

Via FedEx

May 15, 2015

In reply refer to SHEA-115234

Information Technology Unit
Regional Water Quality Control Board, Los Angeles Region
320 West 4th Street, Suite 200
Los Angeles, California 90013

Attention: Information Technology Unit

Gentlemen:

Subject: First Quarter 2015 NPDES Discharge Monitoring Report
Compliance File CI-6027 and NPDES No. CA0001309
Santa Susana Field Laboratory
Ventura County, California

The Boeing Company (Boeing) hereby submits this Discharge Monitoring Report (DMR) for the Santa Susana Field Laboratory (Santa Susana Site) for the period of 1 January through 31 March 2015 (First Quarter 2015). This DMR was prepared as required by and in accordance with National Pollutant Discharge Elimination System (NPDES) Permit No. CA0001309 (Permit) and under regulatory oversight of the Los Angeles Regional Water Quality Control Board (Regional Board). Included are summary tables of best management practices (BMPs), stormwater sample analytical results, rainfall quantities, liquid waste shipments, and laboratory analytical reports for stormwater 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/principles/environment/santa-susana/monitoring-reports.page>

FIRST QUARTER 2015 DMR CONTENTS

This DMR includes the following sections and appendices:

- **Discharge Summary:** This section describes the number of rain events, number of samples collected, sample dates, and sample locations during First Quarter 2015. Table I summarizes the First Quarter 2015 sampling record by outfall, location, and sample type collected per the requirements of the NPDES Permit.
- **First Quarter 2015 Summary of Compliance:** This section summarizes the sample results that exceeded NPDES Permit limits in First Quarter 2015.

First Quarter 2015 Santa Susana Site-wide Stormwater Pollution Prevention Plan (SWPPP)/BMP Activities: This section presents the Santa Susana Site SWPPP activities and BMPs related to demolition, Interim Source Removal Actions (ISRA), the BMP Plan, Northern Drainage, and other activities implemented in First Quarter 2015. Table II summarizes specific BMP activities by outfall location.

- **Data Validation and Quality Control:** This section discusses data validation results and any laboratory or field corrective actions.
- **Appendix A** summarizes measured First Quarter 2015 precipitation at the Santa Susana Site.
- **Appendix B** tabulates liquid waste shipment details.
- **Appendix C** presents chemical analytical results of First Quarter 2015 stormwater and/or receiving water samples in tabular form by outfall location, constituents evaluated (analytes), sample dates, and data validation qualifiers.
- **Appendix D** summarizes the NPDES Permit limit exceedances.
- **Appendix E** contains copies of laboratory analytical reports, chains of custody, and data validation reports.
- **Appendix F** tabulates the Reasonable Potential Analysis (RPA).
- **Figure 1** shows site features and **Figure 2** shows the Arroyo Simi – Frontier Park (RSW-002) sampling location.

DISCHARGE SUMMARY

The Santa Susana Site experienced five qualifying rain events that produced greater than 0.1 inches of rainfall within a 24-hour period and is preceded by at least 72 hours of dry weather during First Quarter 2015 (see Appendix A). Two of the five qualifying rain events produced stormwater discharges. Onsite stormwater samples were collected at Outfall 009; and one quarterly offsite receiving water sample was collected at the Arroyo Simi–Frontier Park location in Simi Valley (RSW 002; see Figure 2). Five additional offsite receiving water grab samples were collected at the Arroyo Simi – Frontier Park location following the collection of the annual stormwater samples and following the collection of routine stormwater samples at Outfall 009. An annual sediment sample was also collected at the Arroyo Simi – Frontier Park (RSW-002) location. Table I summarizes the First Quarter 2015 sampling record by outfall, location and sample type collected, per NPDES Permit requirements.

TABLE I: Sampling Record during First Quarter 2015

Date	Outfall/Location	Sample Frequency	Sample Type
1/11/15	Outfall 009	Annual	Grab, Composite
3/3/15	Outfall 009	Routine	Grab, Composite
1/11/15	Arroyo Simi Frontier Park (RSW-002)	Quarterly	Grab
1/15/15	Arroyo Simi Frontier Park (RSW-002)	Additional	Grab

Date	Outfall/Location	Sample Frequency	Sample Type
1/19/15	Arroyo Simi Frontier Park (RSW-002)	Additional	Grab
1/23/15	Arroyo Simi Frontier Park (RSW-002)	Additional	Grab
1/27/15	Arroyo Simi Frontier Park (RSW-002)	Additional	Grab
3/3/15	Arroyo Simi Frontier Park (RSW-002)	Routine	Grab
3/24/15	Arroyo Simi Frontier Park (RSW-002)- Sediment	Annual	Grab

The samples were submitted to and analyzed by TestAmerica Laboratories, Inc., a California-certified analytical laboratory in Irvine, per the NPDES Permit requirements.

FIRST QUARTER 2015 SUMMARY OF COMPLIANCE

As summarized in Appendix D, the First Quarter 2015 exceedances of Daily Maximum Permit Limit or receiving water limits included:

- *Escherichia coli* (*E. coli*), Fecal Coliform at Arroyo Simi – Frontier Park (RSW-002); and
- Lead at Outfall 009.

Outfall 009

Lead

On March 3, 2015, lead was detected in a stormwater sample collected from Outfall 009 at a concentration of 5.8 micrograms per liter (ug/L), above the Daily Maximum Permit Limit of 5.2 ug/L.

Since total metals are commonly associated with sediment particles, Boeing believes that the lead concentrations observed in stormwater runoff in the Outfall 009 watershed were the result of erosion and total suspended solids (TSS) consisting of native sediments and soil from disturbed areas. TSS loading varies based on rainfall intensity, duration, and erosion characteristics. Boeing will continue to work with the Expert Panel to minimize future metals exceedances at Outfall 009 by slowing down run-off and providing pre-treatment. Boeing constructed a biofilter in 2013, bioswales in 2015, and increased the settling time at culvert modification CM-1 which captures water from the repaved road at the recommendation of the Stormwater Expert Panel.

Boeing is committed to fulfilling the requirements of the NPDES Permit and actions taken during First Quarter 2015 to control erosion and sediment transport and minimize the occurrence of future permit exceedances as described in Table II and the section on Outfall 008/009 ISRA and BMP Plan-Related Activities below.

Arroyo Simi Frontier Park – (RSW-002)**Bacteria**

In a sample collected on 11 January 2015, *E. coli* and fecal coliform were both detected at >1,600 MPN/100mL (greater than 1,600 most probable number per 100 milliliters) above the single sample maximum receiving water limits of 235 MPN/100mL and 400 MPN/100mL, respectively, at Arroyo Simi – Frontier Park (RSW-002). As stated in the NPDES Permit, *E. coli* and fecal coliform are part of water quality objectives for monitoring inland surface waters and include a geometric mean calculation. Five samples collected at Arroyo Simi – Frontier Park (RSW-002) on January 11, 15, 19, 23, and 27 were used to calculate the geometric mean for *E. coli* and fecal coliform. The calculated geometric means for *E. coli* (691 MPN/100mL) and fecal coliform (1,057 MPN/100mL) were above the geometric mean receiving water limits for *E. coli* (126 MPN/100mL) and fecal coliform (200 MPN/100mL).

The Outfall 009 sample was also analyzed for human-specific Bacteroides to confirm that the bacteria present in Outfall 009 samples were not from human sources. The laboratory's initial result was positive for human-specific markers using the sterile bottle required for this analysis. Because human-specific markers have never been detected in previous Outfall 009 samples, it appeared highly likely that the positive result was the result of sample contamination. Following a review of the laboratory and field procedures, Boeing concluded that the likely source of contamination was the sterilized bottle used for the sample. To validate this theory, the lab was asked to re-analyze water from an unsterile bottle from the same rain event and no human-specific markers were present in this sample. To prevent reoccurrence of this problem, Boeing is looking into how the batch of sterile bottles may have become contaminated.

Boeing collects all sanitary waste generated at the Santa Susana site and transports it to an offsite facility for treatment and disposal. The discharge at Outfall 009 consists entirely of stormwater. There is no indication that any human waste can be exposed to or enter any stormwater discharges from the Santa Susana site. The results of the Bacteroides analysis using the non-contaminated sample bottle demonstrated that no human-specific markers were detected at Outfall 009 and any bacteria detected must have originated from non-human, natural sources. It follows that the bacteria detected in waters receiving stormwater discharges from the Santa Susana site sampled at Arroyo Simi – Frontier Park (RSW-002) do not include bacteria originating from human sources at the Santa Susana Site.

FIRST QUARTER 2015 SANTA SUSANA SITE SWPPP/BMP ACTIVITIES

Boeing implemented significant SWPPP- and BMP-related activities to assist in improving stormwater quality and compliance at the Santa Susana Site. Table II summarizes the activities that were completed during First Quarter 2015 by outfall number. In addition to SWPPP-related activities, specific BMP projects included: demolition-related BMPs; Outfall 008/009 ISRA BMPs; BMP Plan-related BMPs; and Northern Drainage BMPs.

TABLE II: Boeing's First Quarter 2015 BMP Activities

OUTFALL (Location)	BMP ACTIVITIES DURING FIRST QUARTER 2015
<p>001 (South Slope below Perimeter Pond)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis.</p>
<p>002 (South Slope below R-2 Ponds)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis.</p> <p><i>Monitoring Well RS-40 Access Road BMPs:</i> Monitoring well RS-40 is within the watershed for Outfall 002. Conducted inspection of rolling dips, water bars and a riprap apron/berm along the access road.</p>
<p>003 (Radioactive Material Handling Facility)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of structural BMPs, including the flow-through structure and stormwater conveyance and retention systems.</p>

OUTFALL (Location)	BMP ACTIVITIES DURING FIRST QUARTER 2015
<p style="text-align: center;">004 (Sodium Reactor Experiment)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and stormwater conveyance system. Completed installation of tank and piping to capture runoff from concrete drainage channels adjacent to Outfall 004 in March.</p>
<p style="text-align: center;">005 (Former Sodium Disposal Facility - 1)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the stormwater conveyance and retention systems. Checked high level float switch in sedimentation basin.</p>
<p style="text-align: center;">006 (Former Sodium Disposal Facility - 2)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and stormwater conveyance system. Replaced worn felt liner on sedimentation basin in February.</p>
<p style="text-align: center;">007 (Building 100)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the stormwater conveyance and retention systems. Performed maintenance on high level float switch in sedimentation basin.</p>

OUTFALL (Location)	BMP ACTIVITIES DURING FIRST QUARTER 2015
<p>008 (Happy Valley)</p>	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Removed a fallen tree in the outfall area.</p>
<p>009 (WS-13 Drainage)</p>	<p><i>Outfall BMPs:</i> Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Removed straw wattles near outfall prior to rain event in February. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis.</p> <p><i>Restoration, Monitoring and Mitigation Plan (RMMP) BMPs:</i> Performed quarterly inspection in February.</p> <p><i>Biofilter:</i> Inspected sedimentation basin, biofilter, and cistern. Replaced totalizer at cistern in February.</p> <p><i>Former B1436 Area:</i> Performed maintenance inspection of bioswale surface area, including hydroseeded area and fiber rolls.</p> <p><i>B-1 Area:</i> Performed maintenance inspection of BMPs along slope and within drainage.</p> <p><i>Culvert modifications (CMs):</i> At CM-1, removed sediment built up within basin, covered the sandbag berm along Area II Road with felt, replaced and upgraded the gravel and rip rap along the slope, and leveled out gravels near the top of the headwall. Replaced fabric covering weir boards at CM-3. Removed excess sediment and plant debris built up behind the weir boards at CM-9, and added a coarser mesh screened inlet to the perforated inlet pipe along Area II Road.</p> <p><i>NASA-led Activities:</i> Drained ELV storage tanks and added new screen cover to pump intake in sediment collection basin. Placed BMPs (sand bags and straw wattles) around monitoring well drilling sites at Area I Former Liquid Oxygen Plant (LOX). Inspected temporary BMPs at LOX ISRA Areas and Expendable Launch Vehicle (ELV) ISRA areas and discharge points to Northern Drainage.</p>

OUTFALL (Location)	BMP ACTIVITIES DURING FIRST QUARTER 2015
010 (Building 203)	Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of structural BMPs, including the flow-through structure and stormwater conveyance and retention systems. Installed new conveyance pump.
011 (Perimeter Pond)	Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and weir for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of structural BMPs, including the flow-through structure and stormwater conveyance system.
012 (Alfa Test Stand)	Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and stormwater conveyance and retention systems. Observed condition of the sand bag berm.
013 (Bravo Test Stand)	Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and stormwater conveyance and retention systems. Observed condition of the sand bag berm.
014 (Advanced Propulsion Test Facility)	Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected the outfall for sediment/debris. Checked sample box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Conducted maintenance inspections of the liner and berm.

OUTFALL (Location)	BMP ACTIVITIES DURING FIRST QUARTER 2015
018 (R-2 Spillway)	<p>Conducted erosion and sediment control inspections and performed maintenance around the perimeter of the outfall, the drainage/watershed, and areas of disturbance or sparse vegetation. Inspected outfall and flume for sediment/debris. Checked sample box and flow meter control box for the presence of debris and/or animals. Cleaned sample box and the outfall area and performed weed abatement as needed. Reset flow meter and replaced tape on a monthly basis. Conducted maintenance inspections of the structural BMPs, including the flow-through structure and conveyance system.</p> <p><i>NASA-led Activities:</i> Placed sand bags around SPA impoundments to increase erosion control. Placed BMPs (sand bags and straw wattles) around well drilling site near R-2 Ponds.</p>
019 (Area I Groundwater Extraction [GET] System)	<p>The GET system has not been in operation since April 2013 and no pumping or discharge has occurred. Therefore, no NPDES sampling was performed in First Quarter 2015 at the Area I GET System. Conducted maintenance inspections of the structural BMPs. Cleaned dissipater screen as needed.</p>
RSW-002 (Arroyo Simi – Frontier Park)	<p>Collected quarterly and rain event receiving water and sediment samples at the Arroyo Simi – Frontier Park location. Conducted monthly receiving water inspections.</p>

During Fourth Quarter 2014, two detention bioswales in the former Building 1436 area were constructed. BMPs installed in the area were inspected during First Quarter 2015 in accordance with the CGP.

Demolition activities covered by NASA's SWPPP (dated March 4, 2015) will be inspected in accordance with the CGP. These activities are anticipated to continue through December 2015.

OUTFALL 008/009 ISRA AND BMP PLAN-RELATED ACTIVITIES

ISRA soil removal within the Outfall 008 watershed was completed in 2009, and ISRA soil removal conducted within the Outfall 009 watershed was completed in Fourth Quarter 2013. In January 2014, the Phase III ISRA Implementation Report for 2011 to 2013 Activities was submitted to the Regional Board (MWH, 2014)¹. Performance monitoring is being conducted at Phase III ISRA areas and the results and recommendations presented in annual rainy season summary reports. Since ISRA remedial activities are complete, progress reports have been provided to the Regional Board on a quarterly basis. In the Third Quarter 2014 Progress Report for June 21, 2014 – September 26, 2014 Activity, Interim Source Removal Action (ISRA) and Best Management Practices (BMP) Plan (Boeing, 2014a), Boeing requested a change from quarterly to annual ISRA/BMP progress reporting. The Regional Board approved this request in an October 10, 2014 letter to Boeing (Regional Board, 2014). Future ISRA/BMP progress will be reported in the annual rainy season reports.

¹ Available at: <http://www.boeing.com/principles/environment/santa-susana/interim-source-removal.page>

The Expert Panel prepared BMP plans and submittals on behalf of NASA and Boeing to meet Outfall 008/009 permit limits/benchmarks established in the NPDES Permit (Order No. R4-2004-0090)². These plans are considered conceptual designs and recommendations for BMPs identified based on an evaluation of NPDES Permit compliance and ISRA/BMP stormwater monitoring results. The following BMP plans were submitted to the Regional Board and are located on Boeing's Santa Susana Site web page under Outfall 008/009 ISRA- and BMP-related activities³:

- 2010 BMP Plan Outfalls 008 and 009 BMP Watersheds (MWH et al., 2010);
- 2011 BMP Plan Addendum (Geosyntec and the Expert Panel, 2011);
- 2012 BMP Plan Addendum (Geosyntec and the Expert Panel, 2012);
- 2013 BMP Plan Addendum (Geosyntec and the Expert Panel, 2013); and
- 2014 BMP Plan Addendum (Geosyntec and the Expert Panel, 2014a).

Completed Expert Panel-recommended BMPs are discussed in the ISRA Performance Monitoring and BMP Monitoring Report for Outfalls 008 and 009 Watersheds submitted to the Regional Board for each rainy season (MWH, 2010; MWH et al., 2011; MWH et al., 2012; MWH et al., 2013; and MWH et al., 2014).

The BMP activities discussed below were performed, commenced, or completed during First Quarter 2015 in coordination with the Expert Panel.

Building 1436 Detention Bioswales

Construction of two detention bioswales, grading, and hydroseeding of the graded surface were completed in December. First Quarter 2015 activities included inspections of the bioswales and hydroseeded areas.

Biofilter

The biofilter is a stormwater treatment BMP designed and built to capture, convey, and treat stormwater runoff from the lower parking lot and former Instrument and Equipment Laboratories (IEL) watershed. A treatment BMP at the lower parking lot was first proposed in the 2010 BMP Plan (MWH et al., 2010). The biofilter consists of a 30,000-gallon cistern, a stormwater conveyance line, a sedimentation basin, and a media biofilter. Construction activities were completed on 15 March 2013; a Regional Board and public tour of the completed biofilter was conducted on 20 March 2013.

First Quarter 2015 activities included inspections to verify that the sedimentation basin and biofilter were free of sediment and debris, checks of the cistern area and pump, and inspections of surrounding BMPs. A total of approximately 276,300 gallons of stormwater were pumped from the cistern to the sedimentation basin during the First Quarter 2015 rain events.

Culvert Modifications

- CM-1: Periodic removal of sediment and debris built up within the basin and behind the weir boards continued at this inlet prior to and during rain events. In January, felt was installed to cover the sandbag berm along Area II Road, gravel and rip rap were repaired and upgraded along the

² Available at: <http://www.boeing.com/principles/environment/santa-susana/permits.page>

³ Available at: <http://www.boeing.com/principles/environment/santa-susana/interim-source-removal.page>

slope, gravel was leveled out near the top of the headwall, and a coarser mesh screened inlet was added to the perforated inlet pipe along Area II Road.

- CM-3: Fabric covering the weir boards was replaced.
- CM-9: Periodic removal of built up sediment and plant debris continued at this inlet prior to and during rain events. In January, a coarser mesh was installed on the pipe influent along Area II Road, and a 90-degree joint on the pipeline was replaced with a tee equipped with a removable flange to allow removal of accumulated debris such as sediment and leaves.

First Quarter 2015 NASA and Boeing ISRA Activities

Boeing continues to submit progress reports to Regional Board staff⁴. In addition to activities performed in coordination with the Expert Panel, the ISRA activities performed for Outfalls 008/009 during First Quarter 2015 included the following:

- ISRA Performance Monitoring and BMP performance monitoring in the following subareas:
 - B-1 Area;
 - Biofilter;
 - Culvert modification (CM)-9.; and
 - Lower Parking Lot
- Inspection of BMPs at ISRA Performance Monitoring and BMP Monitoring locations and surrounding areas;
- Inspection of temporary BMPs at the Area I Former Liquid Oxygen Plant (LOX) and ELV ISRA Areas, and slope drain discharge points to the Northern Drainage; and
- Placement of sandbags and straw wattles at groundwater monitoring well locations near LOX.

NORTHERN DRAINAGE BMPS

Boeing has actively worked to restore the Northern Drainage following cleanup activities performed under the oversight of the DTSC and in accordance with the requirements of Regional Board Cleanup and Abatement Order No. R4-2007-0054 (RWQCB, 2007). The restoration and mitigation activities proposed in the Northern Drainage Restoration, Mitigation, and Monitoring Plan (RMMP)⁵ were implemented beginning in 2012.

Annual survey activities were conducted in the Northern Drainage during Second Quarter 2014, including a botanical survey and, in accordance with the Regional Board's Clean Water Act Section 401 Water Quality Certification issued to Boeing in 2012, a California Rapid Assessment Method (CRAM) survey. Plant and pole cutting monitoring, maintenance and watering ceased during First Quarter 2015 due to the rainy season. Manual watering will resume during the dry season on a weekly basis or as needed until the plants are well established. In accordance with the RMMP, plant monitoring will continue for a minimum of five years from the 2012 planting depending on attaining the success criteria (i.e., performance standards)

⁴ Available at: <http://www.boeing.com/principles/environment/santa-susana/interim-source-removal.page>

⁵ Available at: <http://www.boeing.com/principles/environment/santa-susana/technical-reports.page>

specified in California Department of Fish & Wildlife Streambed Alteration Agreement number 1600-2003-5052-R5 and incorporated into the RMMP (California Department of Fish and Game, 2003).

In accordance with the RMMP, an annual inspection of stabilization measures was conducted in the Northern Drainage during First Quarter 2014 and a technical memorandum recommending maintenance activities were submitted to Boeing in July 2014 (Geosyntec and the Expert Panel, 2014b). Recommendations made in the technical memorandum were implemented during Third Quarter 2014. The technical memorandum, CRAM survey results, and documentation of maintenance activities performed were included in the Northern Drainage 2014 Annual Report submitted to the Regional Board in December 2014 (Boeing, 2014b). The 2015 annual inspection was conducted in February.

REASONABLE POTENTIAL ANALYSIS

Stormwater discharges from the Santa Susana Site occurred at Outfall 009 during First Quarter 2015. Analytical results from this quarter were added to the Reasonable Potential Analysis (RPA) dataset following the MWH and Flow Science RPA procedures for outfall monitoring group 009-010 (MWH and Flow Science, 2006). As shown in Appendix F, the analytical results for First Quarter 2015 did not trigger reasonable potential for any other constituent not already regulated under the current NPDES Permit.

Bacteria

Boeing notes that the water quality objectives for indicator bacteria were updated by the Regional Board on July 8, 2010 (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.

On January 11, 2015, *E. coli* was detected in stormwater samples collected from Outfall 009 at 360 MPN/100mL. Boeing collects all sanitary waste generated at the Santa Susana site and transports it to an offsite facility for treatment and disposal. The discharges at these outfalls consist entirely of stormwater. The Outfall 009 sample was also analyzed for human-specific Bacteroides to confirm that the bacteria present in the Outfall 009 samples were not from human sources. As discussed previously, the laboratory's initial result was positive for human-specific markers using the sterile bottle required for this analysis. The laboratory then re-analyzed water from an unsterile bottle from the same rain event to validate that the sterilized bottle was the source of contamination, and this analysis confirmed no human-specific markers were present. Boeing is looking into how the batch of sterile bottles may have become contaminated. The results of the Bacteroides analysis using the non-contaminated sample bottle demonstrated that no human-specific markers were not detected, and that any bacteria detected in stormwater discharges from the site therefore must have originated from non-human, natural sources. Therefore, Boeing does not believe that reasonable potential has been demonstrated for bacteria at Outfall 009.

Boeing is implementing preventative action by revising the Standard Operating Procedure for collecting samples for human-specific Bacteroides analysis to minimize the potential for contamination, and will continue to perform the human-specific Bacteroides analysis so as to confirm that any indicator bacteria detected at the outfalls are from non-human sources.

DATA VALIDATION AND QUALITY CONTROL

In accordance with current federal and state Environmental Protection Agency guidelines and procedures, or as specified in the NPDES Monitoring and Reporting Program, chemical and radiological analyses of 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. Measures were implemented by the analytical laboratory to monitor and/or evaluate low level detections, analyze for interferences, and ensure that cross-contamination did not occur. Laboratory analytical reports, including validation reports and notes, are included in Appendix E.

Attachment H of the NPDES Permit presents the State Board's minimum levels (MLs) for use in reporting and determining compliance with NPDES Permit limits. The analytical laboratory achieved these MLs in the First Quarter 2015 when technically possible. In cases where the NPDES Permit limit is less than the reporting limit (RL) and ML, the RL was used to determine compliance.

The laboratory RL for each constituent in the permit was less than the lowest applicable permit requirement with the following exceptions: 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, polychlorinated biphenyls (PCBs) [Aroclor congeners], chlordane, chlorpyrifos, diazinon, dieldrin, mercury, and toxaphene. The laboratory RL for these exceptions met their respective MLs with the exception of PCBs. The ML for PCBs is 0.5 ug/L; the laboratory RL was raised to 0.51 ug/L due to a sample volume of slightly less than the required 1000mL. Boeing is implementing corrective action by revising the Standard Operating Procedure for collecting samples. 4,4'-DDD, 4,4'-DDE, 4,4'-DDT, PCBs, chlordane, chlorpyrifos, diazinon, dieldrin, mercury, and toxaphene were not detected at concentrations equal to or greater than their RL in samples collected and analyzed during the First Quarter 2015 or were not analyzed at Arroyo Simi sample location RSW-002 per the requirements of the NPDES Permit.

CONCLUSIONS

Boeing continues to improve water quality at stormwater discharge locations at the Santa Susana Site through methods designed to preserve the natural conditions in the watershed to the maximum extent feasible by implementing sustainable erosion control/restoration measures and continuing with planned ISRA and BMP activities as detailed above.

FACILITY CONTACT

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

CERTIFICATION

I certify under penalty of law that this document and all attachments 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 15th of May 2015 at The Boeing Company, Santa Susana Site.

Sincerely,



Paul J. Costa
Environmental Operations and Compliance Manager
Santa Susana Field Laboratory
The Boeing Company

Enclosures:

References

Figure 1 - Site Map with Stormwater Collection, Conveyance System, and Site Features

Figure 2 - Arroyo Simi – Frontier Park (RSW-002) Sampling Location

Appendix A - First Quarter 2015 Rainfall Data Summary

Appendix B - First Quarter 2015 Liquid Waste Shipment Summary Table

Appendix C - First Quarter 2015 Discharge Monitoring Data Summary Tables

Appendix D - First Quarter 2015 Summary of Permit Limit Exceedances

Appendix E - First Quarter 2015 Analytical Laboratory Report, Chain of Custody, and Validation Report

Appendix F - First Quarter 2015 Reasonable Potential Analysis (RPA) Summary Tables

cc: Ms. Cassandra Owens, RWQCB
Mr. Mark Malinowski, DTSC
California State University – Northridge, Library
Simi Valley Library
Los Angeles Library, Platt Branch

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