an organism directly or indirectly through contamination of bed sediments with subsequent incorporation into the food chain. The SIP, section 1.4.2.2.B. states that the "Regional Board shall deny or significantly limit a mixing zone and dilution credit as necessary to protect beneficial uses..." It continues that "such situations may exist based upon the quality of the discharge... or the overall discharge environment (including ... potential for bioaccumulation)."

For some pollutants, including aldrin, alpha-BHC, chlordane, DDT, dieldrin, heptachlor, heptachlor epoxide, several PAHs, PCBs, TCDD equivalents, and toxaphene the applicable water quality objectives are below the levels that current analytical techniques can measure. Reasonable potential analyses have been completed on each of these constituents and two of them had reasonable potential: alpha-BHC and TCDD equivalents. The MEC detected for TCDD exceeded the CTR criterion and the detection limits for alpha-BHC in the receiving water and the effluent exceeded the criterion.

VI. MODIFICATIONS ASSOCIATED WITH STATE BOARD ORDER WQ 2006-0012 AND WITH THE REVISED REPORT OF WASTE DISCHARGE SUBMITTED BY BOEING ON FEBRUARY 20. 2007

The State Board Order included the following provisions:

- Remanded the permit to the Regional Board to revise the provisions concerning Outfalls 001, 002, 011, and 018,

- Stayed the effluent limitations at Outfalls 011 and 018 pending a determination by the Regional Board deleting either Outfalls 011 and 018 or Outfalls 001 and 002,
- Directed the Regional Board to issue a Cease and Desist Order with the shortest possible compliance schedule and interim effluent limitations. The effective date of the CDO was to be January 19, 2006,
- Review the permit to ensure that numeric effluent limitations for different outfalls do not count the same violation twice in such a manner as to treat a single violation as multiple violations.
- In all other respects, the petitions were denied.

Orders R4-2006-0008 and R4-2006-0036 included numeric effluent limitations for discharges from Outfalls 001, 002, 011, and 018. Outfall 018 is located upstream of Outfall 002 and Outfall 011 is upstream of Outfall 001. The same effluent limitations were applicable to all four outfalls. The State Board Order concluded that Outfalls 001 and 002 were duplicative of Outfalls 011 and 018 and directed the Regional Board to retain only two of the four compliance points with numeric effluent limitations. Since Outfalls 011 and 018 are closer to the developed portion of the site, this Order (Order R4-2007-0055) retains the numeric effluent limitations. Outfall 011 will transport effluent from the groundwater treatment unit and storm water runoff. Therefore, the effluent limitations at Outfall 011 include daily maximum and monthly average concentrations. Outfall 018 will transport storm water runoff from the site; therefore this location is regulated with daily maximum limitations only. This is consistent with the NPDES dischargers in this Region that discharge storm water only.

Outfalls 001 and 002 have monitoring requirements with benchmarks and a requirement for the Discharger to implement BMPs that will be upgraded based on the monitoring data relative to the benchmark. The benchmarks for Outfall 001 will include daily maximum and monthly average limitations since the discharge from Outfall 011 and Outfall 001 will include treated groundwater from Outfall 019 and storm water runoff. Since the discharge at Outfall 001 will be composed of both storm water runoff and treated groundwater both the daily maximum and monthly average benchmarks are applicable. The benchmarks for Outfall 002 are the daily maximum effluent limitations stipulated for Outfalls 011 and 018, since Outfall 002 will transport storm water runoff only.

The State Board Order concluded that the discharge from Outfall 018 was duplicative of the discharge from Outfall 002 and that the discharge from Outfall 011 was duplicative of the Outfall 001. Discharges from Outfalls 018 only occur during storm events. Outfall 018 is located in the same subwatershed with several solid waste management units (SWMU). Flow leaving the R-2 Pond travels 4,500 feet prior to reaching Outfall 002. Prior to the discharge reaching Outfall 002 storm water from STL-IV and from various regions of the buffer zone will also enter the drainage. Storm water from the buffer zone will provide dilution for the contaminants in the discharge. However, storm water from STL-IV may contain elevated levels of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, dibenz(a,h)anthracene, indeno(1,2,3-cd)pyrene, chromium, copper, lead, and zinc, all chemicals of concern associated with this SWMU. Therefore, discharges from Outfall 018 may pick up additional contaminants from storm water runoff traversing contaminated areas at STL-IV and entering the drainage prior to the water exiting Outfall 002.

Discharges from Outfall 011, Perimeter Pond, travel along the southeastern edge of Area 1 Burn Pit (A1BP) prior to entering the buffer zone. A partial list of the chemicals of concern

in soil associated with the A1BP include perchlorate, dioxins, metals (including cadmium, chromium, selenium, copper, mercury, boron, etc.) total petroleum hydrocarbons, and pentachlorophenol. Downstream in the buffer zone discharges from the Perimeter Pond also join with storm water runoff from the southeastern portion of the COCA area of concern (AOC) and the Component Test Laboratory V (CTL V) AOC. Additional runoff from the buffer zone is added to the drainage prior to the flow reaching Outfall 001. Discharges from Outfall 011 may pick up additional contaminants from storm water runoff from the COCA and CTL V AOCs prior to being discharged offsite at Outfall 001.

Outfalls 001 and 002, are downstream from Outfalls 011 and 018. Outfall 001 includes storm water runoff from the southern portion of STL IV and the buffer zone south of Outfall 018. Outfall 002 includes storm water runoff from CTL V the COCA area, A1BP and the buffer zone south of Outfall 011. The discharger will be required to continue to monitor at Outfalls 001 and 002 while implementing BMPs to ensure that contaminants associated with site activities are not transported offsite by storm water runoff.

Based on the State Board Order, a Cease and Desist Order was developed to address new effluent limitations included in Order R4-2006-0008.

A Cease and Desist Order (Order R4-2007-0056) was adopted on November 1, 2007. The Cease and Desist Order included interim effluent concentrations and a time schedule for discharges form Outfalls 001 through 018 as directed by the Remand from State Board. The CDO also included time for the Discharger to implement engineered natural treatment systems at Outfalls 008 and 009. Included in that task was a requirement to assemble a panel of professionals with technical expertise and experience working with natural treatment systems to treat contaminants in storm water runoff. A number of tasks were to be assigned to the panel. They were to review site conditions, evaluate the flows that have been modeled for the site including the design storm recommendation previously provided by the Discharger, the contaminants of concern, the BMPs capable of treating the discharge to meet the final effluent limitations. Subsequently, the panel of experts would be required to select, design and oversee implementation of the selected BMPs.

VII. 2008 Report of Waste Discharge (ROWD)

On December 11, 2008, Boeing submitted a new Report of Waste Discharge. Supplemental material was submitted on February 2, 2009, to complete the ROWD. The ROWD included requests for a number of actions in the NPDES permit. Following is a summary of those requests and the Regional Board responses:

Remove Compliance Points at Outfalls 012 (Alpha Test Stand), 013 (Bravo Test Stand) and 014 (APTF): These outfalls were originally established to monitor the wastewater discharges associated with the rocket engine testing at these locations. Since that time the testing operations have ceased. However, Board staff believes that the testing operations have resulted in contamination in the areas which may be transported downstream via storm water runoff. Therefore, once the operations ceased, the requirements in the permit were altered to require monitoring of storm water runoff from these areas. The Discharger requested a provision to terminate sampling once the structures are removed. Sampling after the structures are removed will provide information regarding the potential transport of residual contamination by storm water runoff. Therefore

the request to remove the compliance points at Outfalls 012 through 014 has not been implemented.

Design Storm: Following the adoption of the NPDES permit on November 1, 2007, Order R4-2007-0055, and the Cease and Desist Order (R4-2007-0056), the Discharger assembled a panel with input from the Regional Board staff and water resources-focused environmental organizations to review site conditions, modeled flow, contaminants of concern and evaluate the BMPs capable of providing the required treatment to meet the final effluent limitations. The panel initially evaluated site conditions and on April 30, 2008, issued a report entitled "Expert Panel Final Consensus Recommendation on a Site Specific Design Storm for the SSFL." The Expert Panel recommended a site specific design storm defined as either 2.5 inches during a 24-hour period, or 0.6 inches in an hour, as measured at the Area IV rain gauge located at the SSFL.

The Regional Board has funded the preliminary work for the development of a regional design storm and the associated policy. This work is documented in the Fact Sheet in the section titled Regional Board's Wet-Weather Task Force. Regional Board staff anticipates that further work will be needed before proposing a regional design storm policy or any site-specific design storm, in order to further explore these assumptions and generalizations; evaluate the efficacy of the design storm for different pollutants and land uses; refine the data used in modeling the water quality outcomes of potential design storms and consider policy implications with regard to incorporating design storms into permits. It is therefore premature to establish a regional design storm or site-specific design storm prior to this additional technical work and prior to a full consideration of the policy considerations of adopting a regional design storm policy.

Regional Board staff also believes it is not appropriate to incorporate the design storm into the permit at this time. Depending on how the design storm is implemented, the size of the storm stipulated by the Expert Panel would result in storms each year that would generate runoff which may not be required to comply with the final effluent limitations that are currently in the permit. The development of a policy is essential to ensure that when a design storm is approved; the implementation of the design storm is consistent throughout the region. There is currently no policy in place for the Los Angeles Region or in any other region throughout the state that Regional Board staff is aware of. However, the work completed on the design storm provides the basis for the design of the BMPs around the site.

Composite versus Grab Sampling: The Discharger also requested to alter the type of monitoring required in the permit from grab to composite. The Expert Panel during the evaluation of the site and permit conditions recommended that using composite versus grab for constituents where composite sampling is appropriate would provide a more representative sample to evaluate contaminants in storm water runoff.

In May, 2004, the Regional Board issued a Section 13267 request for sampling at two locations using grab and composite results. The composite samples were collected over a three hour time span during storm events. The data collected did not yield significant differences in the detected concentrations of the constituents of concern. Since the data collected previously indicates that there is no difference between grab and composite samples, the request to utilize composite sampling has not been incorporated.

Outfalls 008 and 009. Order R4-2007-0055 included a time schedule from November 1, 2007 through June 10, 2009 compliance for the discharges from site would be evaluated utilizing "benchmarks". This time schedule was to allow the assembly of the Expert Panel, and time to plan, design and implement the engineered natural treatment systems (ENTS). The Discharger has:

- The Panel has completed the following tasks:
  - Submitted a recommendation for the Design Storm;
  - Designed ENTs for Boeing owned property at Outfall 009; and
  - Designed ENTs for Outfall 008.
- The Discharger has:
  - Implemented Phase 1 of the ENTs project including culvert upgrades; and
  - Submitted application for Special Use Permit with Ventura County which is required to construct the ENTs.

The modification of the Special Use Permit requires California Environmental Quality Act (CEQA) review. This process takes about four or five months for a mitigated negative declaration. The time required can be increased significantly if the project requires additional evaluation.

Interim Source Removal Action: On December 3, 2008, the Regional Board issued a Section 13304 Order to perform an Interim/Source Removal Action (ISRA) of Soil in the Areas of Outfalls 008 and 009 Drainage Areas. The Order directed the Discharger to undertake source removal of impacted soils that are causing or contributing to violations of limitations contained in NPDES Permit No. CA0001309. Coordinating the efforts to implement the ENTs and the implementation of the source removal activities within both the Outfall 008 and 009 watersheds will result in the maximum benefit. Time will be required for planning, permitting, excavation of the soil, and subsequent re-stabilization of the impacted areas.

The Discharger will utilize source removal actions coupled with the ENTs to comply with the final effluent limitations included in this Order.

VIII. Reasonable Potential Analysis - 2009

The new data submitted was utilized to complete a new RPA. The RPA did not yield any new constituents with reasonable potential (RP).

IX. SPECIFIC RATIONALES FOR EACH OF THE NUMERICAL EFFLUENT LIMITATIONS

A. The following table presents the effluent limitations and the specific rationales for pollutants that are expected to be present in the discharge from Outfalls 011, 018 and 019. The daily maximum effluent limitations are applicable for discharges of storm water runoff from Outfall 018 and 011. The daily maximum and monthly average effluent limitations are applicable for discharges from Outfalls 011 and 019(the groundwater treatment unit).

These effluent limitations will also be used as benchmarks when evaluating the performance of BMPs implemented at Outfalls 001 (daily maximum and monthly average) and Outfall 002 (daily maximum discharge limitations only).

		Discharge Limitations		
Constituents	**Units**	**Monthly Average**	**Daily Maximum**	**Rationale[1]**
pH	pH Units	---	6.5-8.5	Basin Plan
Temperature	°F	---	86	BPJ/Thermal Plan
Total suspended solids	mg/L	15	45	BPJ–Previous Order
$BOD_5$20°C	mg/L	20	30	BPJ – Previous Order
Oil and grease	mg/L	10	15	BPJ – Previous Order
Settleable solids	ml/L	0.1	0.3	BPJ – Previous Order
Total residual chlorine	mg/L	----	0.1	Basin Plan
Total dissolved solids	mg/L	----	950	Basin Plan
Chloride	mg/L	----	150	Basin Plan
Sulfate	mg/L	----	300	Basin Plan
Barium	mg/L	----	1.0	BPJ-Previous Order
Iron	mg/L	----	0.3	BPJ-Previous Order
Fluoride	mg/L	----	1.6	Basin Plan
Detergents (as MBAS)	mg/L	----	0.5	Basin Plan
Nitrate + Nitrate-N	mg/L	----	8.0	Basin Plan
Ammonia-N	mg/L	1.96©	10.1®	LA River Nutrients TMDL
Nitrate-N	mg/L	----	8.0	LA River Nutrients TMDL
Nitrite-N	mg/L	----	1.0	LA River Nutrients TMDL
Manganese	µg/L	----	50	BPJ-Previous Order
Cyanide	µg/L	4.3	8.5	CTR
Antimony	µg/L	----	6.0	Basin Plan-Title 22
Arsenic	µg/L	----	10	USEPA MCL
Beryllium	µg/L	----	4.0	Basin Plan-Title 22
Cadmium	µg/L	2.0	4.0/3.1$^{*\beta}$	CTR/TLA River Metals TMDL
Chromium (VI)	µg/L	8.1	16.3	CTR
Copper	µg/L	7.1	14.0	CTR
Lead	µg/L	2.6	5.2	CTR
Mercury	µg/L	0.05	0.1	CTR
Nickel	µg/L	35	96	CTR
Selenium	µg/L	4.1	8.2/5$^{\#\beta}$	CTR/LA River Metals TMDL

[1] The rationale includes plans, policies, regulations, and other sources of effluent limitations. Basin Plan is Water Quality Control Plan Los Angeles Region, BPJ is Best Professional Judgement, TMDL is Total Maximum Daily Load, CTR is California Toxics Rule (40 CFR Part 131).

* Effluent limit applies only during wet weather discharges.

β This effluent limit shall be deemed vacated at such time as Regional Board Resolutions R05-006 and R05-007 are vacated in compliance with a writ of mandate in the matter of Cities of Bellflower et al v. State Water Resources Control Board et al, Los Angeles Superior Court # BS101732. The Regional Board shall provide notice to the discharger of any such action.

Effluent limit applies only during dry weather discharges.

© Thirty day average at ph = 7.9 and 20°C, when hourly samples are collected and composited or only one grab sample is collected.

		Discharge Limitations		
Constituents	**Units**	**Monthly Average**	**Daily Maximum**	**Rationale[1]**
Silver	µg/L	2.0	4.1	CTR
Thallium	µg/L	----	2.0	Basin Plan
Zinc	µg/L	53.6	119	CTR
1,1-Dichloroethylene	µg/L	3.2	6.0	CTR/BPJ-Title 22
Trichloroethylene	µg/L	----	5.0	BPJ/Basin Plan-Title 22
Perchlorate	µg/L	----	6.0	BPJ/DHS Action Level
2,4,6-Trichlorophenol	µg/L	6.5	13.0	CTR
2,4-Dinitrotoluene	µg/L	9.1	18.3	CTR
Alpha-BHC	µg/L	0.01	0.03	CTR
Bis(2-ethylhexyl)phthalate	µg/L	----	4.0	Basin Plan/Title 22
N-Nitrosodimethylamine	µg/L	8.1	16.3	CTR
Pentachlorophenol	µg/L	8.2	16.5	CTR
TCDD	µg/L	1.4E-08	2.8E-08	CTR
Radioactivity Gross Alpha Gross Beta	 pCi/L pCi/L	 ---- ----	 15 50	 BPJ/Basin Plan BPJ/Basin Plan
Combined Radium-226 & Radium-228	pCi/L	----	5	BPJ/Basin Plan
Tritium	pCi/L	----	20,000	BPJ/Basin Plan
Strontium-90	pCi/L	----	8	BPJ/Basin Plan

B. Following are the effluent limitations and the specific rationales for pollutants discharged from Outfalls 003 through 010. The effluent limitations are effective on the effective date of the permit for Outfalls 003 through 007 and 010. Discharges from Outfalls 008 and 009 must demonstrate compliance with the final effluent limitations after May 17, 2010. During the interim time period (June 10, 2009 through May 17, 2010) the final limitations serve as benchmarks at Outfalls 008 and 009.

		Discharge Limitations		
Constituents	**Units**	**Monthly Average**	**Daily Maximum**	**Rationale**
pH	pH Units	----	6.5-8.5	Basin Plan
Oil and grease	mg/L	----	15	BPJ
Chloride	mg/L	----	150	Basin Plan
Sulfate	mg/L	----	250[2a]	Basin Plan
Sulfate	mg/L	----	300[2b]	Basin Plan
Boron[1]	mg/L	----	1.0	Basin Plan
Fluoride	mg/L	----	1.6	Basin Plan
Nitrate + Nitrate-N	mg/L	----	10.0[2a]	Basin Plan

® 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.

[1] Limit is for discharges for Outfalls 003 through 007, 009, and 010 which flows to Calleguas Creek. It is not applicable to discharges from Outfall 008 to Dayton Canyon Creek.

Constituents	Units	Discharge Limitations		Rationale
		Monthly Average	Daily Maximum	
Nitrate + Nitrate-N	mg/L	----	8[2b]	Basin Plan
Total dissolved solids	mg/L	----	850[2a]	Basin Plan
Total dissolved solids	mg/L	----	950[2b]	Basin Plan
Ammonia-N (Outfall 008 only)	mg/L	----	10.1®	LA River Nutrients TMDL
Nitrate-N (Outfall 008 only)	mg/L	----	8.0	LA River Nutrients TMDL
Nitrite-N (Outfall 008 only)	mg/L	----	1.0	LA River Nutrients TMDL
Selenium (Outfall 008 only)	µg/L	----	5#β	LA River Metals TMDL
Zinc (Outfall 008 only)	µg/L	----	159*β	LA River Metals TMDL
Antimony	µg/L	----	6.0	Basin Plan/Title 22
Cadmium	µg/L	----	4.0/3.1*β	CTR/LA River Metals TMDL
Copper	µg/L	----	14.0	CTR
Mercury	µg/L	----	0.13	Calleguas Creek Metals TMDL
Nickel	µg/L	----	100	Calleguas Creek Metals TMDL/Basin Plan (Title 22)
Thallium	µg/L	----	2.0	Basin Plan
Lead	µg/L	----	5.2	CTR
TCDD	µg/L	----	2.8E-08	CTR
Perchlorate	µg/L	----	6.0	BPJ/ DHS Notification Level
Radioactivity				
Gross Alpha	pci/L	----	15	Basin Plan/Title 22
Gross Beta	pci/L	----	50	Basin Plan/Title 22
Combined Radium-226 & Radium-228	pci/L	----	5	Basin Plan/Title 22
Tritium	pci/L	----	20,000	Basin Plan/Title 22
Strontium-90	pci/L	----	8	Basin Plan/Title 22

[2a] This limit is for discharges which flow to Calleguas Creek from Outfalls 003 through 007, 009, and 010.

C. Following are the benchmarks and the specific rationales for pollutants discharged in storm water runoff from Outfalls 012 through 014.

Constituents	Units	Discharge Limitations		Rationale
		Monthly Average	Daily Maximum	
pH	pH Units	----	6.5-8.5	Basin Plan
Oil and grease	mg/L	----	15	BPJ
Chloride	mg/L	----	150	Basin Plan
Sulfate	mg/L	----	300	Basin Plan
Fluoride	mg/L	----	1.6	Basin Plan
Nitrate + Nitrate-N	mg/L	----	8	Basin Plan
Total dissolved solids	mg/L	----	950	Basin Plan
Settleable solids	ml/L	----	0.3	Basin Plan
Total suspended solids	mg/L	----	45	BPJ
Ammonia-N	mg/L	----	10.1®	LA River Nitrogen TMDL
Nitrate-N	mg/L	----	8.0	LA River Nitrogen TMDL
Nitrite-N	mg/L	----	1.0	LA River Nitrogen TMDL
Cadmium	µg/L	----	$3.1^{*\beta}$	LA River Metals TMDL
Selenium	µg/L	----	$5^{\#\beta}$	LA River Metals TMDL
Zinc	µg/L	----	$159^{*\beta}$	LA River Metals TMDL
Copper	µg/L	----	13.5	CTR
Mercury	µg/L	----	0.10	CTR
Lead	µg/L	----	5.2	CTR
TCDD	µg/L	----	2.8E-08	CTR
Naphthalene	µg/L	----	21	BPJ
Total Petroleum Hydrocarbons	µg/L	----	100	BPJ
Ethylene dibromide	µg/L	----	50	BPJ
Tertiary butyl alcohol	µg/L	----	12	BPJ
1,4-dioxane	µg/L	----	3	BPJ
Perchlorate	µg/L	----	6.0	BPJ/ DHS Notification Level

X. Receiving Water Limitations

A. The discharge shall not cause the concentration of constituents in Arroyo Simi, a tributary of Calleguas Creek, in excess of the following limitations.

Constituents	Units	Discharge Limitations Monthly Average	Discharge Limitations Daily Maximum	Rationale
Chlorpyrifos	µg/L	--	0.02	Toxicity TMDL
Diazinon	µg/L	--	0.16	Toxicity TMDL
Chlordane	µg/L	--	0.001	OC Pest & PCBs TMDL
4,4-DDD	µg/L	--	0.0014	OC Pest & PCBs TMDL
4,4-DDE	µg/L	--	0.001	OC Pest & PCBs TMDL

Constituents	Units	Discharge Monthly Average	Limitations Daily Maximum	Rationale
4,4-DDT	µg/L	--	0.001	OC Pest & PCBs TMDL
Dieldrin	µg/L	--	0.0002	OC Pest & PCBs TMDL
PCBs	µg/L	--	0.0003	OC Pest & PCBs TMDL
Toxaphene	µg/L	--	0.0003	OC Pest & PCBs TMDL

XI. Receiving Water Sediment Effluent Limitations

A. Final Ambient WLAs for Pollutants in Sediment for Storm Water Dischargers

The following are the final ambient WLAs for storm water permittees that were established in the Calleguas Creek OC Pesticides & PCBs TMDL. They are measured as in-stream annual averages at the base of each subwatershed where the discharges are located.

The final WLAs must be achieved and become sediment limitations after the sampling indicates that the Discharger is able to comply with the final WLAs or at the end of the 20-year compliance schedule specified in the TMDL (March 24, 2026), which ever occurs first. In either event, the permit will be reopened at that time to include appropriate sediment limitations.

Constituents	Units	Discharge Monthly Average	Limitations Daily Maximum	Rationale
Chlordane	µg/g	--	0.0033	OC Pest & PCBs TMDL
4,4-DDD	µg/g	--	0.002	OC Pest & PCBs TMDL
4,4-DDE	µg/g	--	0.0014	OC Pest & PCBs TMDL
4,4-DDT	µg/g	--	0.0003	OC Pest & PCBs TMDL
Dieldrin	µg/g	--	0.0002	OC Pest & PCBs TMDL
PCBs	µg/g	--	0.12	OC Pest & PCBs TMDL
Toxaphene	µg/g	--	0.0006	OC Pest & PCBs TMDL

B. Interim Ambient WLAs for Pollutants in Sediment for Storm Water Dischargers

The following sediment interim WLAs for Arroyo Simi are effective June 26, 2014 (five years from the effective date of this permit).

Constituents	Units	Discharge Monthly Average	Limitations Daily Maximum	Rationale
Chlordane	µg/g	--	0.0033	OC Pest & PCBs TMDL
4,4-DDD	µg/g	--	0.014	OC Pest & PCBs TMDL
4,4-DDE	µg/g	--	0.17	OC Pest & PCBs TMDL
4,4-DDT	µg/g	--	0.025	OC Pest & PCBs TMDL
Dieldrin	µg/g	--	0.0011	OC Pest & PCBs TMDL
PCBs	µg/g	--	25.7	OC Pest & PCBs TMDL
Toxaphene	µg/g	--	0.23	OC Pest & PCBs TMDL

XII. Monitoring Requirements

A. Effluent Monitoring

To access the impact of the discharge to the beneficial uses of the receiving waters, the Discharger is required to monitor the conventional and priority pollutants and other identified parameters.

B. Storm Water Monitoring and Reporting

Storm water runoff discharges from the SSFL are subject to requirements stipulated in this NPDES permit and the Discharger is required to comply with all applicable provisions of the Storm Water Pollution Prevention Plan (Attachment A of the Order). This plan includes requirements to develop, implement, and when appropriate update a Storm Water Pollution Prevention Plan (SWPPP) along with Best Management Practices (BMPs) with the goal of preventing all pollutants from contacting storm water and with the intent of keeping all contaminants of concern from moving into receiving waters. The BMPs are designed to treat flows generated by storm water runoff from a storm depth up to 2.3 inches to meet the final effluent limitations.

C. Receiving Water Monitoring and Reporting

The Calleguas Creek Toxicity TMDL and the Calleguas Creek OC Pesticides & PCBs TMDL include receiving water concentrations that are to be accomplished utilizing BMPs. The OC Pesticides & PCBs TMDL includes sediment contaminant concentrations for tributaries of Calleguas Creek as well. This permit includes monitoring requirements to demonstrate compliance with the stipulated effluent limitations.

A requirement has also been included to require priority pollutant monitoring in the Arroyo Simi and in Bell Creek once during the five year permit term.

D. Sediment Monitoring and Reporting

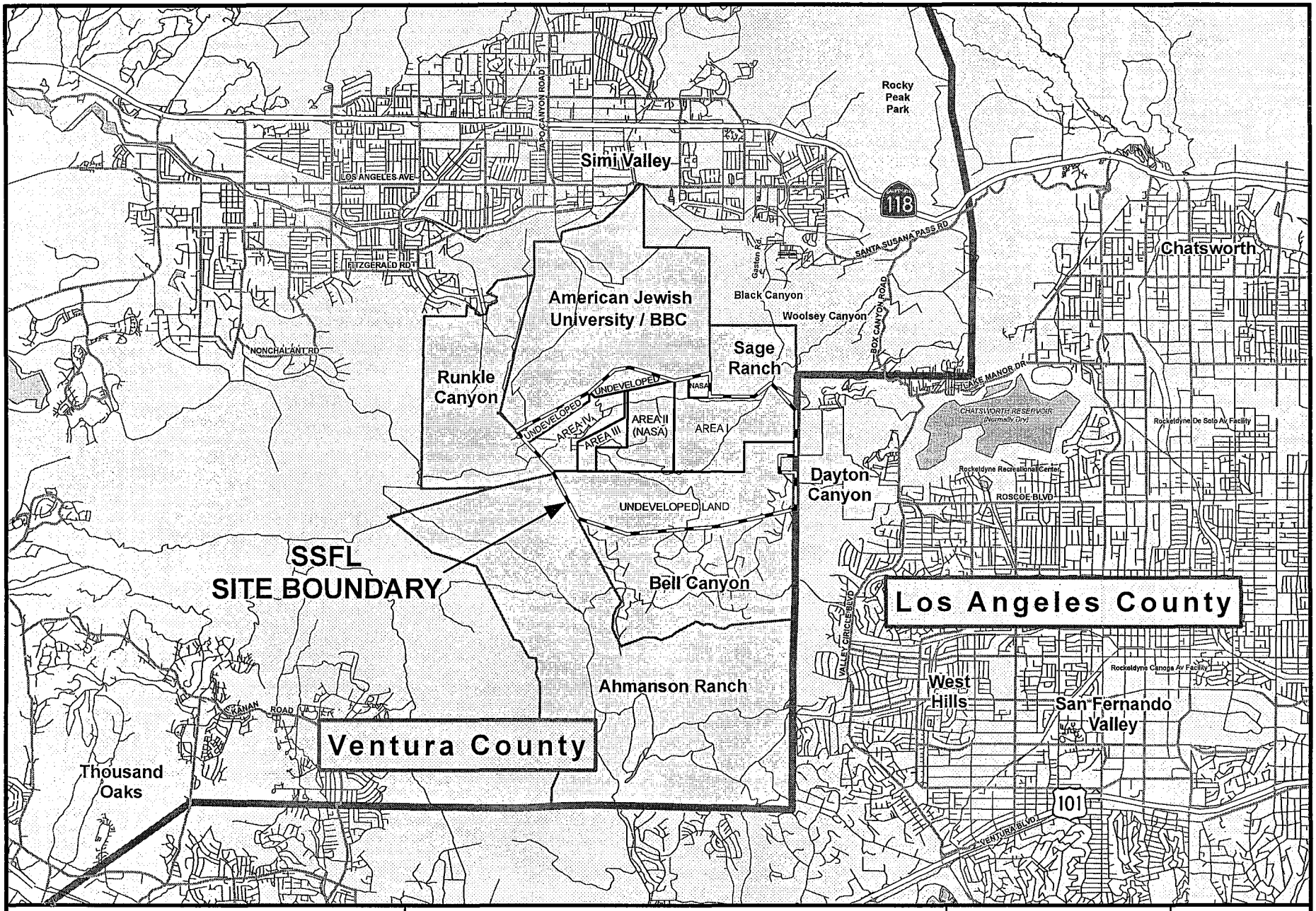
The Calleguas Creek OC Pesticides & PCBs TMDL includes waste load allocations and a requirement for monitoring of the sediment. The TMDL stipulates that compliance with the sediment based WLAs is measured as an in-stream annual average at the base of each subwatershed where the discharges are located.

E. Bioassessment Monitoring

The goals of the bioassessment monitoring for the Arroyo Simi and Los Angeles River are to:

- Determine compliance with receiving water limitations;
- Monitor trends in surface water quality;
- Ensure protection of beneficial uses;
- Provide data for modeling contaminants of concern;

- Characterize water quality including seasonal variation of surface waters within the watershed;
- Assess the health of the biological community; and
- Determine mixing dynamics of effluent and receiving waters in the estuary.



1 inch equals 1.5 miles

Miles

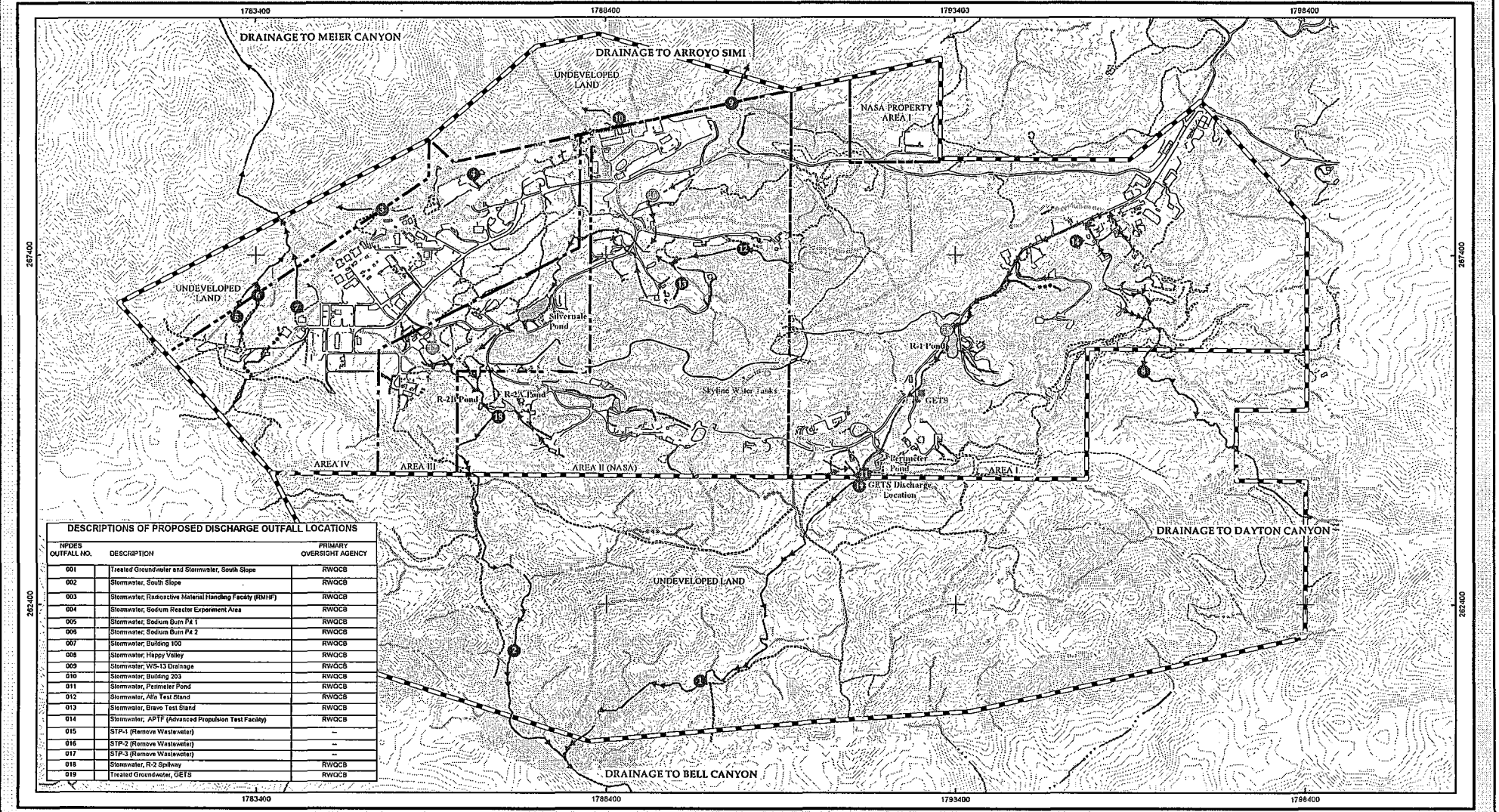
0 1.5 3

SANTA SUSANA FIELD LABORATORY

Document: Offsite-Report-Regional_Map.mxd Date: Dec 10, 2007

Regional Map

FIGURE 1-1



DESCRIPTIONS OF PROPOSED DISCHARGE OUTFALL LOCATIONS

NPDES OUTFALL NO.	DESCRIPTION	PRIMARY OVERSIGHT AGENCY
001	Treated Groundwater and Stormwater, South Slope	RWQCB
002	Stormwater, South Slope	RWQCB
003	Stormwater, Radioactive Material Handling Facility (RMHF)	RWQCB
004	Stormwater, Sodium Reactor Experiment Area	RWQCB
005	Stormwater, Sodium Burn Pit 1	RWQCB
006	Stormwater, Sodium Burn Pit 2	RWQCB
007	Stormwater, Building 100	RWQCB
008	Stormwater, Happy Valley	RWQCB
009	Stormwater, WS-13 Drainage	RWQCB
010	Stormwater, Building 203	RWQCB
011	Stormwater, Perimeter Pond	RWQCB
012	Stormwater, Alfa Test Stand	RWQCB
013	Stormwater, Bravo Test Stand	RWQCB
014	Stormwater, APTF (Advanced Propulsion Test Facility)	RWQCB
015	STP-1 (Remove Wastewater)	--
016	STP-2 (Remove Wastewater)	--
017	STP-3 (Remove Wastewater)	--
018	Stormwater, R-2 Spillway	RWQCB
019	Treated Groundwater, GETS	RWQCB

N

0 500 1,000 2,000 Feet

MAP COORDINATES IN STATEPLANE, NAD 27, ZONE V

- NPDES Outfalls (RWQCB Primary Oversight Authority)
- Historical NPDES Outfalls
- Groundwater Extraction Treatment System (GETS)

Legend
- Effluent Pathways
- Surface Water Drainage Divide
- Natural Drainage
- Concrete Lined Drainage
- Graded Drainage
- Surface Water Reclamation Ponds

Base Map Legend
- SSFL Property Boundary
- Administrative Area Boundary
- Ground Elevation Contours
- Drainage Pathways
- A/C Curbing
- Dirt Road
- Existing Building or Structure

Site Map with Outfall Locations and Storm Water Drainage Systems

Date: Jan 24, 2005

File: T:\projects\rocketdyne\mxd\RAW\Draft\NPDES.mxd

MWH

FIGURE 1-2

TABLE R1

Boeing SSFL
Outfalls 001 and 002
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisms Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6	0.43	NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	Yes	Yes	4300	2.01	8627
2	Arsenic	µg/L	0.6	6.7	340	150	NONE	NONE	10	10.0	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
3	Beryllium	µg/L	0.6	11	NONE	NONE	Narrative	Narrative	4	4.0	YES	Yes	No	Yes	Yes	Yes	Narrative	2.01	
4	Cadmium*	µg/L	0.8971	6.9	4.6	2.4	Narrative	Narrative	5	2.4	YES	Yes	No	Yes	Yes	Yes	Narrative	2.01	
5a	Chromium III*	µg/L	2.2223	100	1741	209	Narrative	Narrative	50	50.0	YES	Yes	No	Yes	Yes	Yes	Narrative	2.01	
5b	Chromium VI	µg/L	0.6	0	16.3	11.5	Narrative	Narrative		11.5	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
6	Copper*	µg/L	1.5861	100	13.5	9.4	1300	NONE		9.4	YES	Yes	No	Yes	Yes	Yes	NONE	2.0	
7	Lead*	µg/L	5.1437	160	82.2	3.2	Narrative	Narrative		3.2	YES	YES	No	NO	NO	NO	Narrative	2.0	
8	Mercury	µg/L	0.8837	0.32	Reserved	Reserved	0.05	0.051	2	0.05	YES	Yes	No	Yes	Yes	Yes	0.051	2.0	0.10
9	Nickel*	µg/L	0.6	23	471	52	610	4600	100	52.16	No	Yes	No	Yes	Yes	Yes	4600	2.01	9228
10	Selenium	µg/L	0.8864	0.63	Reserved	5	Narrative	Narrative	50	5.00	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
11	Silver*	µg/L	0.6	0.14	4	none	NONE	NONE		4.00	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
12	Thallium	µg/L	0.6	0.46	NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	NO	NO	6.3	2.01	13
13	Zinc*	µg/L	1.191	160	122.7	121.7	none	NONE		121.70	YES	Yes	No	Yes	Yes	Yes	NONE	2.01	
14	Cyanide	µg/L	0.6	18	22	5.2	700	220,000	200	5.2	YES	YES	No	YES	YES	YES	220000	2.0	441362
15	Asbestos	Fibers/ L			NONE	NONE	7,000,000	NONE	7x10^6	7x10^6	No	Go to Tier 2	No	NO	NO	NO			
16	2,3,7,8-TCDD (Dioxin)	µg/L	1.2325	5E-06	NONE	NONE	1.3E-08	1.4E-08	3x10^-5	1.4E-08	YES	Yes	Yes	Yes	Yes	Yes	0.000000014	2.01	2.81E-08
30	1,1-Dichloroethylene	µg/L	0.6		NONE	NONE	0.057	3.2	6	3.2	No	Go to Tier 2	No	NO	NO	NO	3.2	2.01	6
43	Trichloroethylene	µg/L	1.4346	2.4	NONE	NONE	2.7	81	5	5	No	Go to Tier 2	No	NO	Yes	Yes	81	2.01	163
53	Pentachlorophenol	µg/L	0.6		32.54	24.97	0.28	8.2			No	Go to Tier 2	No	NO	Yes	Yes	8.2	2.01	16
55	2,4,6-trihlorophenol	µg/L	0.6		NONE	NONE	2.1	6.5		6.5	No	Go to Tier 2	No	NO	NO	NO	6.5	2.01	13
68	Bis(2-Ethylhexyl) Phthalate	µg/L	0.9114	5.7	NONE	NONE	1.8	5.9	4	4	No	YES					5.9	2.01	12
82	2,4-Dinitrotoluene	µg/L	0.6	0.23	NONE	NONE	0.11	9.1		9.1	No	Go to Tier 2	No	NO	NO	NO	9.1	2.01	18
96	N-Nitrosodimethylamine	µg/L	0.6		NONE	NONE	0.00069	8.1		8.1	No	Go to Tier 2	No	NO	Yes	Yes	8.1	2.01	16
103	alpha-BHC	µg/L	0.6		NONE	NONE	0.0039	0.013		0.013	No	Go to Tier 2	No	NO	Yes	Yes	0.013	2.01	0

FOOTNOTE:

These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L,.

* ** Outfall 001 and 019 only when Outfall 019 is discharging.. Effluent limits are benchmarks at Outfalls 001 and 002.

TABLE R1

Boeing SSFL
Outfalls 001 and 002
(CA0001309, CI-6027)

			AQUATIC LIFE CALCULATIONS					AQUATIC LIFE CALCULATIONS				PROPOSED LIMITS		
			Freshwater					Freshwater						
CTR#	DATE	Units	ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	Lowest AMEL**	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.6		3.1		--	6	BPJ used to implement Basin Plan limit
2	Arsenic	µg/L	0.32	109	0.53	79.1	79.1	1.6	123	3.1	246	--	10	BPJ used to implement US EPA MCL.
3	Beryllium	µg/L	0.32		0.53			1.6		3.1		--	4	BPJ used to implement Basin Plan limit
4	Cadmium*	µg/L	0.32	1.5	0.53	1.3	1.3	1.6	2	3.1	4	2.0	4	Limit Based on CTR
5a	Chromium III*	µg/L	0.32	559	0.53	110.4	110.4	1.6	171	3.1	344	--	--	Interim Monitoring
5b	Chromium VI	µg/L	0.32	5	0.53	6.0	5.2	1.6	8	3.1	16	8.1	16	Limit Based on CTR
6	Copper*	µg/L	0.32	4.3	0.53	4.9	4.3	1.6	7.1	3.1	13.5	7.1	14	Limit Based on CTR
7	Lead*	µg/L	0.32	26.4	0.53	1.7	1.7	1.6	2.6	3.1	5.2	2.6	5.2	Limit Based on CTR
8	Mercury	µg/L	0.32		0.53			1.6		3.1		0.05	0.10	Limit Based on CTR
9	Nickel*	µg/L	0.32	151.2	0.53	27.5	27.5	1.6	35	3.1	96	35	96	Limit Based on CTR
10	Selenium	µg/L	0.32		0.53	2.6	2.6	1.6	4.1	3.1	8.2	4.1	8.2	Limit Based on CTR
11	Silver*	µg/L	0.32	1.3	0.53		1.3	1.6	2.0	3.1	4	2	4.0	Limit Based on CTR
12	Thallium	µg/L	0.32		0.53			1.6		3.1		--	2	BPJ used to implement Basin Plan limit
13	Zinc*	µg/L	0.32	39.4	0.53	64.2	39.4	1.6	54	3.1	119	53.6	119	Limit Based on CTR
14	Cyanide	µg/L	0.3	7.1	0.53	2.7	2.7	1.6	4.3	3.1	8.5	4.3	8.5	Limit Based on CTR
15	Asbestos	Fibers/L												Interim Monitoring - No CTR-based Limit
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.32		0.53			1.6		3.1		1.40E-08	2.8E-08	Limit Based on CTR
30	1,1-Dichloroethylene	µg/L	0.32		0.53			1.6		3.1		3.2	6.0	Limit Based on CTR/BPJ Title-22
43	Trichloroethylene	µg/L	0.32		0.53			1.6		3.1		--	5	Limit based on BPJ/Basin Plan-Title 22
53	Pentachlorophenol	µg/L	0.32	10.4	0.53	13.16836558	10.4	1.6	16	3.1	33	8.2	16	Limit Based on CTR
55	2,4,6-trihlorophenol	µg/L	0.32		0.53			1.6		3.1		6.5	13.0	Limit Based on CTR
68	Bis(2-Ethylhexyl) Phthalate	µg/L	0.32		0.53			1.6		3.1		--	4	Limit Based on CTR
82	2,4-Dinitrotoluene	µg/L	0.32		0.53			1.6		3.1		9.1	18.3	Limit Based on CTR
96	N-Nitrosodimethylamine	µg/L	0.32		0.53			1.6		3.1		8.1	16.3	Limit Based on CTR
103	alpha-BHC	µg/L	0.32		0.53			1.6		3.1		0.01	0.03	Limit Based on CTR

FOOTNOTE:

These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

* ** Outfall 001 and 019 only when Outfall 01

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Storm Water
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 001and 002
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Iron	mg/L	25	97.00	2.43	6.68	648	0		648	0.3	BU	YES
Manganese	mg/L	17	11000	3.70	14.02	154250	0		154250	50	BU	YES
Barium	mg/L	5	0.07	0.33	2.27	0.15	0		0.15	1	BU	NO
Settleable solids	mg/L	57	10	4.93	5.09	50.89	0		50.89	0.3	BU	YES
Total Dissolved Solids	mg/L	58	1000	0.57	1.61	1609.90	0		1609.90	950	BU	Yes
Total Suspended solids	mg/L	57	33000.00	6.71	5.88	193964	0		193964	45	BU	YES
$BOD_5 20^oC$	mg/L	58	33	2.03	3.14	103.72	0		103.72	30	BU	YES
Oil and Grease	mg/L	58	6.3	1.14	2.27	14.29	0		14.29	15	BU	NO
Chloride	mg/L	58	56	0.53	1.56	87.48	0		87.48	150.00	BU	NO
Fluoride	mg/L	7	0.45	0.21	1.60	0.72	0		0.72	1.60	BU	NO
Sulfate	mg/L	58	400	0.86	1.95	780.69	0		780.69	300	BU	YES
Gross Alpha	pci/L	15	701	3.61	15.75	11039.20	0		11039.20	15	BU	YES
Gross Beta	pci/L	11	426	2.85	17.38	7404.26	0		7404.26	50	BU	YES
Strontium	pci/L	9	0.16	2.69	20.29	3.25	0		3.25	8	BU	NO
Radium 226 and 228	pci/L	8	17.0	2.32	19.12	325.25	0		325.25	5	BU	YES
Tritium	pci/L	9	157	-7.84	67.88	10658	0		10658	20000	BU	NO
Nitrate + Nitrite as Nitrogen	mg/L	51	10	1.78	3.16	32	0		32	8	BU	YES
Surfactants (MBAS)	mg/L	58	4.4	2.50	3.53	16	0		16	0.5	BU	YES
Residual Chlorine	mg/L	4	0.14	0.62	4.96	1	0		1	0.1	BU	YES
Ammonia as Nitrogen	mg/L	59	18	2.14	3.20	58	0		58	10.1	BU	YES
Nirate as Nitrogen	mg/L	12	3.8	1.14	5.42	21	0		21	8.0	BU	YES

TABLE R1

Boeing SSFL
Outfalls 003 -007, and 010
(CA0001309, CI-6027)

						CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)								
						Freshwater		Human Health											
CTR#	DATE	Units	CV	MEC		C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C		MEC >= Lowest C	Tier 1 - Need limit?	B (RD-1)	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?
1	Antimony	µg/L	2.83	35	35	NONE	NONE	14	4300	6	6.0		YES	Go to Tier 2		No	Yes	Yes	YES
2	Arsenic	µg/L	0.6979	10	10	340	150	NONE	NONE	10	10.0		No	Go to Tier 2		No	NO	NO	NO
4	Cadmium*	µg/L	1.66	1.6	1.6	4.6	2.4	Narrative	Narrative	5	2.4		No	Go to Tier 2		No	NO	Yes	YES
5a	Chromium III*	µg/L	1.0626	13	13	1741	209	Narrative	Narrative		209.3		No	Go to Tier 2		No	NO	NO	NO
5b	Chromium VI	µg/L	0.6		0	16.3	9.4	Narrative	Narrative	50	9.4		No	Go to Tier 2		No	NO	NO	NO
6	Copper*	µg/L	1.1	34	34	13.5	9.4	1300	NONE		9.4		YES	Yes		No	Yes	Yes	YES
7	Lead*	µg/L	2.97	79	79	82.2	3.2	Narrative	Narrative		3.2		YES	Yes		No	Yes	Yes	YES
8	Mercury	µg/L	1.2	0.89	0.89	Reserved	Reserved	0.05	0.051	2	0.05		YES	Yes		No	Yes	Yes	YES
9	Nickel*	µg/L	1.2451	15	15	470.94	52.1564694	610	4600	100	52.16		No	Go to Tier 2		No	NO	Yes	Yes
10	Selenium	µg/L	0.6	4.7	4.7	Reserved	5	Narrative	Narrative	50	5.00		No	Go to Tier 2		No	NO	Yes	Yes
11	Silver*	µg/L	0.6	3.1	3.1	4	none	NONE	NONE		4.00		No	Go to Tier 2		No	NO	NO	NO
12	Thallium	µg/L	0.6	0.34	0.34	NONE	NONE	1.7	6.3	2	2.00		No	Go to Tier 2		No	NO	NO	Yes
13	Zinc*	µg/L	1.2906	91	91	122.7	121.7	none	NONE		121.70		No	Go to Tier 2		No	NO	Yes	Yes
14	Cyanide	µg/L	0.6	2.9	2.9	22	5.2	700	220,000	200	5.2		No	No		No	NO	NO	No
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	2E-04	0.00019	NONE	NONE	1.3E-08	1.4E-08	3x10^-5	1.4E-08		YES	Yes		No	Yes	Yes	YES
20	Bromoform	µg/L	0.6	3.1	3.1	NONE	NONE	4.3	360		360	ND	No	Go to Tier 2		No	NO	NO	NO
23	Dibromochloromethane	µg/L	0.6	2.8	2.8	NONE	NONE	0.401	34		34	ND	No	Go to Tier 2		No	NO	NO	NO
35	Methyl chloride	µg/L	0.60	0.43	0.43	NONE	NONE	Narrative	Narrative		Narrative	ND	No Criteria Available	Go to Tier 2	No data		NO	NO	NO
36	Methylene chloride	µg/L	0.60	1.40	1.4	NONE	NONE	4.7	1,600		1,600	ND	No	Go to Tier 2		No	NO	NO	NO
41	1,1,1-Trichloroethane	µg/L	0.6	0.76	0.76	NONE	NONE	Narrative	Narrative	200	200		No	Go to Tier 2		No	NO	NO	NO
43	Trichloroethylene	µg/L	0.6	0.66	0.66	NONE	NONE	2.7	81	5	5		No	Go to Tier 2		No	NO	NO	NO

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

TABLE R1

Boeing SSFL
Outfalls 003 -007, and 010
(CA0001309, CI-6027)

			HUMAN HEALTH CALCULATIONS						
			Water &Organisms			Organisns Only			
CTR#	DATE	Units	AMEL hh = ECA = C hh W &O	MDEL/AMEL multiplier (n=4)	MDEL hh	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh	ECA acute multiplier (p.7)
1	Antimony	µg/L		3.24		4300	3.24		0.10
2	Arsenic	µg/L		2.15		NONE	2.15		0.28
4	Cadmium*	µg/L		2.96		Narrative	2.96		0.13
5a	Chromium III*	µg/L		2.58		Narrative	2.58		0.19
5b	Chromium VI	µg/L				Narrative	2.01		0.32
6	Copper*	µg/L		2.63		NONE	2.6		0.18
7	Lead*	µg/L		3.26		Narrative	3.3		0.09
8	Mercury	µg/L	0.05	2.71	0.135726	0.051	2.7	0.14	0.17
9	Nickel*	µg/L		2.73		4600	2.73	12564	0.17
10	Selenium	µg/L		2.01		Narrative	2.01		0.32
11	Silver*	µg/L		2.01		NONE	2.01		0.32
12	Thallium	µg/L		2.01		6.3	2.01	13	0.32
13	Zinc*	µg/L		2.76		NONE	2.76		0.16
14	Cyanide	µg/L	700	2.01	1404.332	220000	2.0	441362	0.32
16	2,3,7,8-TCDD (Dioxin)	µg/L		2.01		0.000000014	2.01	2.81E-08	0.32
20	Bromoform	µg/L		2.01			2.01		0.32
23	Dibromochloromethane	µg/L	0.401	2.01	0.804482		2.01		0.32
35	Methyl chloride	µg/L		2.01			2.01		0.32
36	Methylene chloride	µg/L		2.01			2.01		0.32
41	1,1,1-Trichloroethane	µg/L		2.01			2.01		0.32
43	Trichloroethylene	µg/L		2.01			2.01		0.32
FOOTNOTE:									
*	These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.								

TABLE R1

Boeing SSFL
Outfalls 003 -007, and 010
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L		0.15			3.24		10.5		---	6	RP Limit based Basin Plan/Title 22.
2	Arsenic	µg/L	95.8	0.48	72.2	72.2	1.65	119.1	3.5	256.3	---	---	Interim Monitoring - No RP
4	Cadmium*	µg/L	0.6	0.24	0.6	0.6	2.53	1.5	7.5	4.4	---	4	BPJ used to apply limit
5a	Chromium III*	µg/L	336.2	0.36	74.3	74.3	2.01	149.0	5.2	384.7	---	---	Interim Monitoring - No CTR-based Limit
5b	Chromium VI	µg/L	5.2	0.53	4.9	4.9	1.55	7.7	3.1	15.4	---	---	Interim Monitoring - No CTR-based Limit
6	Copper*	µg/L	2.5	0.34	3.2	2.5	2.1	5.1	5.4	13.5	---	14	RP limit based upon CTR
7	Lead*	µg/L	7.7	0.15	0.5	0.5	3.3	1.5	10.7	5.2	---	5.2	RP Limit Based on CTR
8	Mercury	µg/L		0.32			2.2		5.9		---	0.130	RP limit based on CTR
9	Nickel*	µg/L	79.2	0.31	16.2	16	2.18	35.3	5.9	100.0	---	100	Limit Calleguas Crrek TMDL
10	Selenium	µg/L		0.53	2.6	2.6	1.55	4.1	3.1	8.2	---	5	Limit LA River TMDL
11	Silver*	µg/L	1.3	0.53		1.3	1.55	2.0	3.1	4.0	---	---	Interim Monitoring - No CTR-based Limit
12	Thallium	µg/L		0.53			1.55		3.1		---	2	BPJ used to apply Basin Plan Criteria
13	Zinc*	µg/L	20.0	0.30	36.7	20	2.22	44.4	6.1	159.0	---	159	Limit LA River TMDL
14	Cyanide	µg/L	7.1	0.53	2.7	2.7	1.55	4.3	3.1	8.5	---	---	Interim Monitoring - No CTR-based Limit
16	2,3,7,8-TCDD (Dioxin)	µg/L		0.53			1.55		3.1		---	2.8.E-08	RP Limit Based on CTR.
20	Bromoform	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
23	Dibromochloromethane	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
35	Methyl chloride	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
36	Methylene chloride	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
41	1,1,1-Trichloroethane	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit
43	Trichloroethylene	µg/L		0.53			1.55		3.1		---	---	Interim Monitoring - No Limit

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Storm water
The Boeing Company
(Santa Susana Field Laboratory)
Outfalls 003-007,010
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Total Dissolved Solids	mg/L	157	980	0.85	1.37	1344.22	0		1344.22	850	BU	Yes
Oil and Grease	mg/L	157	33	2.12	1.75	57.78	0		57.78	15	BU	YES
Boron	mg/L	21	0.18	1.54	5.08	0.91	0		0.91	1.0	BU	NO
Chloride	mg/L	157	210	1.44	1.58	330.84	0		330.84	150	BU	YES
Fluoride	mg/L	9	0.46	0.23	1.61	0.74	0		0.74	1.6	BU	NO
Sulfate	mg/L	157	180	1.41	1.57	282.30	0		282.30	250	BU	YES
Gross Alpha	pci/L	48	8.96	1.54	3.00	26.86	0		26.86	15	BU	YES
Gross Beta	pci/L	51	63.8	1.06	2.31	147.47	0		147.47	50	BU	YES
Strontium	pci/L	46	11.4	2.63	4.32	49.29	0		49.29	8	BU	YES
Radium 226 and 228	pci/L	28	2.2	2.31	5.83	12.63	0		12.63	5	BU	YES
Tritium	pci/L	39	106	-3.21	5.61	595	0		595	20000	BU	NO
Nitrate + Nitrite as Nitrogen	mg/L	157	51	2.53	1.84	94	0		94	10	BU	YES
Uranium	pci/L	16	2.75	1.15	4.56	13	0		13	20	BU	NO

TABLE R1

Boeing SSFL
Outfalls 008
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisns Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title'22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMELhh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6	0.38	NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	NO	NO	4300	2.01	8627
2	Arsenic	µg/L			340	150	NONE	NONE	10	10.0	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
3	Beryllium	µg/L			NONE	NONE	Narrative	Narrative	4	4.0	No	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
4	Cadmium*	µg/L			4.6	2.4	Narrative	Narrative	5	2.4	No	No	No	No	Yes	Yes	Narrative	2.01	
5a	Chromium III*	µg/L			1741	209	Narrative	Narrative	50	50.0	No	Go to Tier 2	No	Yes	NO	NO	Narrative	2.01	
5b	Chromium VI	µg/L			16.3	11.5	Narrative	Narrative		11.5	No	Go to Tier 2	No	Yes	NO	NO	Narrative	2.01	
6	Copper*	µg/L	0.6	5	13.5	9.4	1300	NONE		9.4	No	Yes	No	Yes	Yes	Yes	NONE	2.0	
7	Lead*	µg/L	0.6	6.3	82.2	3.2	Narrative	Narrative		3.2	YES	Go to Tier 2	No	NO	NO	Yes	Narrative	2.0	
8	Mercury	µg/L	0.6		Reserved	Reserved	0.05	0.051	2	0.05	NO	Yes	No	Yes	Yes	Yes	0.051	2.0	0.10
9	Nickel*	µg/L	0.6	4.3	471	52	610	4600	100	52.16	No	Go to Tier 2	No	NO	NO	NO	4600	2.01	9228
10	Selenium	µg/L	0.6	0.32	Reserved	5	Narrative	Narrative	50	5.00	No	Go to Tier 2	No	NO	Yes	Yes	Narrative	2.01	
11	Silver*	µg/L			4	none	NONE	NONE		4.00	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
12	Thallium	µg/L			NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	NO	NO	6.3	2.01	13
13	Zinc*	µg/L	0.6	19	122.7	121.7	none	NONE		121.70	No	Go to Tier 2	No	No	Yes	Yes	NONE	2.01	
14	Cyanide	µg/L			22	5.2	700	220,000	200	5.2	No	Go to Tier 2					220000	2.0	441362
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	1.13E-08	NONE	NONE	0.000000013	1.4E-08	3x10^-5	1.4E-08	No	No	No	NO	Yes	Yes	0.000000014	2.01	2.81E-08

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Data included extends for December 2007 through December 2008.

TABLE R1

Boeing SSFL
Outfalls 008
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
2	Arsenic	µg/L	0.32	109	0.53	79.1	79.1	1.6	123	3.1	246	--	--	Interim Monitoring - No CTR-based Limit
3	Beryllium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
4	Cadmium*	µg/L	0.32	1.5	0.53	1.3	1.3	1.6	2	3.1	4	--	3.1	RP Limit Based on CTR/ LA River TMDL
5a	Chromium III*	µg/L	0.32	559	0.53	110.4	110.4	1.6	171	3.1	344	--	--	Interim Monitoring -No CTR based limit
5b	Chromium VI	µg/L	0.32	5	0.53	6.0	5.2	1.6	8	3.1	16	--	--	Interim Monitoring - No CTR-based Limit
6	Copper*	µg/L	0.32	4.3	0.53	4.9	4.3	1.6	6.7	3.1	13.5	--	13.5	Limit Based on CTR
7	Lead*	µg/L	0.32	26.4	0.53	1.7	1.7	1.6	2.6	3.1	5.2	--	5.2	BPJ used to implement Limit
8	Mercury	µg/L	0.32		0.53			1.6		3.1		--	0.10	BPJ used to implement Limit
9	Nickel*	µg/L	0.32	151.2	0.53	27.5	27.5	1.6	43	3.1	86	--	--	Interim Monitoring - No CTR-based limit
10	Selenium	µg/L	0.32		0.53	2.6	2.6	1.6	4.1	3.1	8	--	5	Limit based on LA River TMDL
11	Silver*	µg/L	0.32	1.3	0.53		1.3	1.6	2.0	3.1	4	--	--	Interim Monitoring - No CTR-based Limit
12	Thallium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
13	Zinc*	µg/L	0.32	39.4	0.53	64.2	39.4	1.6	61	3.1	159	--	159	RP Limit Based on CTR/ LA River TMDL
14	Cyanide	µg/L	0.3	7.1	0.53	2.7	2.7	1.6	4.3	3.1	8.5	--	--	Interim Monitoring - No CTR-based Limit
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.32		0.53			1.6		3.1		--	2.8E-08	BPJ - Limit Based on CTR

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L..

Data included extends for December 2007 thr

Table A3

Reasonable Potential Analysis for Non-Priority Pollutants in Storm water
The Boeing Company
(Santa Susana Field
Outfall 008
(CA0001309, CI-6027)

CONSTITUENT	Units	Number of Samples	Maximum Observed Effluent Concentration	CV	Multiplier	Projected Maximum Effluent Concentration (99/99)	Dilution Ratio	Background Concentration	Projected Maximum Receiving Water Concentration	Water Quality Objectives	BU - Beneficial use protection NC-Human noncarcinogen AP-Aquatic life protection	REASONABLE POTENTIAL
Total Dissolved Solids	mg/L	19	290	0.31	1.60	462.76	0		462.76	950	BU	Yes
Oil and Grease	mg/L	19	12	1.55	5.49	65.90	0		65.90	15	BU	YES
Chloride	mg/L	19	25	0.59	2.30	57.62	0		57.62	150	BU	NO
Sulfate	mg/L	19	21	0.55	2.20	46.29	0		46.29	300	BU	NO
Gross Alpha	pci/L	5	6.07	0.94	7.80	47.34	0		47.34	15	BU	YES
Gross Beta	pci/L	5	23.7	1.03	9.05	214.51	0		214.51	50	BU	YES
Strontium	pci/L	4	0.214	-214.17	9784.35	2093.85	0		2093.85	8	BU	YES
Radium 226 and 228	pci/L	3	0.5	1.21	19.27	9.71	0		9.71	5	BU	YES
Tritium	pci/L	4	-45.9	-0.23	1.90	-87	0		-87	20000	BU	NO
Uranium	pci/L	3	0.682	0.53	4.73	3	0		3	20	BU	NO
Nitrate + Nitrite	mg/L	6	7.7	0.37	2.36	18	0		18	8	BU	YES

TABLE R1

Boeing SSFL
Outfalls 009
(CA0001309, CI-6027)

					CTR CRITERIA				Basin Plan	REASONABLE POTENTIAL ANALYSIS (RPA)							HUMAN HEALTH CALCULATIONS		
					Freshwater		Human Health										Organisms Only		
CTR#	DATE	Units	CV	MEC	C acute = CMC tot	C chronic = CCC tot	Not applicable C hh W&O	C hh O	Title 22 GWR	Lowest C	MEC >= Lowest C	Tier 1 - Need limit?	B>C	Tier 2 - Need limit?	Tier 3 - other info. ?	Tier 3 - need limit?	AMEL hh = ECA = C hh O	MDEL/ AMEL multiplier	MDEL hh
1	Antimony	µg/L	0.6	1.6	NONE	NONE	14	4300	6	6.0	No	Go to Tier 2	No	NO	NO	NO	4300	2.01	8627
2	Arsenic	µg/L	0.6		340	150	NONE	NONE	10	10.0	YES	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
3	Beryllium	µg/L	0.6		NONE	NONE	Narrative	Narrative	4	4.0	NO	Go to Tier 2	No	NO	NO	NO	Narrative	2.01	
4	Cadmium*	µg/L	0.60	0.64	4.6	2.4	Narrative	Narrative	5	2.4	No	No	No	No	Yes	Yes	Narrative	2.01	
5a	Chromium III*	µg/L			1741	209	Narrative	Narrative	50	50.0	No	Go to Tier 2	No	Yes	NO	NO	Narrative	2.01	
5b	Chromium VI	µg/L			16.3	11.5	Narrative	Narrative		11.5	No	Go to Tier 2	No	Yes	NO	NO	Narrative	2.01	
6	Copper*	µg/L	0.6	12	13.5	9.4	1300	NONE		9.4	YES	Yes	No	Yes	Yes	Yes	NONE	2.0	
7	Lead*	µg/L	0.6	2.9	82.2	3.2	Narrative	Narrative		3.2	No	Go to Tier 2	No	NO	NO	Yes	Narrative	2.0	
8	Mercury	µg/L	0.6	0.073	Reserved	Reserved	0.05	0.051	2	0.05	YES	Yes	No	Yes	Yes	Yes	0.051	2.0	0.10
9	Nickel*	µg/L	0.6	2.6	471	52	610	4600	100	52.16	No	Go to Tier 2	No	NO	NO	NO	4600	2.01	9228
10	Selenium	µg/L	0.6		Reserved	5	Narrative	Narrative	50	5.00	NO	Go to Tier 2	No	NO	Yes	Yes	Narrative	2.01	
11	Silver*	µg/L			4	none	NONE	NONE		4.00	No	Go to Tier 2	No	NO	NO	NO	NONE	2.01	
12	Thallium	µg/L			NONE	NONE	1.7	6.3	2	2.00	No	Go to Tier 2	No	NO	NO	NO	6.3	2.01	13
13	Zinc*	µg/L			122.7	121.7	none	NONE		121.70	No	Go to Tier 2	No	No	Yes	Yes	NONE	2.01	
14	Cyanide	µg/L			22	5.2	700	220,000	200	5.2	No	Go to Tier 2					220000	2.0	441362
15	Asbestos	Fibers/ L			NONE	NONE	7,000,000	NONE	7x10^6	7x10^6	No	Go to Tier 2	No	NO	NO	NO			
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.6	3.58E-07	NONE	NONE	0.000000013	1.4E-08	3x10^-5	1.4E-08	YES	Yes	No	yes	Yes	Yes	0.000000014	2.01	2.81E-08

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L.

Data included extends for December 2007 through December 2008.

TABLE R1

Boeing SSFL
Outfalls 009
(CA0001309, CI-6027)

CTR#	DATE	Units	AQUATIC LIFE CALCULATIONS Freshwater: ECA acute multiplier (p.7)	LTA acute	ECA chronic multiplier	LTA chronic	Lowest LTA	AQUATIC LIFE CALCULATIONS Freshwater: AMEL multiplier (n=4)	AMEL aq.life	MDEL multiplier (n=4)	MDEL aqlife	PROPOSED LIMITS: Lowest AMEL	Lowest MDEL	Recommendation
1	Antimony	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
2	Arsenic	µg/L	0.32	109	0.53	79.1	79.1	1.6	123	3.1	246	--	--	Interim Monitoring - No CTR-based Limit
3	Beryllium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
4	Cadmium*	µg/L	0.32	1.5	0.53	1.3	1.3	1.6	2	3.1	4	--	3.1	RP Limit Based on CTR/ LA River TMDL
5a	Chromium III*	µg/L	0.32	559	0.53	110.4	110.4	1.6	171	3.1	344	--	--	Interim Monitoring -No CTR based limit
5b	Chromium VI	µg/L	0.32	5	0.53	6.0	5.2	1.6	8	3.1	16	--	--	Interim Monitoring - No CTR-based Limit
6	Copper*	µg/L	0.32	4.3	0.53	4.9	4.3	1.6	6.7	3.1	13.5	--	13.5	Limit Based on CTR
7	Lead*	µg/L	0.32	26.4	0.53	1.7	1.7	1.6	2.6	3.1	5.2	--	5.2	BPJ used to implement Limit
8	Mercury	µg/L	0.32		0.53			1.6		3.1		--	0.10	BPJ used to implement Limit
9	Nickel*	µg/L	0.32	151.2	0.53	27.5	27.5	1.6	43	3.1	86	--	--	Interim Monitoring - No CTR-based limit
10	Selenium	µg/L	0.32		0.53	2.6	2.6	1.6	4.1	3.1	8	--	5	Limit based on LA River TMDL
11	Silver*	µg/L	0.32	1.3	0.53		1.3	1.6	2.0	3.1	4	--	--	Interim Monitoring - No CTR-based Limit
12	Thallium	µg/L	0.32		0.53			1.6		3.1		--	--	Interim Monitoring - No CTR-based Limit
13	Zinc*	µg/L	0.32	39.4	0.53	64.2	39.4	1.6	61.2	3.1	159	--	159	NO RP Limit Based on LA River TMDL
14	Cyanide	µg/L	0.3	7.1	0.53	2.7	2.7	1.6	4.3	3.1	8.5	--	--	Interim Monitoring - No CTR-based Limit
15	Asbestos	Fibers/ L										--	--	Interim Monitoring - No CTR-based Limit
16	2,3,7,8-TCDD (Dioxin)	µg/L	0.32		0.53			1.6		3.1		--	2.8E-08	Limit Based on CTR

FOOTNOTE:

* These metals are hardness dependent. CTR criteria was calculated using an average receiving water hardness of 100 mg/L,.

Data included extends for December 2007 thr