
Via FedEx

May 11, 2012

In reply refer to SHEA-111998

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

Dear Sir/Madam:

The Boeing Company (Boeing) hereby submits the First Quarter 2012 Discharge Monitoring Report (DMR) for the Santa Susana Field Laboratory (Santa Susana Site). In conformance with National Pollutant Discharge Elimination System (NPDES) Permit No. CA0001309 (Permit), this report includes the field actions and results from activities related to the Santa Susana Site surface water outfalls (**Figure 1**) that occurred during the period of January 1 through March 31, 2012 (First Quarter 2012). Included are summary tables of surface water sample analytical results, rainfall summaries, liquid waste shipment summaries, and surface water sample laboratory analytical reports.

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:

www.boeing.com/aboutus/environment/santa_susana/programs.html.

FIRST QUARTER 2012 DMR CONTENTS AND DISCHARGE SUMMARY

Figure 1 is a map showing the location of the regulated outfalls for the Santa Susana Site. A summary of the First 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, II, and III) were shipped offsite for disposal. During the First Quarter 2012, demolition of STP III began. Consequently, the offsite shipment of sanitary waste from STP-III has been discontinued as of January 2012. These data and details of all other liquid waste shipments are summarized in **Appendix B**.

The Santa Susana Site experienced three rain events that produced greater than 0.1 inch of rainfall within a 24-hour period (see **Appendix A**) and three stormwater related samples were collected in the First Quarter 2012. Additionally, an annual sediment sample was collected at the Arroyo Simi receiving water location in Simi Valley on February 23, 2012 and an annual surface water sample was collected on March 8, 2012; an annual sample was collected at Outfall 019 the Groundwater Extraction Treatment System (GETS) on February 28, 2012, and a monthly sample was collected at the GETS on March 29-30, 2012. Due to the lack of substantial rainfall and no flow at the other outfall locations (Outfalls 001, 002, 003, 004, 005, 006, 007, 008, 010, 011, 012, 013, 014, and 018) during the First Quarter 2012 annual samples were not collected. However, the annual samples will be collected at the first possible rain event that flow is observed. **Table 1** summarizes the First Quarter 2012 sampling record by outfall, location where flow was observed, and sample type collected per the requirements of the NPDES Permit.

Table 1: Sampling Record during the First Quarter 2012

Date	Outfall/Location	Samples Collected (i.e., grab, composite)
1/23/2012	Outfall 009 (WS-13 Drainage)	Grab & Composite
2/13/2012	Outfall 019 (GETS)	Grab & Composite
2/23/2012	Arroyo Simi Receiving Water/Sediment (RSW-002)	Grab
2/28/2012	Outfall 019 (GETS)	Grab & Composite
3/8/2012	Arroyo Simi Receiving Water (RSW-002)	Grab
3/17/2012	Arroyo Simi Receiving Water (RSW-002)	Grab
3/17/2012	Outfall 009 (WS-13 Drainage)	Grab & Composite
3/25/2012	Outfall 009 (WS-13 Drainage)	Grab & Composite
3/27/2012	Arroyo Simi Receiving Water (RSW-002)	Grab
3/27/2012	Outfall 009 (WS-13 Drainage)	Grab
3/29/2012	Outfall 019 (GETS)	Grab & Composite

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

A summary table of NPDES Permit effluent limit exceedances and/or benchmark limits based on the surface water analytical data is provided in **Appendix E**. In addition, the results of a reasonable potential analysis (RPA) utilizing updated monitoring data are provided in **Appendix F**. **Appendix G** contains copies of the laboratory analytical reports, chains of custody, and data validation reports.

Included in **Appendices C** through **F** are a compilation of notes, abbreviations, and data validation codes that are used in the analytical data summary tables.

SUMMARY OF NONCOMPLIANCE

The following summary of noncompliance results for First Quarter 2012 monitoring results are organized by outfall location. As indicated in the Permit, only exceedances of a permit limit or benchmark limits are discussed in this DMR. Those constituents that are detected but do not have a permit limit or benchmark limit are not included. During the First Quarter 2012, surface water samples collected at Outfall 009 and the Arroyo Simi location at Frontier Park in Simi Valley (RSW 002) exceeded permit limits.

Outfall 009

The following is a summary of exceedances of permit limits at Outfall 009 (WS-13 Drainage). The permit limit exceedances are further detailed in **Appendix E**.

Dioxins and Furans: Dioxins (TCDD) Toxic Equivalent Quotient (TEQ)

TCDD TEQ in stormwater samples from Outfall 009 exceeded the TCDD TEQ daily permit limit on March 18, 2012 and March 25, 2012. The measured concentrations for the samples collected are 1.61×10^{-7} µg/L and 5.62×10^{-8} µg/L, respectively, and exceeds the permit limit daily maximum of 2.8×10^{-8} µg/L.

According to the Department of Toxic Substances Control (DTSC), TCDD congeners have been documented as frequently detected in approved non-impacted background soils at the SSFL (MWH, 2005). The presence of TCDD in both background soils and fire-related materials is well documented in the scientific literature (USEPA, 2000), substantiated by on and offsite studies (MWH, 2005; Flow Science, 2006). Previously documented reports by others suggest and the Surface Water Expert Panel¹ (Expert Panel) suggest that the levels of TCDD TEQ measured in surface water at the SSFL could originate primarily from wildfire combustion processes, regional and atmospheric deposition, and other naturally occurring sources over which Boeing has no reasonable control (USEPA, 2000; MWH, 2005; Flow Science, 2006).

Boeing believes the dioxin concentrations in stormwater runoff are associated with the high rainfall intensity that occurred during the First Quarter 2012 therefore causing erosion and elevated concentrations of total suspended solids (TSS) consisting of native sediments and soils. TSS loading will vary based on rainfall intensity, duration, and erosion characteristics. Actions taken during the First Quarter 2012 to control sediment transport and minimize the occurrence of any future permit exceedances are described in the following sections of this report and in **Table 2**.

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

Metals

Lead was detected in samples collected from Outfall 009 on March 25, 2012, at concentration of 7.2 µg/L. This concentration exceeds the NPDES benchmark limit of 5.2 µg/L, as indicated in **Appendix E**.

The reduction of TSS in stormwater runoff is likely to be the most effective approach for reducing lead concentrations, since lead typically has low solubility and is associated with sediments. During cleanup activities, Boeing has implemented Best Management Practices (BMPs) to minimize the transportation of sediment from these areas. Boeing continues to investigate erosion sources and implement erosion control measures in the Outfall 009 watershed. Erosion and sediment control plans, including channel stabilization, are underway for the Northern Drainage area, as are restoration activities as discussed further in this document.

As discussed above, Boeing believes the metals concentrations in stormwater runoff from the SSFL are associated with TSS consisting of native sediments and soils, and that TSS and metals loading will vary based on rainfall intensity, duration, and erosion characteristics. A report from the Expert Panel, indicate that background conditions are significant contributors of regulated constituents, including metals at Outfall 009. Continued monitoring of surface water will provide a more thorough dataset with which to evaluate further the occurrence and likely sources of metals and dioxin in this watershed.

Arroyo Simi Receiving Water Sample Location – Frontier Park (RSW 002)

The following is a summary of exceedances of permit limits at Arroyo Simi Receiving Water Location – Frontier Park (RSW 002). The permit limit exceedances are further detailed in **Appendix E**.

Bacteria

Escherichia Coli (E. Coli) was detected at 300 MPN/100mL, above the single sample maximum receiving water limit of 235 MPN/100mL at Arroyo Simi – Frontier Park (RSW 002) in a sample that was collected on March 8, 2012, as indicated in **Appendix E**.

E. Coli and Fecal Coliform were detected above the receiving water limits at Arroyo Simi – Frontier Park (RSW 002) in the samples that were collected on March 17, 2012 and March 25, 2012, as indicated in **Appendix E**. E. Coli and Fecal Coliform were both detected at ≥1,600 MPN/100mL in samples collected on March 17, 2012, above the permit daily limits for E. coli of 235 MPN/100mL and for E. Coli of 400 MPN/100ml. Samples collected on March 27, 2012, E. Coli and Fecal Coliform were both detected at 1,600 MPN/100mL, above the permit daily limits for E. coli of 235 MPN/100mL and for E. Coli of 400 MPN/100ml.

To confirm that bacteria present in the Arroyo Simi were not of human origin, Boeing analyzed the sample from the Arroyo Simi-Frontier Park (RSW 002) on March 17, 2012 and March 27, 2012 for human-specific Bacteroides. Laboratory results indicate that “the total Bacteroides detected in the samples was not derived from human [sources]. It must be derived from other animal sources.” See **Appendix G**.

The receiving water limitations are based on the water quality objectives contained in the Los Angeles River Watershed Basin Plan (Basin Plan) for Total Maximum Daily Load (TMDL) and in accordance with the NPDES permit. In adopting the Basin Plan TMDL for Bacteria, the Regional Board has recognized that “there are natural sources of bacteria that may cause or contribute to exceedances of the single sample objectives and that it is not the intent of the Regional Board to require treatment or diversion of natural coastal creeks or to require treatment of natural sources of bacteria from undeveloped areas.”²

The Basin Plan includes E. Coli and Fecal Coliform as part of water quality objectives for monitoring of inland surface waters and includes a geometric mean calculation. The geometric mean calculation requires five surface water samples to satisfy calculation and permit requirement. The geometric mean calculation for E. Coli and Fecal Coliform for surface water samples collected at the Arroyo Simi-Frontier Park (RSW 002) will be calculated in the Second Quarter 2012 and included in the Second Quarter 2012 DMR once all samples are collected and analyzed per the NPDES Permit.

Bacteria Investigation – Arroyo Simi-Frontier Park Location (RSW 002)

As stated in a letter to the Regional Board dated September 7, 2011, Boeing initiated an investigation in response to the detection of bacteria at the Arroyo Simi-Frontier Park (RSW 002) sample location to investigate for potentially contributing sources of bacteria from the Santa Susana Site (Boeing, 2011). This investigation includes a review of rain intensity, flow conditions, and observations of potential contributing sources including the STPs, port-potties, and wildlife. The following paragraphs discuss the results and conclusions of that investigation.

The investigation of bacteria was triggered from the sample collected from Arroyo Simi-Frontier location (RSW 002) on March 8, 2012, which exceeded the single sample maximum receiving water limit for bacteria (E. Coli). This sample was collected from the Arroyo Simi-Frontier location (RSW 002) during dry weather conditions. Consequently, the investigation was focused on the rain events that occurred on March 17, 2012 and March 25, 2012; specifically looking at rain intensity, flow conditions, and observations of potential contributing sources.

² Resolution No. R10-007, July 9, 2010, Amendment to the Water Quality Control Plan for the Los Angeles Region to Incorporate a Total Maximum Daily Load for Indicator Bacteria in the Los Angeles River Watershed, Attachment A at 2-3.

Peak rainfall during the events on March 17th and 25th was recorded at over 0.25 inch per hour and over 0.5 inch per hour, respectively. Rain intensity during these rain events was the highest recorded in the First Quarter 2012 (Appendix A). Flow conditions during these rain events were also the highest observed during the First Quarter 2012. As stated above, the lab results of bacteria present at the Arroyo Simi-Frontier Park location are not derived from a human source. Furthermore no spills, overflows or leaks occurred from the STPs or any port-a-potties onsite. In addition to the results of the onsite investigation and the laboratory results indicating the samples were not derived from human sources, Boeing believes that the presence of bacteria is not related to activities at the Santa Susana Site.

Boeing will continue to monitor both E. Coli, Fecal Coliform, and human-specific Bacteroides in all samples analyzed for bacteria at the Arroyo Simi-Frontier Park location to verify that bacteria at this sampling location are from animals and not human sources.

FIRST QUARTER 2012 SITE-WIDE STORM WATER POLLUTION PREVENTION PLAN (SWPPP)/BEST MANAGEMENT PRACTICES (BMP) ACTIVITIES

During the First Quarter 2012, Boeing continued to implement the site-wide Storm Water Pollution Prevention Plans (SWPPP's). Boeing conducted monthly, pre- and post-storm season inspections as required by the site-wide SWPPP to identify and mitigate any on-site conditions identified that may affect the quality of storm water runoff from the Santa Susana Site in accordance with the State of California General Industrial Storm Water Permit No. CAS000001 (General Permit) SWPPP requirements.

Site-wide BMP activities also include inspection of Solid Waste Management Units (SWMUs). Per SWPPP requirements, SWMU inspections are completed three times a year during the months of January, April and September. SWMU inspections were completed in January 2012.

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 comprise of the removal of sediment, removal of leaf litter, filter media replacement, liner repair or replacement, implementation of additional BMPs, and weed abatement.

During the First Quarter 2012, Boeing continued to implement the individual SWPPP's. As part of the implementation of the SWPPP's, BMP inspections are completed in order to identify and mitigate any onsite conditions identified that may affect the quality of storm water runoff from the Santa Susana Site. BMP inspections were completed in accordance with the State of California General Permit for Storm Water Discharges Associated with Construction and Land

Disturbance Activities, Order NO. 2009-0009-DWQ; NPDES NO. CAS000002 Construction General Permit (CGP) SWPPP requirements. SWPPP Inspections were conducted weekly, before and after qualifying rain events, and during extended rainfall lasting longer than 24-hours as required by the CGP.

Construction, demolition and Interim Source Removal Action (ISRA) activities are included in the CGP SWPPP requirements. Efforts to plan and implement BMPs for pre- and post-soil disturbance activities for demolition and ISRA areas are discussed in Table 1 and summarized further in sections below. The demolition and ISRA areas include both the areas of disturbed soil from recent demolition, soil removal, or remediation activities and areas that are post-remediation, post-demolition, and now in restoration.

Table 2 is a summary of the specific BMP activities by outfall location that were conducted during the First Quarter 2012.

Table 2: Boeing’s BMP Activities during the First Quarter 2012

OUTFALL (Location)	BMP ACTIVITIES DURING FIRST QUARTER 2012
001 (South Slope below Perimeter Pond)	Inspected the outfall and flume for any excess sediment/debris. Flume clear of sediment and debris. Observed sediment and erosion controls around the perimeter of the outfall and Outfall 001 drainage. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Conducted weed abatement.
002 (South Slope below R-2 Pond)	Conducted sediment and erosion control inspections around the perimeter and Outfall 002 drainage. Inspected outfall and flume for any excess sediment/debris. Flume, outfall and sample box drained and cleared of sediment and debris. Checked flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Completed maintenance inspection and reset of ISCO sampler.
003 (RMHF)	Conducted sediment and erosion control inspections. Inspected flume and outfall for any excess sediment/debris. Flume and outfall clear of sediment and debris. Maintenance inspections were conducted of the structural BMPs including the stormwater retention basin, conveyance and filter system. Checked sample box, flow meter control box for spiders and presence of the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis.
004 (SRE)	Inspected the flume, outfall and liner for any excess sediment/debris. Conducted sediment and erosion control inspections near the outfall. Maintenance inspections were conducted of the structural BMPs including the stormwater retention system, conveyance and filter

OUTFALL (Location)	BMP ACTIVITIES DURING FIRST QUARTER 2012
	system. Completed inspection of dedicated retention tanks. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis.
005 (FSDF-1)	Conducted sediment and erosion control inspections. Inspected the outfall and flume for any excess sediment/debris. Completed maintenance inspections on structural BMPs including the conveyance, stormwater retention system, and sediment basin liner. Completed inspection of dedicated retention tanks.
006 (FSDF-2)	Inspected the flume, outfall and liner for any excess sediment/debris. Outfall clear of sediment and debris. Conducted sediment and erosion control inspections near the outfall. Completed maintenance inspections on the structural BMPs including the stormwater retention system and filter system. Checked sample box, flow meter control box the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Completed inspection of dedicated retention tanks.
007 (Building 100)	Conducted sediment and erosion control inspections at perimeter of outfall. Observed the sediment basin liner and outfall for any excess sediment/debris or deficiencies. Completed maintenance inspection of the conveyance system, stormwater retention system, and sediment basin liner. Checked high level float/switch in sedimentation basin. Completed inspection of dedicated retention tanks.
008 (Happy Valley)	Conducted sediment and erosion control inspections near the perimeter of the outfall and within the Outfall 008 drainage. Maintained and repaired existing sediment and erosion controls. Observed the outfall and flume for any excess sediment/debris, and cleared excess sediment from the flume. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Completed bi-annual inspections of approximately eleven hundred native plants within Outfall 008.
009 (WS-13 Drainage)	Checked sample box, flow meter control box for spiders and presence of rodents/animals. Flow meter reset and tape replaced on monthly basis. Completed bi-annual inspections of approximately nineteen hundred native plants within the Outfall 009 watershed. Maintained plastic sheeting covering active ISRA excavation areas in Ash Pile/Sewage Treatment Plant (AP/STP) and at ISRA area Expendable Launch Vehicle (ELV)-1C, and added supplemental sand bags. Repaired construction fencing at ELV. Repaired silt fence at ISRA area B1-1A. Placed additional rip rap within the B-1 media filter bed and near the entry gate into the B-1 filter media area. Replaced spent gravel bags at the B-1 entrance. Re-

OUTFALL (Location)	BMP ACTIVITIES DURING FIRST QUARTER 2012
	<p>adjusted loosened tarp and replaced sand bags along the top of and at base of gunite slope at B-1. Removed excess sediment and plant debris from culvert inlet area at the Upper Parking Lot entrance. Removed spent fiber roll from gravel area at ISRA area Instrument Experimentation Lab (IEL)-2. Removed silt fence at ISRA area Component Testing Lab-1 (CTL1)-1B and installed rip rap. Replaced old fiber rolls with biodegradable fiber rolls along the CTL-1 abandoned road and removed spent sand bags at the entrance. Installed fabric over weir boards at Culvert Maintenance (CM)-1, CM-2, CM-3, CM-4, CM-6, CM-8, CM-9, CM-10, and CM-11 and added gravel to the media filter beds at CM-2, CM-3, CM-4, CM-8, CM-10, and CM-11. Along Area II Road, replaced and installed additional biodegradable fiber rolls along road west of CM-11. Removed excess sediment, plant debris, and loose fiber roll straw from the asphalt swale east of CM-2, the asphalt swale between CM-11 and CM-6, and behind the sand bag berm at the corner of Helipad Road and Area II Road. Replaced broken sand bags and maintained sand bag berm northwest of CM-1. Repaired cracked concrete seal around the HDPE culvert at CM-1. Replaced fiber rolls and removed excess sediment along RD-47 Road. Installed biodegradable fiber rolls along Area II Landfill access road. Removed and disposed of loose sections of metal pipe and other large debris from B-1, IEL-1, CM-1, ELV-1C, and CM-6. Removed spent fiber rolls from well-vegetated areas at the Lower Lot, and IEL-2.</p>
<p>010 (Building 203)</p>	<p>Maintenance inspections were conducted on structural BMPs including the filter media, conveyance and the stormwater retention system. Completed inspection of dedicated retention tanks. Removed pump at base of filtration media/system for maintenance. Maintained and inspected sediment and erosion controls within areas of disturbance or sparse vegetation. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Removed spent fiber rolls from well vegetated area west of the outfall. Installed a new pump at the discharge of Outfall 010.</p>
<p>011 (Perimeter Pond)</p>	<p>Maintenance inspections were conducted on structural BMPs including the weir, filter media, pump and conveyance system. Conducted sediment and erosion control inspections at flume, drainage area, perimeter of outfall, pond and around conveyance system. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Revised intake structure piping at R1 Pond and moved pond level staff gage. Installed pumps, piping, valves, electrical and secondary containment for chemicals at the Outfall 011 Stormwater Treatment System (SWTS).</p>

OUTFALL (Location)	BMP ACTIVITIES DURING FIRST QUARTER 2012
	<p>Constructed raised, grated platforms around the bag filters at Outfall 011 SWTS. Modified uphill discharge piping to reduce discharge velocity. Installed a concrete liner in the culvert underneath SWTS. Installed jute matting and biodegradable fiber rolls to the south slope of the Outfall 011 SWTS for sediment and erosion control. Transplanted mulefat cuttings to two 5-ft areas around R-1 pond where vehicles disturbed soil. Removed spent fiber rolls from well-vegetated areas the Advanced Propulsion Testing Facility (APTF), and near CTL-I.</p>
<p>012 (ALFA Test Stand)</p>	<p>Maintenance inspections were conducted on structural BMPs including pump, conveyance system and retention tank. Observed condition of the sand bag berm. Inspected outfall and perimeter for presence of rodents/animals.</p>
<p>013 (BRAVO Test Stand)</p>	<p>Maintenance inspections were conducted on structural BMPs including pump, conveyance system and retention tank. Observed condition of the sand bag berm. Inspected outfall and perimeter for presence of rodents/animals.</p>
<p>014 (APTF Test Stand)</p>	<p>Maintenance inspections were conducted on structural BMPs Observed the condition and integrity of the liner and berm. Observed sediment and erosion control BMPs around outfall perimeter.</p>
<p>018 (R-2 Spillway)</p>	<p>Maintenance inspections were conducted on structural BMPs including the filter media and conveyance system. Checked sample box, flow meter control box for the presence of debris and/or animals. Flow meter reset and tape replaced on monthly basis. Added gravel to areas of loose soil around the Outfall 018 SWTS. Installed a raised, grated platform around bag filter vessels and piping to granulated activated carbon (GAC) vessels. Constructed a short wall to separate area of work within the SWTS area and lined culvert on west side of SWTS.</p>
<p>019 (GETS)</p>	<p>Automated pH adjustment system was function tested and calibrated. A metals treatment resin was changed out. Pacific Health and Safety (H&S) completed an H&S audit. The Horiba U-22 Water Quality Instrument was factory calibrated as part of compliance monitoring and sampling. Quarterly maintenance including: an oil change and belt tension inspection on the air compressor, inspected motor rotation on transfer pumps PC-200 and PC-201, cleaned iron scaling off differential pressure transducers DPI-200 & DPI-201, cleaned sump pump and verified operation, inspected and verified operation of safety shower, cleaned foot valves, strainers and flushed potable water through chemical injection pumps for Calcium Chloride (CaCl₂) and Sulfuric Acid (H₂SO₄), and exercised pneumatic valves.</p>

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 First Quarter 2012 the former Environmental Effects Laboratory (EEL) in Area III was demolished. All debris, metal, concrete, and asphalt was segregated upon removal 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.

Upon completion of demolition activities, post-demolition and restoration efforts include the implementation of erosion and sediment control BMPs including hydroseed or hydromulch. During the First Quarter 2012 silt fence, biodegradable fiber rolls, and sand bags were installed at the EEL in Area III. All former demolition areas (CTL-V, Canyon, and CTL-III), located in Area I and currently under the CGP, were inspected in accordance with CGP SWPPP requirements and BMPs were implemented as needed. Notice of Termination (NOT) for CTL-V, Canyon and CTL-III are pending approval. Until approval of the NOTs are received the facilities will remain under the CGP.

As part of the effort to reduce run-off of surface waters at the Santa Susana Site, demolition activities in Areas I and III have reduced run-off by allowing for more infiltration to occur. 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 been proceeding 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 were completed on October 19, 2009 and phase II ISRA soil removal conducted within Outfall 009 was completed during the First Quarter 2011. Phase III ISRA work began in Second Quarter 2011.

During the First Quarter 2012, Boeing:

- 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;

- Completed bi-annual inspections of approximately eleven hundred native plants with Outfall 008 and approximately nineteen hundred native plants within the Outfall 009 watershed;
- Reviewed excavation and confirmation sampling plans for remaining AP/STP ISRA activities with the Regional Board and DTSC;
- In coordination with the Expert Panel:
 - Southern California Edison (SCE) completed review of the treatment BMP in the Lower Parking Lot Soil Stockpile area and responded they would not allow the proposed work within their easement. An alternative layout for the BMP outside of the SCE easement was selected and biological and geophysical surveys were performed. Once the conceptual design is selected, work will begin on redesign. The revised permits will be submitted when the redesign is complete;
 - Continued review of BMP designs for the Helipad and ELV near the corner of Helipad Road and Area 2 Road, and ELV hillside areas on NASA property;
 - Reviewed areas of localized erosion in the 008 watershed and continued planning for additional BMPs to be installed along dirt roads, channel banks, and channels, tentatively in summer 2012;
 - Hosted a site walk with the Regional Board, the Expert Panel, and NASA to discuss details of the Restoration, Mitigation, and Monitoring Plan (RMMP), completed BMPs, and planned BMPs within the Outfall 009 watershed;
- Maintained plastic sheeting covering active ISRA excavation areas in AP/STP;
- Patched hole in silt fence at ISRA area B1-1A (downslope from planting area);
- Placed rip rap per the design at the B-1 media filter bed;
- Installed additional rip rap at eroded area near the entry gate into the B-1 media filter bed area;
- Replaced broken gravel bags at the B-1 entrance;
- Re-adjusted loosened tarp and replaced sand bags along the top of the gunite slope overlooking the guard shack;
- Replaced sand bag covering hole in gunite slope near the guard shack;
- Removed excess sediment and plant debris from culvert inlet area at the Upper Parking Lot entrance;
- Removed damaged fiber roll from gravel area at ISRA area IEL-2;
- Removed silt fence at ISRA area CTL1-1B and installed rip rap;
- Replaced old fiber rolls with biodegradable fiber rolls along the CTLI-1 abandoned road;
- Removed worn sand bags at the bottom of the CTLI-1 abandoned road;
- Installed fabric over weir boards at CM-1, CM-2, CM-3, CM-4, CM-6, CM-8, CM-9, CM-10, and CM-11 to promote flow through the media beds;
- Added supplemental gravel to the media filter beds at CM-2, CM-3, CM-4, CM-8, CM-10, and CM-11;
- Replaced damaged sections of biodegradable fiber rolls along Area II Road and removed accumulated sediment and loose straw from fiber rolls within asphalt swale between CM-11 and CM-6;

- Installed an additional biodegradable fiber roll along road west of CM-11;
- Removed accumulated plant debris, fiber roll straw, and sediment from asphalt swale east of CM-2;
- Replaced broken sand bags and maintained sand bag berm northwest of CM-1;
- Replaced fiber rolls and removed excess sediment on RD-47 road;
- Removed accumulated sediment and plant debris built-up behind sand bag berm at the corner of Helipad Road and Area II Road;
- Maintained plastic sheeting covering ISRA area ELV-1C and added supplemental sand bags;
- Installed biodegradable fiber rolls along Area II Landfill access road;
- Conducted rain event Performance Monitoring and BMP Subarea Monitoring activities, including sampling; and
- Conducted SWPPP inspections per the ISRA SWPPP.

Boeing continues to conduct bi-weekly status meetings, and submit monthly and quarterly progress reports to Regional Board Staff on the progress of the ISRA activities³. Boeing is committed to the restoration of the ISRA areas immediately following clean-up activities and works closely with the DTSC and Expert Panel to ensure that restoration is comprehensive.

Northern Drainage and BMP Plan Related Activities

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). Boeing and NASA worked with the Surface Water Expert Panel to develop a site-specific 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. As stated in the CAO, Boeing will continue to collect surface water samples for three rain events that follow the cleanup completion data and submit monthly monitoring reports to the Regional Board until all data has been reported.

³ Available at http://www.boeing.com/aboutus/environment/santa_susana/isra.html

Outfalls 011 and 018 SWTSs and BMP Plan Related Activities

Testing and optimization of Outfall 011 and 018 SWTSs continued through the First Quarter 2012. Specific details of these activities were as follows:

- Constructed raised, grated platforms around the bag filters at Outfalls 011 and 018 SWTSs;
- Hydrostatic tested chemical skid at Outfall 018 SWTS;
- Installed electrical conduits and light posts for site lighting at Outfall 018 SWTS;
- Began installing pH meters and sample ports before the oxidation contact tank (OCT) and buffer tank influent lines at Outfall 018 SWTS;
- Performed maintenance on the ACTIFLO scraper assembly at Outfall 018 SWTS;
- Installed posts and railings along site perimeter Outfall 018 SWTS;
- Installed chemical skid pumps and piping at Outfall 011 SWTS;
- Installed the sump pump electrical panel at Outfall 011 SWTS;
- Constructed and painted the satellite accumulation enclosures, office and site boundary railings at Outfall 011 SWTS;
- Installed electrical wiring for level indicator transmitters (LITs) for the buffer and backwash tank and pH meter for OCT at Outfall 011 SWTS;
- Installed a pH meter before the buffer at Outfall 011 SWTS;
- Conducted hydrostatic test of Outfall 011 SWTS;
- Revised the intake structure piping at R1 Pond and moved pond level staff gage at Outfall 011 SWTS;
- Conducted dry test on ACTIFLO unit at Outfall 011 SWTS;
- Installed recirculation line at Outfall 11 SWTS;
- Tested electrical work on chemical skids and ACTIFLO programmable logic controller (PLC) at Outfall 011 SWTS;
- Installed common alarm and grounded electrical for ACTIFLO unit at Outfall 011 SWTS;
- Installed submersible pump in solids weir tank at Outfall 011 SWTS;
- Installed flush lines on instrumentation sample lines at Outfall 011 SWTS;
- Hydro tested treatment pond pumps at Outfall 011 SWTS;
- Installed GAC bypass piping at Outfall 011 SWTS;
- Calibrated chemical dosing pumps at Outfall 011 SWTS;
- Installed high pressure switch and pressure gauge on effluent line at Outfall 011 SWTS;
- Coat sand filters with potassium permanganate at Outfall 011 SWTS;

It is anticipated that Outfall 018 SWTS startup and optimization will continue through the Second Quarter 2012. Outfall 011 SWTS startup and optimization began in the First Quarter 2012 with optimization to be completed throughout the remainder of the rainy season and

following non-rainy season. 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 First Quarter 2012 for Outfalls 009, 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, Outfalls 001, 002, 011, 018 and 003-010 (MWH and Flow Science, 2006). RPA analysis was performed for E.Coli at Outfall 009 for samples collected on March 17, 2012; these analyses are discussed below and also did not trigger reasonable potential. RPA was not triggered for any other constituent not already regulated under the current NPDES Permit. Complete RPA tables for the outfall monitoring group are provided in **Appendix F**.

Boeing notes that the water quality objectives for indicator bacteria were updated by the Regional Board on July 8, 2010 (see Resolution No. 2010-005). This update eliminated water quality objectives for fecal coliform and added water quality objectives for E. Coli. In response to this change to objectives, RPA was not conducted for Fecal Coliform.

E. Coli

As noted above, Boeing collects all sanitary waste generated at the Santa Susana site and transports it offsite for treatment and disposal. The discharge at Outfall 009 consists entirely of stormwater. As described above, Boeing has been working to improve the quality of the stormwater discharges at Outfall 009 through methods designed to preserve the natural conditions in the watershed to the maximum extent feasible by implementing erosion control and restoration measures such as the planting and maintenance of native plants and the application of hydroseed mulch, as well as through planned ISRA activities. Thus, there is no indication that any human waste can be exposed to or enter any stormwater discharges from Santa Susana, and any bacteria detected at Outfall 009 therefore must have originated from non-human, natural sources.

To confirm that bacteria present in the samples collected at Outfall 009 were not of human origin, Boeing collected a sample from this location on March 17, 2012 and March 25, 2012 that was analyzed for human-specific Bacteroides. Laboratory results indicated that "the total Bacteroides detected in the samples was not derived from human [sources]. It must be derived from other animal sources." See **Appendix G**.

As stated above for and in response to the detection of bacteria at Arroyo Simi-Frontier Park location (RSW-002) Boeing initiated an investigation for potentially contributing sources of bacteria from the Santa Susana Site. Potential contributing sources of bacteria onsite may include the STPs, port-a-potties, and wildlife. A review of rain intensity, flow conditions, and observations of potential contributing sources was conducted as part of the investigation

(Boeing, 2011). As a result of the investigation and additional laboratory analysis for human-specific Bacterioides, Boeing believes that the presence of bacteria is not related to activities at the Santa Susana Site. However, field observations conducted during the March 17, 2012 rain event identified animal droppings as horse manure in the Outfall 009 Watershed.

Therefore, Boeing does not believe that reasonable potential has been demonstrated for bacteria at Outfall 009. Boeing will continue to monitor both E. Coli, Fecal Coliform and human-specific Bacterioides in all samples analyzed and monitor for any potentially contributing sources of bacteria at this and other outfalls in order to continue to confirm that any indicator bacteria detected at the outfalls are from animals and not human sources.

DATA VALIDATION AND QUALITY CONTROL DISCUSSION

In accordance with current federal and state Environmental Protection Agency (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 T-A of the NPDES Permit issued to the SSFL presents the State of California Water Resources Control Board (SWRCB or "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, cyanide, 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 First Quarter 2012.

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.

Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for a knowing violation.

Executed on the 11th of May 2012, at The Boeing Company, Santa Susana Site.

Sincerely,



Thomas D. Gallacher
Director
Santa Susana Field Laboratory
Environment, Health and Safety

TDG:jag

Attachments:

Figure: 1 Storm Water Drainage System and Outfall Locations

- Appendices:
- A First Quarter 2012 Rainfall Data Summary
 - B First Quarter 2012 Liquid Waste Shipment Summary Tables
 - C First Quarter 2012 Summary Tables, Discharge Monitoring Data
 - D First Quarter 2012 Radiological Monitoring Data
 - E First Quarter 2012 Summary of Permit Limit Exceedances
 - F First Quarter 2012 RPA Summary Tables
 - G First Quarter 2012 Analytical Laboratory Reports, Chain-of-Custody, and Validation Reports



cc: Ms. Cassandra Owens, Regional Water Quality Control Board
Mr. Rick Brausch, Department of Toxic Substances Control
Mr. Gerard Abrams, Department of Toxic Substances Control
Mr. Robert Marshall, California State University – Northridge, Library
Mr. Gabriel Lundeen, Simi Valley Library
Ms. Lynn Light, Platt Branch, Los Angeles Library

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