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Attorneys for Petitioner
THE BOEING COMPANY

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD

**In the Matter of Waste Discharge
Requirements
Order No. R4-2009-0058**

PETITION FOR REVIEW
Cal. Water Code § 13320 & 23 CCR § 2050

The Boeing Company, ("Petitioner") hereby files this petition for review to the State Water Resources Control Board ("State Board") of Waste Discharge Requirements Order No. R4-2009-0058 ("WDR"), adopted by the California Regional Water Quality Control Board, Los Angeles Region ("Regional Board") on May 8, 2009. This petition for review is filed pursuant to the Water Code § 13320 and 23 CCR § 2050. A copy of the WDR and associated documents are attached hereto as **Exhibit A**.

Petitioner requests the State Board to hold this petition in abeyance pursuant to 23 CCR § 2050.5. Petitioner reserves its right to seek a stay of the WDR by the State Board.

I. Name and Address of Petitioner

Petitioner is The Boeing Company. Petitioner's address is Santa Susana Field Laboratory, 5800 Woolsey Canyon Road, Canoga Park, CA 91304-1148. Petitioner may be contacted through its counsel of record.

II. The Regional Board Action for Which this Petition for Review is Sought

The Regional Board action for which this petition is filed is the issuance of Waste Discharge Requirements Order No. R4-2009-0058, adopted May 8, 2009.

III. The Date the Regional Board Acted

The date of the Regional Board's action subject to review is May 8, 2009.

IV. Statement of Reasons the Action is Inappropriate and Improper

The issues raised in this petition were presented to the Regional Board before its adoption of the WDR. The adoption of the WDR was beyond the authority of the Regional Board, inappropriate, improper, or not supported by the record, for the following reasons:

A. The WDR terminates benchmarks applicable to Outfalls 008 and 009 on May 17, 2010, before Boeing can complete the interim source removal action ("ISRA") required by the Regional Board's Section 13304 cleanup and abatement order ("CAO"), issued on December 3, 2008. Boeing's ability to comply with the numeric limitations applicable to these outfalls will be adversely affected while the ISRA is being implemented.

B. The WDR imposes effluent limits for storm water-only discharges, and the limits imposed are unreasonable and violate Water Code § 13241.

C. The WDR fails to include a site-specific design storm as recommended by the Expert Panel assembled in accordance with Cease and Desist Order No. R4-2007-0056.

D. The WDR requires the performance of a reasonable potential analysis ("RPA") for storm water-only discharges, inconsistent with the State Implementation Plan ("SIP").

E. The WDR requires Boeing to perform a RPA for discharges which, if required, should be performed by the Regional Board.

F. The WDR requires Boeing to perform a RPA for constituents that have never been detected in storm water-only discharges or detected consistently below effluent limits.

G. The WDR requires Boeing to monitor discharges from Outfalls 012, 013 and 014, which is duplicative of monitoring required at Outfalls 011 and 018.

H. The WDR and accompanying Fact Sheet include numerous factual inaccuracies that do not correctly describe historical operations or regulatory compliance measures.

I. The WDR and accompanying Fact Sheet fail to clarify that engineered natural treatment systems ("ENTs"), if required, will be designed in light of the ISRA, under the oversight of the Regional Board.

V. Petitioner is Aggrieved

Petitioner is aggrieved for the reasons set forth in paragraph IV above.

VI. Petitioner's Requested Action by the State Board

Petitioner respectfully requests that the State Board determine that the Regional Board's actions in adopting the WDR were inappropriate and improper, and that it assume the

powers of the Regional Board to amend the WDR in accordance with this petition and applicable law. In particular, Petitioner requests the State Board to amend the WDR as follows: (1) extend the benchmarks applicable to Outfalls 008 and 009 to June 26, 2012, as originally proposed by the Regional Board; (2) vacate numeric effluent limits applicable to storm water discharges because they should not be applied to storm-water-only discharges, and do not take into account background conditions, atmospheric deposition, or Water Code § 13241 factors; (3) include site-specific design storm criteria for storm water discharges as recommended by the Expert Panel; (4) vacate the requirement to perform a RPA for storm water discharges; (5) vacate the requirement to monitor discharges from Outfalls 012, 013 and 014 because it is duplicative of monitoring at Outfalls 011 and 018; (6) clarify that the ENTs, if required, will be designed in light of the ISRA, under the oversight of the Regional Board; (7) provide any other relief that is warranted; and (8) make any relief granted retroactive to May 8, 2009.

VII. Statement of Points and Authorities

Petitioner requests the State Board to hold in abeyance this petition for review pending further discussions between Petitioner and the Regional Board. Petitioner will notify the State Board if it intends to activate this appeal. Petitioner understands it will be given the opportunity to amend this petition and submit detailed points and authorities in the event this petition is converted to active status.

VIII. Statement of Transmittal of Petition to the Regional Board

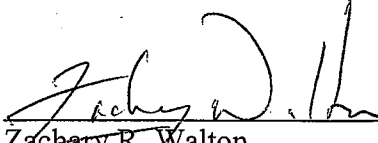
A copy of this petition has been transmitted to the Executive Officer of the Regional Board on June 8, 2009.

IX. Request to Regional Board for Preparation of the Administrative Record

By copy of this petition to the Executive Officer of the Regional Board, Petitioner hereby requests the preparation of the administrative record herein. Petitioner reserves its right to request a hearing for the purpose of presenting additional evidence not previously presented to the Regional Board, in accordance with 23 CCR § 2050.6(b).

Dated: 6/08/09

Respectfully submitted,



Zachary R. Walton
Paul, Hastings, Janofsky & Walker LLP
Attorneys for Petitioner The Boeing Company

EXHIBIT A

Transmittal Letter from Regional Water
Quality Control Board (May 19, 2009);

WDR Order No. R4-2009-0058
(May 8, 2009);

Fact Sheet for WDR Order No. R4-2009-0058
(May 8, 2009);

Monitoring and Reporting Program No. 6027
(May 8, 2009)



California Regional Water Quality Control Board

Los Angeles Region



Recipient of the 2001 *Environmental Leadership Award* from Keep California Beautiful

Linda S. Adams
Agency Secretary

320 W. 4th Street, Suite 200, Los Angeles, California 90013
Phone (213) 576-6600 FAX (213) 576-6640 - Internet Address: <http://www.waterboards.ca.gov/losangeles>

Arnold Schwarzenegger
Governor

May 19, 2009

Mr. Thomas D. Gallacher, Director
SSFL – Safety, Health & Environmental Affairs
The Boeing Company
Santa Susana Field Laboratory
5800 Woolsey Canyon Road
Canoga Park, CA 91304-1148

VIA CERTIFIED MAIL
RETURN RECEIPT REQUESTED
No. 7005 0390 0000 4141 3153

Dear Mr. Gallacher:

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT (NPDES) (ORDER NO. R4-2009-0058) FOR THE BOEING COMPANY, SANTA SUSANA FIELD LABORATORY, CANOGA PARK. NPDES NO. CA0001309, CI NO. 6027

Our letter dated April 28, 2009, transmitted the revised-tentative Order for renewal of your permit to discharge wastes under the National Pollutant Discharge Elimination System (NPDES) Program.

Pursuant to Division 7 of the California Water Code, this Regional Board at a public hearing held on May 8, 2009, reviewed the revised-tentative requirements, considered all factors in the case, and adopted the proposed NPDES permit with the following revisions.

Waste Discharge Requirements

1. Page 38, Finding 98. Paragraphs two and three included in the revised-tentative requirements were deleted. The text described the basis for the implementation schedule that staff proposed which extended from June 10, 2009 through June 27, 2012. This schedule was not approved by the Regional Board.
2. Page 54, Item 7.a. Statement 2 was modified to read "This BMP Compliance Report is due to the Regional Board 60 days after a reported exceedance of a benchmark."
3. The Order was updated to incorporate the date of adoption, May 8, 2009.

Fact Sheet

1. The Board requested that the requirement to review the best management practices be required after each exceedance of a benchmark (numeric water quality based effluent limitation) at outfalls where the benchmarks are used to determine compliance. Page 41, Paragraph 1, Statement 3, was modified to read "Exceedance of a benchmark triggers an evaluation of the BMPs implemented at the site." In Statement 5 of that

California Environmental Protection Agency



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paragraph was modified to read "If so, the Discharger must develop a plan to implement the required upgrades and report to the Regional Board staff within 60 days of a reported exceedance."

2. Page 48, Paragraph 2 of the Fact Sheet, in the section titled Interim Source Removal Action. The text following the first four statements was deleted. The section as modified reads:

"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."

Monitoring and Reporting Program

1. The MRP was updated to incorporate the date of adoption, May 8, 2009.

The Regional Board adopted the revised-tentative requirements incorporating the changes enumerated above. The adopted Order (Order R4-2009-0058) serves as an NPDES permit, and expires on April 10, 2014. Section 13376 of the California Water Code requires that an application/Report of Waste Discharge for a new permit must be filed at least 180 days before the expiration date.

The "Monitoring and Reporting Program" requires you to implement the monitoring program on the effective date of this Order (June 29, 2009). Your first monitoring report for the period of June 2009 is due by August 15, 2009. Monitoring reports should be sent to the Regional Board, ATTN: Information Technology Unit.

When submitting monitoring or technical reports to the Regional Board per these requirements, please include a reference to Compliance File CI-6027 and NPDES No. CA0001309, which will assure that the reports, are directed to the appropriate file and staff. Please do not combine your discharge monitoring reports with other reports, such as progress reports. Submit each type of report as a separate document.

We are sending the final copy of the permit to the Discharger. For those on the mailing list who would like access to a copy of the order, please go to the Regional Board's website at www.swrcb.ca.gov/rwqcb4/html/permits/generalpermits.html.

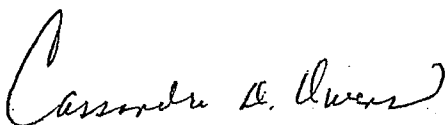
Mr. Thomas D. Gallacher
The Boeing Company

- 3 -

May 19, 2009

If you have any questions please contact Cassandra Owens at (213) 576-6750.

Sincerely,

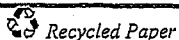


Cassandra Owens, Chief
Industrial Permitting Unit

Enclosures: Waste Discharge Requirements
Fact Sheet
Monitoring and Reporting Program

cc: Honorable Fran Pavley, Senator, 23rd District
Honorable Alex Padilla, Senator 20th District
Honorable Tony Strickland, Senator 19th District
Assembly member Bob Blumenfield, Assembly member 40th District
Assembly member Audra Strickland, Assembly member 37th District
Assembly member Pedro Nava, Assembly member 35th District
Ms. Rondi Guthrie, c/o Assemblywoman Audra Strickland
Mr. Jarrod Degonia, c/o Assembly member Cameron Smyth
Mr. Aron Miller c/o Senator Fran Pavely
Ms. Samantha Stevens, c/o Assembly member Bob Blumenfield
Ms. Louise Rishoff, c/o Assembly member Julia Brownley
Environmental Protection Agency, Region 9, Permits Branch (WTR-5)
Mr. Thomas Kelly, Environmental Protection Agency, Region 9, (WTR-5)
Environmental Protection Agency, Region 9, Office of Radiation Programs
Mr. Craig Cooper, Environmental Protection Agency, Region 9
Mr. David Cooper, Environmental Protection Agency, Region 9
Ms. Nicole Moutoux, Environmental Protection Agency, Region 9
Mr. Allen Elliott, National Aeronautics and Space Administration
Ms. Merrilee Fellows, National Aeronautics and Space Administration
Mr. Michael Lopez, U.S.D.O.E., Oakland
Mr. Thomas Johnson, ETEC Project Manager, United States Department of Energy
Ms. Stephanie Jennings, United States Department of Energy
Ms. Rebecca Tadesse, Branch Chief of Materials Decommissioning, U.S. Nuclear
Regulatory Commission
U.S. Army Corps of Engineers
NOAA, National Marine Fisheries Service
Department of Interior, U.S. Fish and Wildlife Service
Mr. Michael Levy, State Water Resources Control Board, Office of Chief Counsel
Mr. Philip Isorena, State Water Resources Control Board, Division of Water Quality
Ms. Stephanie Trotter, State Water Resources Control Board
Mr. William Paznokas, Department of Fish and Game, Region 5

California Environmental Protection Agency

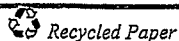


Our mission is to preserve and enhance the quality of California's water resources for the benefit of present and future generations.

Mailing List (continued)

Mr. Norm Riley, Department of Toxic Substances Control, Sacramento
Mr. Jim Pappas, Department of Toxic Substances Control, Sacramento
Mr. Gerard Abrams, Department of Toxic Substances Control, Sacramento
California Coastal Commission, South Coast District
Department of Health Services, Public Water Supply Branch
Los Angeles County, Department of Public Works, Environmental Programs Division
Los Angeles County, Department of Health Services
City of Los Angeles, Bureau of Engineering, Wastewater Systems Engineering Division
ULARA Watermaster
Water Replenishment District of Southern California
Ventura County Air Pollution Control District
Ventura County Public Works
Ventura County Environmental Health Division
Ms. Linda Parks, Ventura County Board of Supervisors
Mr. Damon Wing, c/o Ms. Linda Park, Ventura County Board of Supervisors
Ms. Nicole Doner, Ventura County Planning Division
Mr. Rick Verguitz, Water & Environmental Resources Section, Ventura County Watershed
Protection District
City Manager, City of Simi Valley
Dr. Mark Gold, Heal the Bay
Mr. David Beckman, NRDC
Mr. Tom Ford, Santa Monica Baykeeper
Mr. Daniel Cooper, Lawyers for Clean Water
Mr. Mati Waiya, Wishtoyo Foundation
Friends of the Los Angeles River
Los Angeles and San Gabriel Rivers Watershed Council
Bell Creek Homeowners Association, c/o Michael Bubman
Bell Creek Homeowners Association, c/o Jerry Murphy
Ms. Carol Henderson, Office Manager, Bell Canyon Association
Ms. Barbara Johnson, Susana Knolls Homeowners, Inc.
Mr. Daniel Maccabee, Brandeis-Bardin Institute
Dr. Joseph K. Lyou, Executive Director, Committee to Bridge the Gap (CBG)
Mr. Dan Hirsch, CBG
Mr. Sheldon Plotkin, SCFS
Mr. Wayne Lee
Simi Valley Library
California State University, Northridge
Mr. Cybil Zeppieri
Mr. Lori Zinkan
Ms. Christina Walsh
Ms. Teresa Jordan
Ms. Mary Wisebrock
Masry & Vititoe Law Offices
Mr. Matt Hagemann, Soil/Water/Air Protection Enterprise

California Environmental Protection Agency



Mailing List (continued)

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Mr. Anthony Zepeda
Ms. Lorraine Scott
Ms. Bunny Raskin
Ms. Heather L. Hoecherl Esq., Director of Science and Policy, Heal the Bay
Ms. Kirsten James, MESM, Staff Scientist, Heal the Bay
Ms. Elizabeth Crawford
Paul Costa, Boeing
Ms. Sharon Rubalcava, Weston, Benshoof, Rochefort, Rubalcava, MacCuish, LLP
Ms. Darlene Ruiz, Hunter Ruiz Research, Consulting and Advocacy
Mr. Jack M. Wallace
Mr. Adam Salkin
Ms. Jeannie Chari
Ms. Marie Mason
Ms. Carissa Marsh, The Simi Valley Acorn
Ms. Chris Rowe
Dr. Daniel Wiseman, WHNC-SSMAC
Ms. Marge Weems
Mr. William Bowling, ACMELA.ORG
Mr. John Luker
Ms. Elizabeth Zlotnik
Mr. AJ Greenstein
Ms. Ginn Doose
Mr. Matthew Sanders, Paul, Hastings, Janofsky & Walker LLP
Dr. Michael Josselyn, WRA, Inc.
Dr. Michael Stenstrom, SSFL Stormwater Expert Panel
Mr. Jae Kim, TetraTech

State of California
CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
LOS ANGELES REGION

ORDER NO. R4-2009-0058

**WASTE DISCHARGE REQUIREMENTS
FOR
THE BOEING COMPANY
(Santa Susana Field Laboratory)
(NPDES NO. CA0001309)**

The California Regional Water Quality Control Board, Los Angeles Region (Regional Board), finds:

Background

1. The Boeing Company (hereinafter Boeing or Discharger) discharged waste from its Santa Susana Field Laboratory (SSFL) facility under waste discharge requirements, which serve as a National Pollutant Discharge Elimination System (NPDES) permit, contained in Order No. 98-051 adopted by this Regional Board on June 29, 1998 (NPDES Permit No. CA0001309).
2. Boeing filed a report of waste discharge and applied for renewal of its waste discharge requirements and NPDES permit for discharge of wastes to surface waters. Order R4-2004-0111, adopted on July 1, 2004, incorporated effluent limitations based on the California Toxics Rule (CTR) criteria where appropriate and added nine new compliance points for a total of eighteen compliance points at the SSFL facility.
3. Order R4-2006-0008 (adopted January 19, 2006) amended Order No R4-2004-0111. Order R4-2006-0008 was the result of new information incorporated into the Order after one year of compliance and routine monitoring based on Monitoring and Reporting Program (MRP) No. 6027. Order R4-2006-0036 (adopted March 9, 2006) incorporated the waste load allocations (WLAs) from Total Maximum Daily Loads (TMDLs) for the Los Angeles River and for Calleguas Creek.
4. Order R4-2007-0055 amended Order R4-2006-0036 to comply with directives given to the Regional Board in Order WQ 2006-0012 issued by the State Water Resources Control Board in the matter of the Petition of the Boeing Company for Review of Waste Discharge Requirements (WDR) Orders R4-2004-0111, R4-2006-0008, and R4-2006-0036 for the Santa Susana Field Laboratory. The Order also includes revisions based on the results of the reasonable potential analysis which includes the data collected through May 22, 2006.
5. On December 3, 2008, Tracy Egoscue, Executive Officer of the Regional Board, issued a California Water Code Section 13304 Order to perform interim/source removal action of soil in the areas of Outfalls 008 and 009 Drainage Areas to the Discharger. The Order

March 11, 2009
Revised: April 6, 2009
Revised: May 8, 2009

directed the Discharger to cleanup and abate the waste that are discharging to waters of the State, minimize impacts to the streambed adjacent habitat during the cleanup, protect the water quality during and after the cleanup, and restore the streambed and surrounding habitat following the cleanup.

6. On December 11, 2008, the Discharger submitted a new report of waste discharge (ROWD). Supplemental information was submitted on February 2, 2009, to complete the ROWD. This Order (R4-2009-0058) includes updates required as a result of the new ROWD, the California Water Code Section 13304 Order, and the new reasonable potential analysis (RPA) conducted on data collected from August 2004 through December 2008.

Description of Facility

7. SSFL is located at the top of Woolsey Canyon Road in the Simi Hills, Ventura County, California (Figure 1). The developed portion of the site comprises administrative areas I – IV is approximately 1,525.7 acres. The northern undeveloped property is approximately 181.7 acres and the southern undeveloped property is 1142.6 acres. SSFL is owned by both Boeing and the National Aeronautics and Space Administration (NASA). The United States Department of Energy (DOE) also owns several buildings located in Area IV, with the land being under the ownership of Boeing.
8. Boeing and its predecessors' operations at SSFL since 1950 include research, development, assembly, disassembly, and testing of rocket engines, missile components, and chemical lasers. DOE conducted past operations in research and development of energy related programs, and seismic testing experiments. Current DOE activities onsite are solely related to facility decontamination, decommissioning, and environmental remediation and restoration.
9. Historical Boeing activities at SSFL that contributed to discharges from the site include rocket engine testing where water was used to cool flame deflectors, fire suppression equipment, and pressure testing of equipment used to support rocket engine testing. Other facility support activities such as cooling, heating, domestic waste treatment, and ground water treatment contributed to discharges from the site as well.
10. Surface Impoundments: There are nine closed surface impoundments at the SSFL that are regulated under the Resource Conservation and Recovery Act (RCRA). The nine impoundments are closed and regulated by Department of Toxic Substances Control (DTSC) under two postclosure permits issued in 1995. These impoundments include: Engineering Chemistry Laboratory (ECL), Advanced Propulsion Test Facility (APTF) 1 & 2, Storable Propellant Area (SPA) 1 & 2, Systems Test Lab (STL) IV 1 & 2, Delta skim pond and the Alfa Bravo skim pond. A tenth surface impoundment, the Propellant Load Facility (PLF), was clean closed and did not require a postclosure permit.
11. Nuclear Operations Decontamination and Decommissioning: Nuclear research and development for the U.S. Department of Energy (DOE) and its predecessors was conducted at the SSFL from 1954 – 1989. The activities included developing and operating reactors, and fabricating and disassembling nuclear fuel. The federal

government began to phase out the program in the 1960s. The last reactor was shut down in 1980, and nuclear research was terminated in 1989. This research and the associated activities resulted in residual contamination in Area IV.

There are currently no programs at the SSFL that employ special nuclear materials. Current decommissioning activities have reduced the inventory of radioactive waste to approximately 5 curies. Previously all of this material was stored in shielded vaults located at the Radioactive Materials Handling Facility (RMHF), near Outfall 003. More recently, any radioactive material stored onsite is located in a separate building at a RMHF. SSFL continues to utilize radioisotopes in the form of calibration sources that are necessary to calibrate radiation detectors and counting equipment. Periodic radiological monitoring of surface waters is conducted under the existing NPDES permit. One radiological facility located in Area IV, Building 4059, was decommissioned in 2004. Two radiological facilities located in Area IV of the SSFL remain to be decommissioned and storm water run-off from the area is monitored for radioactivity. The DOE is responsible for the cost of decontamination and decommissioning, and the California Department of Public Health (Radiologic Health Branch) has radiological oversight responsibilities at SSFL including a radioactive materials license.

10. Monomethyl Hydrazine Usage: Monomethyl hydrazine (MMH), a propellant, has been used for research, development and testing of rocket engines at SSFL since 1955. MMH that is released as a result of testing operations is captured and treated by an ozonation unit under a variance granted by DTSC. MMH is no longer used at SSFL.
11. Energy Technology Engineering Center (ETEC) Cogeneration Operations: The Sodium Component Testing Installation (SCTI) (cogeneration) unit of ETEC utilized two cooling tower operations, Power Pac and E-5. Both systems have been shut down and will not be reactivated. The facility has been decommissioned and was demolished in July, 2003.
12. Rocket Engine and Component Testing: An engine test consisted of a cycle of one to three engine runs lasting one to three minutes each. A test cycle would take one to two weeks to complete. Each engine run resulted in the use of 50,000 to 200,000 gallons of deluge/cooling water that may have come in contact with fuels such as LOX or kerosene and associated combustion products. The frequency of testing historically varied depending on production requirements. In July 2004 the frequency of testing was one test cycle every one to two months. In January 2006 the Discharger indicated that the frequency of testing had significantly decreased over the past year and was likely to shut down completely during the life of this permit. The updated ROWD submitted in February 2007 provided documentation that rocket engine and component testing operations at the facility had terminated.
13. CTL-3 Chemical Laser Testing: CTL-3 was not operational in 2004. In 2005, limited operations resumed at the facility. There is no discharge to surface waters from this area.
14. Future Operations: Since SSFL is a test facility, it is difficult to anticipate future test projects and possible wastewater generation. Following are discussions of potential

future operations:

Treatment Under Tiered Permitting Rules: Boeing is exploring the feasibility of treating certain waste streams by either a mobile or fixed hazardous waste treatment unit operating under DTSC Permit-By-Rule requirements. The waste streams to be treated would be classified under these regulations as non-RCRA, or RCRA exempt hazardous waste. Treated effluent would then be released at a separate outfall.

Description of Waste Discharge

15. SSFL has the potential (based on a 24-hour duration, 10 year return storm event) to discharge a total of approximately 168 million gallons per day (MGD) of storm water runoff that has the potential to contain pollutants from the facilities. Approximately 70% of the discharge exits the property via two southerly discharge points (Discharge Outfalls 001 and 002) to Bell Creek, a tributary to the Los Angeles River, a water of the United States, with its confluence located near the intersection of Bassett Street and Owensmouth Avenue in Canoga Park (see Figure 1).

The storm water from the northern boundaries of the site is discharged via Outfalls 003 through 007, 009 and 010 to the northwest toward the Arroyo Simi. The storm water runoff from Happy Valley (Outfall 008) flows via Dayton Canyon Creek to Chatsworth Creek. Chatsworth Creek flows south to Bell Creek southwest of the intersection of Shoup Avenue and Sherman Way. Bell Creek subsequently flows southeast to the Los Angeles River.

16. Groundwater Remediation: During the early 1950s to the mid-1970s, volatile organic compounds were utilized for the cleaning of hardware and rocket engine thrust chambers, and for the cleaning of other equipment. These solvents migrated into the subsurface, contaminating groundwater primarily with trichloroethylene (TCE) and 1,2-dichloroethylene (1,2-DCE).

An extensive groundwater remediation/investigation program has been ongoing at the SSFL, has included pumping, treating and storing groundwater at the facility. In July 2004, this system was composed of eight treatment systems; five active and three inactive, which have the capability of producing up to 578 million gallons per year of groundwater treated to remove the volatile and, in some cases, semi-volatile organic compounds. The treatment system was not designed to treat other pollutants such as perchlorate or metals. Treated groundwater was discharged directly into one of five ponds included in the water reclamation system via naturally occurring streambeds and in some cases man made watercourses present onsite. The chemical treatment used for the groundwater treatment systems consisted of ultraviolet light and hydrogen peroxide oxidation, and carbon adsorption. The physical treatment consisted of air stripping towers. These treatment systems were regulated under RCRA hazardous waste permits or administrative order issued by DTSC, and various air quality control permits issued by Ventura County. Groundwater treatment operations at the facility were terminated in September 2005 after the Topanga Fire destroyed much of the piping utilized to transport the water around the site.

In the future, Boeing plans to treat effluent from SSFL groundwater remediation operations in either a mobile or fixed hazardous waste treatment unit operating under DTSC Permit-By-Rule requirements. The waste streams to be treated would be classified under these regulations as non-RCRA or RCRA exempt hazardous waste. Treated groundwater effluent would then be released at a separate outfall (Outfall 019).

17. Water used at SSFL for personnel and for industrial purposes is supplied by both the Calleguas Municipal Water District and a bottled water supplier. The water used for industrial purposes historically after use was discharged to the onsite streambeds, watercourses, and ponds. Currently, there are no operations that generate wastewater. Groundwater treatment is scheduled to resume in late 2009. The treated groundwater effluent will be discharged at Outfall 019.
18. Two package-type activated sludge sewage treatment plants (STP1 and STP3) previously provided secondary and tertiary treatment for most of the domestic sewage generated onsite. Disinfected sewage effluent from the activated sludge facilities was directed to the reclaimed water system reservoirs (unlined ponds). Water from the reservoirs was routinely reused for industrial purposes. A third activated sludge sewage treatment plant (STP2) is a transfer holding tank and only used for storage.

Operations terminated at STP3 in October 2001 and at STP1 in December 2001. Domestic sewage, which was previously treated at the sewage treatment plants, is being shipped offsite. The STP1 and STP3 basins are currently used as collection points for wastewater generated onsite. Every few days, vacuum trucks transport the accumulated waste off site for treatment. One of the Joint Outfalls (Los Angeles County Sanitation District's) facilities are routinely used for disposal of the waste.

19. The SSFL previously utilized a system of natural, unlined and man-made ponds and channels to collect and reuse water as a cooling media and for fire suppression during rocket engine and component hot fire testing and to provide for storm water settling as a BMP. Water supplied to the system came from any one, or a combination of the following, sources: storm water, treated groundwater, tertiary treated sanitary sewage, recycled test cooling water, or domestic water purchased from an established purveyor. The water was stored in a series of steel tanks located in Area 2 called Skyline. The water was transferred by gravity to either the Alfa or Bravo test facilities for use as cooling and fire protection water during test operations. Excess water from these operations was returned to the ponds through open, unlined channels. The water was then pumped back to the storage tanks at Skyline for reuse. If the demand for water exceeds the reclaimed water supply, domestic water was used to make up the difference. The reclaimed water system is separated from the domestic water supply by air gaps and backflow prevention devices. The reclaim water is no longer used in the reclaim system. Water used for industrial purposes was replaced by domestic water supplied by Calleguas Municipal Water District.

Historically, Area I utilized the R-1 Pond as a reservoir for the reclaimed water system. Water retained in the R-1 Pond was comprised of primarily effluent from the groundwater treatment systems. Other sources included effluent from Sewage Treatment Plant 1 and seasonal rain events. If the supply of reclaimed water exceeds

requirements, the R-1 Pond will overflow into Perimeter Pond; excess water from Perimeter Pond will then flow south to Bell Creek through Outfall 001. Discharges through Outfall 001 are rare, and will usually only occur after rainfall over an extended period.

Historically, Areas II, III, and IV shared a common system for reclaimed water collection and distribution, is referred to as Area IV. Area IV used Silvernale Pond and R-2A Pond as reservoirs for the reclaimed water system. As in Area I, the primary source of water stored in the ponds came from groundwater treatment operations. Other sources include effluent from Sewage Treatment Plant 3, cooling water runoff from test operations and seasonal rain events. If the supply of reclaimed water exceeded requirements, the water was discharged to the south through R-2A Pond, and then to Bell Creek through Outfall 002. Reclaimed water could be pumped from either Silvernale or R-2A Pond to the reclaimed water storage tanks located at Skyline, as needed.

Industrial operations onsite historically discharged untreated wastewater directly to either constructed or natural drainage areas and streambeds. The wastewater flowed to ponds located onsite and was subsequently used in other industrial activities such as quenching operations during engine tests. These natural drainage areas and streambeds are waters of the United States.

20. The five active ponds used historically for collection and storage of reclaimed water are:

R-1 Pond	capacity 3.7 million gallons
Perimeter Pond	capacity 1.3 million gallons
Silvernale Pond	capacity 6.0 million gallons
R2-B Pond	capacity 200,000 gallons
R2-A Pond	capacity 2.5 million gallons

The Coca Pond was previously used as a retention basin to collect water from the space shuttle main engine testing area. When Coca Pond is filled to capacity, it discharges to the R-2 Pond. The pond was historically used to collect water that leaked from the fire suppression system located in the former test area. If sufficient leaks occurred, the pond discharged to R-2. However, this permit prohibits discharges of non storm water to the onsite waterways and ponds.

21. SSFL has the capability to redirect the flow in each of the five ponds via unlined channels, water lines, or pumping into water storage tanks as follows:

R-1 Pond	Flow may be discharged to Perimeter Pond or pumped to the Reclaimed Water Storage Tanks.
Perimeter Pond (PP)	Flow may be released to Bell Canyon or pumped to R-1 Pond.
Silvernale Pond	Effluent flows by gravity to R2-A Pond.

R2-B Pond	This pond is a silt inlet to R-2A Pond. Flow goes directly to R-2A Pond.
R2-A Pond	Flow may be released to Bell Canyon or pumped to Silvernale Pond.

Air agitation is used at these ponds to control algae blooms. Chemical addition, such as copper sulfate, bromine or chlorine, is not used, but may become necessary in the future if agitation alone proves to be inadequate to control algae blooms.

22. The SSFL is underlain by alluvium, weathered bedrock and unweathered bedrock. The alluvium occurs in narrow drainages and alluvial valleys. The alluvium is underlain by the Chatsworth Formation. The Chatsworth Formation consists of fractured sandstone with interbeds of siltstone and claystone, which can transmit water as well as contaminants.

The groundwater system at the SSFL is divided into two aquifers; the shallow and the deep. The alluvium and weathered bedrock comprise the shallow aquifer, and the unweathered and fractured Chatsworth Formation comprise the deep aquifer.

The groundwater surface in the shallow aquifer generally reflects surface topography. In April 2002, groundwater depths in the shallow aquifer ranged from approximately 6 feet to 40 feet below grade. Wells in the deeper aquifer contained groundwater between approximately 23 feet to approximately 520 feet below grade.

23. Previously, excess water from the onsite wastewater reclamation system was intermittently discharged to the southern Discharge Outfalls 001 and 002

The ROWD submitted by the Discharger in February 2007 indicated that the onsite reclamation system was no longer in use. Wastewater discharges to surface waters will occur solely from the Groundwater Extraction Treatment System (Outfall 019), when it begins operations. Other facility support activities such as fire suppression equipment, cooling, and heating will not discharge to onsite drainages or to the onsite ponds.

24. Order 98-051 included estimates of discharges from the Seismic Test Area of 0.0002 mgd. The operations at that area have ceased and, the building has been demolished. Hence, there are no projected discharges from that location.

Order No. 98-051 also includes a total design flow from industrial discharges of 1.6338 mgd. The design flow in Order R4-2004-0111 is 1.5123 mgd. The decrease in the design flow is due to operations that have ceased, facilities that have been demolished, and a decrease in the pump rate for the groundwater treatment systems.

25. Previously, in dry weather, ongoing activities were normally sufficient to use the water generated from the onsite groundwater treatment systems. However, in recent years this water balance has changed. Water now being added into the system from the Calleguas Municipal Water District, plus the reduction of testing activities, has caused releases from R-2A Pond (located upstream from Outfall 002) to become intermittent. During hot weather, the water released will either evaporate or percolate into the ground without

reaching Discharge Outfall 002. Thus, offsite discharge of water rarely occurs during dry weather.

26. The wastewater, which was a combination of storm water runoff, treated sewage effluent, treated groundwater, and water from industrial processes, was discharged offsite through Outfall 001, located at Latitude 34° 12' 49.7" North and Longitude 118° 41' 43.7" West, or through Outfall 002, located at Latitude 34° 13' 2.4" North and Longitude 118° 42' 15.4" West. These two discharge outfalls are located a maximum 6,000 feet south of the final retention ponds located at the edge of the developed portion of the site.
27. Many of the areas that discharged wastewater to the drainage areas and streambeds are associated with activities that are being regulated by DTSC under RCRA. DTSC is exercising its RCRA authority through Post Closure Permits and corrective action oversight of contaminated areas. The corrective action oversight includes delineation of areas of contamination, as well as subsequent cleanup operations at solid waste management units (SWMUs) and areas of concern onsite. The Post Closure Permits cover the operation of the groundwater treatment systems used during the cleanup.
28. The 1995 Final SB 1082 Framework which was issued on December 14, 1995 documents the framework for implementing Health and Safety Code Section 25204.6(b) dealing with jurisdictional overlap between the DTSC and the Regional Water Quality Control Boards (RWQCBs). SB 1082 requires that "sole jurisdiction over the supervision of that action [meaning oversight of those corrective action activities] is vested in either the department or the State Water Resources Control Board and the California Regional Water Quality Control Boards." Since many of the identified wastewater sources are currently involved in the RCRA corrective action or the Post Closure Permits with DTSC as the oversight agency and consistent with RCRA, DTSC will ensure that the discharges from these operations meet the substantive Clean Water Act requirements. Regional Board staff was provided with the opportunity to comment during the revision of the RCRA permits to ensure the Clean Water Act, Porter-Cologne Act, and the Basin Plan requirements are met. The final revised permits have not been issued. Order R4-2004-0111, R4-2006-0008, R4-2006-0036 required the final, downstream outfalls (Serial Nos. 001 and 002) to comply with water quality standards, and these outfalls were regulated under these Orders. Order R4-2007-0055 regulates with numeric effluent limitations discharges from Outfalls 011 and 018 and includes requirements for monitoring at Outfalls 001 and 002

There were several other operations that were ongoing, which are not included in the RCRA corrective action, that discharge wastewater to the onsite drainageways and streambeds. These activities were covered by the NPDES permit.

29. The operations evaluated at SSFL during the development of Order R4-2004-0111 and the agency (RWQCB or DTSC) with primary oversight authority and the NPDES outfall number associated with the operation if the Regional Board has oversight are listed below (Figure 2).

Operation	Current NPDES Outfall No.	Agency
1. Wastewater and Storm water runoff	001	RWQCB
2. Wastewater and storm water runoff	002	RWQCB
3. Storm water Radioactive Material Handling Facility	003	RWQCB
4. Storm water Sodium Reactor Exp.	004	RWQCB
5. Storm water Sodium Burn Pit 1	005	RWQCB
6. Storm water Sodium Burn Pit 2	006	RWQCB
7. Storm water Building 100	007	RWQCB
8. Storm water Happy Valley	008	RWQCB
9. Storm water WS-13 Drainage	009	RWQCB
10. Storm water Building 203	010	RWQCB
11. R-1 Pond	----	DTSC
12. Perimeter Pond	011	RWQCB
13. R-2 Ponds (R-2A and R-2B)	----	DTSC
14. R-2 Spillway	018	RWQCB
15. Silvernale Pond	----	DTSC
16. Alfa Test Stand	012	RWQCB
17. Bravo Test Stand	013	RWQCB
18. WS-5 Groundwater Treatment System (GWTS)/ Ultraviolet light/peroxidation (UV/P)	----	DTSC
19. RD-9 GWTS UV/P	----	DTSC
20. Alfa GWTS/Air Stripping Towers (AST)	----	DTSC
21. Delta GWTS/AST	----	DTSC
22. STLV-IV GWTS/AST	----	DTSC
23. Area 1 Road GWTS/AST	----	DTSC
24. Bravo GWTS/AST	----	DTSC
25. Canyon GWTS/AST	----	DTSC
26. Interim GWTS near FSDF*	----	DTSC
27. Interim GWTS near Bldg 59*	----	DTSC
28. Interim GWTS near RMHF*	----	DTSC
29. APTF	014	RWQCB
30. STP-1 – effluent	015	RWQCB
31. STP-2 – effluent	016	RWQCB
32. STP-3 – effluent	017	RWQCB
33. Groundwater Treatment System	019	RWQCB

Implemented in Interim Measures at the site. If the systems continue to operate they will be included in the revised Post Closure Permit.

Operations at the test stands (Outfalls 012 – 014) and the sewage treatment plants (Outfalls 015 – 017) have ceased. No further process waste discharges are expected from these areas. The groundwater treatment systems listed above have been taken off line and a new groundwater treatment system operating under Permit-by-Rule

requirements is planned for the site. Effluent from the groundwater treatment operations will be discharged at Outfall 019 in the vicinity of CTL III during routine operations.

30. The ROWD submitted on February 20, 2007, included a request to discharge treated groundwater to the streambed downstream of Outfall 011 and upstream of Outfall 001. The treated groundwater is a wastewater from a point source and thus will be regulated by RWQCB in this permit at a new outfall (Outfall 019), which is included in the previous table. Outfall 019 is located in the vicinity of CTL III and during dry weather operations a sample will be collected post treatment at that location. During storm events the discharge from Outfall 019 will be piped downstream of the engineered BMPs located at Outfall 011 but prior to the area where the sample is collected. Therefore, the sample collected at Outfall 011 during storm events will have mixed wastewater; storm water runoff and effluent from the groundwater treatment unit.

Description of Storm Water Sampling

31. One objective of this Order is to protect the beneficial uses of receiving waters. To meet this objective, storm water runoff discharges from the SSFL are subject to requirements stipulated in this NPDES permit and the Discharger will be required to comply with all applicable provisions of the Storm Water Pollution Prevention Plan (Attachment A). 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 intent of preventing all pollutants from contacting storm water and with the intent of keeping all contaminants of concern from moving into receiving waters.
32. Past operations at SSFL have resulted not only in contamination of the groundwater with volatiles but also with various types of surface and near surface soil contamination. Previous investigations and sampling has confirmed the presence of elevated concentrations of mercury and perchlorate in soil, which has been present in storm water runoff in elevated concentrations. The persistent transport of these contaminants offsite in storm water requires that these contaminants have effluent limitations in this Order.
33. Storm water from APTF flows toward Bell Creek and the Los Angeles River. Operations at the facility included small engine testing using kerosene (RP-1), hydrogen, potentially alcohol, methanol, peroxide, and liquid oxygen (LOX). Nitrogen is also used for purge gas. After testing, the staging areas were not routinely washed down to remove residual contaminants from the test operations. In July 2004, the Discharger indicated that during normal operations, testing may occur during storm events.

Outfall 014, located at the former location of APTF, was established in Order R4-2004-0111. No test operations have occurred at this location since the adoption of the Order in 2004 and the ROWD submitted in February 2007 indicates that testing operations at the facility have ceased. This Order requires monitoring of storm water runoff from the area.

34. Storm water runoff from the area that drains to discharge points 001 and 002 is estimated at 34 and 51 MGD respectively (based on a 24-hour duration, 10-year return storm). Historically, this runoff was mixed with industrial waste collected in the ponds prior to discharge.
35. The estimated flow from the area that drains storm water only from the northwest slope and discharges it via discharge points 003, 004, 005, 006, 007, 008, 009, and 010 are 0.79, 0.55, 0.015, 0.81, 0.2, 3.3, 32, and 0.38 MGD respectively. The flow from these locations exits the site leading to Meier Canyon towards the Arroyo Simi (Figure 2). The Arroyo Simi is a tributary to Calleguas Creek, a water of the United States. The locations and the associated drainage areas are listed below for each of the seven storm water only discharge locations:

<u>Discharge Outfall</u>	<u>Latitude (North)</u>	<u>Longitude (West)</u>	<u>Vicinity</u>
003 (RMHF)	34° 14' 4.0"	118° 42' 38.4"	Radioactive Materials Handling Facility
004 (SRE)	34° 14' 9.1"	118° 42' 23.9"	Former Sodium Reactor Experiment
005 (SBP-1)	34° 13' 48.1"	118° 43' 3.9"	Former Sodium Burn Pit 1
006 (SBP 2)	34° 13' 50.7"	118° 42' 59.9"	Former Sodium Burn Pit 2
007 (B100)	34° 13' 50.2"	118° 42' 52.5"	Building 100
009(W5-13)	34° 14' 19"	118° 41' 38"	WS-13 Drainage Area
010(Bldg. 203)	34° 14' 17"	118° 41' 56"	Building 203

There is no flow from these locations except during heavy rainfall. For purposes of access and safety, these sampling stations have been established inside the SSFL northwest property boundary. The stations are located in close proximity to past and/or existing radiological facilities or other operations, as is noted in the vicinity column above. Additional storm water flow exits the site via various drainage channels into Meir, Runkle and Woolsey Canyons.

36. Storm water runoff from the northwest slope of the facility is monitored at Discharge Outfalls 003, 004, 005, 006, 007, 009, and 010 which discharge towards the Arroyo Simi. The outfall locations near the Northwest slope are located such that they capture runoff from past and existing radiological facilities.
37. The WS-13 Drainage (Outfall 009) area begins near the entrance to the property and traverses several potential areas of concern. The WS-13 drainage area collects storm water runoff from the Area 1 and Area 2 Landfill, and the former LOX plant located on NASA owned property. In addition, WS-13 picks up storm water run on from Sage Ranch where agricultural operations took place and a gun shooting range was located. The storm water runoff from the WS-13 drainage area is sampled at Discharge Outfall 009. This outfall drains to Arroyo Simi.
38. Building 203 (Outfall 010) was formerly used as an instrumentation laboratory where various types of instrumentation were repaired and calibrated. The instrumentation included but was not limited to, thermometers and manometers that contained mercury.

Also historically, a photographic processing lab was present in Building 202. Currently Building 203 is used for laser research and Building 202 is inactive. Operations in Building 203 include polishing, cleaning (using solvents and other chemicals), assembly and testing of various components in both open warehouse and clean room environments. All wastes are currently containerized and transported off site for disposal.

Building 203 has been added as Solid Waste Management Unit (SWMU) 5.2 under the RCRA corrective action program due to mercury contamination. Mercury has also been detected downgradient of the building in the surface soils of the adjacent drainage. An interim measure to remove the surface soil and the associated contamination was completed in the summer of 2004.. The storm water runoff from Building 203 will be sampled at Discharge Outfall 010. Discharges from Building 203 drains to the Arroyo Simi and subsequently to Calleguas Creek.

39. The area commonly referred to as Happy Valley receives storm water runoff from the former solid propellant testing area. A major component of the propellant was perchlorate. The propellant testing area is inactive and buildings have been demolished. Since the propellant has been used in the area and reasonable potential existed for the constituent to cause or contribute to an exceedance, an effluent limit for perchlorate and a requirement to sample the runoff for all other constituents tested for at Discharge Outfalls 003 through 007, has been included in Order R4-2004-0111. The Discharger with DTSC oversight implemented an interim measure (soil removal activity) for soils contaminated with elevated levels of perchlorate during Fall 2003. This project was completed in early 2004. This new storm water monitoring location is Discharge Outfall 008. Following the completion of the interim measure perchlorate has not exceeded the effluent limit. Storm water from Happy Valley flows to Dayton Canyon Creek which merges with Chatsworth Creek. Chatsworth Creek which flows south to Bell Creek southwest of the intersection of Shoup Avenue and Sherman Way. Bell Creek subsequently flows east and merges with Calabasas Creek at the Los Angeles River near the intersection of Vanowen Street and Owensmouth Avenue.

Description of Groundwater Treatment System, and Water Reclamation System

40. The groundwater treatment systems were designed to treat VOC contaminated groundwater. The groundwater is treated and subsequently discharged to channels that transport it around the site for reuse. Perchlorate has been detected in some of the wells. Since the five active RCRA permitted treatment systems are not designed to treat perchlorate, the Discharger has in some instances terminated the treatment of the pumped groundwater from the locations where perchlorate has been detected.

The groundwater treatment systems monitoring and discharge requirements are included in the Hazardous Waste Facility Post-Closure Permit for SSFL which is managed by DTSC. Consequently, all activities associated with the groundwater treatment systems and discharges associated therewith will continue to be managed by DTSC. DTSC is required by RCRA to ensure that the requirements implemented in its permits comply with all applicable and appropriate Regional Board requirements. The treated groundwater and storm water runoff was regulated at Outfall 001. Order R4-

2007-0055 required compliance of treated groundwater and storm water runoff at Outfall 011, which is upstream of Outfall 001.

41. A new groundwater treatment system is in the design phase for the SSFL. The groundwater treatment system will be located near CTL-III and will treat water from extraction wells, purge water generated during groundwater sampling events, and groundwater generated during well installations or pumping tests. The treated effluent will be discharged near CTL III (Outfall 019) which is located upstream of Outfall 011. The system is scheduled to be complete in late 2009.

During storm events the discharge from Outfall 019 will be piped downstream of the engineered BMPs located at Outfall 011 but prior to the area where the sample is collected. Therefore, the sample collected at Outfall 011 during storm events will have mixed wastewater; storm water runoff and effluent from the groundwater treatment unit.

42. The rocket engine test stands were used to test fire rocket engines built onsite. The fire suppression and cooling water used during testing may contain residual fuels and solvents. This wastewater was directed via lined and unlined channels to the reclamation ponds, which were used to store wastewater collected from the various onsite operations along with any storm water runoff for reuse onsite.

The Regional Board had oversight of the discharges from the active engine test stands. Order No. R4-2004-0111 included requirements for monitoring of the discharges. The data collected was used to evaluate reasonable potential of the discharge to exceed applicable requirements and if warranted; effluent limitations were implemented for the discharges in Order Nos. R4-2006-0008 and R4-2006-0036.

43. The sewage treatment plants were also managed by the Regional Board. The sewage treatment plants historically collected only domestic waste generated onsite. There is no pretreatment program in place since the facility does not handle any industrial waste. To implement Clean Water Act section 405(d), on February 19, 1993, USEPA promulgated 40 CFR Part 503 to regulate the use and disposal of municipal sewage sludge. Orders R4-2004-0111, R4-2006-0008, and R4-2006-00036 implement the regulations and it is the responsibility of the Discharger to comply with said regulations, which are enforceable by USEPA.

The plants (STP-1 and STP-3) were activated sludge sewage treatment plants that provided secondary and tertiary treatment for the domestic sewage from the facility. The disinfected sewage effluents were subsequently directed to the reclaimed water system reservoir. The two plants are currently being used as collection reservoirs only. They previously had effluent limitations for BOD₅20°C, coliform, and turbidity on discharges from the facilities. Sewage sludge generated was hauled offsite to the one of the facilities operated by Los Angeles County Sanitation Districts. The monitoring program for the sewage treatment plants included requirements for the previously mentioned constituents as well as pH, oil and grease and suspended solids. Order R4-2004-0111 included requirements to monitor for priority pollutants, perchlorate, N-nitrosodimethylamine, 1,4-dioxane, and 1,2,3-trichloropropane to provide the data required to evaluate reasonable potential. Data collected provided the basis for establishing additional effluent limitations

for the sewage treatment plants in Orders R4-2006-0008 and R4-2006-0036.

After the State Board decision to remand the permit to the Regional Board in Order WQ 2006-0012, Boeing on February 21, 2007, submitted an updated Report of Waste Discharge (ROWD) to the Regional Board. The ROWD included a request to remove the sewage treatment plant outfalls (Outfall 015 – 017). The Discharger is currently using the facilities as collection reservoirs; periodically they are pumped out and the waste is disposed of at the County of Los Angeles Sanitation Districts' facilities. The Discharger does not plan to discharge from the locations in the future.

44. The water reclamation system consisted of five ponds located throughout the developed portion of the site. The treated groundwater, engine test stand wastewater and collected storm water historically traveled around the site, for months prior to being discharged offsite. The natural water courses located onsite are waters of the United States and are subject to regulation under the National Pollutant Discharge Elimination System provisions of the Clean Water Act. Since many of these ponds and water courses that connect these ponds are unlined, contaminants in the water may be deposited on surface soils or they may percolate down to shallow groundwater. Subsequent discharges offsite via these waterways may also transport these contaminants offsite.

The ponds, which were used to store the wastewater for future use, are in all cases included in solid waste management units (SWMUs) currently being investigated by DTSC. These areas are included in the ongoing RCRA characterization and cleanup at the site and are managed by DTSC. There are two special cases, Perimeter Pond and the R-2 Pond Spillway which includes runoff from both R-2A and R-2B Ponds. The ponds are SWMUs and cleanup and characterization will proceed with DTSC oversight. The effluent from Perimeter Pond and the R-2 Pond Spillway will have Regional Board oversight for the required monitoring since the discharges routinely occur as a result of storm events and the discharge is to waters of the United States. The ponds also collected wastewater from a number of areas involved in cleanup operations that may contribute constituent concentrations to the discharge. The water reclamation system at SSFL is no longer operational.

45. On December 17, 2003, the Regional Board received the December 2003 *Technical Memorandum Analysis of Groundwater Recharge, Santa Susana Field Laboratory, Ventura County, California*, prepared by Montgomery Watson Harza on behalf of the Boeing Company. This document was submitted to DTSC in order to present a qualitative and quantitative analysis of groundwater recharge at the Santa Susana Field Laboratory. Regional Board staff has also reviewed this document and find that a reasonable conclusion for the amount of rainfall that infiltrates soil using a water balance method is between 23% to 26%. Using a chloride mass balance method resulted in a range of 1% to 12% rainfall infiltration. As these calculations by different methodologies differ significantly and are inconclusive, Regional Board staff find that there is insufficient data to suggest that rainfall will not significantly recharge groundwater in the underlying surficial soils, weathered and fractured bedrock. In addition, there has been no site-specific soil attenuation factor/model submitted for Regional Board staff review. Inasmuch, those limitations placed in this Order to protect groundwater recharge beneficial uses and beneficial uses of underlying groundwater apply at end-of-pipe.

Applicable Plans, Policies, and Regulations

46. On June 13, 1994, the Regional Board adopted a revised *Water Quality Control Plan for the Coastal Watersheds of Los Angeles and Ventura Counties* (Basin Plan) as amended on January 27, 1997, by Regional Board Resolution No. 97-02. The Basin Plan (i) designates beneficial uses for surface and groundwaters, (ii) sets narrative and numerical objectives that must be attained or maintained to protect the designated beneficial uses and conform to the state antidegradation policy (*Statement of Policy with Respect to Maintaining High Quality Waters in California*, State Board Resolution No. 68-16, October 28, 1968), and (iii) describes implementation programs to protect all waters in the Region. In addition, the Basin Plan incorporates all applicable State and Regional Board plans and policies and other pertinent water quality policies and regulations. The Regional Board prepared the 1994 update of the Basin Plan to be consistent with all previously adopted State and Regional Board plans and policies. This Order implements the plans, policies and provisions of the Regional Board's Basin Plan.
47. The receiving water for discharges from Outfall 008 enters Dayton Canyon Creek, flows via Chatsworth Creek to Bell Creek, southwest of the intersection of Sherman Way and Shoup Avenue, and subsequently to the Los Angeles River. The receiving water for Outfalls 001, and 002 is Bell Creek and subsequently to the Los Angeles River. The Basin Plan contains water quality objectives for, and lists the following beneficial uses for Dayton Canyon Creek, Bell Creek, and the Los Angeles River.

Dayton Canyon Creek – Hydrologic Unit 405.21

Existing: wildlife habitat
Intermittent: groundwater recharge, contact and non-contact water recreation; warm freshwater habitat.

Bell Creek – Hydrologic Unit 405.21

Existing: wildlife habitat
Intermittent: groundwater recharge, contact and non-contact water recreation; warm freshwater habitat.

The Los Angeles River upstream of Figueroa Street – Hydrologic Unit 405.21:

Existing: groundwater recharge; contact and non-contact water recreation, warm freshwater habitat; wildlife habitat; and wetland habitat.
Potential: industrial service supply.

Los Angeles River downstream of Figueroa Street – Hydrologic Unit 405.15

Existing: groundwater recharge, contact and non-contact water recreation, and warm freshwater habitat.
Potential: industrial service supply and wildlife habitat.

Los Angeles River downstream of Figueroa Street – Hydrologic Unit 405.12

Existing: groundwater recharge; contact and noncontact water recreation; warm freshwater habitat; marine habitat; wildlife habitat; and rare, threatened, or endangered species.
Potential: industrial service supply; industrial process supply; migration of aquatic organisms; spawning, reproduction, and/or early development; and shellfish harvesting.

Los Angeles River Estuary – Hydrologic Unit 405.12

Existing: industrial service supply; navigation; contact and non-contact water recreation; commercial and sport fishing; estuarine habitat; marine habitat; wildlife habitat; rare, threatened, or endangered species; migration of aquatic organisms; spawning, reproduction, and/or early development; and wetland habitat.
Potential: shellfish harvesting.

Dayton Canyon Creek, Bell Creek and all of the reaches of the Los Angeles River listed, except for the estuary, also have municipal and domestic supply (MUN) listed as a potential beneficial use with an asterisk in the Basin Plan. This is consistent with Regional Board Resolution 89-03; however the Regional Board has only conditionally designated the MUN beneficial uses and at this time cannot establish effluent limitations designed to protect the conditional designation.

48. The storm water runoff discharges from the northwest side of SSFL (Outfalls 003 through 007) exit the site and flow down the Meier and Runkle Canyons toward the Arroyo Simi. The Arroyo Simi is tributary to the Calleguas Creek. The beneficial uses of the Arroyo Simi and other tributaries of the Calleguas Creek are:

Arroyo Simi – Hydrologic Unit 403.62

Existing: wildlife habitat, rare, threatened, or endangered species habitat,
Intermittent: industrial process supply, groundwater recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat;

Arroyo Las Posas – Hydrologic Unit 403.62

Existing: groundwater recharge, freshwater replenishment, contact and non-contact water recreation, warm freshwater habitat, wildlife habitat,
Potential: industrial process supply, industrial service supply, agricultural supply, and cold freshwater habitat.

Calleguas Creek – Hydrologic Unit 403.12

Existing: industrial service supply, industrial process supply, agricultural supply, groundwater recharge, contact and non-contact water recreation, warm freshwater habitat, and wildlife habitat,

Calleguas Creek – Hydrologic Unit 403.11

Existing: agricultural supply, groundwater recharge, freshwater replenishment; contact and non-contact water recreation, warm freshwater habitat, cold freshwater habitat, wildlife habitat, rare, threatened or endangered species, and wetland habitat,

Calleguas Creek Estuary – Hydrologic Unit 403.11

Existing: noncontact water recreation, commercial and sport fishing, estuarine habitat, wildlife habitat, rare, threatened or endangered species, migration of aquatic organisms, spawning, reproduction, and/or early development, and wetland habitat;

Potential: navigation and water contact recreation.

Mugu Lagoon – Hydrologic Unit 403.11

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

Potential: water contact recreation.

All of the reaches of Calleguas Creek, except the estuary, also include conditional municipal and domestic supply designations as an intermittent or potential beneficial use in the Basin Plan.

49. **Ammonia Basin Plan Amendment.** The 1994 Basin Plan provided water quality objectives for ammonia to protect aquatic life, in Tables 3-1 through Tables 3-4. However, those ammonia objectives were revised on April 25, 2002, by the Regional Board with the adoption of Resolution No. 2002-011, *Amendment to the Water Quality Control Plan for the Los Angeles Region to Update the Ammonia Objectives for Inland Surface Waters (including enclosed bays, estuaries and wetlands) with Beneficial Use designations for protection of Aquatic Life*. The ammonia Basin Plan amendment was approved by the State Board, the Office of Administrative Law, and USEPA on April 30, 2003, June 5, 2003, and June 19, 2003, respectively. Although the revised ammonia water quality objectives may be less stringent than those contained in the 1994 Basin Plan, they are still protective of aquatic life and are consistent with USEPA's 1999 ammonia criteria update.

50. ***Title 22 of the California Code of Regulations.*** The California Department of Health Services (DHS) established primary and secondary maximum contaminant levels (MCLs) for a number of chemical and radioactive contaminants. These MCLs can be found in Title 22, California Code of Regulations (Title 22). Chapter 3 of the Basin Plan incorporates portions of Title 22 by reference. In addition, narrative objectives require that ground waters shall not contain taste or odor-producing substances in concentrations that affect beneficial uses. The secondary MCLs in Title 22 are designed to ensure that water's taste and odor does not affect its suitability to drink. Title 22 MCLs have been incorporated into NPDES permits and Non-Chapter 15 WDRs to protect the municipal and domestic supply (MUN) and groundwater recharge (GWR), where the underlying groundwater is designated MUN, beneficial uses.

Groundwater Recharge. Sections of Bell Creek and Arroyo Simi, near the SSFL discharge points, are designated as GWR indicating that groundwater recharge is a beneficial use. Surface water from the Bell Creek enter the Los Angeles River Watershed. The headwaters of the Los Angeles River originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. Four basins in the San Fernando Valley area contain substantial deep groundwater reserves and are recharged mainly through runoff and infiltration.

Surface water discharges from the north west edge of the SSFL are directed to Arroyo Simi a tributary located in the Calleguas Creek Watershed. Supplies of groundwater are critical to agricultural operations and industry (sand and gravel mining) in this watershed. Moreover, much of the population in the watershed relies upon groundwater for drinking. Since groundwater from these basins is used to provide drinking water to a large portion of the population, Title 22-based limitations are needed to protect that drinking water supply. By limiting the contaminants in the SSFL discharges, the amount of pollutants entering the surface waters and groundwater basins are correspondingly reduced. Once groundwater basins are contaminated, it may take years to clean up, depending on the pollutant. Compared to surface water pollution, investigations and remediation of groundwater are often more difficult, costly, and extremely slow. For these reasons Title 22-based limitations will remain in the NPDES permit where there is reasonable potential.

Notification Level for Perchlorate. DHS also establishes Notification Levels (NLs), or health-based advisory levels for chemicals in drinking water that lack MCLs. Through 2004, the Notification Levels were referred to as Action Levels. An NL is the concentration of a chemical in drinking water that is considered not to pose a significant health risk to people ingesting that water on a daily basis. NLs may be established by DHS for non-regulated chemical contaminants when one of the following occurs:

1. A chemical is found in an actual or proposed drinking water source, or
2. A chemical is in proximity to a drinking water source, and guidance is needed, should it reach the source.

A NL is calculated using standard risk assessment methods for non-cancer and cancer endpoints, and typical exposure assumptions, including a 2-liter per day ingestion rate, a 70-kilogram adult body weight, and a 70-year lifetime. For chemicals that are

considered carcinogens, the NL is considered to pose "de minimus" risk, i.e., a theoretical lifetime risk of up to one excess case of cancer in a population of 1,000,000 people – the 10^{-6} risk level. (In that population, approximately 250,000 – 300,000 cases of cancer would be anticipated to occur naturally.) NLs may be revised from time to time to reflect new risk assessment information. Chemicals for which NLs are established may eventually be regulated by MCLs, depending on the extent of contamination, the levels observed, and the risk to human health. A number of the contaminants for which action levels were originally established now have MCLs.

In 1997, DHS established an 18 $\mu\text{g/L}$ action level for perchlorate. DHS used the upper value of the 4 to 18 $\mu\text{g/L}$ range that resulted from the provisional reference dose that USEPA prepared in support of its Superfund activities. A revised external review draft perchlorate reference dose corresponding to a drinking water concentration of 1 $\mu\text{g/L}$ was released in 2002. DHS concluded that the action level needed to be revised downward. On January 18, 2002, DHS reduced the perchlorate action level to 4 $\mu\text{g/L}$. The revised action level coincided with the analytical detection limit for purposes of reporting and was at the lower end of the 4 to 18 $\mu\text{g/L}$ range from the USEPA 1992-1995 assessment. The Public Health Goal (PHG) for perchlorate was developed by Office of Environmental Health Hazard Assessment based on a contemporary health risk assessment. This new information was provided to DHS and on March 11, 2004, the NL for perchlorate was revised to 6 $\mu\text{g/L}$, a value identical to the PHG that will be used by DHS to develop the MCL for perchlorate. The effluent limit for perchlorate (6 $\mu\text{g/L}$) included in this WDR has been updated to reflect the change implemented by DHS.

Perchlorate and its salts are used in, but not limited to, solid propellant for rockets, missiles, and fireworks. The defense and aerospace industries purchase more than 90 percent of all the perchlorate manufactured. Perchlorate has historically been used at SSFL and thus is considered a chemical of concern at the site. Monitoring data collected during the tenure of the current permit indicates that perchlorate is present in the storm water runoff in Happy Valley and it has been detected in some of the groundwater wells utilized in the cleanup operations ongoing with DTSC oversight.

Perchlorate can interfere with iodide uptake by the thyroid gland; this can result in a decrease in the production of thyroid hormones, which are needed for prenatal and postnatal growth and development, as well as for normal body metabolism. Neither the CTR, NTR, or the Basin Plan has requirements stipulated for perchlorate. Since there is no drinking waters standard, or maximum contaminant level (MCL), the DHS uses the NL as an advisory level. The Regional Board, exercising its best professional judgement, in the review of the "best available science" has in the past considered and used ALs when deemed appropriate to establish final effluent limitations in WDRs and NPDES permits adopted by this Board, to implement the Basin Plan narrative WQO, "all waters shall be maintained free of toxic substance that produce detrimental physiological responses in human, plant, animal, or aquatic life," and to prevent degradation of valuable groundwater sources of drinking water.

51. Under title 40 Code of Federal Regulations (40 CFR) section 122.44(d), *Water Quality Standards and State Requirements*, "Limitations must control all pollutants or pollutant parameters (either conventional, non-conventional, or toxic pollutants), which the Director determines are or may be discharged at a level which will cause, have the reasonable potential to cause, or contribute to an excursion above any State water quality standard, including State narrative criteria for water quality." Where numeric effluent limitations for a pollutant or pollutant parameter have not been established in the applicable state water quality control plan, 40 CFR section 122.44(d)(1)(vi) specifies that water quality-based effluent limitations (WQBELs) may be set based on United States Environmental Protection Agency (USEPA) criteria, and may be supplemented where necessary by other relevant information to attain and maintain narrative water quality criteria, and to fully protect designated beneficial uses.
52. Section 402(p) of the federal Clean Water Act (CWA), as amended by the Water Quality Act of 1987, requires NPDES permits for storm water discharges. The Discharger, in addition to meeting the effluent limitations included in this permit for storm water discharges only, will be required to develop and implement a SWPPP as stipulated in Finding 27. These requirements, as they are met, will protect and maintain existing beneficial uses of the receiving water.
53. Effluent limitation guidelines requiring the application of best practicable control technology currently available (BPT), best conventional pollutant control technology (BCT), and best available technology economically achievable (BAT), were promulgated by the USEPA for some pollutants in this discharge. Effluent limitations for pollutants not subject to the USEPA effluent limitation guidelines are based on one of the following: best professional judgment (BPJ) of BPT, BCT or BAT; current plant performance; or water quality based effluent limitations (WQBELs). The WQBELs are based on the Basin Plan, other State plans and policies, or USEPA water quality criteria which are taken from the CTR. These requirements, as they are met, will protect and maintain existing beneficial uses of the receiving water. The attached Fact Sheet for this Order, which has been reviewed and considered by the Regional Board, is considered part of this Order. The Fact Sheet includes specific bases for the effluent limitations, including the basis for determining reasonable potential for a pollutant to cause or contribute to an exceedance of water quality standards.
54. 40 CFR section 122.45(f)(1) requires that except under certain conditions, all permit limitations, standards, or prohibitions be expressed in terms of mass units. 40 CFR section 122.45(f)(2) allows the permit writer, at its discretion, to express limitations in additional units (e.g., concentration units). The regulations mandate that, where limitations are expressed in more than one unit, the permittee must comply with both. Generally, mass-based effluent limitations would ensure that proper treatment, and not dilution, is employed to comply with the final effluent concentration limitations. Concentration-based effluent limitations, on the other hand, would discourage the reduction in treatment efficiency during low flow periods and would require proper operation of treatment units at all times. In the absence of concentration-based effluent limitations, a permittee would be able to increase its effluent concentration (i.e., reduce its level of treatment) during low flow periods and still meet its mass-based effluent limitations.

55. Effluent limitations established pursuant to sections 301 (Effluent Limitations), 302 (Water Quality-Related Effluent Limitations), 303 (Water Quality Standards and Implementation Plans), 304 (Information and Guidelines), and 402 (NPDES) of the CWA and amendments thereto, are applicable to the discharges herein.
56. On May 18, 2000, the USEPA promulgated numeric criteria for priority pollutants for the State of California [known as the CTR and codified as 40 CFR section 131.38]. On March 2, 2000, the State Board adopted the *Policy for Implementation of Toxics Standards for Inland Surface Waters, Enclosed Bays, and Estuaries of California (State Implementation Policy or SIP)*. The SIP was effective on April 28, 2000 with respect to the priority pollutant criteria promulgated for California by the USEPA through National Toxics Rule (NTR) and to the priority pollutant objectives established by the Regional Boards in their Basin Plans, with the exception of the provision on alternate test procedures for individual discharges that have been approved by the USEPA Regional Administrator. The alternate test procedures provision was effective on May 22, 2000. The SIP was effective on May 18, 2000, with respect to the priority pollutant criteria promulgated by the USEPA through the CTR. The State Board adopted an amendment to the SIP on February 24, 2005 that became effective on July 13, 2005. The SIP establishes implementation provisions for priority pollutant criteria and objectives and provisions for chronic toxicity control. Requirements in this Order implement the SIP.
57. The CTR and SIP require dischargers' submittal of data to the Regional Board to: (1) determine if WQBELs for priority pollutants are required; and (2) to calculate effluent limitations, if required. The policy further provides that the time schedule for providing the data shall be as short as practicable but not to exceed three years from the date of the SIP, which was May 22, 2000.
58. The CTR criteria for freshwater or human health for consumption of organisms, whichever is more stringent, were used to prescribe the effluent limitations in this Order to protect the beneficial uses of the Los Angeles River and the Calleguas Creek.
- Under 40 CFR section 131.38(e)(6), the CTR authorizes the Regional Board to grant a compliance schedule for WQBELs based on CTR criteria for a period up to five years from the date of permit issuance, reissuance, or modification. The SIP provides a compliance schedule for WQBELs (up to five years) and for WQBELs based upon Total Maximum Daily Loads (TMDL) and Waste Load Allocations development (up to 15 years). However, the USEPA has not yet approved the longer of the two compliance schedules nor depromulgated the five-year maximum in the CTR to allow for the 15 years in the SIP. Therefore, the more stringent provision, allowing a compliance schedule of five years, is the maximum duration authorized.
59. State and Federal antibacksliding and antidegradation policies require Regional Board actions ensure that the waterbody will not be further degraded. Antibacksliding provisions are contained in Section 303(d)(4) and 402(o) of the CWA, and in 40 CFR section 122.44(l). Those provisions require a reissued permit to be as stringent as the previous permit with some exceptions where effluent limitations may be relaxed. For those limitations carried forward, the Regional Board has determined that there is reasonable

potential for the pollutant to cause or contribute to an exceedance of water quality standards in accordance with State Board Order No. WQ 2003-0009. Reasonable potential is determined using the procedures established in the SIP, which includes a three-tiered approach involving statistical analysis supplemented by best professional judgment.

60. On October 28, 1968, the State Board adopted Resolution No. 68-16, Maintaining High Quality Water, which established an antidegradation policy for State and Regional Boards. Similarly, the CWA (section 304(d)(4)(B)) and USEPA regulations (40 CFR section 131.12) requires that all NPDES permitting actions be consistent with the federal antidegradation policy. Specifically, waters that are of a higher quality than needed to maintain designated as beneficial shall be maintained at the higher water quality unless specific findings are made.

Watershed Management Approach and Total Maximum Daily Loads (TMDLs)

61. The Regional Board has implemented the Watershed Management Approach to address water quality issues in the region. Watershed management may include diverse issues as defined by stakeholders to identify comprehensive solutions to protect maintain, enhance, and restore water quality and beneficial uses. To achieve this goal, the Watershed Management Approach integrates the Regional Board's many diverse programs, particularly TMDLs, to better assess cumulative impacts of pollutants from all point and nonpoint sources. A TMDL is a tool for implementing water quality standards and is based on the relationship between pollution sources and in-stream water quality conditions. The TMDL establishes the allowable loadings or other quantifiable parameters for a waterbody and thereby provides the basis to establish water quality-based controls. These controls should provide the pollution reduction necessary for a waterbody to meet water quality standards. This process facilitates the development of watershed-specific solutions that balance the environmental and economic impacts within the watershed. The TMDLs will establish waste load allocations (WLAs) and load allocations (LAs) for point and non-point sources, and will result in achieving water quality standards for the waterbody.
62. The Los Angeles River watershed is one of the largest in the Region. The headwaters of the Los Angeles River originate in the Santa Monica, Santa Susana, and San Gabriel Mountains. The river flows through industrial and commercial areas and is bordered by rail yards, freeways, and major commercial and government buildings. The Los Angeles River tidal prism/estuary begins in Long Beach at Willow Street and runs approximately three miles before joining with Queensway Bay located between the Port of Long Beach and the City of Long Beach.

The surface water discharges from Outfalls 001,002, 011, 018, 019, and all other upstream outfalls discharge to Bell Creek, a tributary to the Los Angeles River. Storm water only from Happy Valley, Discharge Serial 008, exits the site toward Dayton Canyon Creek, which flows into Chatsworth Creek. Chatsworth Creek flows southward to Bell Creek, near the intersection of Sherman Way and Shoup Avenue, and subsequently the Los Angeles River. The area where the facility is located is largely undeveloped. The majority of the Los Angeles River Watershed is considered impaired

due to a variety of point and nonpoint sources. Bell Creek, which is the receiving water for the wastewater discharge from the SSFL, is on the 2002 303(d) list. High coliform count is the stressor listed for Bell Creek. Downstream receiving waters are listed for high coliform counts, volatiles (1,1-Dichloroethylene, tetrachloroethylene, and trichloroethylene), nutrients, oil, ammonia and others.

The TMDL for Nitrogen (nutrients) in the Los Angeles River received Regional Board approval on July 10, 2003 (Resolution No. 03-009) and State Board approval with adoption of Order 2003-0074 on November 19, 2003. The Office of Administrative Law (OAL) and USEPA approval dates were February 27, 2003, and March 18, 2003, respectively. The Regional Board filed a Notice of Decision with the California Resources Agency on March 23, 2004 and the TMDL was effective as of that date. The Los Angeles River Nutrient TMDL revision with Interim WLAs was approved by the Regional Board on December 4, 2003 (Resolution No. 2003-016). The State Board approved the TMDL with Resolution 2004-0014 on March 24, 2004. OAL approved it on September 27, 2004, and the effective date for the Order was September 27, 2004. This permit includes effluent limitations based on the WLAs established for the Los Angeles River.

63. The TMDL for metals in the Los Angeles River was approved by the Regional Board during the June 2, 2005 hearing (Resolution No. 2005-006). The State Board approved the TMDL on October 20, 2005; OAL and EPA approvals were received on December 9, 2005 and December 22, 2005 respectively.

The metals TMDL establishes numeric water quality targets that are based on objectives established by USEPA in the CTR. Targets for copper, lead, zinc and/or selenium (total recoverable) are established in designated reaches of the Los Angeles River. Separate water quality targets are established for dry and wet weather discharges.

64. The Los Angeles River Trash TMDL was adopted by the Regional Board on September 19, 2001. The TMDL established a numeric target of zero trash in the river. The TMDL was to be implemented via storm water permits in a phased reduction for a period of ten years. The LA River Trash TMDL was approved by the State Water Resources Control Board on February 19, 2002, the Office of Administrative Law on July 16, 2002 and by the US EPA on August 1, 2002. The TMDL became effective on August 28, 2002.

There were a number of challenges to the LA River Trash TMDL. The consideration of the challenges resulted in a requirement that the TMDL be set aside and not implemented until the California Environmental Quality Act (CEQA) requirements have been satisfied. On June 8, 2006, the Los Angeles Regional Water Quality Control Board adopted a resolution to set aside the adopted TMDL. On July 17, 2006, the State Board adopted Resolution 2006-0051, setting the TMDL aside.

The Regional Board on August 9, 2007, adopted a new TMDL for trash in the Los Angeles River Watershed that includes WLAs of zero for trash. This TMDL will become effective after approval from the State Board, OAL, and EPA. When the TMDL is effective, the WLA for trash will be incorporated in this permit.

65. Storm water runoff from Outfalls 003 through 007, 009 and 010 exiting the SSFL site does so near the northwest site boundary. The receiving water for the storm water runoff is the Arroyo Simi, a tributary of the Calleguas Creek. The Calleguas Creek Watershed extends from the Santa Monica Mountains and the Simi Hills in the south, to the Santa Susana Mountains, South Mountain, and Oak Ridge in the north. Land uses vary throughout the watershed. Urban developments are generally restricted to the city limits of Simi Valley, Moorpark, Thousand Oaks, and Camarillo. Agricultural activities are spread out along valleys and on the Oxnard Plain.

Storm water runoff exits the site and travels down Meier and Runkle Canyons towards the Arroyo Simi. Most of the land use around the facility is open area. Overall the Calleguas Creek Watershed is considered an impaired watershed. It appears that the sources of many of the pollutants in the watershed are agricultural activities, runoff from open space, runoff from industrial areas and publicly owned treatment works (POTWs). Approximately fifty percent of the watershed is still open space, although there is a severe lack of benthic and riparian habitat present. The runoff, when it is sufficient to reach the Arroyo Simi, enters it in Reach 1 – Hydrological Unit 403.62. The stressors listed in the 1998 State Board's California 303(d) list for this reach are ammonia, boron, chloride, sulfates and total dissolved solids. Elevated levels of chromium, nickel, selenium, silver and zinc were also reported in tissue samples.

In the 2002 State Board 303(d) list, Reach 1 of Arroyo Simi is grouped with Reach 2 and has been renamed Calleguas Creek Reach 7. The listed stressors for Calleguas Creek Reach 7 included fecal coliform, organophosphorus pesticides and sedimentation/siltation in addition to those listed in the 1998 303(d) list. The 2002 303(d) list does not include the metals reported with elevated tissue samples in the 1998 303(d) list. These metals were also not included in the 2006 303(d) list.

66. Chloride TMDL and Chloride Limitations. On March 22, 2002, the consent decree deadline for the establishment of a chloride TMDL, USEPA Region 9 established the Calleguas Creek Total Maximum Daily Load for chloride. The TMDL adopted by USEPA was based largely on the technical efforts produced by the Regional Board staff.

The Calleguas Creek Watershed Group in collaboration with USEPA Region 9 and the Regional Board is developing the *Calleguas Creek Watershed Salts TMDL*. The work plan addresses chloride, TDS, sulfate and boron in the watershed. The Regional Board and USEPA is using the work product from the Calleguas Creek Watershed Group to establish a subsequent TMDL for chloride in the Calleguas Creek Watershed.

Discharges from SSFL enters the Calleguas Creek Watershed in Arroyo Simi Reach 7, which is included on the 303 (d) list as a chloride water quality limited segment in the Calleguas Creek Watershed. There are no waste load allocations (WLAs) for point source discharges or load allocations (LAs) for nonpoint sources that apply to storm conditions in the TMDL. Since all discharges from the SSFL to the Arroyo Simi occur as a result of storm water runoff, no chloride WLAs will be included in this Order for discharges from Outfalls 003 through 007, 009 and 010 to Arroyo Simi. Based on existing data, SSFL does not appear to contribute chloride loading to the watershed at levels that would alter the assumptions of the TMDL or contribute to further impairment.

Nitrogen Compounds and Related Effects TMDL. On October 24, 2002, the Regional Board adopted Resolution No. 2002-017, Amendment to the *Basin Plan for the Los Angeles Region* to include a TMDL for Nitrogen Compounds and Related Effects in Calleguas Creek (*Nitrogen Compounds and Related Effects TMDL*). The State Board approved the Nitrogen Compounds and Related Effects TMDL on March 19, 2003. The Office of Administrative Law approved the TMDL on June 5, 2003 and USEPA approved it on June 20, 2003.

The *Nitrogen Compounds and Related Effects TMDL* includes waste load allocations for ammonia (NH₃), nitrite as nitrogen (NO₂-N), nitrate as nitrogen (NO₃-N), and nitrate plus nitrite as nitrogen (NO₂-N + NO₃-N). The TMDL authorizes interim limitations (expressed as interim waste allocations) for total nitrogen (NO₃-N + NO₂-N). The WLA applied to the publicly owned treatment works (POTW) in the watershed and the LAs are specified for agricultural discharges. Hence, this Order does not include the TMDL limitations for ammonia, nitrate as nitrogen, nitrite as nitrogen, or nitrate plus nitrite as nitrogen for discharges of storm water only from the SSFL to Arroyo Simi and Calleguas Creek. However, based on existing data, SSFL does not appear to contribute nitrogen loading to the watershed at levels that would alter the assumptions of the TMDL or contribute to further impairment.

The Regional Board approved the Basin Plan amendment to incorporate the TMDL for toxicity, chlorpyrifos, and diazinon in the Calleguas Creek, its tributaries and Mugu Lagoon (Resolution No. R4-2005-009) on July 7, 2005. The TMDL addresses impairment to water quality due to elevated levels of chlorpyrifos, diazinon, other pesticides and/or other toxicants. The amendment includes numeric targets, WLAs, and load allocations for Toxicity Unit Chronic, chlorpyrifos, and diazinon. It also includes a compliance schedule of two years from the effective date of the TMDL to meet the final WLAs and ten years to meet the LAs applied to nonpoint sources.

The State Board approved the TMDL on September 22, 2005 (Resolution No. 2005-0067). OAL and EPA approvals were effective on November 27, 2005, and March 14, 2006, respectively. The TMDL became effective on March 24, 2006. A waste load allocation of 1.0 TUC is allocated to the major point sources (POTWs) and minor point sources discharging to the Calleguas Creek Watershed. Interim and final waste load allocations and were also established for chlorpyrifos and diazinon. The implementation schedule specifies that the interim limitations for chlorpyrifos and diazinon in storm water NPDES permits be in stream limitations. The appropriate waste load allocations are translated into permit limitations and included in this Order beginning in "resolved" paragraph no. I.B., "Effluent Limitations."

Resolution No. R4-2005-0010, a TMDL for organochlorine (OC) pesticides, polychlorinated biphenyl (PCBs) and siltation in Calleguas Creek, its tributaries, and Mugu Lagoon, was also approved by the Regional Board on July 7, 2005. The TMDL addresses impairment to water quality due to elevated concentrations of OC pesticides and PCBs, which can bioaccumulate in fish tissue and cause toxicity to aquatic life in estuarine and inland waters. Siltation may transport these contaminants to surface waters and impair aquatic life and wildlife habitats. The TMDL establishes water column

targets, fish tissue targets, and sediment targets to ensure the protection of beneficial uses. The TMDL establishes a twenty-year plan for reducing OC pesticides, PCBs and siltation loads from point sources and nonpoint sources.

The State Board approved the TMDL on September 22, 2005 (Resolution No. 2005-0068). OAL and EPA approvals are followed on January 20, 2006, and March 14, 2006, respectively. The TMDL was effective on March 24, 2006. The appropriate targets will apply to discharges from Outfalls 003 through 007, 009, and 010 which enter Arroyo Simi, a tributary of Calleguas Creek.

The TMDL includes waste load allocations for OC pesticides and PCBs in sediment in Calleguas Creek and its tributaries. The waste load allocations have been translated directly into ambient contaminant concentrations in the sediment of Arroyo Simi. Those ambient contaminant concentrations will be compared directly to sediment concentrations measured in the samples collected to determine compliance with the interim waste load allocations stipulated. The interim waste load allocations are effective throughout the tenure of this permit.

The waste load allocations in the water column are translated into effluent limitations utilizing the steady state model from the SIP. The calculated effluent limitations are included as receiving water effluent limitations in "resolved" paragraph I.C.1. Since the discharge is storm water and it is near the top of the watershed, the Discharger may utilize the option of sampling the discharge for the OC pesticides and PCBs or sampling the receiving water. The Discharger may also choose to join the Calleguas Creek Watershed TMDL Monitoring Program (CCWTMP) and monitor at an established compliance sampling location in Arroyo Simi.

Resolution R4-2006-012, the TMDL for metals and selenium for Calleguas Creek, its tributaries and Mugu Lagoon was adopted by the Los Angeles Regional Board on June 8, 2006. The TMDL establishes numeric targets for dissolved copper, nickel, and zinc, and in total recoverable mercury and selenium. It also includes fish tissue targets for mercury, bird egg targets for mercury and selenium and sediment quality guidelines for copper, nickel, and zinc.

The State Board approved the TMDL on October 25, 2006 (Resolution No. 2006-0078). OAL and EPA approval the TMDL on February 6, 2007 and March 26, 2007 respectively. The TMDL became effective on March 26, 2007. This permit implements the TMDL.

Discharges from the Boeing SSFL site (Outfalls 003 through 007, 009, and 010) enter Calleguas Creek in Reach 7, which was Arroyo Simi Reaches 1 and 2 in the 1998 303(d) List. Dry weather discharges from this area do not reach Calleguas Creek and Mugu Lagoon. Therefore, no dry weather waste load allocations are established for the constituents in the water column. Selenium waste load allocations have not been developed for this reach as it is not on the 303 (d) list. The final waste load allocation developed for mercury was 0.051 µg/L. The mercury waste load allocation was used to develop a daily maximum effluent limit, implemented at Outfalls 003 through 007, 009, and 010.