



The Boeing Company
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Via FedEx

November 14, 2012
In reply refer to SHEA-112698

Regional Water Quality Control Board
Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, CA 90013

Attention: Information Technology Unit

Reference: Compliance File CI-6027 and NPDES No. CA0001309

Subject: Third Quarter 2012 NPDES Discharge Monitoring Report Submittal – Santa Susana Site

Dear Sir/Madam:

The Boeing Company (Boeing) hereby submits this Discharge Monitoring Report (DMR) that includes the field actions and activities related to the Santa Susana Site surface water outfalls (**Figure 1**) that occurred during the period of July 1 through September 30, 2012 (Third Quarter 2012) for the Santa Susana Field Laboratory (Santa Susana Site). This DMR is prepared as required Los Angeles Regional Water Quality Control Board (Regional Board) and in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. CA0001309 (Permit). Included are summary tables of surface water sample analytical results, rainfall summaries, liquid waste shipment summaries, and analytical laboratory reports of surface water samples.

Hard copies of this DMR are available to the public at California State University at Northridge Library; Simi Valley Library; and the Platt Branch of the Los Angeles Library. An electronic version of this DMR is located at:

http://www.boeing.com/aboutus/environment/santa_susana/ents/monitoring_reports.html

THIRD QUARTER 2012 DMR CONTENTS AND DISCHARGE SUMMARY

Figure 1 shows the location of the regulated outfalls. A summary of the Third Quarter 2012 measured precipitation at the Santa Susana Site is presented in **Appendix A**. All sanitary wastes from the domestic Sewage Treatment Plants (STPs I and II) were shipped from the Santa Susana Site for offsite disposal. These data and details of all other liquid waste shipments are

summarized in **Appendix B**. Further details of demolition and Best Management Practice (BMP) related activities are included in **Demolition Related Activities** section below.

The Santa Susana Site experienced zero rain events that produced greater than 0.1 inch of rainfall within a 24-hour period and no flow was observed at any of the outfall locations (see **Appendix A**). Monthly samples were collected at Outfall 019 the Groundwater Extraction Treatment System (GETS) on July 2-3, 2012, August 1-2, 2012, and September 5-6, 2012. Additionally, a quarterly sample was collected at the Arroyo Simi receiving water location in Simi Valley on August 9, 2012. The annual samples for Outfalls 001, 002, 008, 009, and 018 were collected during the Second Quarter 2012. Annual samples for the remaining outfalls (Outfalls 003, 004, 005, 006, 007, 010, 011, 012, 013 and 014) will be collected at the first rain event that flow is observed. **Table 1** summarizes the Third Quarter 2012 sampling record by outfall, location and sample type collected per the requirements of the NPDES Permit.

Table 1: Sampling Record during the Third Quarter 2012

Date	Outfall/Location	Samples Collected (i.e., grab, composite)
7/2-7/3/2012	Outfall 019 (GETS) Monthly	Grab & Composite
8/1-8/2/2012	Outfall 019 (GETS) Monthly	Grab & Composite
8/9/2012	Arroyo Simi Receiving Water (RSW-002) - Quarterly	Grab
9/5-9/6/2012	Outfall 019 (GETS) Monthly	Grab & Composite

All samples are submitted to and analyzed by a California-certified analytical laboratory per the Permit requirements. Analytical results from Third Quarter 2012 stormwater samples are presented in **Appendices C** and **D**; results are presented in tabular form by outfall location, constituents evaluated (analytes), sample dates, and data validation qualifiers in.

Results of a reasonable potential analysis (RPA) utilizing updated monitoring data are provided in **Appendix E**. A compilation of notes, abbreviations, and data validation codes that are used in the analytical data summary tables are included in **Appendices C** through **F**. **Appendix F** contains copies of the laboratory analytical reports, chains of custody, and data validation reports. **Appendix G** shows a summary of the specific BMP activities by outfall location that were conducted during the Third Quarter 2012.

THIRD QUARTER 2012 SUMMARY OF NONCOMPLIANCE

No surface water discharges occurred from the Santa Susana Site during the Third Quarter 2012. As such, there are no compliance issues to report for this period. Additionally, no constituents were detected in the monthly GETS samples or quarterly sample collected at the Arroyo Simi at Frontier Park in Simi Valley (RSW 002). Therefore, the samples collected at the Arroyo Simi and the GETS during the Third Quarter 2012 did not exceed the permit limits or the

receiving water limits as defined in the NPDES permit, therefore were in full compliance for the quarter.

OUTFALL 001 BMP COMPLIANCE PLAN

As noted in the Second Quarter 2012 report, a BMP Compliance Plan was submitted to the Regional Board on August 27, 2012. The BMP Compliance Plan is primarily focused on reducing erosion and sedimentation upstream of Outfall 001. Based on the results of the activities implemented upstream of Outfall 001, Boeing believes that implementing stabilization and erosion control measures is the most effective way to meet effluent standards while not severely impacting the adjacent undisturbed habitats at Outfall 001. Recommendations for BMPs include bank stabilization and check dam implementation. Due to the amount of material needed to build these stabilization measures in the upstream drainage of Outfall 001 a section 401 water quality application was submitted to the Regional Board on October 4, 2012. Boeing will not install these stabilization measures until the Regional Board approves the section 401 water quality permit. To stabilize these areas during the rainy season, temporary erosion and sediment controls will be installed. **Figure 2** shows map locations and descriptions for the measures submitted to the Regional Board in a BMP Compliance Plan.

THIRD QUARTER 2012 SITE-WIDE STORM WATER POLLUTION PREVENTION PLAN (SWPPP)/BMP ACTIVITIES

During the Third Quarter 2012, Boeing continued to implement the site-wide and individual SWPPP's for the Santa Susana Site. Boeing conducted monthly, pre- and post-storm season inspections as required by the site-wide SWPPP to identify and mitigate any on-site conditions that may affect the quality of storm water runoff from the Santa Susana Site.

Site-wide BMP activities also include inspection of Solid Waste Management Units (SWMUs) as required in the site-wide SWPPP. SWMU inspections during the Third Quarter 2012 were completed in September.

Site-wide activities also include the inspection of outfalls and outfall perimeters, inspection of stormwater pumping and conveyance system. Inspection of specific BMP activities at each outfall location may include inspections of erosion and sediment control BMPs, flume and sample box condition, flow meter calibrations, surface water catchment or sedimentation basin condition, liner integrity, filter media condition, system pump and conveyance condition, and retention tank inspection. General maintenance and housekeeping of outfalls may include the removal of sediment, removal of leaf litter, filter media replacement, liner repair or replacement, and weed abatement.

During the Third Quarter 2012, Boeing also continued to implement the individual SWPPP's. As part of the implementation of the SWPPP's, BMP inspections were completed in accordance with the State of California Construction General Permit (CGP) requirements.

Efforts to plan and implement BMPs for pre- and post-soil disturbance activities for demolition and ISRA areas are discussed further in sections below. Demolition projects comprise of areas of disturbed soil from recent demolition, post-demolition and post-demolition restoration. Interim Source Removal Action (ISRA) areas consist of the ongoing soil removal and/or remediation activities, post remediation and restoration areas.

Demolition Related BMP Activities

Boeing is committed to the reinstatement of the site to its natural habitat. Previously active areas are being demolished and prepared for restoration. During the Third Quarter 2012 demolition activities were completed at the former Building 300 in Area I. All debris, metal, concrete, and asphalt was segregated upon demolition and transported to a waste or recycling facility per the waste management plan, and in accordance with all local, state, and federal regulations. Construction BMPs were implemented before, during and after demolition activities. Preliminary demolition activities at Building 015 in Area IV began in the Third Quarter 2012. Demolition of Building 015 in Area IV is scheduled to be completed in the Fourth Quarter 2012 and will be discussed in the following quarterly DMR.

Upon completion of demolition activities, post-demolition and restoration efforts included the implementation of erosion and sediment control BMPs. Hydroseed, hydromulch and planting of vegetation will be completed in the Fourth Quarter 2012. Boeing will continue demolition activities to reduce run-off, implement BMPs to address erosion and sedimentation, and return the Santa Susana Site to its natural habitat.

Outfall 008/009 ISRA and BMP Plan Related Activities

Pursuant to the December 3, 2008, Section 13304 Order issued by the Regional Board, Boeing has continued with ISRA activities in the Outfall 008 and 009 watersheds to address constituents that have exceeded NPDES Permit limits/benchmarks. ISRA soil removal within Outfall 008 was completed on October 19, 2009, phase II ISRA soil removal conducted within Outfall 009 was completed during the First Quarter 2011, and phase III ISRA work began in Second Quarter 2011. **Figure 3** shows the location of these ISRA soil removal activities within the Santa Susana Site. A BMP plan was prepared by Boeing and NASA, with considerable input from the Surface Water Expert Panel (Expert Panel), pursuant to the NPDES Permit (Order No. R4-2010-0090). This plan was adopted by the Regional Board on June 3, 2010. A list of new BMP recommendations was developed based on a statistical evaluation performed on available data, which is presented in the 2010-2011 Rainy Season Summary Report. In subsequent rainy seasons, data is reevaluated and has resulted in updates to the BMP plan. The 2011 and 2012

BMP Plan Addendums were submitted to the Regional Board in September of 2011 and 2012, respectively.

In coordination with the Expert Panel, activities were performed during the Third Quarter 2012 to address: the 2012 BMP Plan Addendum; the lower parking lot BMP; and the NASA ISRA areas and BMPs. A brief summary of these activities are given below:

2012 BMP Plan Addendum:

Activities included continued evaluation of surface water data from the 2011/2012 rainy season for inclusion in the Performance Monitoring and BMP Monitoring Summary Report and development of conceptual BMP designs for inclusion in the 2012 BMP Plan Addendum. The Expert Panel conducted a meeting onsite at SSFL to review BMP data on June 27 – 28, 2012. The 2011/2012 Performance Monitoring and BMP Monitoring Summary Report was submitted to the Regional Board on August 31, 2012, and the 2012 BMP Plan Addendum was submitted to the Regional Board on September 28, 2012.

Lower Parking Lot BMP:

Approval was received from Ventura County for the grading permit application for the Lower Parking Lot Sediment Basin and Biofilter outside the Southern California Edison (SCE) easement. Grading construction activities began on August 29, 2012 and the Regional Board and Ventura County conducted several site visits to inspect and observe construction activities. A building permit application was submitted. Approval from the Ventura County Building Department was received on October 22, 2012.

NASA ISRA Areas and BMPs:

NASA received a letter from DTSC on August 23, 2012 allowing use of the December 2011 EPA Radiological Trigger Levels (RTLs) for disposal of ISRA waste soils and provided guidance for evaluating non-detect sample results with a minimum detectable concentration (MDC) above the RTL. Planning and design activities for BMPs and drainage improvements at the Helipad and the ELV channel resumed following receipt of this letter. A pre-demolition gamma scan at the Helipad area was performed on June 22, 2012 and the results indicate that demolition debris acceptable for off-site disposal and/or recycling.

3rd Quarter ISRA activities.

In addition to activities performed in coordination with the expert panel, the following activities were performed for Outfall 008/009 during the Third Quarter 2012:

- Site visits:
 - The State of California Water Resources Control Board (State Board) and the Regional Board conducted a site visit on August 28, 2012 to familiarize Board members with the Santa Susana site.

- Permitting:
 - A 401c permit application was submitted to the Regional Board for remaining BMP work within Outfall 008 drainages.

- Sampling:
 - Conducted post-demolition soil sampling at Building 300 in Area I (data used to develop the delineation sampling plan at ISRA area IEL-3) and conducted delineation soil sampling for ISRA area IEL-3;
 - Performed radiological waste characterization step-out soil sampling at ISRA area ELV-1C;
 - Waste characterization sampling of soil and road base that is planned to be removed during construction was performed on July 25 – 31, 2012;
 - Radiological soil sampling of Helipad soils was conducted on August 31, 2012; and
 - Performed confirmation and Regional Board soil sampling at ISRA area AP/STP-1C-1.

- Surveys, Monitoring, and Inspections:
 - Performed biological survey, vegetation clearance, and resumed excavation at AP/STP ISRA areas;
 - Conducted investigation of unknown feature east of ISRA area AP/STP-1C-1;
 - Conducted sediment and erosion control inspections near the perimeter of Outfall 008 and within the Outfall 008 drainage;
 - Observed Outfall 008 and 009 flumes for any excess sediment/debris, checked the sample boxes and flow meter control boxes for spiders and presence of rodents/animals, and reset the flow meters and replaced tape on monthly basis; and
 - Conducted SWPPP inspections at 2010 and 2011 ISRA areas per the ISRA SWPPP.

- ISRA BMPs Implemented:
 - Removed built-up sediment from rip rap blanket at the flume and replaced fiber rolls and silt fence adjacent to flume;
 - Removed hay bales, silt fences, and stakes at completed ISRA areas where removal was not disruptive to vegetation;
 - Replaced and secured plastic sheeting covering western and eastern portion of ISRA area ELV-1C;
 - Removed silt fence from ISRA area B1-1A vegetated area and constructed an earth berm in its place;
 - Removed deteriorated hay bales from ISRA area B1-1C, replaced biodegradable fiber rolls, and installed rip rap check dam;
 - Installed gravel road path at the B-1 site and roughened soil to encourage rooting after hydroseeding, planned for November;
 - Patched cracks at top of gunite-lined slope above the guard shack and poured low concrete curb; and

- Boring of infiltration holes upgradient of the Helipad sand bag berms was performed on September 6 - 7, 2012.

Boeing continues to conduct bi-weekly status meetings, and submit monthly and quarterly progress reports to Regional Board staff on the progress of ISRA activities and BMP Plan ¹. Boeing is committed to the restoration of the ISRA areas immediately following clean-up activities and works closely with the Regional Board, DTSC, and the Expert Panel to ensure that restoration is comprehensive.

Northern Drainage

Boeing has actively worked to restore the Northern Drainage following clean-up activities performed under the oversight of the DTSC in accordance with the requirements of Regional Board Cleanup and Abatement Order (CAO) No. R4-2007-0054.

DTSC issued a Certification of Completion on April 29, 2011, stating that the response actions required under the Imminent and Substantial Endangerment Determination and Order and Remedial Action Order (ISE/RA Order), Santa Susana Field Laboratory, Ventura County, California (CAD 093365435 and CA 1800090010) were successfully performed, the contaminants of concern had been removed, and remaining concentrations no longer posed an immediate risk to humans or environmental receptors (DTSC, 2011). As stated in the CAO, Boeing completed collection of three surface water samples following the cleanup completion date and therefore no further wet weather sampling will be conducted in the Northern Drainage. As the requirements of the CAO have been fulfilled and no further wet weather sampling is required, the final Northern Drainage Monthly Monitoring Report (MMR) was submitted for May 2012.

Boeing and NASA worked with the Expert Panel to develop a site-specific Restoration Mitigation and Monitoring Plan (RMMP) for the areas of the Northern Drainage that were subject to this Order. The RMMP was submitted to the Regional Board on October 5, 2011 (Haley & Aldrich, 2011) and provides a detailed summary and conceptual designs for restoration and stabilization of the banks and bottom of the Northern Drainage, as well as mitigation and monitoring for riparian plants removed during remediation. Boeing received permit approvals from the Regional Board, California Department of Fish and Game (CDFG) and Los Angeles Division of the Army Corps of Engineers (ACOE) in early July 2012.

The RMMP implementation was divided into two phases. Phase I includes the installation of structural measures including biological monitoring during construction activities, while phase II consists of the installation of plants and bioengineering features. **Figure 4** shows map locations of the RMMP for the Santa Susana Site. Phase I began on August 28, 2012 and was completed

¹ Available at: http://www.boeing.com/aboutus/environment/santa_susana/tech_reports.html

on September 21, 2012. Phase II will commence in the beginning of November 2012 and will be completed before the end of the month.

Outfalls 011 and 018 SWTS Activities

Operation, testing, and optimization of Outfall 011 and 018 SWTSs continued through the Third Quarter 2012. **Figure 5** shows a map of Outfall 018 SWTS and its structure. Specific details of activities performed at the Outfall 018 SWTS are as follows:

- Installations:
 - Installed electrical for pond aerators;
 - Installed polymer line to plate settler;
 - Installed buoys for intake structure at Silvernale;
 - Installed water heater for polymer chemical skid;
 - Installed pH meter before OCT (after chemical Box 1);
 - Installed electrical conduits for flow meters and level transmitters;
 - Welded and installed supports for supernatant overflow tank;
 - Welded and installed a ladder and platform for plate settler;
 - Completed secondary containment for chemical enclosures;
 - Constructed chemical enclosures for chemical skids;
 - Constructed satellite accumulation enclosures; and
 - Placed gravel throughout site.

- Repairs and Revisions:
 - Revised the piping and electrical for KMnO₄ chemical skid and tote;
 - Revised piping and electrical for all chemical pumps/skids;
 - Revised and welded influent piping for treatment pumps;
 - Repaired the scraper on the ACTIFLO unit; and
 - Removed unused electrical conduit near the pier.

- Maintenance:
 - Removed used sand media from sand filters and cleaned interior of units;
 - Placed new sand media in sand filters;
 - Removed GAC media from GAC vessels and cleaned interior of vessels; and
 - Drained and cleaned buffer, backwash, ACTIFLO, supernatant, mixer, and solids weir tanks.

Figure 6 shows a map of Outfall 011 SWTS and its structure. Specific details of activities performed at the Outfall 011 SWTS are as follows:

- Drained and cleaned buffer, backwash, ACTIFLO, supernatant, mixer, and solids weir tanks;

- Performed maintenance in all chemical skids;
- Installed access ways throughout site;
- Welded and installed a ladder and platform for plate settler; and
- Placed gravel throughout site.

In anticipation for the upcoming rainy season, Outfall 011 and 018 SWTS will undergo hydrostatic testing, coating of the sand filters with potassium permanganate, regular maintenance of equipment, and tagging of equipment. In addition, it is anticipated that OF018 SWTS will conduct pilot tests on a couple of dewatering units to process solids generated during treatment. Additional stormwater control measures including the existing flow-through media beds and sediment control BMPs throughout the watershed are in place to meet stormwater quality objectives in conformance with the NPDES Permit.

REASONABLE POTENTIAL ANALYSIS (RPA)

Outfall monitoring data were collected during the Third Quarter 2012 for Outfall 019 and the Arroyo Simi Receiving Water sample point. Data from this quarter were added to the RPA dataset as per the MWH and Flow Science RPA procedures for the outfall monitoring group, Outfall 019 (MWH and Flow Science, 2006). RPA was not triggered for any constituent not already regulated under the current NPDES Permit. Complete RPA tables for the outfall monitoring group are provided in **Appendix F**.

DATA VALIDATION AND QUALITY CONTROL DISCUSSION

In accordance with current federal and state EPA guidelines and procedures, or as specified in the NPDES Monitoring and Reporting Program, chemical analyses of surface water discharge and receiving water samples were completed at a State of California-certified laboratory. Data validation was performed on the analytical results and quality control elements were found to be within acceptable limits for the analytical methods reported, except as noted on the analytical summary tables. As noted above, measures were implemented by the analytical laboratory to monitor and/or evaluate its low level detections, to analyze for interferences and to ensure that cross contamination does not occur in the future. Laboratory analytical reports, including validation reports and notes, are included in **Appendix G**. Attachment H of the NPDES Permit issued to the Santa Susana Site presents the State Board minimum levels (MLs) for use in reporting and determining compliance with NPDES Permit limits.

The analytical laboratory achieved these MLs for this reporting period when technically possible. When elevated laboratory reporting limits (RLs) were noted, the laboratory maximum detectable limits (MDLs) remained below the State of California MLs. However, some constituents' daily MDLs in the NPDES Permit are less than their respective MLs, and less than the RL. In cases where the NPDES Permit limit is less than the RL and ML, the RL was used to determine compliance. The specific constituents that have NPDES Permit limits that are less

than the RL and ML are: mercury, bis(2-ethylhexyl)phthalate, polychlorinated biphenyls (PCBs) (Aroclor congeners), chlordane, Dichlorodiphenyldichloroethane (DDD), Dichlorodiphenyldichloroethylene (DDE), Dichlorodiphenyltrichloroethane (DDT), dieldrin, toxaphene, and chlorpyrifos. These compounds were either not a required analyte or not detected in all of the surface water/receiving water samples collected during Third Quarter 2012.

During the Second Quarter 2012, the automated composite sampling equipment (autosamplers) installed at several outfalls, including Outfall 001, 002, 008 and 009, appeared to have malfunctioned and did not operate to specified calibrated programs for the full 24-hour period. During this period, the autosamplers were set up to collect individual aliquots (fixed-volume subsamples) within a programmed period of time (e.g., each aliquot is collected in a little over one minute at Outfall 001). It appears that the autosamplers collected aliquots based on the peak flow rates, which at times exceeded the rate at which the autosamplers could collect aliquots (as determined by the programmed sampling time). When this occurred, the autosamplers retained a "memory" of the number of aliquots that should have been collected during times of peak flow, and continued to collect samples at an accelerated rate, even after outfall flow rates had fallen to lower levels (i.e., the autosamplers attempted to "catch up" by sampling as frequently as possible until the "memory" of the number of samples had been cleared, and even if the resulting sampling rate exceeded the program specifications based on outfall flow rates).

To address this issue, Boeing is investigating ways to refine the specific autosampler programs, recalibrate the autosampler devices, and run field tests to confirm the autosamplers are collecting samples properly. The method that is currently being programmed and tested involves a change in sampling approach – specifically, aliquots will be collected at fixed time intervals, but the volume of sample collected in each time interval will be proportional to the volume of flow past the outfall in the same time interval. This approach is expected to eliminate the problem of "retained memory" that resulted in faulty sampling during the last season.

FACILITY CONTACT

If there are any questions regarding this DMR or its enclosures, you may contact Mr. Paul Costa at (818) 466-8778.

CERTIFICATION

I certify under penalty of law that this document and all appendices were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted.

References Cited:

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